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&

STORMWATER MANAGEMENT REPORT

FOR

INNIS LAKE SECONDARY PLAN

TOWN OF CALEDON
REGION OF PEEL

PROJECT NO. 22-1297

MAY 2026

FUNCTIONAL SERVICING & STORMWATER MANAGEMENT REPORT FOR THE INNIS LAKE SECONDARY PLAN

TOWN OF CALEDON

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FUNCTIONAL SERVICING & STORMWATER MANAGEMENT REPORT
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1.0 INTRODUCTION

David Schaeffer Engineering Limited (DSEL) has been retained to prepare a Functional Servicing and Stormwater Management Report (FSR) in support of the Innis Lake Secondary Plan area (G1 Secondary Planning Area) in the Town of Caledon.

The secondary plan is bounded by Mayfield Road to the south, Innis Lake Road to the west, Centreville Creek Road to the east and Healey Road to the north in the Town of Caledon, Regional Municipality of Peel. The secondary plan is identified as New Community Area in the 2025 Future Caledon Official Plan and is shown in ***Figure 1.***

The secondary plan has been divided into two phases of development due to the varying development timings of the participating landowners. Phase 1 of the secondary plan includes the lands south of the future east-west collector road, approximately 1.5km north of Mayfield Road. These lands have been analyzed and discussed in detail in this FSR.

Phase 2 of the secondary plan includes the remaining lands within the Innis Lake Secondary Planning area which are located north of the Phase 1 lands and extend up to Healey Road. The Phase 2 lands have been presented conceptually to confirm that the advancement of Phase 1 does not preclude viable servicing and development strategies for the Phase 2 lands. An FSR will be required for the Phase 2 plans when a development concept is prepared.

This FSR is a high-level document intended to identify the development constraints, SWM targets, and general site serviceability of the overall secondary plan. This FSR addresses the functional servicing and stormwater management for the proposed development in accordance with the Local Subwatershed Study (LSS, RJ Burnside et al., May 2026) and relevant municipal standards. This FSR will generally confirm that adequate services are available to support the proposed development in accordance with the standards of the Town of Caledon, Region of Peel, Toronto Region Conservation Authority (TRCA), and general industry practice.

2.0 PREVIOUS STUDIES AND REPORTS

The following materials shown in ***Table 2-1*** have been reviewed in order to identify the constraints which govern development within the secondary plan

Table Error! No text of specified style in document.**-1: Background Studies and Guidelines**

RESOURCES
Humber River Hydrology Update Civica Infrastructure, 2018 ***(Humber Hydrology)***
Scoped Subwatershed Study, Part A, B and C – Peel Settlement Area Boundary Expansion. Wood Environment & Infrastructure Solutions, January 2022. ***(SABE Report)***
Linear Wastewater Standards Region of Peel, October 2025 ***(Sanitary Design Criteria)***

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Linear Infrastructure - Watermain Design Criteria Region of Peel, June 2010 ***(Watermain Design Criteria)***
Stormwater Management Planning and Design Manual Ministry of Environment, March 2003 ***(SWMP Manual)***
Low Impact Development Stormwater Management Planning and Design Guide Credit Valley Conservation and Toronto and Region Conservation Authority, 2011 ***(LID Design Manual)***
Region of Peel Water & Wastewater Master Plan for the Lake-Based System Region of Peel, 2020 ***(Peel Master Plan)***
Stormwater Management Criteria TRCA, August 2012 ***(SWM Criteria)***
Hydraulic Capacity and Modeling Analysis Memo GeoAdvice, March 2026 ***(Water Servicing Report)***
Local Subwatershed Study RJ Burnside et al., May 2026 ***(LSS)***

The above documents form the basis for this report.

3.0 PROPOSED LAND USE

The secondary plan lands are currently under agricultural use and include several natural heritage features associated with tributaries of the West Humber River. The secondary plan area is approximately 410 Ha, with the Phase 1 lands comprising approximately 154 Ha.

The Concept Plan for the Phase 1 lands includes Neighbourhood Area, Neighbourhood Centre, Urban Corridor, Natural Heritage System, Stormwater Management Ponds, Neighbourhood Parks, Elementary and Secondary Schools, and Place of Worship. The development concept, illustrated in ***Figure 3***, includes the following land uses listed in ***Table 3-1***.

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Table Error! No text of specified style in document.**-2: Summary of Proposed Land Uses**

Land Use	Area (Ha)
Phase 1	
Neighbourhood Area	71.3
Neighbourhood Centre	2.9
Urban Corridor	20.6
Natural Heritage System	42.2
SWM Ponds	9.8
Parks	5.4
Elementary School	1.6
Place of Worship	0.6
TOTAL	**154.4**

4.0 STORM DRAINAGE

The secondary plan will be developed using a treatment train approach for addressing stormwater runoff generated by the proposed development, consisting of:

- the application of source control and LID techniques as appropriate, preferentially located in public areas with appropriate soil conditions to provide stormwater quality control and address the site water balance.
- conveyance techniques as appropriate; and
- end of pipe facilities such as wet ponds and other stormwater management facilities for additional quantity, quality, and erosion control.

The pre-development drainage areas and drainage patterns for the secondary plan are discussed in Section 6.1 of the ***LSS.***

4.1 Floodplain Assessment

An existing conditions floodplain assessment was completed as part of the ***LSS*** for the secondary plan area. Please refer to Section 6.2 and 6.3 of the ***LSS*** for detailed discussion of the existing conditions floodplain assessment.

A post-development floodplain assessment will be completed as part of Part 'B' of the ***LSS*** to evaluate the impact of the proposed secondary plan development on the floodplain.

4.2 Proposed Drainage Patterns

Post-development drainage areas have been delineated to reflect the Phase 1 secondary plan concept area with due consideration for property ownership, community phasing, and consideration for external drainage patterns entering the subject property. A conventional storm sewer system and major system conveyance network is designed to direct storm flows safely through the catchment to designated stormwater management facilities for treatment where appropriate. The proposed conditions drainage strategy is illustrated in ***Figure 3***.

The number and location of ponds and the associated drainage areas presented in this report are generally established on technical merits, community phasing, and environmental consideration. The number of stormwater management ponds have been minimized to reduce maintenance requirements for the Town and to improve land use efficiency without compromising the benefits

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of stormwater management. All SWM requirements would still be met through the proposed SWM Ponds.

External proposed conditions drainage areas to ponds and to the subject property is addressed in ***Section 4.2.1***. The grading and drainage boundaries may be further refined at the detailed design stage.

4.2.1 Boundary Road Drainage and External Drainage

The boundary roads have been reviewed to identify areas that could potentially drain to ponds within the secondary plan lands for stormwater treatment. Currently, quality control is provided through grassed swales, with no quantity control measures in place.

Mayfield Road

Mayfield Road is currently a 2-lane rural cross-section and is proposed to be urbanized and widened as part of the Region of Peel's Transportation Master Plan (2019). It is understood that the Region will be widening the road along the frontage of the Phase 1 lands, from the existing rural 2-lane section to an urbanized 5-lane section, with accompanying storm sewers to collect and convey road drainage.

The Mayfield Road widening and urbanization is currently in detailed design with construction anticipated to begin in Summer 2026. The detailed design drawings for Mayfield Road show a storm sewer network equipped with underground storage and dedicated sewer outlets to provide quality and quantity control for road runoff. As such, runoff from Mayfield Road has not been considered in the design of the Innis Lake Secondary plan.

Innis Lake Road

Innis Lake Road is a 2-lane rural cross-section and is proposed to by urbanized and widened from 2 to 4 lanes by 2041 per the Town of Caledon's Multi-Modal Transportation Master Plan (June 2024). Under existing conditions, road runoff is collected in ditches on either side of the road and conveyed to TWHRB-5b approximately 100m north of Mayfield Road. Under post-development conditions, TWHRB-5b is proposed to be eliminated and drainage from Innis Lake Road will be conveyed via storm sewer to the 1220mm culvert on Mayfield Road. Similar to Mayfield Road, it is anticipated that the urbanized design of Innis Lake Road will include storm sewers to collect and convey road drainage to the culvert on Mayfield Road. As part of the secondary plan it is assumed that the future Innis Lake Road widening design will include provisions for quality and quantity control.

Centreville Creek Road

Centreville Creek Road is a 2-lane rural cross-section and is proposed to by urbanized and widened from 2 to 4 lanes by 2041 per the Town of Caledon's Multi-Modal Transportation Master Plan (June 2024). Under existing conditions, road runoff is collected in ditches on either side of the road and conveyed to TWHRA-3b and TWHRA-3b-1 before crossing Mayfield Road via the 1800mm culvert east of Centreville Creek Road. It is anticipated that the urbanized design of Centreville Creek Road will include storm sewers to collect and convey road drainage to the existing creek TWHRA-3b and TWHRA-3b-1. As part of the secondary plan, it is assumed that the future Centreville Creek Road widening design will include provisions for quality and quantity control.

External Drainage Areas:

The Innis Lake secondary plan area represents the upstream end of the 36.07, 36.08, 36.09, 36.10 and 36.11 catchments. External drainage north of the secondary plan (Healey Road) drains

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to the Phase 2 lands via culverts on Healey Road and Centreville Creek Road. This external drainage is generally conveyed directly to the natural valley system within the Phase 2 lands and has been included in the hydrology modeling. External drainage west of the secondary plan is captured in existing culverts on Innis Lake Road at the northern limit of the Phase 1 lands and conveyed to TWHRB-8.

External drainage east of the secondary plan will be conveyed to the natural creek systems TWHRA-3b and TWHRA-3b-1 via culverts on Centreville Creek Road and Mayfield Road.

Phase 1 will be developed prior to Phase 2. Cut-off swales will be installed at the development limit between Phase 1 and Phase 2 to direct drainage to TWHRB-7b, TWHRA-7, and TWHRA-6a. Once Phase 2 proceeds with development, SWM ponds will be required within the Phase 2 lands to provide both quantity and quality control.

4.3 Conveyance of Minor System Flows

The secondary plan will generally be serviced by a conventional storm sewer system designed in accordance with Town of Caledon standards:

- Storm sewers will be sized using a 10-year return frequency without surcharging where foundation drains will be connected to the storm sewer.
- Storm sewers will be sized using a 5-year return frequency where foundation drains will not be connected to the minor system (i.e. sump pumps are utilized).

Sump pumps will be required in areas of shallow storm sewers or where 0.3 m of freeboard is not achieved from the 100 year / Regional hydraulic grade line to the underside of footing elevation. The sump pump outlet locations will be established through detailed design and will require back flow preventers or gooseneck connections to discharge to the storm sewer.

Given grading constraints associated with boundary roads and natural heritage systems, combined with the requirement for Regional control ponds and the resulting pond water levels and hydraulic grade line, sump pumps are anticipated within the majority of the Phase 1 lands. As such, in accordance with Section 1.4.2.2.2 of the Town standards, the storm sewers are to be sized using a 5-year return frequency.

Storm flows from Phase 1 lands will be directed to one of the seven proposed stormwater management ponds (SWMP) or one of two proposed On-site Control Areas (OSCAs) in the study area, where the runoff will be treated for water quality, erosion, and quantity control. OSCAs are discussed further in ***Section 5.0***

The conceptual storm servicing plan is provided in ***Drawing 2*** and the overall drainage plan identifying catchment areas to the respective ponds is provided in ***Figure 5***. Preliminary plans and profiles are shown on ***Drawing 4***. Preliminary storm design sheets are included in ***Appendix B***.

4.4 Conveyance of Major Storm Flows

A continuous overland flow route will be provided through Phase 1 in order to safely convey major system flows in excess of the minor system and up to the 100-year event. Overland flow routes will be directed to one of seven stormwater management ponds or two OSCAs located within the study area. The major system flow will not exceed the width of the road allowance, and in no case will the depth of flow exceed 0.30 meters above the gutter of the road during a 100-year event, in accordance with the Town of Caledon criteria.

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Should the major system flow exceed the conveyance capacity of any given road, the storm sewer will be sized to accommodate the flows in excess of the road capacity.

The major system flows will be attenuated in the stormwater management ponds or OSCAs to achieve the allowable release rates as defined in ***Section 5.3.4***.

4.4.1 Uncontrolled Areas

Driven primarily by grading constraints within Phase 1, there are circumstances that result in major system flows that are unable to be attenuated in the stormwater management ponds. These scenarios include:

- Rear yards backing onto the Natural Heritage System
    - Rear yards are often >1.5m lower than the adjacent road grade and as such it is not practical to capture rear yard drainage into the storm sewer
    - This drainage is considered to be clean drainage and does not require quality control
- Areas directed to On-site Control Areas (OSCAs) will be provided with quality controls and quantity controls up to the 100yr storm (not including Regional)
    - There are two areas on the southeast corner of the plan that are bounded by NHS and / or external roads on all sides
    - These areas are 5 Ha in size or less and as such do not merit a SWM pond for quality and quantity control
    - On-site control within these development blocks will be provided for quality control and quantity control up to and including the 100yr storm
    - The ultimate location and details of these on-site control areas will be determined through site-specific draft plan applications

An assessment has been completed to demonstrate these uncontrolled areas can discharge to the West Humber River without increasing the total peak flows from the secondary plan. As such, no overcontrol is required in the ponds. “Part B” of the ***LSS*** will include discussion of the post-development hydrology and analysis of the downstream Flood Vulnerable Areas (FVA).

5.0 STORMWATER MANAGEMENT

Stormwater management for Phase 1 of the secondary plan will be accommodated in seven stormwater management facilities (SWMs) and two on-site control areas (OSCAs). All SWM ponds will be conventional wet ponds. Details for the OGS units provided as part of the OSCAs will be provided at detailed design and will be designed to provide 80% TSS removal (i.e. Jellyfish Unit TM, or equivalent) for the upstream catchment. Details of the stormwater management for the Phase 2 lands will be part of a future study for the proposed development of Phase 2.

SWM Pond 1 is located at the northwest corner in Phase 1 of the secondary plan area. The pond is bounded by the proposed east-west collector road to the north, a proposed local road to the west, and the proposed realigned channel to the east and south. The pond is situated at an existing low point near the confluence of TWHRA-7a and TWHRB-8. The pond will provide quality and quantity control for approximately 4.8 Ha of lands within Phase 1 and in the future development within Phase 2. The pond outfall will be located on the eastern portion of the pond and will discharge to the proposed realigned channel.

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SWM Pond 2 is bounded by the existing NHS to the south and east, a proposed collector road to the west, and proposed residential lots to the north. The pond will provide quality and quantity control for approximately 22.5 Ha, and discharge to the existing channel TWHRB-7 to the east.

SWM Pond 3 is located in the southwest portion of the secondary plan, bounded by proposed local roads to the north and west, existing NHS to the east, and the existing Place of Worship to the south. The pond will provide quality and quantity control for approximately 9.3 Ha, discharging to the existing channel TWHRB-6 to the east.

SWM Pond 4 is bounded by the existing NHS to the west, a proposed collector road to the north and east, and proposed residential lots to the south. The pond will provide quality and quantity control for approximately 12.3 Ha, discharging to the existing channel TWHRB-7 to the west.

SWM Pond 5 is located at the southern portion of the secondary plan, bounded by Mayfield Road to the south, a proposed collector road to the east, a local road to the north, and future residential lots to the west. The pond will provide quality and quantity control for approximately 8.5 Ha, and discharge to the existing channel TWHRB-5 to the east.

SWM Pond 6 is located at the northeast portion in Phase 1 of the secondary plan, bounded by a proposed park to the north, existing NHS to the west, a proposed collector road to the south, and a proposed local road to the east. The pond will provide quality and quantity control for approximately 34.6 Ha, discharging to the existing channel TWHRA-6 to the west.

SWM Pond 7 is located at the southeast portion of the secondary plan, bounded by existing NHS to the west and south, a proposed local road to the north, and future residential lots to the south and east. The pond will provide quality and quantity control for approximately 6.3 Ha, and discharge to the existing channel TWHRA-3c to the west.

OSCA 1 will be located in the southern portion of the secondary plan. The drainage area to OSCA 1 is approximately 5.2 Ha and is bounded by the existing NHS corridors associated with TWHRA-6, TWHRA-3b, and TWHRA-3b1. This area is unable to drain to one of the seven ponds described above and will require its own on-site control area for quality and quantity control. Given that the drainage area is at the minimum allowable drainage area for a conventional wet pond (i.e. 5 Ha), details for the OSCA will be investigated through a site-specific FSR as part of the draft plan application for these lands.

OSCA 2 will be located in the southeastern portion of the secondary plan. The drainage area to OSCA 2 is approximately 2.9 Ha and is bounded by Centreville Creek Road, Mayfield Road, and the existing NHS corridors associated with TWHRA-3b and TWHRA-3b1. This area is unable to drain to one of the seven ponds described above and will require its own on-site control area for quality and quantity control. Given that the drainage area is below the minimum allowable drainage area for a conventional wet pond (i.e. 5 Ha), details for the OSCA will be investigated through a site-specific FSR as part of the draft plan application for these lands.

Clay liner recommendations for all SWM ponds will be determined through a site-specific geotechnical investigation. The following sections outline the preliminary details for Ponds 1 through 7, and the two OSCA areas within the Phase 1 lands.

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5.1 Design Criteria

Stormwater management within the secondary plan is proposed in accordance with the criteria set out in Section 6.4 of the LSS summarized below:

Table 5-1: Summary of Stormwater Management Criteria

Water Quality Control	➢ Provide **Enhanced (Level 1)** water quality treatment, sized in accordance with the ***SWMP Manual.***
	➢ 90th percentile storm event addressed through the CLI-ECA hierarchy requirements.
Erosion Control	➢ Provide adequate drawdown time / erosion control to protect the form and function of watercourses downstream of the SWM facilities as per TRCA requirements of a 48-hour drawdown time for the 25 mm storm runoff volume
Quantity Control	➢ Volume required to meet unitary rates from the TRCA's ***Humber River Hydrology*** reports based on post-development drainage area to SWM facility.
	➢ Quantity control required for the 2- to 100-year and Regional events in accordance with the unit flow equations for subcatchments 36.07 through 36.11 of Humber, as provided by TRCA Quantity Controls are required for 2- to 100-year and Regional storm events.

All facilities will be designed accordingly to meet the criteria in Section 4.2.1 of the TRCA's Approaches to Manage Regulatory Event Flow Increases resulting from Urban Development (TRCA, 2016), where applicable.

All facilities will be designed to generally meet the criteria in Appendix E of the TRCA's Stormwater Management Criteria (TRCA, 2012), where applicable.

The stormwater management for the subject area is to be designed with a treatment train approach, with the catchment upstream of the ponds deploying LIDs. Furthermore, the study area is intended to comply with the Consolidated Linear Infrastructure Environmental Compliance Approval (CLI-ECA) criteria outlined in ***Table 5-2***. The CLI-ECA criteria is intended to allow development applications to proceed with ECAs under the direction of local municipalities through a delegated authority from the Province of Ontario.

5.1.1 CLI-ECA Design Criteria

The MECP published design criteria for sanitary sewers, storm sewers, and forcemains authorized under Environmental Compliance Approval (ECA) in May 2023. The Consolidated Linear Infrastructure – Environmental Compliance Approval (CLI-ECA) process is delegated authority from the Province of Ontario (MECP) to municipalities through an agreement to modify or expand their infrastructure networks, subject to provisions outlined in the agreement with the MECP. As part of the CLI-ECA agreement process, the MECP has issued design performance criteria within the agreement with municipalities pertaining to stormwater management objectives,

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as shown in **Table 5.2**. However, the Performance Criteria has not been translated to Town of Caledon design standards and details that can be used by practitioners.

A column has been added on the right side of the table to refer to the relevant section in the FSR / LSS where the performance criteria are addressed.

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Table 5-2: CLI-ECA Performance Criteria

Topic	MECP CLI ECA Criteria	FSR/LSS Section
Water Balance [1]	FOR DEVELOPMENT SCENARIOS [2] Assessment Studies: i) Control [3] as per the criteria identified in the water balance assessment completed in one or more of the following studies [15], if undertaken: a watershed/subwatershed plan; Source Protection Plan (Assessment Report component); Master Stormwater Management Plan, Master Environmental Servicing Plan; Class EA, or similar approach that transparently considers social, environmental and financial impacts; or local site study including natural heritage, Ecologically significant Groundwater Recharge Areas (EGRA), inflow and infiltration strategies. The assessment should include sufficient detail to be used at a local site level and consistent with the various level of studies; OR IF Assessment Studies in i) NOT completed: ii) Control [3] the recharge [4] to meet Pre-development [5] conditions on property; **OR** iii) Control [3] the runoff from the 90th percentile storm event. Lake Simcoe Watershed Municipalities: iv) Control [3] as per the evaluation of anticipated changes in water balance between Pre-development and post-development assessed through a Stormwater management plan in support of an application for Major Development [6]. The assessment should include sufficient detail to be used at a local site level. If it is demonstrated, using the approved water balance estimation methods **[7]**, that the site's post to Pre-development water balance cannot be met, and Maximum Extent Possible [8] has been attained, the proponent may use Lake Simcoe and Region Conservation Authority's (LSRCA) Recharge Compensation Program [9]. FOR RETROFIT SCENARIOS [10] Assessment Studies: i) Control as per criteria identified in the water balance assessment completed in one or more of the following studies: a watershed/subwatershed plan, Source Protection Plan (Assessment Report component), Master Stormwater Management Plan, Master Environmental Servicing Plan, Class EA, or local site study including natural heritage, EGRA, inflow and infiltration strategies, if undertaken. The assessment should include sufficient detail to be used at a local site level and consistent with the various level of studies; **OR** ii) If constraints [11] identified in i), then control [3] as per Maximum Extent Possible [8] based on environmental site feasibility studies or address local needs[14]. IF Assessment Studies in i) NOT completed: iii) Control [3] the recharge [4] to meet Pre-development [5] conditions on property; **OR** Control [3] the runoff from the 90th percentile storm event.	Section 4 of the LSS
Water Quality [1]	FOR DEVELOPMENT SCENARIOS [2]	Section 5.3 of the FSR

Topic	MECP CLI ECA Criteria	FSR/LSS Section
	All of the following criteria must be met for development scenarios: **General:** i) Characterize the water quality to be protected and Stormwater Contaminants (e.g., suspended solids, nutrients, bacteria, water temperature) for potential impact on the Natural Environment, and control as necessary, **OR** ii) As per the watershed/subwatershed plan, similar area-wide Stormwater study, or Stormwater management plan to minimize, or where possible, prevent increases in Contaminant loads and impacts to receiving waters. Suspended Solids: v) Control [3] 90th percentile storm event and if conventional methods are necessary, then enhanced, normal, or basic levels of protection (80%, 70%, or 60% respectively) for suspended solids removal (based on the receiver). Phosphorus: i) Minimize existing phosphorus loadings to Lake Erie and its tributaries, as compared to 2018 or conditions prior to the proposed development, **OR** ii) Minimize phosphorus loadings to Lake Simcoe and its tributaries. Proponents with development sites located in the Lake Simcoe watershed shall evaluate anticipated changes in phosphorus loadings between Pre-development and post-development through a Stormwater management plan in support of an application for Major Development [6]. The assessment should include sufficient detail to be used at a local site level. If, using the approved phosphorus budget tool [12], it is demonstrated that the site's post to Pre-development phosphorus budget cannot be met, and Maximum Extent Possible [8] has been attained, the proponent may use LSRCA's Phosphorus Offsetting Policy [9]. FOR RETROFIT SCENARIOS [10] i) Improve the level of water quality control currently provided on site; **AND** ii) As per the 'Development' criteria for Suspended Solids, **OR** iii) **If 'Development' criteria for Suspended Solids cannot be met**, Works are designed as a multi-year retrofit project, in accordance with a rehabilitation study or similar area-wide Stormwater study, such that the completed treatment train will achieve the 'Development' criteria for Suspended Solids or local needs[14], within ten (10) years; **OR** If constraints [11] identified in ii) and iii), then control [3] as per Maximum Extent Possible [8] based on environmental site feasibility studies.	
Erosion Control	FOR DEVELOPMENT SCENARIOS [8]	Section 7 of the LSS

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Topic	MECP CLI ECA Criteria	FSR/LSS Section
(Watershed) [1]	i) As per erosion assessment completed in watershed/subwatershed plan, Master Stormwater Management Plan, Master Environmental Servicing Plan, Drainage Plan, Class EA, local site study, geomorphologic study, or erosion analysis; **OR** ii) As per the Detailed Design Approach or Simplified Design Approach methods described in the Stormwater Management Planning and Design Manual: a. The Detailed Design Approach may be selected by the proponent for any development regardless of size and location within the watershed provided technical specialists are available for the completion of the technical assessments; or considered more appropriate than the simplified approach given the size and location of the development within the watershed and the sensitivity of the receiving waters in terms of morphology and habitat function. b. The Simplified Design Approach may be adopted for watersheds whose development area is generally less than twenty hectares AND either one of the following two conditions apply: 1)The catchment area of the receiving channel at the point-of-entry of Stormwater drainage from the development is equal to or greater than twenty-five square kilometres; or 2)Meets the following conditions: • The channel bankfull depth is less than three quarters of a metre; • The channel is a headwater stream; • The receiving channel is not designated as an Environmentally Sensitive Area (ESA) or Area of Natural or Scientific Interest (ANSI) and does not provide habitat for a sensitive aquatic species; • The channel is stable to transitional; and • The channel is slightly entrenched; **OR** iii) In the absence of a guiding study, detain at minimum, the runoff volume generated from a 25 mm storm event over 24 to 48 hours. FOR RETROFIT SCENARIOS [10] If approaches i-iii) under 'Development Scenarios' are not feasible as per identified constraints [11], then improve the level of erosion control [3] currently provided on site to Maximum Extent Possible [8] based on environmental site feasibility studies or address local needs[14].	
Water Quantity	i) As per municipal standards, Master Stormwater Management Plan, Class EA, Individual EA and/or ECA, as appropriate for the type of project [13]	Section 4.3 and 4.4 of the FSR

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Topic	MECP CLI ECA Criteria	FSR/LSS Section
(Minor and Major System) [1]		
Flood Control (Watershed Hydrology) [1]	FOR DEVELOPMENT SCENARIOS [2] i) Manage peak flow control as per watershed/subwatershed plans, municipal criteria being a minimum 100 year return storm (except for site-specific considerations and proximity to receiving water bodies), municipal guidelines and standards, Individual/Class EA, ECA, Master Plan, as appropriate for the type of project [13]. FOR RETROFIT SCENARIOS [10] If approaches i) under 'Development Scenarios' are not feasible as per identified constraints [11], then improve the level of flood control [3] currently provided on site to Maximum Extent Possible [8] based on environmental site feasibility studies.	Section 6 of the LSS and Section 5.3.4 of the FSR.
Construction Erosion and Sediment Control	i) Manage construction erosion and sediment control through development and implementation of an erosion and sediment control (ESC) plan. The ESC plan shall: a. Have regard to Canadian Standards Association (CSA) W202 Erosion and Sediment Control Inspection and Monitoring Standard (as amended); OR b. Have regard to Erosion and Sediment Control Guideline for Urban Construction 2019 by TRCA (as amended). ii) Be prepared by a QP for sites with drainage areas greater than 5 ha or if specified by the Owner for a drainage lower than 5 ha. iii) Installation and maintenance of the ESC measures specified in the ESC plan shall have regard to CSA W208:20 Erosion and Sediment Control Installation and Maintenance (as amended). For sites with drainage areas greater than 5 ha, a QP shall inspect the construction ESC measures, as specified in the ESC plan.	Section 13 of the FSR

Footnotes:

1. Where the opportunity exists on your project site or the same subwatershed, reallocation of development elements may be optimal for management as described in footnote [3].
2. Development includes new development, redevelopment, infill development, or conversion of a rural cross-section into an urban cross-section.
3. Stormwater volumes generated from the geographically specific 90th percentile rainfall event on an annual average basis from all surfaces on the entire site are targeted for control. Control is in the following hierarchical order, with each step exhausted before proceeding to the next: 1) retention (infiltration, reuse, or evapotranspiration), 2) LID filtration, and 3) conventional Stormwater management. Step 3, conventional Stormwater management, should proceed only once Maximum Extent Possible [8] has been attained for Steps 1 and 2 for retention and filtration.
4. Recharge is the infiltration and movement of surface water into the soil, past the vegetation root zone, to the zone of saturation, or water table.
5. Pre-development is defined as the more stringent of the two following scenarios: 1) a site's existing condition, or 2) as defined by the local municipality.
6. Major Development has the same meaning as in the Lake Simcoe Protection Plan, 2009.
7. Currently, the approved tool by LSRCA for calculating the water balance is the Thornthwaite-Mather Method. Other tools agreed upon by relevant approval agencies (e.g., LSRCA, municipality, or Ministry) may also be acceptable, subject to written acceptance by the Director.

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Topic	MECP CLI ECA Criteria	FSR/LSS Section
	8. Maximum Extent Possible means maximum achievable Stormwater volume control through retention and LID filtration engineered/landscaped/technical Stormwater practices, given the site constraints [11]. 9. Information pertaining to LSRCA's Recharge Compensation Program and Phosphorus Offsetting Policy is available on LSRCA's website (lsrca.on.ca), or in "Water Balance Recharge Policy for the Lake Simcoe Protection Plan", dated July 2021, and prepared by Lake Simcoe Region Conservation Authority and "Phosphorus Offsetting Policy", dated July 2021, and prepared by Lake Simcoe Region Conservation Authority. 10. Retrofit means: 1) a modification to the management of the existing infrastructure, 2) changes to major and minor systems, or 3) adding Stormwater infrastructure, in an existing area on municipal right-of-way, municipal block, or easement. It does not include conversion of a rural cross-section into an urban cross-section. 11. Site constraints must be documented. A list of site constraints can be found in Table A2. 12. Tools for calculating phosphorus budgets may include the Ministry's Phosphorus Tool, the Low Impact Development Treatment Train Tool developed in partnership by TRCA, LSRCA, and Credit Valley Conservation (CVC), or other tools agreed upon by the LSRCA and other relevant approval agencies including the municipality. 13. Possible to look at combined grey infrastructure and LID system capacity jointly. 14. Local needs include requirements for water quality, erosion, and/or water balance retrofits identified by the owner through ongoing operation and maintenance of the stormwater system, including inspection of local receiving systems and the characterization of issues requiring remediation through retrofit controls. All studies shall conform with Ministry policies. If any conclusions in the studies negate policy, then the project will require a direct submission to the Ministry for review through an application pertaining to a Schedule C Notice.	

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5.2 Operating Characteristics

The stormwater management ponds have generally been designed in accordance with the requirements of the Town of Caledon ***Design Standards***, ***TRCA Hydrology Updates,*** and the ***SWMP Manual***, and include the following features:

Sediment Forebay	to improve sediment removal prior to entering the pond
Permanent Pool	to provide water quality and trap pollutants
Extended Detention Storage	to provide erosion control
Quantity Control Storage	to attenuate post development flows to the allowable release rates as per the ***TRCA Hydrology Updates***

The conceptual designs of the stormwater management facilities including typical cross sections are presented in ***Figure 7*** through ***Figure 13.*** A summary of the pond operating characteristics is presented in ***Table*** 5-3***-3***:

Table 5-3: Summary of Required Pond Storage Characteristics

Pond I.D.	Drainage Area (ha)	Imp. Coverage (%)	Permanent Pool Volume [1] (m^3)	Erosion Control Volume [2] (m^3)	100 Year Flood Control Volume [3] (m^3)	Regional Flood Control Volume [3] (m^3)
Pond 1	4.80*	0.76	984	795	2,872	6,902
Pond 2	22.53	0.67	4,949	3,285	10,895	18,147
Pond 3	9.32	0.69	2,007	1,393	4,783	7,950
Pond 4	12.33	0.70	3,005	1,896	6,380	11,025
Pond 5	8.54	0.68	1,913	1,264	4,984	14,114
Pond 6	34.61	0.72	6,597	5,413	22,486	61,596
Pond 7	6.33	0.74	2,040	1,030	3,844	10,673
OSCA 1	5.24	0.66	N/A	N/A	N/A	N/A
OSCA 2	2.92	0.85	N/A	N/A	N/A	N/A

[1] Permanent pool and quality control provided for MOE Enhanced Protection as per MOE SWMP Manual
[2] Erosion control to provide 48-hour drawdown time for the 25mm storm runoff volume
[3] Proposed conditions as modelled in VO

The impervious coverage has been estimated based on the various land uses and their respective sizes in the current development concept plan. The final impervious coverage may be further refined at the site specific draft plan and detailed design stage.

5.3 POND COMPONENTS

5.3.1 Sediment Forebay

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A sediment forebay is provided in each stormwater management pond. The SWM Pond designs include a sediment forebay in order to improve the pollutant removal by trapping larger particles near the inlet of the pond. The forebays have been designed with a length to width ratio of approximately 3:1 and do not exceed one third of the permanent pool surface area for wet ponds, as required in the MOECC SWMP Design Manual. Furthermore, the forebay has a minimum depth of 1.5m to minimize the potential for re-suspension.

5.3.2 Permanent Pool

The permanent pools will be approximately 3m deep. The permanent pools have been sized to provide Enhanced Level protection in accordance with the MOECC SWMP Design Manual. Slopes of 7:1 (H:V) or flatter will be provided for 3m (horizontally) on either side of the permanent pool wetted perimeter.

The storage characteristics are summarized in ***Table 5-4***.

Table 5-4: Permanent Pool Storage

Pond I.D.	Drainage Area (ha)	Imp. Coverage (%)	Volume[1] Required (m^3)	Volume Provided (m^3)
Pond 1	4.80	0.76	984	4,206
Pond 2	22.53	0.67	4,949	4,965
Pond 3	9.32	0.69	2,007	2,816
Pond 4	12.33	0.70	3,005	4,643
Pond 5	8.54	0.68	1,913	2,000
Pond 6	34.61	0.72	6,597	10,518
Pond 7	6.33	0.74	2,040	2,090

1 SWMP Design Manual, Table 3.2

The slopes in the permanent pools will be graded with side slopes of 5:1 and 7:1, with minor localized variations. OSCAs will be provided with OGS units to provide quality control for the upstream drainage areas.

5.3.3 Extended Detention

Stormwater erosion criteria for proposed SWM facilities were established based on the TRCA SWM Criteria (2012) and MOE (2003) requirement for extended detention volume based on detention of the 25mm storm event over a period of 48 hours. This level of design was sufficient to develop preliminary sizing of stormwater facilities in support of the secondary plan.

The resulting pond characteristics are summarized in ***Table 5-5.***

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Table 5-5: Extended Detention / Erosion Control

Pond I.D.	Drainage Area (ha)	Imp. Coverage (%)	Release Rate Required[1] (m^3/s)	Volume Required[1] (m^3)	Volume Provided (m^3)
Pond 1	4.80	0.76	0.0190	795	3,954
Pond 2	22.53	0.67	0.1010	3,285	3,235
Pond 3	9.32	0.69	0.0400	1,393	1,371
Pond 4	12.33	0.70	0.0530	1,896	2,111
Pond 5	8.54	0.68	0.0370	1,264	1,288
Pond 6	34.61	0.72	0.1460	5,413	4,376
Pond 7	6.33	0.74	0.0260	1,030	1,592

[1] Based on 48-hour drawdown time for the 25 mm storm runoff volume

The extended detention component has been provided with side slopes of 7:1 with minor localized variations. Side slopes of 7:1 have been applied to the pond area 1 m on either side of the permanent pool water levels.

The extended detention volumes within the ponds will outlet through a reverse graded pipe. An orifice will be provided to discharge the extended detention volume at the allowable release rate. When used in connection with a perforated pipe outlet configuration, the minimum orifice size as per the ***SWMP Manual*** is 50mm. If this is not possible, an alternative option such as using a custom inlet control device (e.g. Hydrovex) may be reviewed at the detailed design stage.

5.3.4 Quantity Control

Quantity control for the secondary plan will be provided for 2-to-100 year and Regional Storm events based on the target release rates in Section 6.4 of the LSS. The details of the outlet structures for each pond are included in ***Appendix C***.

The required quantity control release rates are summarized in **Table 5-6** below and have been incorporated into the pond designs.

Table 5-6: Pond Target Release Rates

Pond	Target Release Rate (L/s)[1]						
	2-year	5-year	2-year	25-year	2-year	100-year	2-year
1	32.8	1	32.8	1	32.8	1	32.8
2	153.8	2	153.8	2	153.8	2	153.8
3	64.4	3	64.4	3	64.4	3	64.4
4	90.5	4	90.5	4	90.5	4	90.5
5	60.1	5	60.1	5	60.1	5	60.1
6	129.2	6	129.2	6	129.2	6	129.2
7	116.7	7	116.7	7	116.7	7	116.7
OSCA 1[2]	32.0	OSCA 1[2]	32.0	OSCA 1[2]	32.0	OSCA 1[2]	32.0
OSCA 2[2]	19.0	OSCA 2[2]	19.0	OSCA 2[2]	19.0	OSCA 2[2]	19.0

1 Post- to pre-development quantity control required for the 2- to 100-year and Regional events in accordance with the unit flow equations for Sub-Basin 36 of the Humber River Watershed, as provided by TRCA.
2 OSCA areas will not provide Regional control

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SWM Ponds have been modelled in VO (Visual Otthymo) to determine the storage volumes required to achieve the target peak outflow rates for each storm event. A summary of the required volume is presented in ***Table 5-7***, with further details provided in ***Appendix D***.

Table 5-7: Quantity Control - Target Storage Volumes

Storm Event	Target Storage (m^3)								
	Pond 1	Pond 2	Pond 1	Pond 4	Pond 1	Pond 6	Pond 1	OSCA 1	Pond 1
2-yr	1,256	2-yr	1,256	2-yr	1,256	2-yr	1,256	2-yr	1,256
5-yr	1,675	5-yr	1,675	5-yr	1,675	5-yr	1,675	5-yr	1,675
10-yr	1,958	10-yr	1,958	10-yr	1,958	10-yr	1,958	10-yr	1,958
25-yr	2,314	25-yr	2,314	25-yr	2,314	25-yr	2,314	25-yr	2,314
50-yr	2,590	50-yr	2,590	50-yr	2,590	50-yr	2,590	50-yr	2,590
100-yr	2,872	100-yr	2,872	100-yr	2,872	100-yr	2,872	100-yr	2,872
Regional	6,902	Regional	6,902	Regional	6,902	Regional	6,902	Regional	6,902

A drop inlet structure will be provided at the pond outlets, which restricts flows to the required rates for 2- to 100-year and Regional storm events by a combination of orifices and/or weirs. The outlet pipe will be sized such that the full flow capacity of the pipe exceeds the maximum regional pond outflow for each pond. The preliminary control structure design, with stage-storage-discharge relationships for Ponds 1 to 7 and OSCA 1 and 2 has been provided in ***Appendix C***. The volumes provided based on preliminary control structures are outlined in ***Tables 5-8***.

Table 5-8: Quantity Control - Storage Volumes Based on Preliminary Control Structures

Storm Event	Target Storage (m^3)						
	Pond 1	Pond 2	Pond 1	Pond 4	Pond 1	Pond 6	Pond 1
2-yr	1,256	2-yr	1,256	2-yr	1,256	2-yr	1,256
5-yr	1,675	5-yr	1,675	5-yr	1,675	5-yr	1,675
10-yr	1,958	10-yr	1,958	10-yr	1,958	10-yr	1,958
25-yr	2,314	25-yr	2,314	25-yr	2,314	25-yr	2,314
50-yr	2,590	50-yr	2,590	50-yr	2,590	50-yr	2,590
100-yr	2,872	100-yr	2,872	100-yr	2,872	100-yr	2,872
Regional	6,902	Regional	6,902	Regional	6,902	Regional	6,902

5.3.5 Emergency Overflows

In the event of a blockage or a storm greater than the Regional Event, an emergency overflow weir has been provided in all SWM ponds. The emergency overflow weirs will be sized through detailed design to convey the greater of the unattenuated 100 year or Regional inflow to the pond.

5.3.6 Access Roads

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5.0 m wide access roads will be provided on at least two sides of the pond blocks to facilitate routine inspection and maintenance activities within the pond. The access roads will be graded with a maximum slope of 2% cross slope, and 10:1 longitudinal slope for the access road into the pond forebay and main cell.

The pond access roads will connect to municipal right-of-ways, and will allow for access to the outlet structure, inlet structures, forebay and main cell. The maintenance access roads will be configured such that two points of entry are provided where possible. The access roads shall be situated in a manner that allows trucks to drive around the pond without having to turn around.

5.3.7 Sediment Drying Area

The Town has varied criteria for sediment drying areas depending on whether sediment removal operations will occur in dry conditions or wet conditions. Sediment drying areas will be provided above the 2-year water level to allow for sediment removal. The sediment drying areas will be sized to provide a sediment drying volume for a minimum of 10 years of sediment accumulation.

5.3.8 Pond Outfall

All ponds will discharge to the West Humber River. All outfalls to the West Humber River will be designed to generally meet the criteria in Appendix E2 of the TRCA's Stormwater Management Criteria (TRCA, 2012), where applicable.

The outfalls are proposed to discharge to the valley floor, given the bank steepness. The outfalls will provide energy dissipation at the headwall to mitigate localized erosive forces in the floodplain and valley floor. Outfalls and plunge pools are generally oriented perpendicular to the adjacent stream to minimize risk of channel bank scour, and opportunities to have all outfalls oriented in this manner to the extent feasible will be explored at detailed design. The details of the energy dissipator or plunge pool will be provided at detailed design. Construction of the outfalls should minimize disturbance to the Natural Heritage System.

The outfalls will generally be located as close to the toe of valley slope as possible to be as far from the low-flow channel as possible. Furthermore, the outfalls will be oriented at an obtuse angle in the downstream direction to avoid perpendicular flows from entering the low flow channel, where possible.

5.4 POND MAINTENANCE

The following section provides general guidance on pond maintenance for the secondary plan. Further refinement and details can be provided at detailed design.

5.4.1 Inspections

As recommended in the ***SWMP Manual***, inspections should be made after every significant storm (e.g., >10 mm) during the first two years of operation to ensure that the facility is functioning properly. It is anticipated that four inspections will be required per year. After the initial period, and proper operation has been confirmed, an inspection schedule can be established based on the observed operation of the ponds. Although four inspections per year are recommended, the ponds should be inspected annually as a minimum requirement.

5.4.2 Regular Operation and Maintenance Activities

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Grass Cutting

Grass cutting is not recommended for the ponds. Allowing grass to grow enhances the water quality and provides other benefits. It is understood though, that grass cutting enhances the aesthetics of the facility for nearby residents and therefore, should be done as infrequently as possible.

Grass should not be cut to the edge of the permanent pool and should be done parallel to the shoreline. Grass clippings should be ejected away from the pond.

Weed Control

If weed control is required to remove a specific species, the weeds should be removed by hand.

Plantings

Different parts of the SWM ponds will require different vegetative treatments for upland, flood, shoreline and aquatic conditions. Planting methods and any replanting should be carried out in accordance with an approved Landscape Design and the recommendations of the ***SWMP Manual***, or as modified by the operating authority.

Trash Removal

Trash and debris should be removed by hand and performed as required based on inspections.

Sediment Removal

In accordance with the ***SWMP Manual,*** it is recommended that the frequency of sediment removal be determined based on a 5% reduction in the total suspended solids (TSS) removal efficiency. The frequency of pond maintenance will be determined at the detailed design stage. It should be noted that routine cleaning of the sediment forebay should allow for less frequent cleaning of the main cell than indicated in the ***SWMP Manual.*** However, the extension of service life prior to cleaning cannot be quantified.

Safety

The ponds should be provided with appropriate signage which warns the public of the presence of deep water and slopes. Landscape drawings are to be prepared with strategic plantings around the perimeter of the ponds to discourage direct access to the facility. All inlets, outlets, structures, and headwalls will be provided with the appropriate grates, covers, and safety features to prevent public entry or tampering.

6.0 WATER BALANCE MITIGATION MEASURES (LID DESIGN)

Where feasible, LID measures for SWM will be incorporated into the development design to minimize development impacts on the natural water balance and control runoff. The basic premise for LID is to manage stormwater to minimize the runoff of rainfall and increase the potential for infiltration through the use of various design techniques. As outlined in the SWMP Design Manual (2003), the most recent Low Impact Development Stormwater Management Planning and Design Guide published by the CVC and TRCA and Sustainable Technologies Evaluation Program LID Stormwater Management webpage, there are a suite of LID techniques that can be considered to match pre-development infiltration volumes.

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6.1 Water Quantity

There are number of techniques that maximize water availability in pervious areas that are not credited through the CLI-ECA program. This includes measures located on private property such as direction of roof runoff towards pervious areas and increased topsoil depth within private lots. These types of surface LID techniques promote natural infiltration simply by providing additional water volumes in the pervious areas (i.e., these areas would receive precipitation as well as extra water from roof runoff). This may be particularly effective in the summer months, when natural infiltration would not generally occur because the additional water overcomes the natural soil moisture deficit. While these techniques are not credited through the CLI-ECA program, they do provide a water quantity benefit by reducing runoff.

In addition to the techniques mentioned above, there are a number of LID measures that can be implemented as part of the CLI-ECA program. These include measures within areas owned or maintained by the municipality. To determine the optimal LID strategy, the proposed design must first consider site constraints. As part of the CLI-ECA program, the MECP provides a checklist of stormwater management site constraints that should be considered when evaluating if LID measures are suitable to meet the water balance and/ or quality control targets. Table 8.9.1 from the *Environmental Compliance Approvals for a Stormwater Management System* (MECP, 2022) has been provided below for reference of site constraints.

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Table 6-1: Stormwater Management Practices Site Constraints

Potential Site Constraints	Notes Regarding Constraints on Subject Lands
Shallow bedrock [1], areas of blasted bedrock [2], and Karst;	N/A
High groundwater [1] or areas where increased infiltration will result in elevated groundwater levels which can be shown through an appropriate area specific study to impact critical utilities or property (e.g., susceptible to flooding);	High groundwater in a number of locations throughout the site. Clearance to groundwater is shown on ***Figure 15.***
Swelling clays [3] or unstable sub-soils;	N/A
Contaminated soils (e.g., brownfields);	N/A
High Risk Site Activities including spill prone areas;	N/A
Prohibitions and or restrictions per the approved Source Protection Plans and where impacts to private drinking water wells and /or Vulnerable Domestic Well Supply Areas cannot be appropriately mitigated;	N/A
Flood risk prone areas or structures and/ or areas of high inflow and infiltration (I/I) where wastewater systems (storm and sanitary) have been shown through technical studies to be sensitive to groundwater conditions that contribute to extraneous flow rates that cause property flooding / Sewer back-ups;	N/A
For existing municipal rights-of-way infrastructure (e.g., roads, sidewalks, utility corridor, Sewers, LID, and trails) where reconstruction is proposed and where surface and subsurface areas are not available based on a site-specific assessment completed by a QP;	Mayfield Road is part of an ongoing detailed design. Innis Lake Road and Centreville Creek Road are anticipated to be widened and urbanized in the future. Any LID measures proposed within these roads would need to be coordinated with the Town of Caledon as part of the EA process.
For developments within partially separated wastewater systems where reconstruction is proposed and where, based on a site-specific assessment completed by a QP, can be shown to: Increase private property flood risk liabilities that cannot be mitigated through design; Impact pumping and treatment cost that cannot be mitigated through design; or Increase risks of structural collapse of Sewer and ground systems due to infiltration and the loss of pipe and/or pavement support that cannot be mitigated through design.	N/A
Surface water dominated or dependent features including but not limited to marshes and/or riparian forest wetlands which derive all or a majority of their water from surface water, including streams, runoff, and overbank flooding. Surface water dominated or dependent features which are identified through approved site specific hydrologic or hydrogeologic studies, and/or Environmental Impact Statements (EIS) may be considered for a reduced volume control target. Pre-consultation with the MECP and local agencies is encouraged;	N/A
Existing urban areas where risk to water distribution systems has been identified through assessments to meet applicable drinking water requirements, including Procedures F-6 and F-6-1, and substantiated by a QP through an appropriate area specific study and where the risk cannot be reasonably mitigated per the relevant design guidelines;	N/A
Existing urban areas where risk to life, human health, property, or infrastructure has been is identified and substantiated by a QP through an appropriate area specific study and where the risk cannot be reasonably mitigated per the relevant design guidelines;	N/A
Water reuse feasibility study has been completed to determine non-potable reuse of Stormwater for onsite or shared use;	N/A
Economic considerations set by infrastructure feasibility and prioritization studies undertaken at either the local/site or municipal/system level [4].	The Town of Caledon must consider the future maintenance cost of LID infrastructure.

Footnote:

1. May limit infiltration capabilities if bedrock and groundwater is within 1m of the proposed Facility invert per Table 3.4.1 of the LID Stormwater Planning and Design Guide (2010, V1.0 or most recent by TRCA/CVC). Detailed assessment or studies are required to demonstrate infiltration effects and results may permit relaxation of the minimum 1m offset.
2. Where blasting is more localized, this constraint may not be an issue elsewhere on the property. While infiltration-based practices may be limited in blasted rock areas, other forms of LID, such as filtration, evapotranspiration, etc., are still viable options that should be pursued.
3. Swelling clays are clay soils that is prone to large volume changes (swelling and shrinking) that are directly related to changes in water content.
4. Infrastructure feasibility and prioritization studies should comprehensively assess Stormwater site opportunities and constraints to improve cost effectiveness, environmental performance, and overall benefit to the receivers and the community. The studies include assessing and prioritizing municipal infrastructure for upgrades in a prudent and economically feasible manner.

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The use of large, engineered facilities and constructed subsurface infiltration measures such as infiltration trenches will be limited in where they can be applied due to high groundwater and low infiltration rates. ***Figure 15*** illustrates the clearance between groundwater and proposed grades within the site. As noted in ***Table 6-1*** above, and the guiding documents noted in **Table 8.9.1** from the MECP document**,** 1m clearance is required between the high groundwater elevation and the bottom of the proposed LID measures to ensure that they are able to function properly. LID measures have therefore been proposed in areas where 1m separation can be provided between groundwater and the bottom of the LID measure. Groundwater elevations should be confirmed through additional testing at detailed design.

6.2 LID DESIGN CONSIDERATIONS

6.2.1 Soil Characteristics and Infiltration Rates

The *CVC LID Design Guide* recommends that testing be completed to determine the infiltration rate of native soils to help determine appropriate LID measure locations. Based on hydraulic conductivity provided in Section 4 of the ***LSS***, the infiltration rate within the Phase 1 lands is estimated to be 12mm/hr. The *CVC LID Design Guide* recommends a safety correction factor be applied to the measured infiltration rates in order to calculate a design infiltration rate. The safety correction factor is used to compensate for potential reductions in soil permeability to compaction or smearing during construction, gradual accumulation of fine sediments over the life span of the trench, and uncertainty in measured values when less permeable soil horizons exist below the proposed bottom elevation of the trench. Safety factors generally range from 2.5 to 6.5, depending on the infiltration rates measured. As such, LID measures are assumed to have an infiltration rate of 12 mm/hr, with a factor of safety of 2.5 applied, resulting in a design infiltration rate of 4.8 mm/hr. It is recommended that, at detailed design, infiltration tests are completed per recommendations by the LID Design Guide to confirm the Safety Correction Factor that should be applied.

6.2.2 LID Depth and Drawdown Time

The preliminary LID measure sizing and drawdown times were calculated using the LID Design Guide within the Phase 1 lands and detailed in ***Appendix D***. The design guidelines have been used to calculate the allowable reservoir depths of the trenches, as well as the required trench footprints. The LID sizing is based on a drawdown of designed storage volume within 48 hours with a void ratio of 0.4 and the adjusted infiltration rate as discussed above. The parameters of this preliminary infiltration trench sizing should be confirmed and refined through detailed design.

$$d_{max} = \frac{i * t}{V_r}$$

Where:

d_{max} = maximum allowable depth of the trench
i = percolation rate of surrounding soils (mm/hr)
ts = drawdown time
Vr = void space ratio

The maximum trench depth, required trench footprint, and time to drain calculations are found in ***Appendix D.*** The actual size of trenches, configuration, applicability, design storm, infiltration rates, depth to water table and frost cover should be refined through detailed design.

6.2.3 Drainage Area

The CVC LID Design Guide recommends an impervious drainage area to treatment facility area ratio of between 5:1 and 20:1 to avoid too much sediment load being directed to LIDs. Catchment areas to the LIDs can be found in ***Figure 15***. Pre-treatment, such as catchbasin shields, are proposed in areas where the impervious drainage area to treatment facility area ratio is greater than 20:1.

6.2.4 Accessibility for Maintenance

LID location selection is important, and LID design should have consideration for future access and maintenance of the LID measures.

6.3 TYPES OF LID MEASURES

The current Town of Caledon design guidelines do not include recommended LID measures or details that would be acceptable in public spaces. As such, the types of LID measures identified in this section of the report are based on review of LID measures within the Phase 1 lands from a first-principles approach starting with site constraints. The design of the LID measures is constrained by clearance to groundwater, design infiltration rates, proposed land use, and maximum storage depths to achieve 48-hour drawdown time. Typically, two different types of LID measures are implemented within developments:

- Infiltration Galleries – Within Parks
- Infiltration Trenches – Within select Rights-of-Way

6.3.1 Infiltration Galleries in Parks

As shown in ***Figure 15*****,** there are three parks proposed within Phase 1 of the secondary plan. Based on the latest groundwater contour information, there is not adequate clearance from potential LID measures to groundwater. Detailed groundwater information within the park blocks should be investigated through draft plan and detailed designs to confirm if LIDs can be implemented within the park blocks.

Construction Requirements
The proposed infiltration trenches should be constructed during the park servicing. The LID measures should be kept offline until these areas have been stabilized.

Maintenance and Monitoring Requirements

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Inspection and clean-out ports should be included to ensure minimal maintenance. If required, replacement of components will be carried out through a trench box or open cut, depending on park programming. The LID measures are located near the adjacent roadways to provide unobstructed access to the LIDs from the road. A monitoring program should be developed through detailed design in consultation with the Town of Caledon.

6.3.2 Infiltration Trenches in the ROW

As shown in ***Figure 15*****,** infiltration trenches are proposed within rights-of-way throughout the Phase 1 lands. LIDs in the ROW require a minimum of 3.5m clearance between groundwater and surface grades to provide 1m clearance from groundwater to the bottom of the gallery. The proposed infiltration trenches will be connected to manholes within the road. Pre-treatment will be provided in the catchbasins using CB shields, before runoff is directed to the storm sewer/trench. The trench will be installed below the storm sewer so that at the manhole, flows can be directed towards the trench and spill to the storm sewer when the capacity is exceeded. This also allows upstream catchments to be directed to the downstream infiltration trenches. ***Tables 6-2*** provides design data and infiltration volumes.

Table 6-2: ROW Infiltration Trench Design Summary

Catchment Number	LID Number	Depth (m)	Width (m)	Length (m)	Porosity	Storage Volume (m^3)	Drawdown Time (hrs)
36.07	21	0.55	2.0	68	0.4	30	46
	35/39	0.55	2.0	72	0.4	27	46
36.08	P4-115	0.55	2.0	43	0.4	16	46
	P4-105	0.55	2.0	366	0.4	151	46
	P4-110	0.55	2.0	137	0.4	45	46
	P4-119	0.55	2.0	77	0.4	32	46
	P2-59	0.55	2.0	81	0.4	36	46
	P2-39	0.55	2.0	108	0.4	37	46
	P2-21	0.55	2.0	49	0.4	18	46
	P3-86	0.55	2.0	60	0.4	21	46
36.09	97	0.55	2.0	180	0.4	79	46
36.10	204	0.55	2.0	49	0.4	20	46
	199	0.55	2.0	153	0.4	65	46
36.11	P4-121	0.55	3.0	85	0.4	54	46
	P4-99	0.55	3.0	185	0.4	115	46
	247	0.55	3.0	92	0.4	59	46
	215	0.55	3.0	345	0.4	228	46
	175	0.55	3.0	532	0.4	351	46
	168	0.55	3.0	168	0.4	60	46
	179	0.55	3.0	76	0.4	52	46

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Catchment Number	LID Number	Depth (m)	Width (m)	Length (m)	Porosity	Storage Volume (m^3)	Drawdown Time (hrs)
	189	0.55	3.0	64	0.4	41	46

Construction Requirements

The proposed infiltration trenches should be constructed during the site servicing and road construction. The LID measures should be kept offline until the catchment area (road and adjacent lots) have been stabilized.

Maintenance and Monitoring Requirements

Manholes will function as inspection and clean-out ports, and removable maintenance caps will be provided on the downstream end of the infiltration trench to allow for flushing. The infiltration trench will be maintained similar to other servicing located within the ROW. Replacement of components will be carried out through a trench box to limit disturbance within the right-of-way. A monitoring program should be developed through detailed design in consultation with the Town of Caledon.

7.0 WATER QUALITY

7.1 Suspended Solids Target

The CLI-ECA program requires that the stormwater management design control the 90th percentile storm event for suspended solid removal. The suggested 90th percentile storm event from the *Manual for Low Impact Development (LID) Stormwater Management Guidance* is shown in ***Image 7.1*** below.

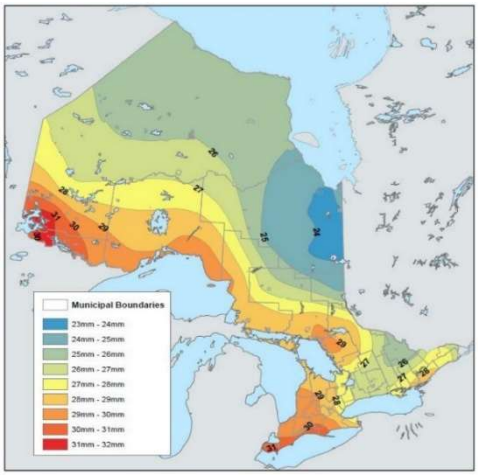


Image 7.1 – 90th Percentile Runoff Volume

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As shown in the figure above, the suggested 90th percentile rain event for Caledon is the 28mm event. This means that 28mm will be treated for water quality. A summary of the 90th percentile (28mm) runoff volume for the Phase 1 is provided below in ***Table 7-1***.

Table 7-1: Preliminary Calculation of Water Quality Control Volume for Phase 1 lands

SWM Facility	Area (ha)	Runoff Coefficient	Water Quality Volume (m^3)
1	4.8	0.76	1,058
2	22.5	0.66	4,325
3	9.3	0.68	1,846
4	12.3	0.70	2,515
5	8.5	0.68	1,692
6	34.6	0.72	7,207
7	6.3	0.75	1,369
Total:			**20,012**

7.2 Post-Development Water Quality

As shown in ***Table 6-3*** above, the total 90th percentile water quality volume for the Phase 1 lands is calculated to be 690 m^3. A portion of this water quality volume will be provided through the LID measures discussed in ***Section 6.3***. The total single event water quality volume provided by the proposed LID measures is 690 m^3 for all possible LID locations as shown below in ***Table 7-2***.

Table 7-2: LID Storage Volume

Catchment	Location	Storage Volume (m^3)
36.07	ROW Infiltration Trench	83.8
36.08	ROW Infiltration Trench	370.7
36.09	ROW Infiltration Trench	79.2
36.10	ROW Infiltration Trench	88.9
36.11	ROW Infiltration Trench	927.1
Total:		**1549.7**

The storage provided by all possible locations of LID measures represents 7.7% of the 90th percentile storm event volume, or the equivalent of approximately the 2mm event. To achieve more than 2% of the 90th Percentile storm event target, the LIDs would need to infiltrate more than existing conditions infiltration. The Town of Caledon would need to consider potential environmental impacts of infiltrating more water than pre-development conditions, as well as the cost implications of additional LIDs. Alternative quality-based LID strategies could be explored such as waterproofed trenches to restrict groundwater interaction, but the Town of Caledon must consider the benefits of the additional LID measures compared to the cost of installation and maintenance for additional infrastructure. In any case, it is not feasible to provide the entire 90th percentile storm event volume through infiltration LID measures.

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Table 7.1.2 of the CLI-ECA criteria notes that "*if conventional methods are necessary, then enhanced, normal, or basic levels of protection (80%, 70%, or 60% respectively) for suspended solids removal (based on the receiver)*" should be provided. As per **Section 5**, enhanced level protection will be provided by the SWM Ponds and/ or OGS units.

8.0 WATER SUPPLY SERVICING

8.1 Water Supply Servicing Design Criteria

The water supply servicing for the secondary plan will be designed according to the Region of Peel design criteria, by taking into consideration watermain sizing, depth, crossings, valves, hydrants, and service connections such that adequate pressures and fire flows can be achieved. Water design flows will be designed with the following criteria shown in ***Table 8-3*** and ***Table 8-2*** below.

Table 8-3: Water Design Criteria

DEMAND TYPE	CRITERIA
Average Daily Demand - Residential (L/c/d)	270
Maximum Daily Demand - Residential (L/c/d)	1.8 x avg. day
Peak Hour Demand - Residential (L/c/d)	3.0 x avg. day

Table 8-4: Region of Peel Linear Design Manual Population Densities

DEVELOPMENT TYPE	EQUIVALENT POPULATION DENSITY (PERSON / HA)
Single Family	50
Single family (Less than 10 m frontage)	70
Semi-detached	70
Townhouse / Row Dwellings	175
Apartment buildings	475
Commercial	50

8.2 Existing Water Services

Within the vicinity of the development area, the Region currently provides supply to Pressure Zone 6 through a 200 mm main along Innis Lake Road, a 200mm watermain along Centreville Creek Road, and a 750 mm main on Mayfield Road. The existing watermains are illustrated in ***Figure 6.***

8.3 External Water Supply Requirements

A 400mm watermain on Innis Lake Road, between Mayfield Road and the limit of the Phase 1 lands will be constructed as part of Peel Region's *Capital Project ID 24-1197*. Discussions with the Region have confirmed that the project is currently in detailed design with construction

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expected to occur in Q2 of 2027. A 400mm watermain on Centreville Creek Road, between Mayfield Road and limit of the Phase 1 lands will be constructed as part of Peel Region's *Capital Project ID 25-1163.* The watermain design has been issued for tender and is expected to begin construction in 2026.

Region of Peel DC watermain projects *ID 24-1269* and *ID 24-1192* will extend 900mm and 1200mm transmission mains north to Healey Road and along Healey Road between Innis Lake Road and Centreville Creek Road. These transmission mains connect the Tullamore Pumping Station and elevated tanks within Bolton and are not required to directly service the Phase 2 lands.

8.4 Proposed Water Supply

Four watermain connections are proposed to the existing 750mm watermain on Mayfield Road to service Phase 1 of the secondary plan. Four connections are proposed to the existing 200mm watermain on Centreville Creek Road, and one connection is proposed to the existing 200mm watermain on Innis Lake Road. A 400mm watermain will be extended north on Innis Lake Road to service the northern end of the Phase 1 development. This watermain extension will form part of the Region's Capital Project 24-1197.

The 400mm watermain that will extend along the east-west collector road will provide future servicing that can be extended north to the Phase 2 lands. The 400mm watermains along Innis Lake Road and Centreville Creek Road can also be extended north to service the Phase 2 lands.

9.0 SANITARY SERVICING

9.1 Region of Peel Sanitary Design Criteria

The sanitary mains within the secondary plan will be designed with the following Region of Peel design criteria:

Table 9-5: Wastewater Design Criteria

DEMAND TYPE	CRITERIA
Average Dry Weather Flow	302.8
Infiltration	0.0002 m^3 per second per hectare
Peaking Factor	Peak Flow Factor – Harmon Formula

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Table 9-6: Region of Peel Linear Design Manual Population Densities

DEVELOPMENT TYPE	EQUIVALENT POPULATION DENSITY (PERSON / HA)
Single Family	50
Single family (Less than 10 m frontage)	70
Semi-detached	70
Townhouse / Row Dwellings	175
Apartment Buildings	475

Table 9-3: Population Per Unit

DEVELOPMENT TYPE	EQUIVALENT POPULATION DENSITY (PERSON / Unit)
Single Detached	4.2
Townhouse	3.4
Apartment	3.1
Employment	50 pp/ha

9.2 Existing Sanitary Services

There are no existing sanitary sewers directly adjacent to the secondary plan area. An existing 600mm sanitary sewer is located on Goreway Drive at Countryside Drive, approximately 1km south of the Phase 1 lands. An existing 675mm sanitary sewer is located on McVean Drive at Countryside Drive. Both existing sewers are intended to provide outlets to the secondary plan lands per the Region of Peel's 2025 DC Capital Program.

9.3 External Sanitary Servicing Requirements

A 600mm sanitary sewer is proposed to be extended north on Goreway Drive (Innis Lake Road) from Countryside Drive to Mayfield Road as part of Peel Region's *Capital Project ID 24-2166.* This project is in detailed design with 30% design drawings issued in April 2026. These drawings have been included in ***Appendix H***. A 525mm sanitary sewer will be extended north on Innis Lake Road from Mayfield Road to Healey Road as part of Peel Region's *Capital Project ID 24-2167.*

A 675mm sanitary sewer is proposed to be extended north on McVean Drive (Centreville Creek Road) from Countryside Drive to Mayfield Road as part of Peel Region's *Capital Project ID 29-2169.* This project is scheduled for design in 2029. A 525mm/600mm sanitary sewer will be extended north on Centreville Creek Road from Mayfield Road to Healey Road as part of Peel

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Region's *Capital Project ID 30-2199.* A 450mm/ 525mm DC sanitary sewer is also proposed within the secondary plan as part of Peel Region's *Capital Project ID 30-2198* and *ID 29-2160.*

9.4 Proposed Sanitary Servicing

The Phase 1 lands will be serviced by a network of local gravity sewers designed in accordance with Region of Peel criteria. The lands west of TWHRA-5 and TWHRA-6 will discharge west to the proposed 600mm sewer on Innis Lake Road/ Goreway Drive (24-2166 and 24-2167) while lands east of TWHRA-5 and TWHRA-6 will discharge east to the proposed 525mm/600mm/675mm sewer on Centreville Creek Road/ McVean Drive (29-2169 and 30-2199).

The conceptual sanitary servicing concept is illustrated on ***Drawing 3***. An overall sanitary drainage plan is provided on ***Figure 5*** and preliminary plan and profiles are shown on ***Drawing 4***.

10.0 ROADS

Access to the secondary plan is available from the north via Healey Road, from the south via Mayfield Road, and the west and east via Innis Lake Road and Centreville Creek Road respectively.

The community will include a series of 18 m and 26m wide municipal roads and 8m wide laneways in accordance with Town of Caledon standards. Sidewalks will be constructed in accordance with the standard municipal cross sections. Sidewalk locations may be further refined through detailed design. Please refer to ***Figure 14A*** to ***Figure 14F*** for typical rights-of-way sections within Phase 1 of the secondary plan.

11.0 GRADING

A preliminary grading plan has been prepared for the Phase 1 lands based on the environmental and engineering constraints identified. The proposed road grades range from 0.75% to 5%. The conceptual grading is illustrated in ***Drawing 1***.

Interim grading measures may be required adjacent to the Phase 2 lands north of the east-west collector road, until the Phase 2 lands proceed for development.

11.1 Grading in Natural Heritage System

Grading in the NHS buffers is minimized but required at the following locations:

- Two (2) stormwater management ponds
- Four (4) areas along the perimeter of the site where the road grade is higher than the existing NHS grade

The anticipated grading within the NHS buffers is illustrated in ***Drawing 1***.

The grading in the NHS has been minimized through use of walk-out units (approximately 2.5 m vertically transitions through the lots), and berming within rear-yard where space is available. Retaining walls have not been used in addition to walk-out unit product type. The remaining vertical difference is addressed through transition sloping in the buffer to a maximum of 3:1 sloping. Transition sloping is limited to the hazard buffers and is not proposed in buffers themselves.

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Additional detailed grading will be submitted as part of site-specific draft plans and detailed designs. The impact assessment of the NHS grading will be addressed in “Part B” of the ***LSS***.

12.0 WATERCOURSE AND UTILITY CROSSINGS

Creek crossings are required to accommodate servicing and active transportation requirements within the community. There are six (7) proposed crossing locations where rights-of-way are proposed to cross the Natural Heritage System:

- 21m ROW crossing of TWHRB-8
- 26m ROW crossing of TWHRB-7
- 26m ROW crossing of TWHRB-7b
- 26m ROW crossing of TWHRA-7
- 26m ROW crossing of TWHRA-5
- 28m ROW crossing of TWHRA-3b
- 28m ROW crossing of TWHRA-3b1

The assessment of the proposed road crossings, including culvert sizing and hydraulic impacts to the floodplain, will be assessed through “Part B” of the ***LSS.***

13.0 EROSION AND SEDIMENT CONTROL

An erosion and sediment control strategy should be implemented prior to construction of site services. The following measures are recommended:

Erosion

- regular inspection and monitoring of the erosion and sediment control devices.
- ensure stabilized soil and slope stability to prevent runoff and stability hazards.
- cover non-active work faces of stockpiles, excavation areas, all other exposed surfaces of concern with tarps or other appropriate materials as practicable.
- Monitoring the weather forecast daily and plan/schedule work activities with specific consideration of impending weather conditions to prevent events leading towards further erosion.
- Minimize staging and temporary stockpile of soil and other materials to the extent possible.

Sediment

- silt control fencing and double row silt control fencing with straw bales where required.
- stone mud mat at the construction entrance.
- interceptor swale with rock check dam where appropriate.
- use of the permanent ponds as a temporary silt basin during site construction activities.
- removal and disposal of the erosion and sediment control devices after the site has been stabilized.

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14.0 CONCLUSIONS

This Functional Servicing and Stormwater Management Report provides an overview of the servicing plan for the secondary plan. This report generally demonstrates the availability of water, sanitary, and storm services for the proposed development in accordance with Town of Caledon, Region of Peel, and TRCA criteria and in consideration of applicable guideline documents.

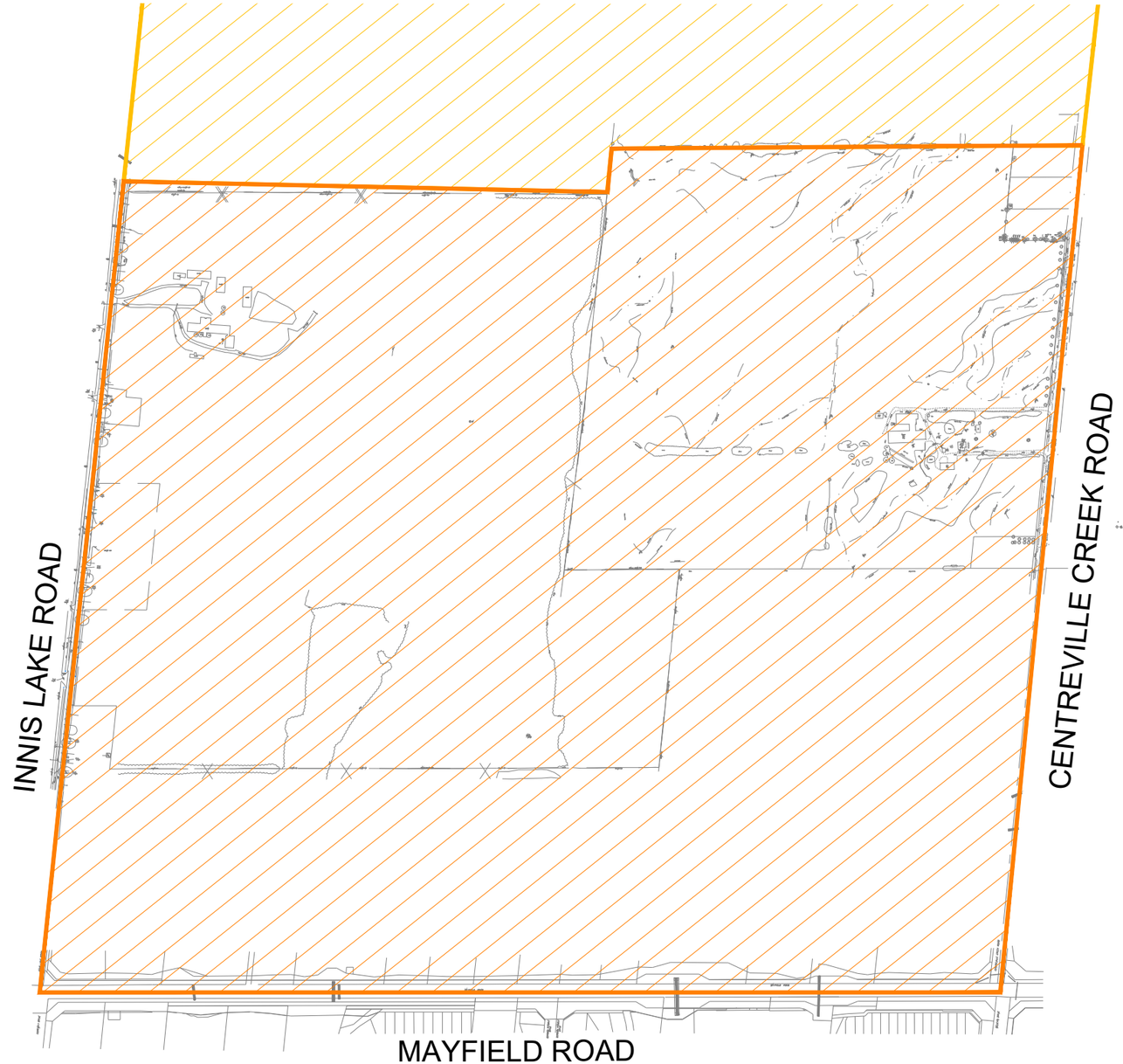
We trust you will find the contents of this report satisfactory.

Prepared by,
David Schaeffer Engineering Ltd.

Brian Betts, P. Eng.

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LEGEND

- PHASE 1 STUDY AREA
- PHASE 2 STUDY AREA
- EXISTING WATERCOURSE

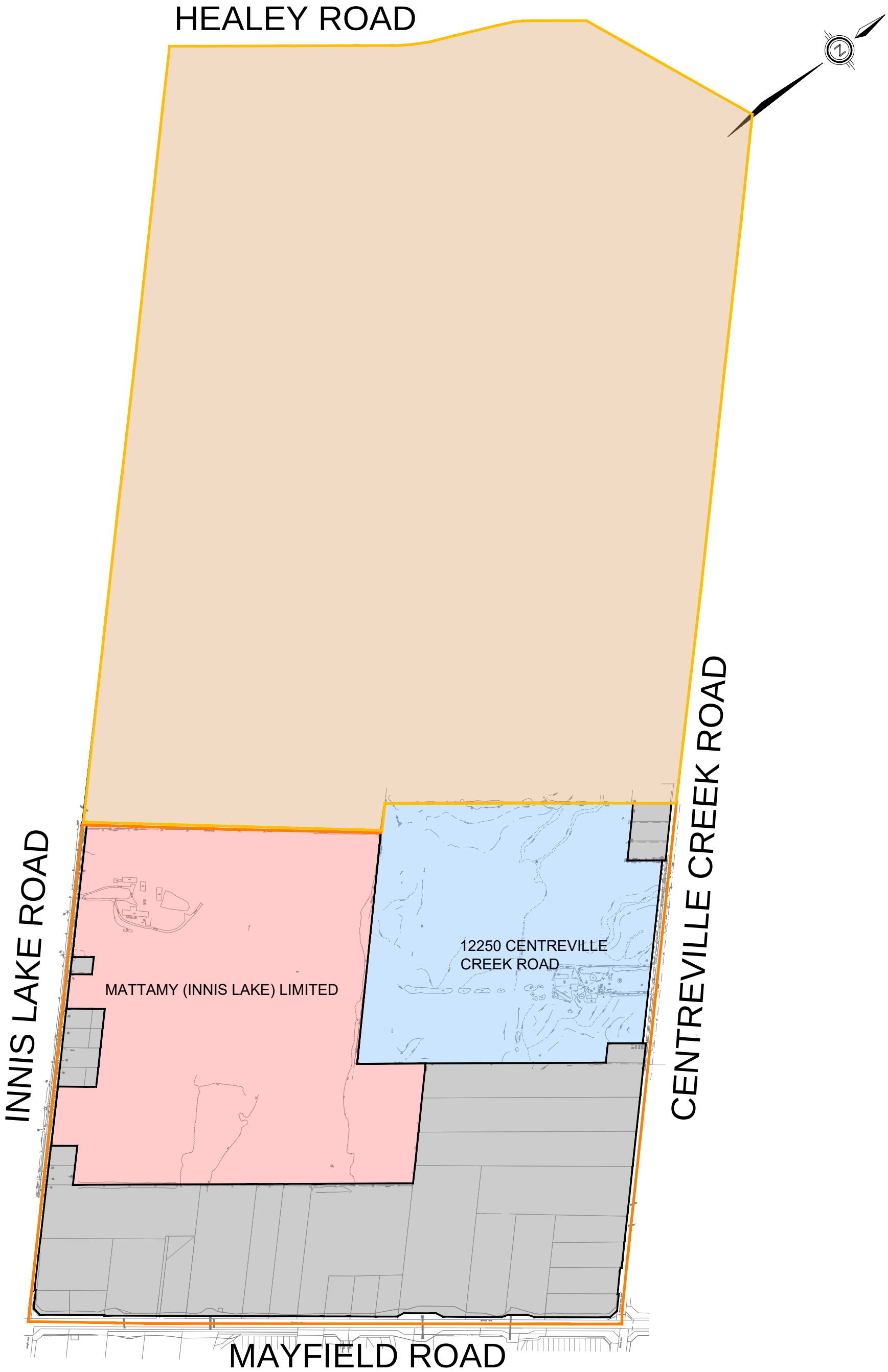
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TOWN OF CALEDON

SITE LOCATION PLAN

SCALE:	1:7500	PROJECT No.:	22-1297
DATE:	MAY 2026	FIGURE:	1



LEGEND

- PHASE 1 STUDY AREA
- PHASE 2 STUDY AREA
- PARTICIPATING OWNER
- PHASE 2 STUDY AREA
- NON-PARTICIPATING LAND OWNER

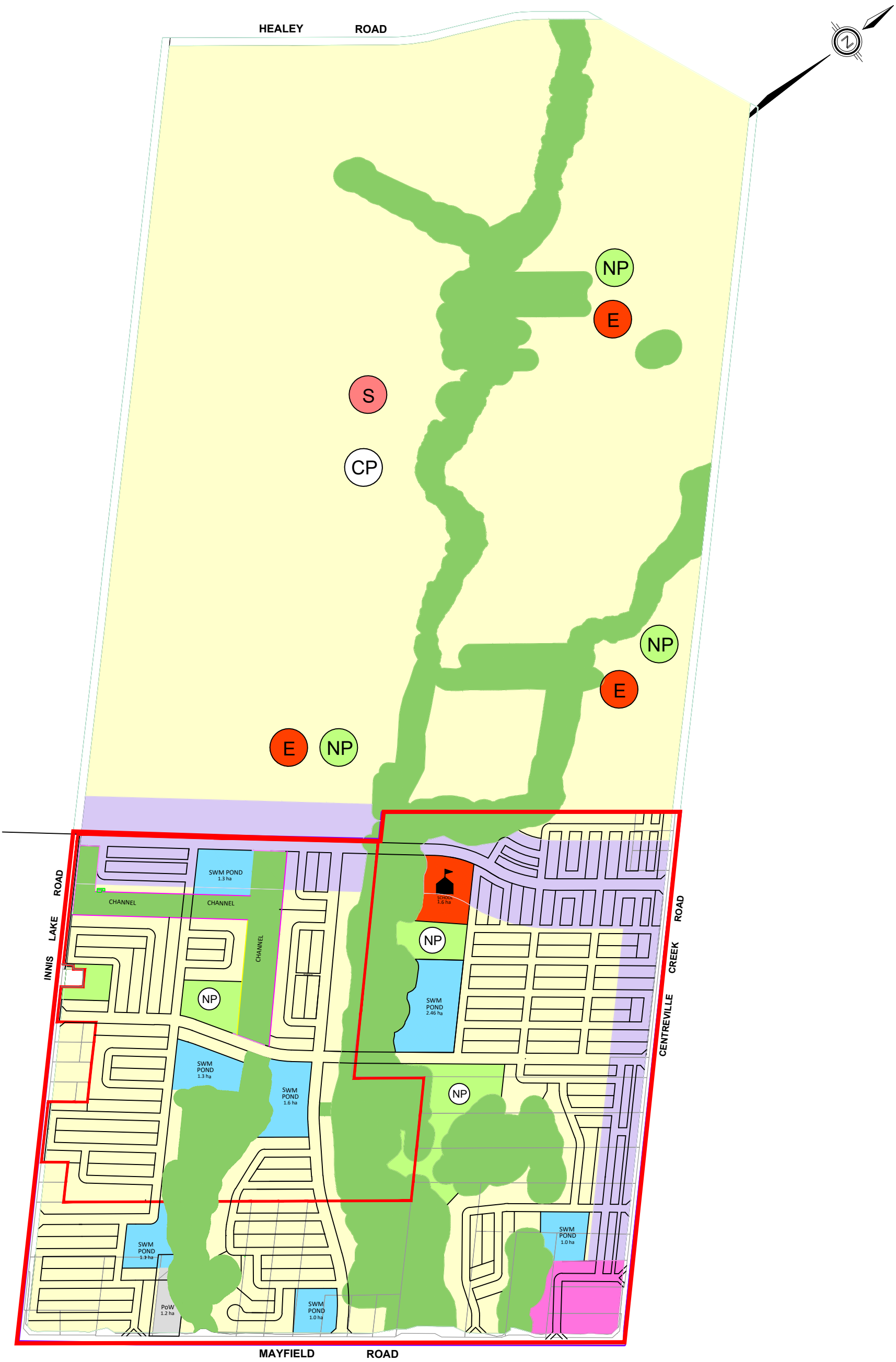
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TOWN OF CALEDON

OWNERSHIP PLAN

SCALE:	1:9000	PROJECT No.:	22-1297
DATE:	MAY 2026	FIGURE:	2



LEGEND

- Study Area
- Neighbourhood Area
- Neighbourhood Centre
- Urban Corridor
- Natural Heritage System
- SWM Ponds
- Neighbourhood Parks
- Elementary Schools
- Place of Worship

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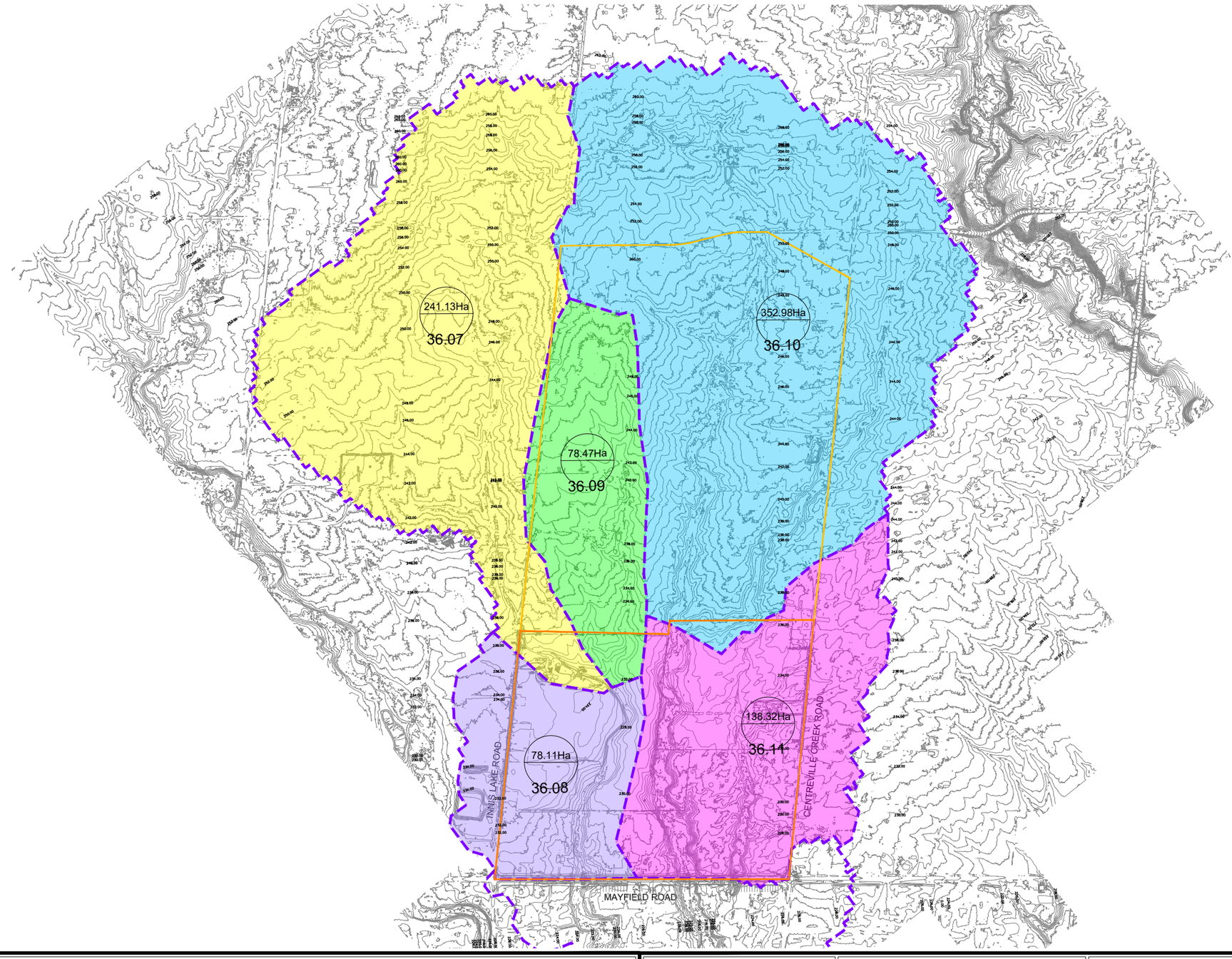
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TOWN OF CALEDON

CONCEPT PLAN

SCALE:	1:9000	PROJECT No.:	22-1297
DATE:	MAY 2026	FIGURE:	3



LEGEND

- PHASE 1 STUDY AREA
- PHASE 2 STUDY AREA
- PRE-DEVELOPMENT CATCHMENT ID 36.07
- PRE-DEVELOPMENT CATCHMENT ID 36.08
- PRE-DEVELOPMENT CATCHMENT ID 36.09
- PRE-DEVELOPMENT CATCHMENT ID 36.10
- PRE-DEVELOPMENT CATCHMENT ID 36.11

7.3Ha — TOTAL DRAINAGE AREA

PRE-DEVELOPMENT DRAINAGE BOUNDARY

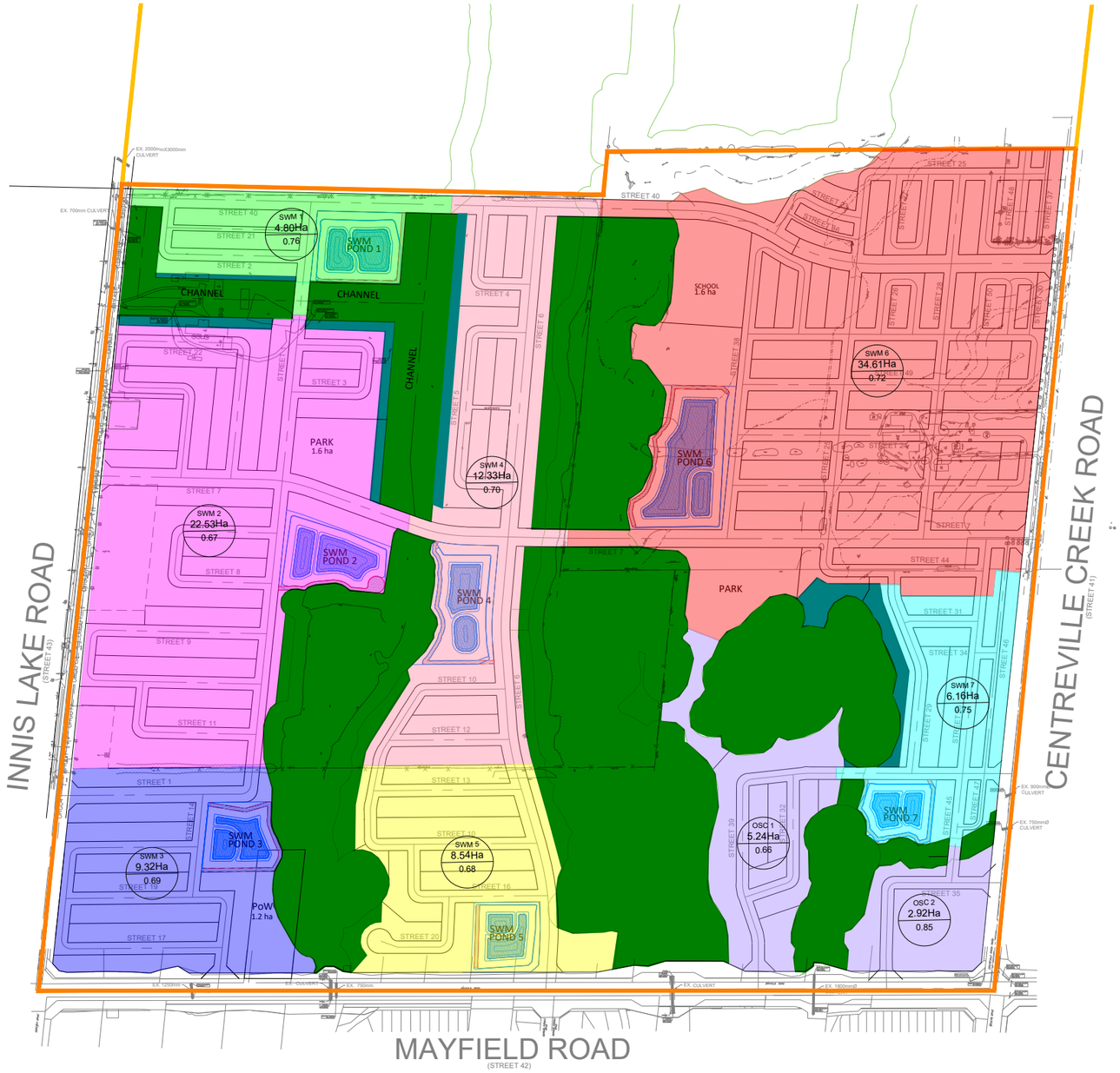
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TOWN OF CALEDON

PRE-DEVELOPMENT DRAINAGE AREAS

SCALE:	1:20000	PROJECT No.:	22-1297
DATE:	MAY 2026	FIGURE:	4



LEGEND

- PHASE 1 STUDY AREA
- PHASE 2 STUDY AREA
- STORM TRIBUTARY AREA
- EXISTING WATERCOURSE
- NHS BOUNDARY
- POND 1 DRAINAGE AREA
- POND 2 DRAINAGE AREA
- POND 3 DRAINAGE AREA
- POND 4 DRAINAGE AREA
- POND 5 DRAINAGE AREA
- POND 6 DRAINAGE AREA
- POND 7 DRAINAGE AREA
- OSC DRAINAGE AREA

NHS 1.81Ha 0.90 — DRAINAGE DESTINATION, TOTAL AREA, RUN-OFF COEFFICIENT

POND E2 0.57Ha 0.70 — DRAINAGE DESTINATION, EXTERNAL DRAINAGE AREA, RUN-OFF COEFFICIENT

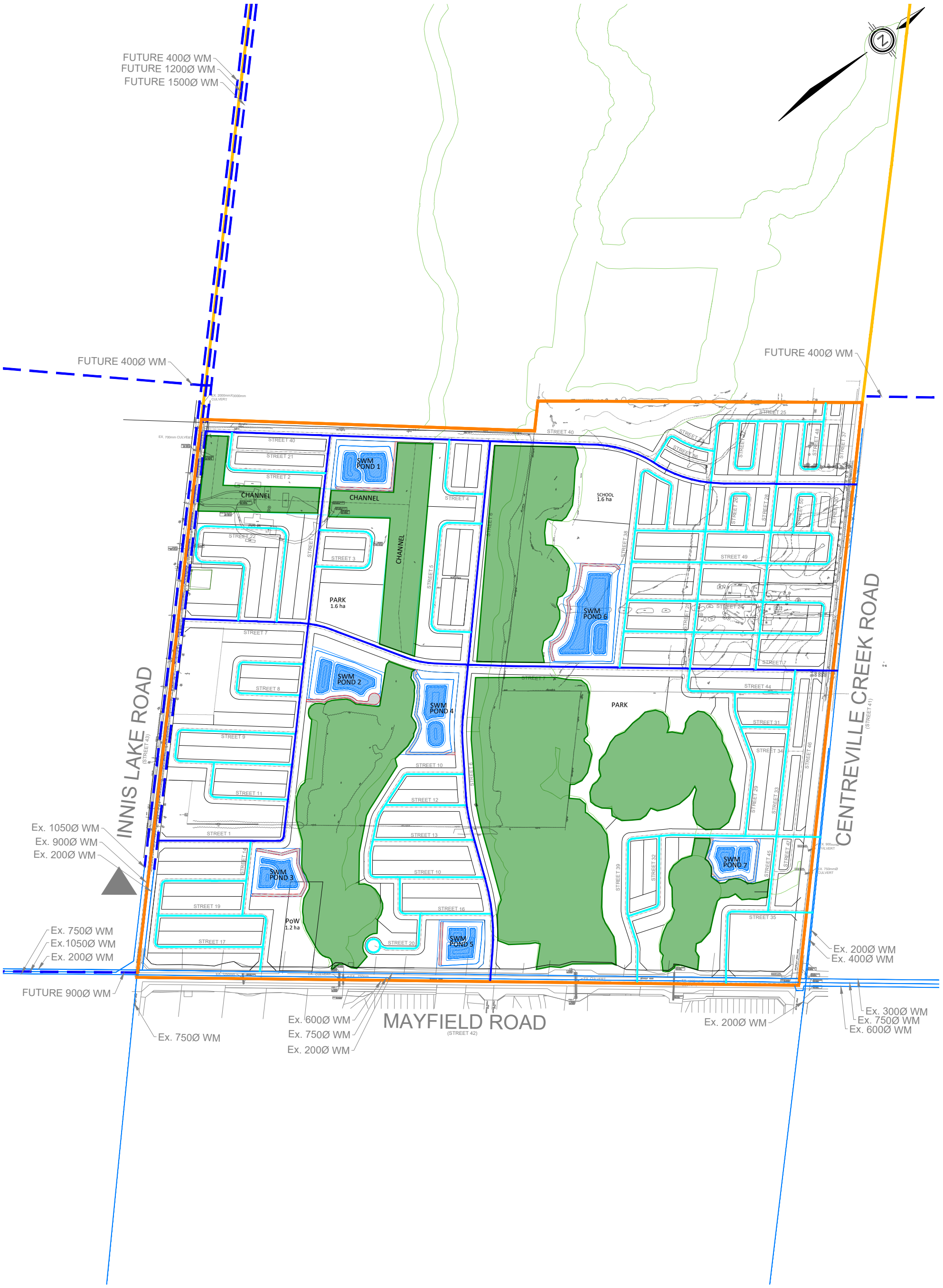
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TOWN OF CALEDON

POST-DEVELOPMENT DRAINAGE AREAS

SCALE:	1:7500	PROJECT No.:	22-1297
DATE:	MAY 2026	FIGURE:	5



LEGEND

- PHASE 1 STUDY AREA
- PHASE 2 STUDY AREA
- PROPOSED LOCAL WATERMAIN
- PROPOSED TRUNK WATERMAIN
- PROPOSED FUTURE WATERMAIN (BY OTHERS)
- EXISTING WATERMAIN
- NHS BOUNDARY

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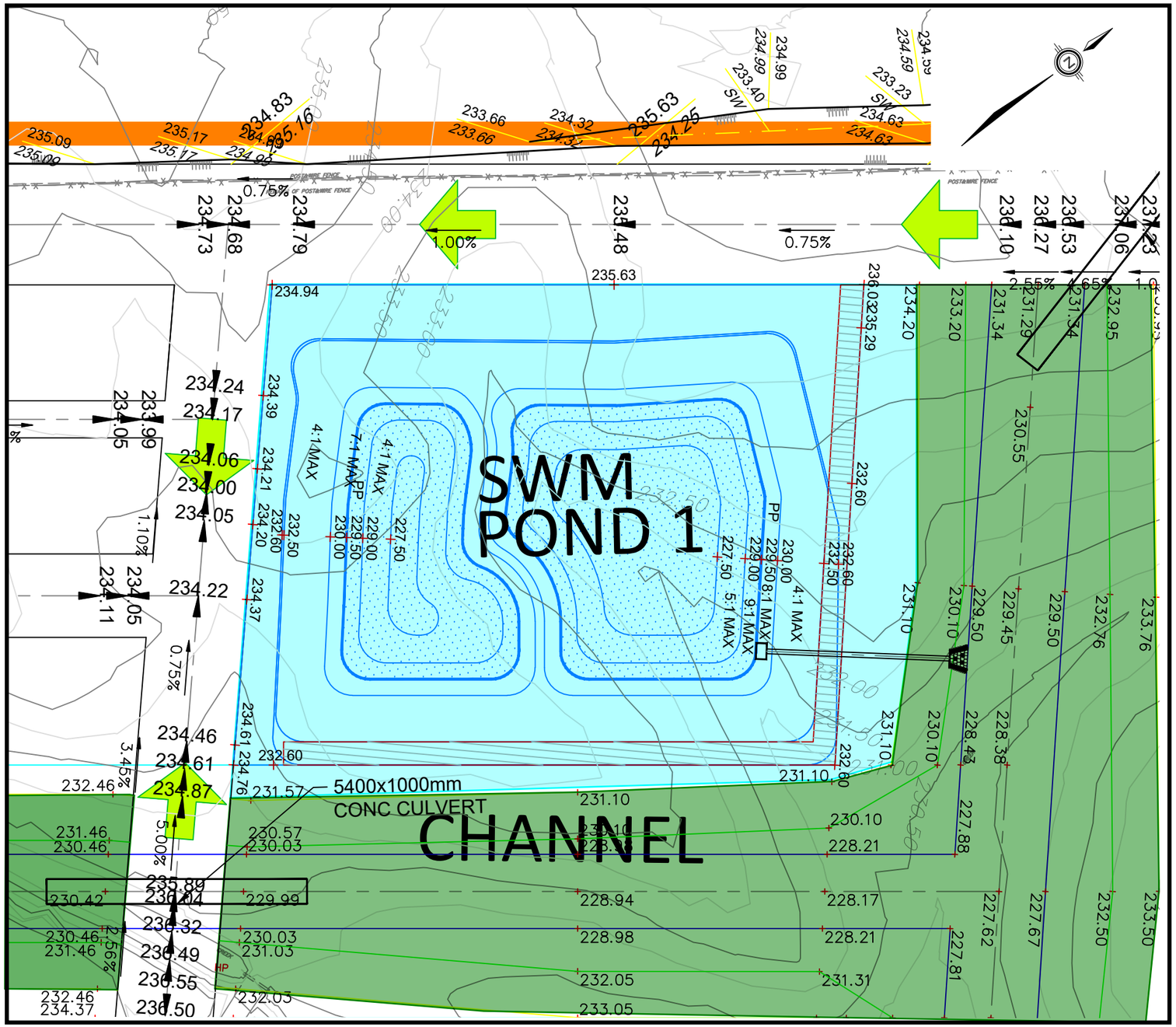
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TOWN OF CALEDON

CONCEPTUAL WATERMAIN SERVICING

SCALE:	1:7500	PROJECT No.:	22-1297
DATE:	MAY 2026	FIGURE:	6



POND 1 DATA	
DRAINAGE AREA (Ha)	4.79
IMPERVIOUSNESS	80%
POND BLOCK AREA (Ha)	1.33

LEGEND

- SITE BOUNDARY FOR DRAFT PLAN APPLICATION
- LONGTERM STABLE TOP OF SLOPE
- TRCA REGULATION LIMIT
- TRCA STAKED FEATURE LIMIT
- 10m TRCA STAKE FEATURE BUFFER
- REGIONAL FLOODLINE
- 10m REGIONAL FLOODLINE BUFFER
- WETLANDS
- 10m WETLANDS BUFFER
- MEANDER BELT
- 10m MEANDER BELT BUFFER
- WATERCOURSE
- ACCESS ROAD
- PROPOSED TRAIL
- PERMANENT POOL
- PROPOSED GRADE
- 264.50 / 264.00 EXISTING CONTOUR ELEVATION
- POND INLET
- POND OUTLET
- PLUNGE POOL
- OVERLAND FLOW DIRECTION
- EMERGENCY OVERFLOW DIRECTION

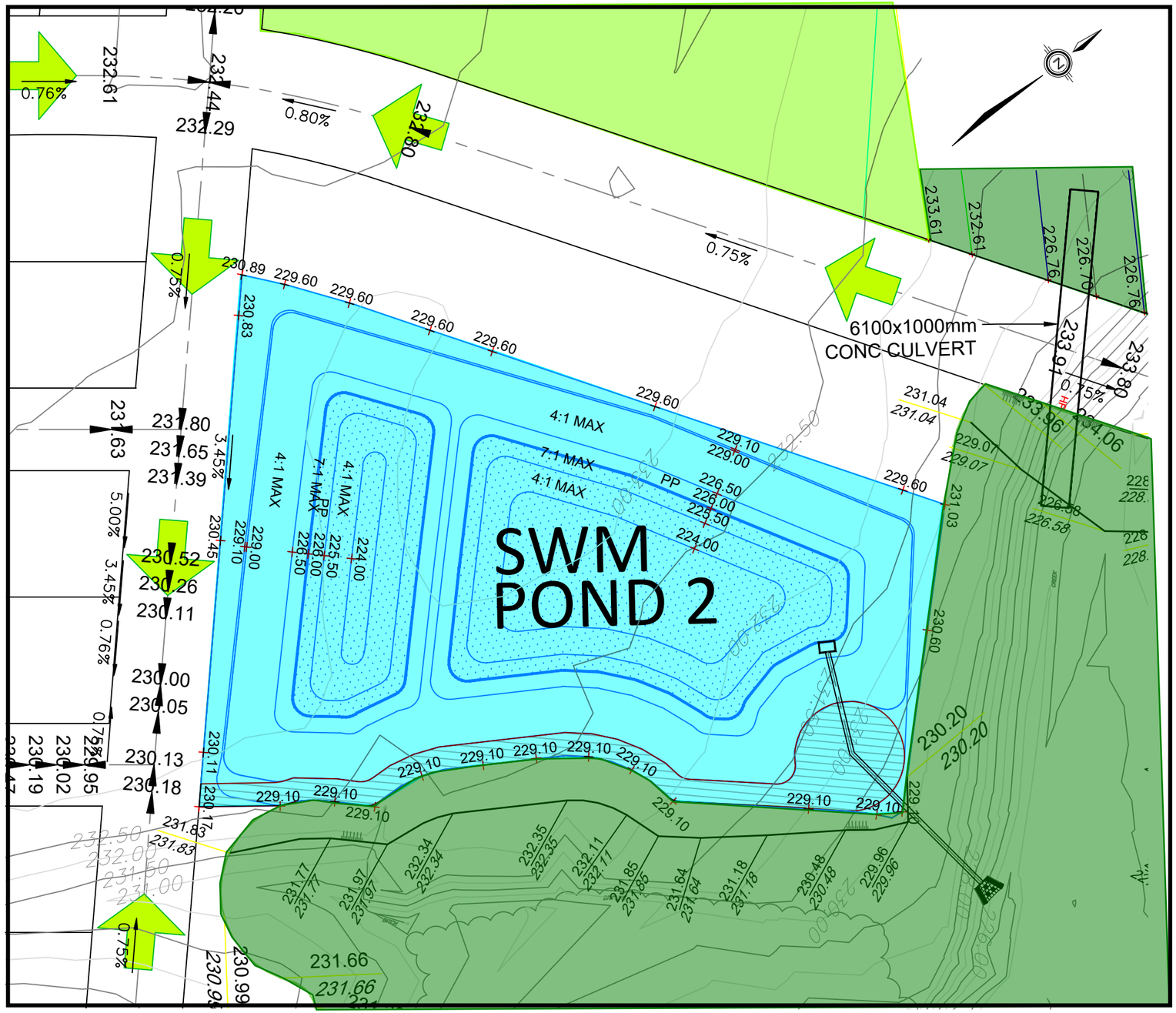
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TOWN OF CALEDON

SWM POND 1

SCALE:	1:1000	PROJECT No.:	22-1297
DATE:	MAY 2026	FIGURE:	7



POND 2 DATA	
DRAINAGE AREA (Ha)	22.53
IMPERVIOUSNESS	67%
POND BLOCK AREA (Ha)	1.37

LEGEND

- SITE BOUNDARY FOR DRAFT PLAN APPLICATION
- LONGTERM STABLE TOP OF SLOPE
- TRCA REGULATION LIMIT
- TRCA STAKED FEATURE LIMIT
- 10m TRCA STAKE FEATURE BUFFER
- REGIONAL FLOODLINE
- 10m REGIONAL FLOODLINE BUFFER
- WETLANDS
- 10m WETLANDS BUFFER
- MEANDER BELT
- 10m MEANDER BELT BUFFER
- WATERCOURSE
- ACCESS ROAD
- PROPOSED TRAIL
- PERMANENT POOL
- PROPOSED GRADE
- 264.50 / 264.00 EXISTING CONTOUR ELEVATION
- POND INLET
- POND OUTLET
- PLUNGE POOL
- OVERLAND FLOW DIRECTION
- EMERGENCY OVERFLOW DIRECTION

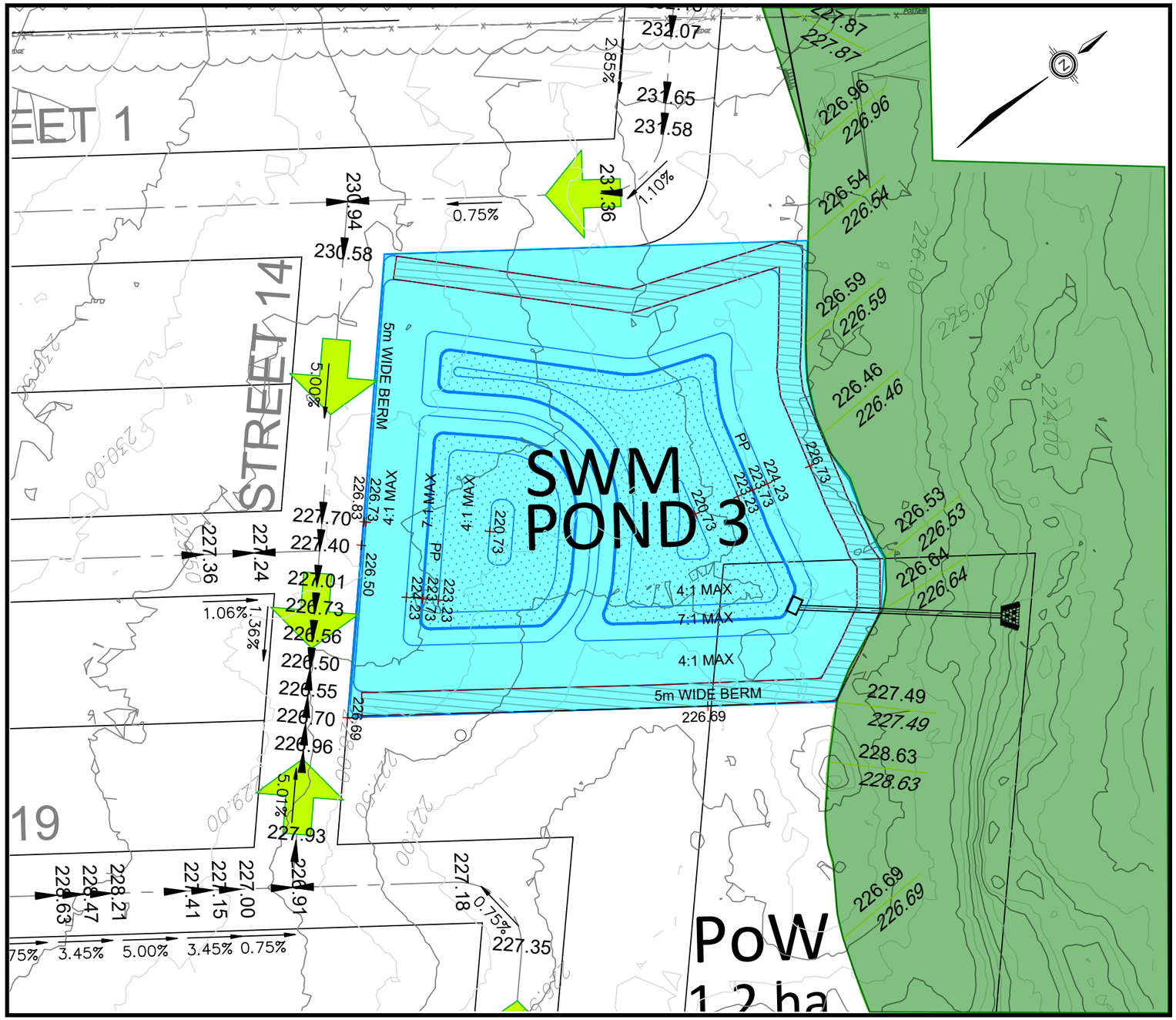
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TOWN OF CALEDON

SWM POND 2

SCALE:	1:1000	PROJECT No.:	22-1297
DATE:	MAY 2026	FIGURE:	8



POND 3 DATA	
DRAINAGE AREA (Ha)	9.32
IMPERVIOUSNESS	69%
POND BLOCK AREA (Ha)	1.04

LEGEND

- SITE BOUNDARY FOR DRAFT PLAN APPLICATION
- LONGTERM STABLE TOP OF SLOPE
- TRCA REGULATION LIMIT
- TRCA STAKED FEATURE LIMIT
- 10m TRCA STAKE FEATURE BUFFER
- REGIONAL FLOODLINE
- 10m REGIONAL FLOODLINE BUFFER
- WETLANDS
- 10m WETLANDS BUFFER
- MEANDER BELT
- 10m MEANDER BELT BUFFER
- WATERCOURSE
- ACCESS ROAD
- PROPOSED TRAIL
- PERMANENT POOL
- PROPOSED GRADE
- EXISTING CONTOUR ELEVATION (264.50 / 264.00)
- POND INLET
- POND OUTLET
- PLUNGE POOL
- OVERLAND FLOW DIRECTION
- EMERGENCY OVERFLOW DIRECTION

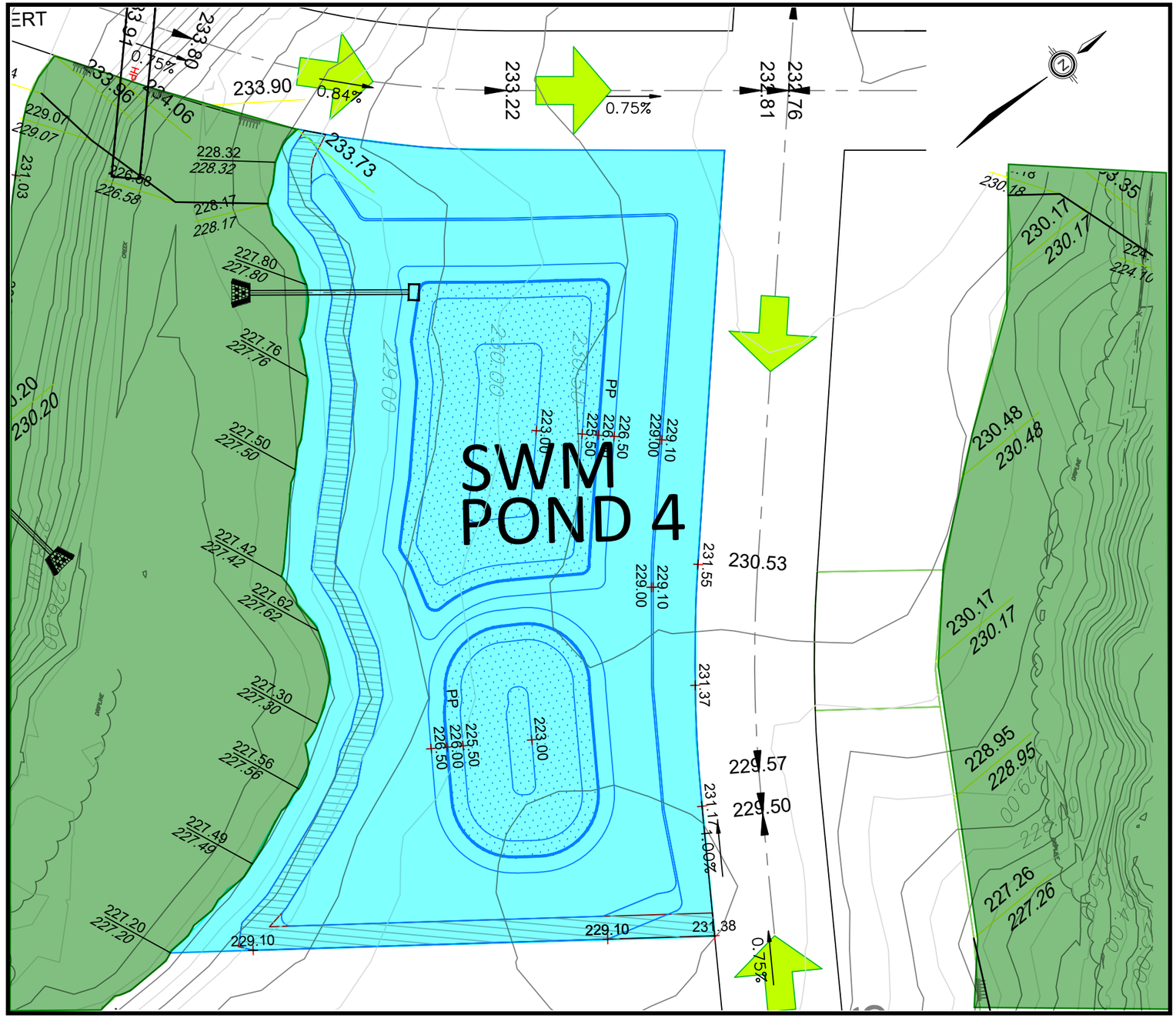
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INNIS LAKE ROAD FSR

TOWN OF CALEDON

SWM POND 3

SCALE:	1:1000	PROJECT No.:	22-1297
DATE:	MAY 2026	FIGURE:	9



POND 4 DATA	
DRAINAGE AREA (Ha)	12.32
IMPERVIOUSNESS	72%
POND BLOCK AREA (Ha)	1.58

LEGEND

- SITE BOUNDARY FOR DRAFT PLAN APPLICATION
- LONGTERM STABLE TOP OF SLOPE
- TRCA REGULATION LIMIT
- TRCA STAKED FEATURE LIMIT
- 10m TRCA STAKE FEATURE BUFFER
- REGIONAL FLOODLINE
- 10m REGIONAL FLOODLINE BUFFER
- WETLANDS
- 10m WETLANDS BUFFER
- MEANDER BELT
- 10m MEANDER BELT BUFFER
- WATERCOURSE
- ACCESS ROAD
- PROPOSED TRAIL
- PERMANENT POOL
- PROPOSED GRADE
- 264.50 / 264.00 EXISTING CONTOUR ELEVATION
- POND INLET
- POND OUTLET
- PLUNGE POOL
- OVERLAND FLOW DIRECTION
- EMERGENCY OVERFLOW DIRECTION

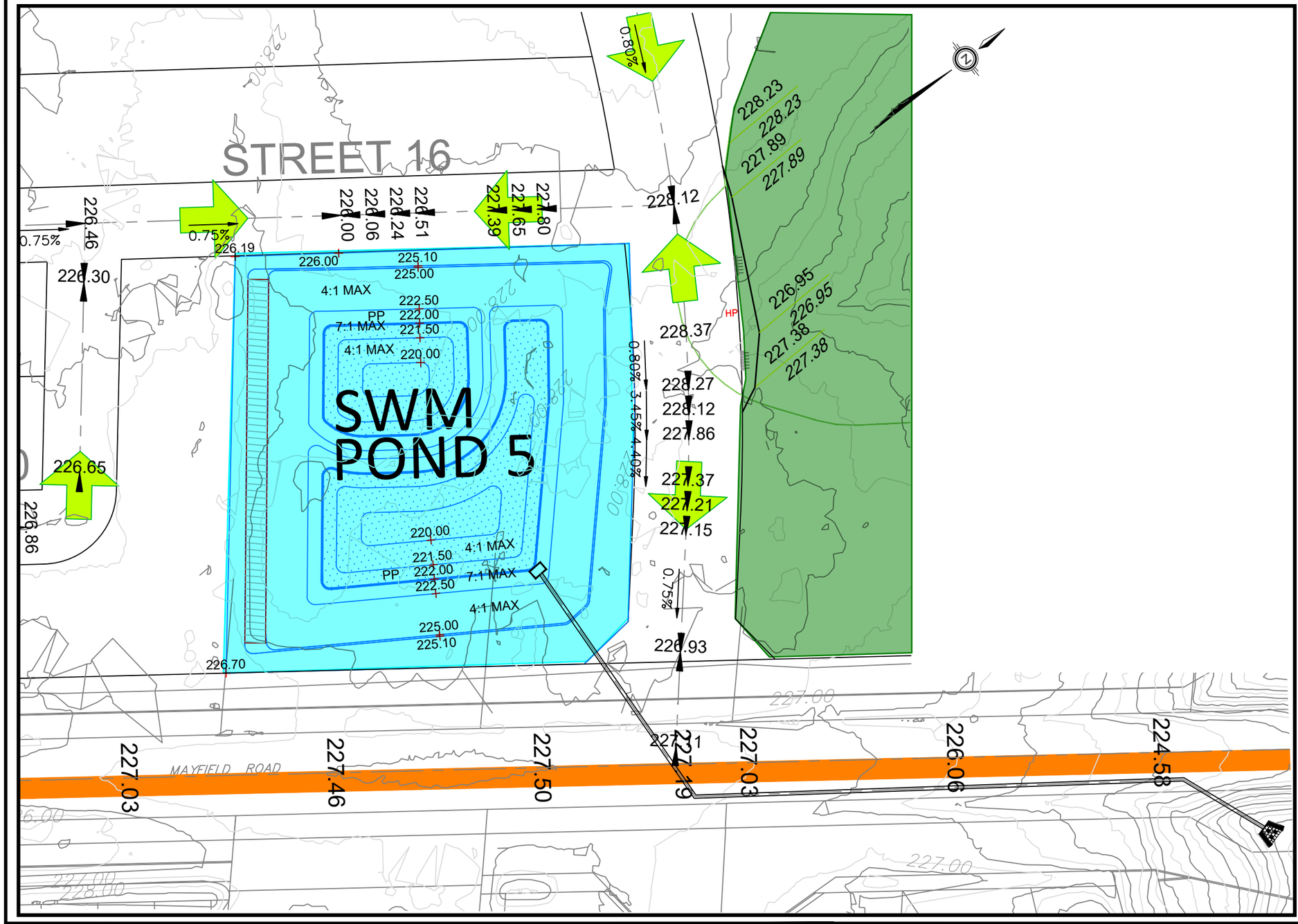
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INNIS LAKE ROAD FSR

TOWN OF CALEDON

SWM POND 4

SCALE:	1:1000	PROJECT No.:	22-1297
DATE:	MAY 2026	FIGURE:	10



LEGEND

- SITE BOUNDARY FOR DRAFT PLAN APPLICATION
- LONGTERM STABLE TOP OF SLOPE
- TRCA REGULATION LIMIT
- TRCA STAKED FEATURE LIMIT
- 10m TRCA STAKE FEATURE BUFFER
- REGIONAL FLOODLINE
- 10m REGIONAL FLOODLINE BUFFER
- WETLANDS
- 10m WETLANDS BUFFER
- MEANDER BELT
- 10m MEANDER BELT BUFFER
- WATERCOURSE
- ACCESS ROAD
- PROPOSED TRAIL
- PERMANENT POOL
- PROPOSED GRADE
- 264.50 / 264.00 EXISTING CONTOUR ELEVATION
- POND INLET
- POND OUTLET
- PLUNGE POOL
- OVERLAND FLOW DIRECTION
- EMERGENCY OVERFLOW DIRECTION

POND 5 DATA	
DRAINAGE AREA (Ha)	8.54
IMPERVIOUSNESS	69%
POND BLOCK AREA (Ha)	0.98

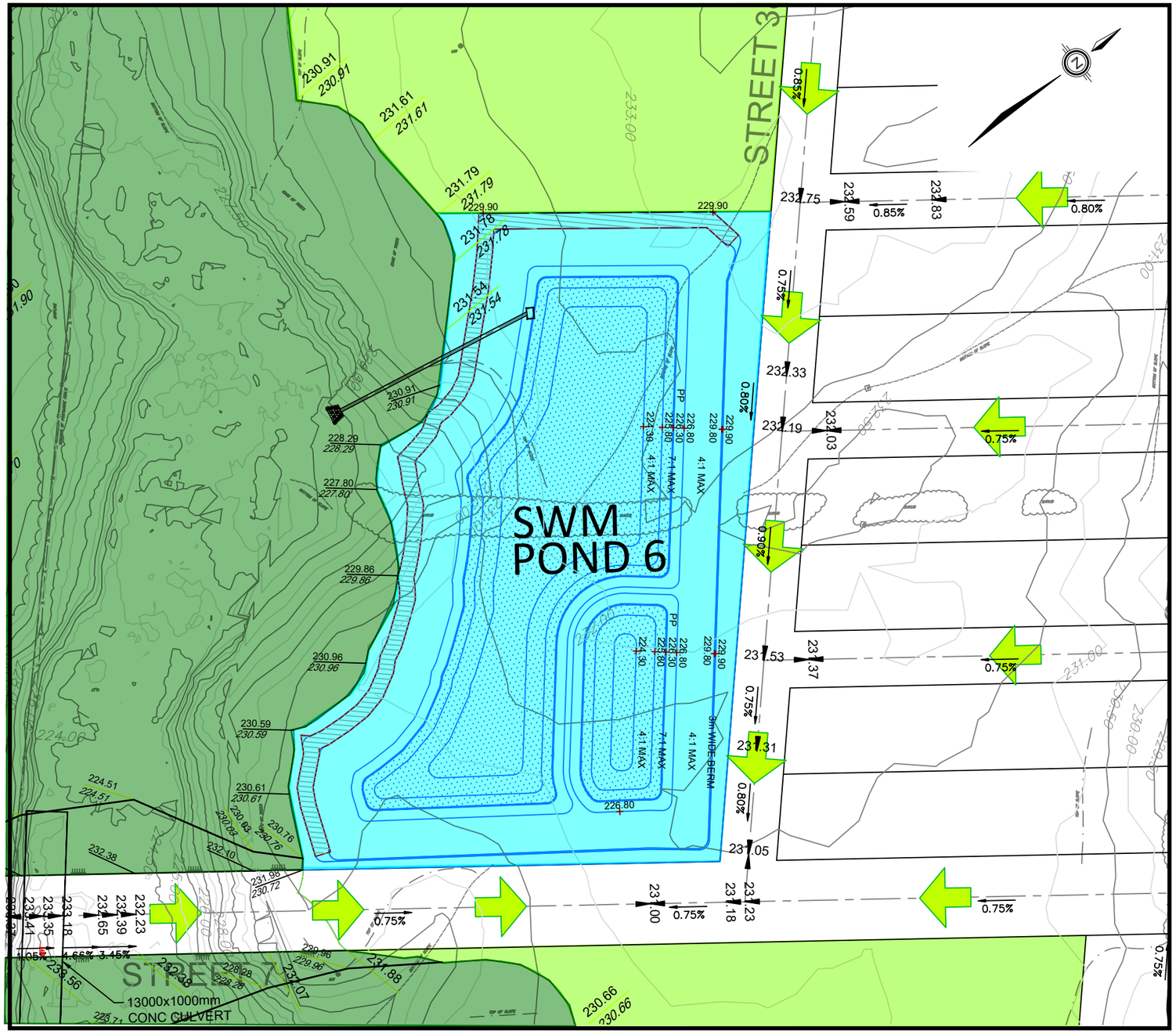
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TOWN OF CALEDON

SWM POND 5

SCALE:	1:1000	PROJECT No.:	22-1297
DATE:	MAY 2026	FIGURE:	11



POND 6 DATA	
DRAINAGE AREA (Ha)	34.62
IMPERVIOUSNESS	74%
POND BLOCK AREA (Ha)	2.43

LEGEND

- SITE BOUNDARY FOR DRAFT PLAN APPLICATION
- LONGTERM STABLE TOP OF SLOPE
- TRCA REGULATION LIMIT
- TRCA STAKED FEATURE LIMIT
- 10m TRCA STAKE FEATURE BUFFER
- REGIONAL FLOODLINE
- 10m REGIONAL FLOODLINE BUFFER
- WETLANDS
- 10m WETLANDS BUFFER
- MEANDER BELT
- 10m MEANDER BELT BUFFER
- WATERCOURSE
- ACCESS ROAD
- PROPOSED TRAIL
- PERMANENT POOL
- PROPOSED GRADE
- 264.50 / 264.00 EXISTING CONTOUR ELEVATION
- POND INLET
- POND OUTLET
- PLUNGE POOL
- OVERLAND FLOW DIRECTION
- EMERGENCY OVERFLOW DIRECTION

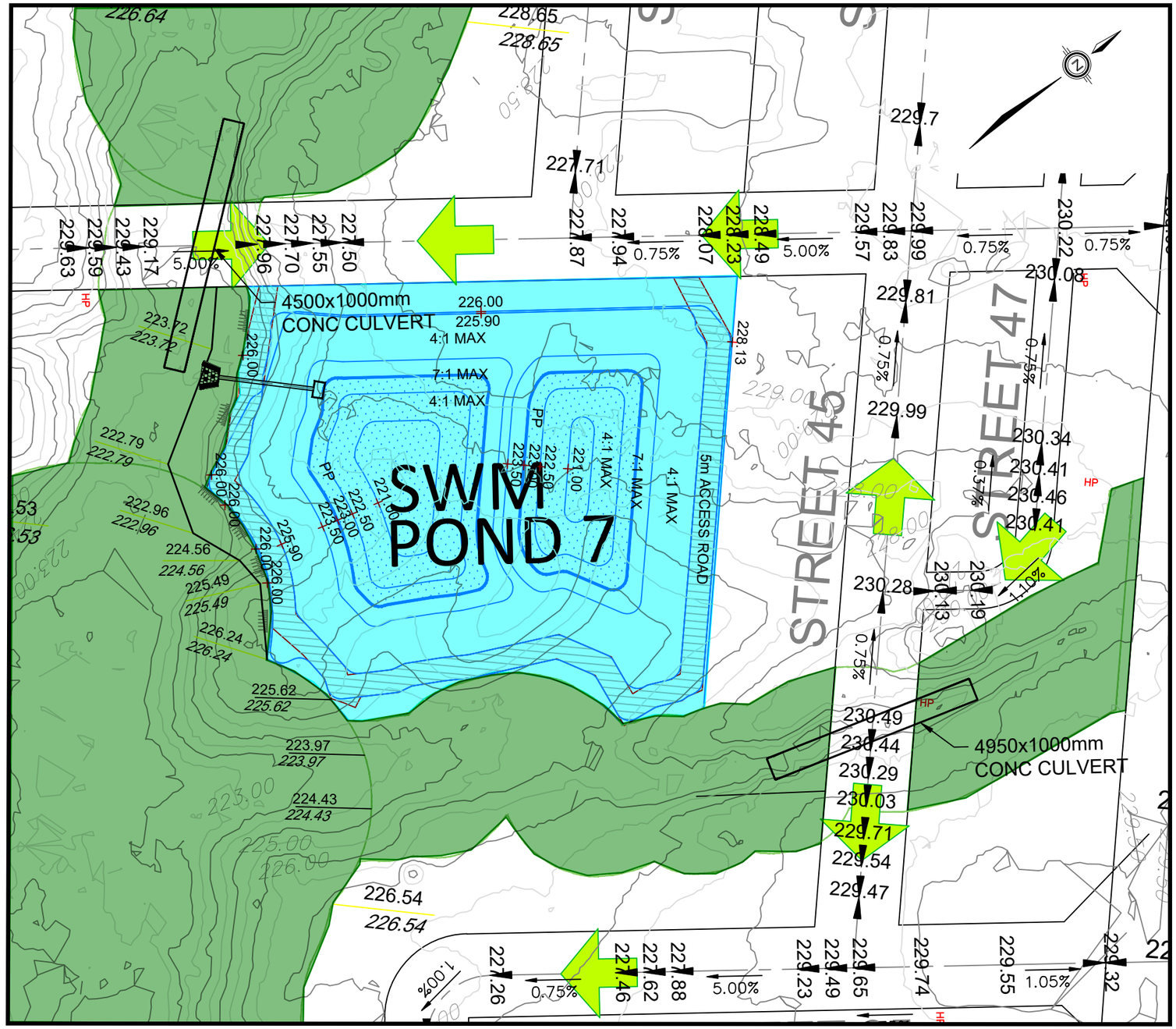
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TOWN OF CALEDON

SWM POND 6

SCALE:	1:1500	PROJECT No.:	22-1297
DATE:	MAY 2026	FIGURE:	12



POND 5 DATA	
DRAINAGE AREA (Ha)	8.54
IMPERVIOUSNESS	69%
POND BLOCK AREA (Ha)	0.98

LEGEND

- SITE BOUNDARY FOR DRAFT PLAN APPLICATION
- LONGTERM STABLE TOP OF SLOPE
- TRCA REGULATION LIMIT
- TRCA STAKED FEATURE LIMIT
- 10m TRCA STAKE FEATURE BUFFER
- REGIONAL FLOODLINE
- 10m REGIONAL FLOODLINE BUFFER
- WETLANDS
- 10m WETLANDS BUFFER
- MEANDER BELT
- 10m MEANDER BELT BUFFER
- WATERCOURSE
- ACCESS ROAD
- PROPOSED TRAIL
- PERMANENT POOL
- PROPOSED GRADE
- 264.50 / 264.00 EXISTING CONTOUR ELEVATION
- POND INLET
- POND OUTLET
- PLUNGE POOL
- OVERLAND FLOW DIRECTION
- EMERGENCY OVERFLOW DIRECTION

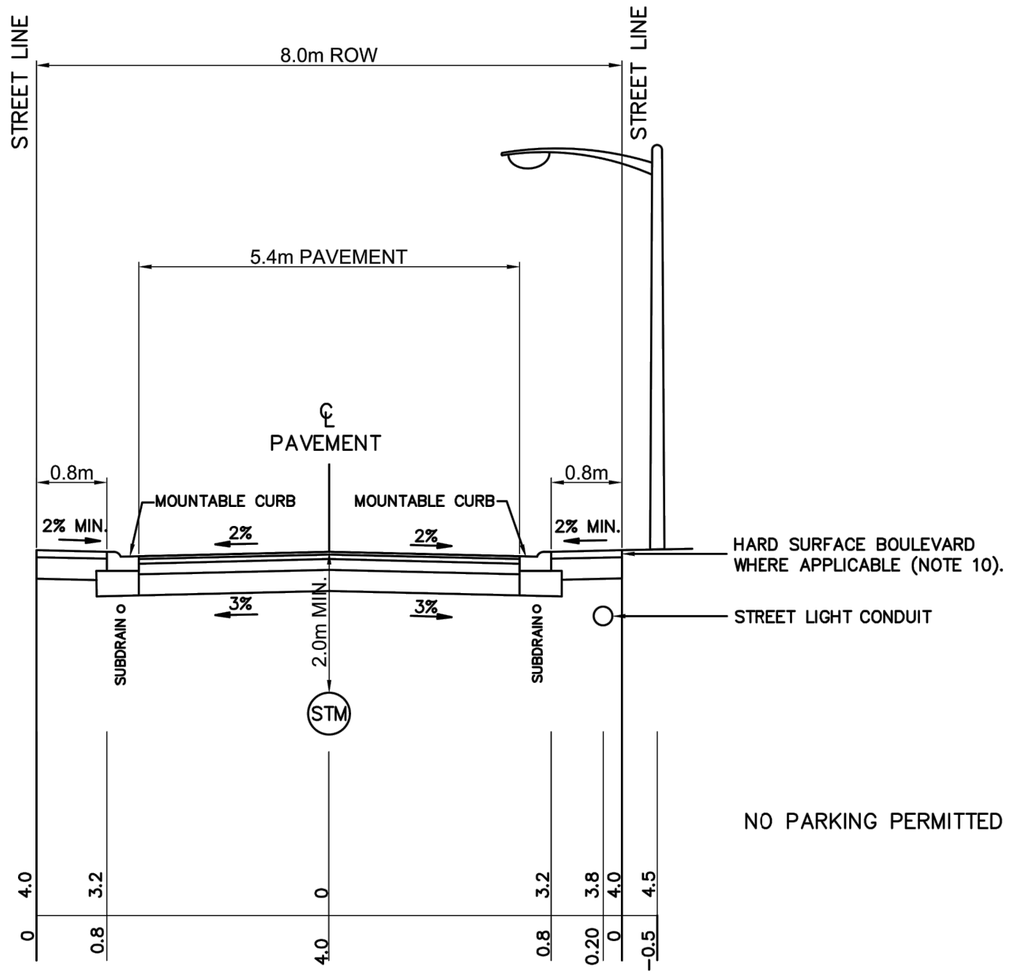
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TOWN OF CALEDON

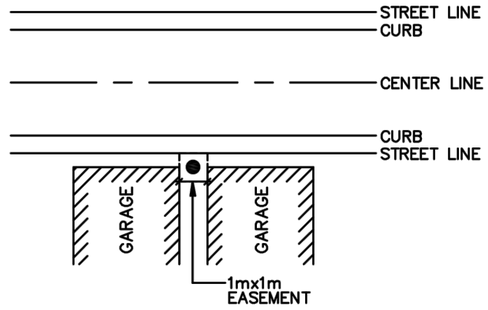
SWM POND 7

SCALE:	1:1000	PROJECT No.:	22-1297
DATE:	MAY 2026	FIGURE:	13



NO PARKING PERMITTED

PLAN:



NOTES

1. THE FOLLOWING IS A MINIMUM ROAD BASE AND WILL REQUIRE A SOILS REPORT VERIFICATION
   - 40 mm HL3
   - 65 mm HL8
   - 150 mm GRANULAR "A"
   - 300 mm GRANULAR "B"
2. STREETLIGHT FIXTURE PER APPROVED TOWN STANDARD.
3. FULL LENGTH MINIMUM 100 MM DIA.SUB-DRAINS C/W FILTERCLOTH SHALL BE INSTALLED, AS PER APPROVED TOWN OF CALEDON STANDARD NO. 218.
4. SUB-GRADE SHALL BE COMPACTED TO A MINIMUM 95% OF S.P.D. AT OPTIMUM MOISTURE CONTENT.
5. WHERE POSSIBLE MANHOLE LIDS TO BE LOCATED OUT OF TIRE LANE OF TRAFFIC.
6. TRANSFORMERS TO BE LOCATED ON SIDE STREETS WHERE POSSIBLE OR ALTERNATIVELY ON EASEMENT ADJACENT TOLANEWAY.
7. STREET LIGHT POLE IN 1mx1m EASEMENT.
8. 50m MAXIMUM POLE SPACING AND THEREFORE MAXIMUM LANEWAY LENGTH IS 50m WITHOUT LANEWAY ILLUMINATION.
9. ONLY STORM SEWERS ARE PERMITTED WITHIN LANEWAYS.
10. WHERE LANEWAYS ARE PROPOSED ADJACENT RESIDENTIAL REAR YARDS, HARD SURFACING IS TO BE INSTALLED FROM THE BACK OF CURB TO THE STREET LINE. HARD SURFACE TYPE IS AT THE DISCRETION OF THE TOWN.

TOWN OF CALEDON

8.0m LANEWAY
6.0m ROADWAY (5.4m PAVEMENT)

NO.	REVISION	APR'D	DATE
4	TEXT AND SLOPE REVISIONS		JULY 19
3	DIMENSION AND TEXT REVISION		JAN. 09
2	DIMENSION AND LAYOUT REVISION		JULY 08
1	NOTES EDIT, STANDARD No. 225 NOW 200		JUNE 08

APR'D: C.C. | DATE: JUNE 08
DRAWN: | SCALE: N.T.S.

STANDARD No. 200

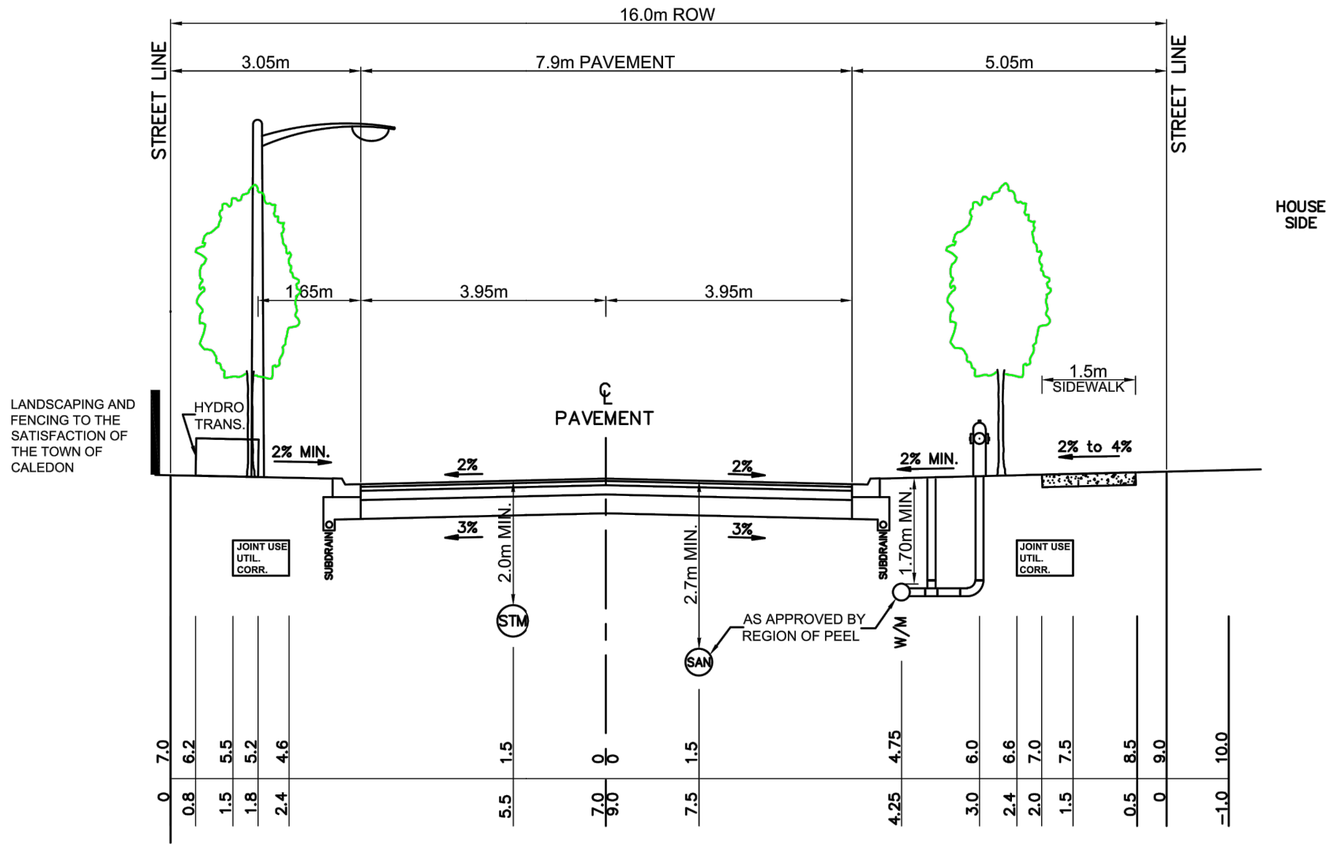
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INNIS LAKE ROAD FSR

TOWN OF CALEDON

TYPICAL ROAD SECTIONS - 8.0m LANEWAY

SCALE: AS SHOWN | PROJECT No.: 22-1297
DATE: MAY 2026 | FIGURE: 14A



NOTES

1. WATERMAIN TO HAVE MINIMUM COVER OF 1.7m.
2. UTILITY CORRIDOR TO HAVE A MINIMUM COVER OF 0.9m.
3. TREES TO BE PLACED IN LOCATIONS PER APPROVED LANDSCAPE PLAN.
4. STREETLIGHT FIXTURE PER APPROVED TOWN STANDARD.
5. THE FOLLOWING IS A MINIMUM ROAD BASE AND WILL REQUIRE A SOILS REPORT VERIFICATION
   - 40 mm HL3
   - 65 mm HL8
   - 150 mm GRANULAR "A"
   - 300 mm GRANULAR "B"
6. THE BOULEVARDS REQUIRE A MINIMUM OF 300mm OF TOPSOIL AND NURSERY SOD.
7. ON A CRESCENT THE WATERMAIN SHALL BE PLACED ON THE OUTSIDE.
8. FULL LENGTH MINIMUM 100 MM DIA.SUB-DRAINS C/W FILTERCLOTH SHALL BE INSTALLED, AS PER APPROVED TOWN OF CALEDON STANDARD NO .218.
9. SUB-GRADE SHALL BE COMPACTED TO A MINIMUM 95% OF S.P.D. AT OPTIMUM MOISTURE CONTENT.
10. WHERE POSSIBLE MANHOLE LIDS TO BE LOCATED OUT OF TIRE LANE OF TRAFFIC.
11. LONG DIMENSION OF TRANSFORMER TO BE PARALLEL TO STREETLINE.

TOWN OF CALEDON

16.0m LOCAL WINDOW STREET
8.5m ROADWAY (7.9m PAVEMENT)

NO.	REVISION	APR'D	DATE
4	TEXT AND SLOPE REVISIONS		MAY 19
3	DIMENSION AND TEXT REVISION		JAN. 09
2	DIMENSION AND LAYOUT REVISION		JULY 08
1	DIMENSION EDIT, STD No. 212 NOW 201		JUNE 08

APR'D: C.C. | DATE: JUNE 08
DRAWN: | SCALE: N.T.S.

STANDARD No. 201

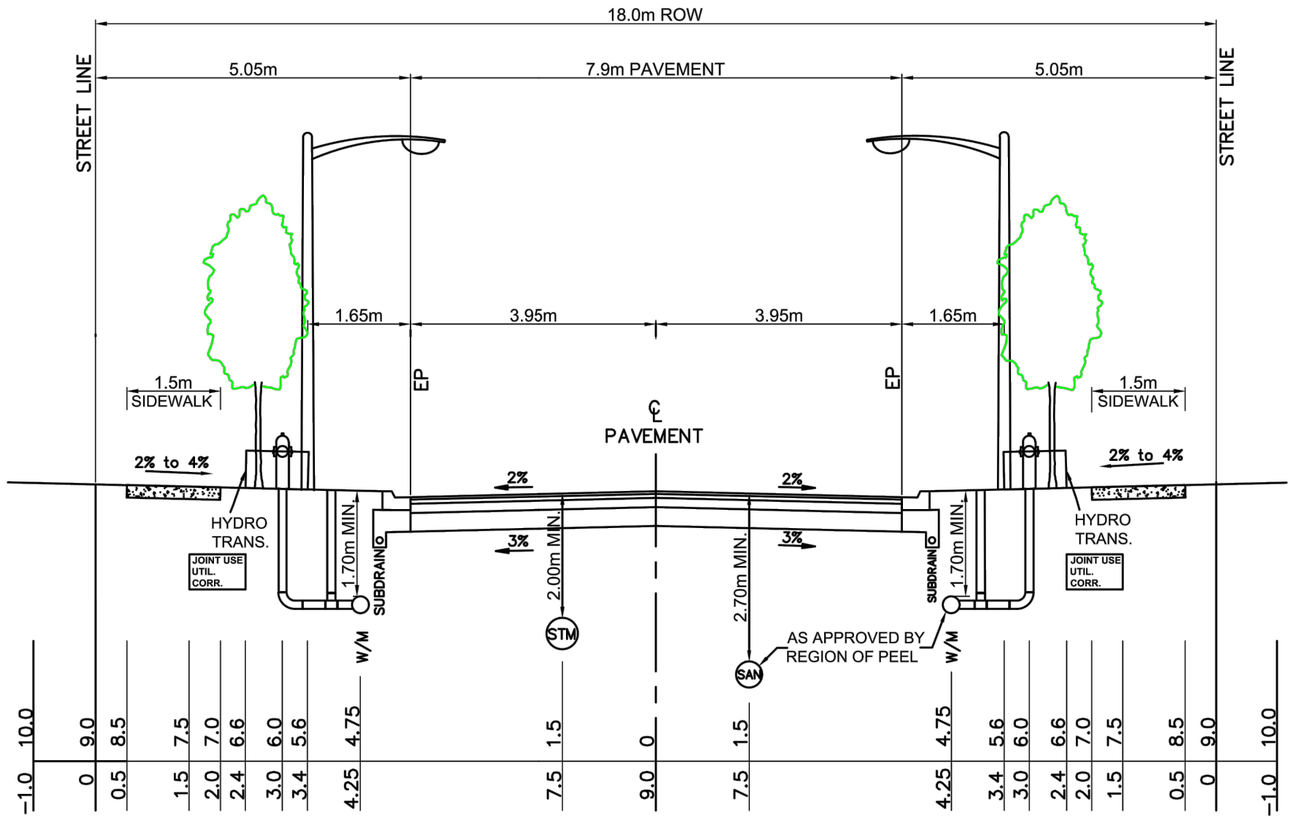
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INNIS LAKE ROAD FSR

TOWN OF CALEDON

TYPICAL ROAD SECTIONS - 16m ROW

SCALE:	AS SHOWN	PROJECT No.:	22-1297
DATE:	MAY 2026	FIGURE:	14B



NOTES
1. WATERMAIN TO HAVE MINIMUM COVER OF 1.7m.
2. UTILITY CORRIDOR TO HAVE A MINIMUM COVER OF 0.9m.
3. TREES TO BE PLACED IN LOCATIONS PER APPROVED LANDSCAPE PLAN.
4. STREETLIGHT FIXTURE PER APPROVED TOWN STANDARD.
5. THE FOLLOWING IS A MINIMUM ROAD BASE AND WILL REQUIRE A SOILS REPORT VERIFICATION
   - 40 mm HL3
   - 65 mm HL8
   - 150 mm GRANULAR "A"
   - 300 mm GRANULAR "B"
6. THE BOULEVARDS REQUIRE A MINIMUM OF 300mm OF TOPSOIL AND NURSERY SOD.
7. ON A CRESCENT THE WATERMAIN SHALL BE PLACED ON THE OUTSIDE.
8. FULL LENGTH MINIMUM 100 MM DIA.SUB-DRAINS C/W FILTERCLOTH SHALL BE INSTALLED, AS PER APPROVED TOWN OF CALEDON STANDARD NO. 219.
9. SUB-GRADE SHALL BE COMPACTED TO A MINIMUM 95% OF S.P.D. AT OPTIMUM MOISTURE CONTENT.
10. WHERE POSSIBLE MANHOLE LIDS TO BE LOCATED OUT OF TIRE LANE OF TRAFFIC.
11. LONG DIMENSION OF TRANSFORMER TO BE PARALLEL TO STREETLINE.

TOWN OF CALEDON

18.0m LOCAL ROAD
8.5m ROADWAY (7.9m PAVEMENT)

NO.	REVISION	APR'D	DATE
4	TEXT AND SLOPE REVISIONS		MAY 19
3	DIMENSION AND TEXT REVISION		JAN. 09
2	DIMENSION AND LAYOUT REVISION		JULY 08
1	DIMENSION EDIT		JUNE 08

APR'D: C.C. | DATE: JUNE 08
DRAWN: | SCALE: N.T.S.

STANDARD No. 202

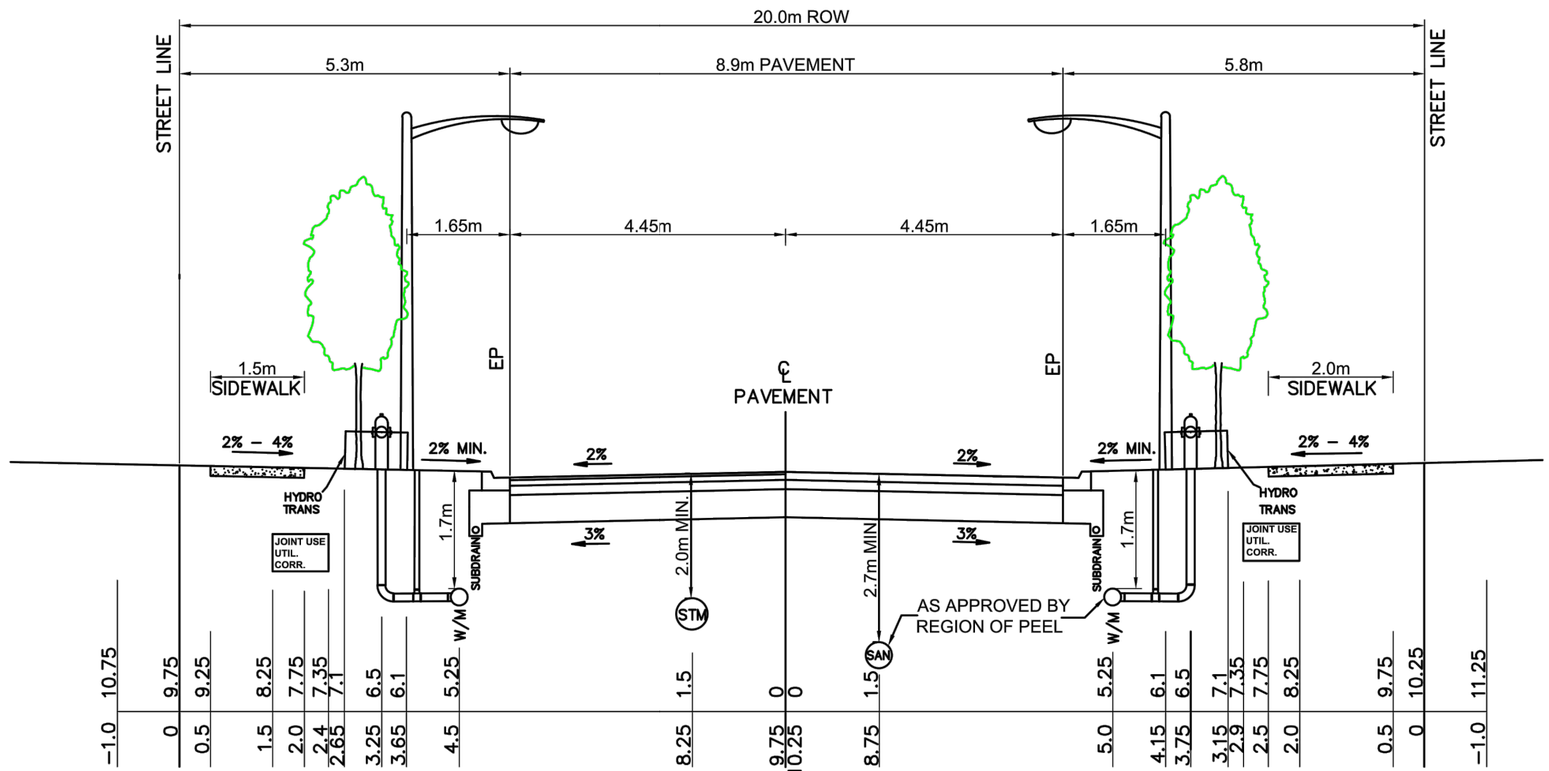
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INNIS LAKE ROAD FSR

TOWN OF CALEDON

TYPICAL ROAD SECTIONS - 18m ROW

SCALE:	AS SHOWN	PROJECT No.:	22-1297
DATE:	MAY 2026	FIGURE:	14C



NOTES

1. UTILITY CORRIDOR TO HAVE A MINIMUM COVER OF 0.9 m.
2. WATERMAIN TO HAVE A MINIMUM COVER OF 1.7 m.
3. THE FOLLOWING IS A MINIMUM ROAD BASE AND WILL REQUIRE A SOILS REPORT VERIFICATION
   - 40 mm HL3
   - 90 mm HL8
   - 150 mm GRANULAR "A"
   - 450 mm GRANULAR "B"
4. THE BOULEVARDS REQUIRE A MINIMUM OF 300mm OF TOPSOIL AND NURSERY SOD.
5. TREES TO BE PLACED IN LOCATIONS PER APPROVED LANDSCAPE PLANS.
6. STREETLIGHT FIXTURE PER APPROVED TOWN STANDARD.
7. FULL LENGTH MINIMUM 100 MM DIA.SUB-DRAINS C/W FILTERCLOTH SHALL BE INSTALLED, AS PER APPROVED TOWN OF CALEDON STANDARD NO. 218.
8. SUB-GRADE SHALL BE COMPACTED TO A MINIMUM 95% OF S.P.D. AT OPTIMUM MOISTURE CONTENT.
9. WHERE POSSIBLE MANHOLE LIDS TO BELOCATED OUT OF TIRE LANE OF TRAFFIC.
10. LONG DIMENSION OF TRANSFORMER TO BE PARALLEL TO STREETLINE.
11. 1.0 m SPLASH PAD TO BE PATTERNED CONCRETE AS PER APPROVED TOWN OF CALEDON STANDARD NO. 903.

TOWN OF CALEDON

20.0m NEIGHBOURHOOD COLLECTOR
9.5m ROADWAY (8.9m PAVEMENT)

NO.	REVISION	APR'D	DATE
4	TEXT AND SLOPE REVISION		JULY 19
3	DIMENSION AND TEXT REVISION		JAN. 09
2	DIMENSION AND LAYOUT REVISION		JULY 08
1	DIMENSION EDIT, STD No. 206 NOW 204		JUNE 08

APR'D: C.C. | DATE: JUNE 08
DRAWN: | SCALE: N.T.S.

STANDARD No. 204

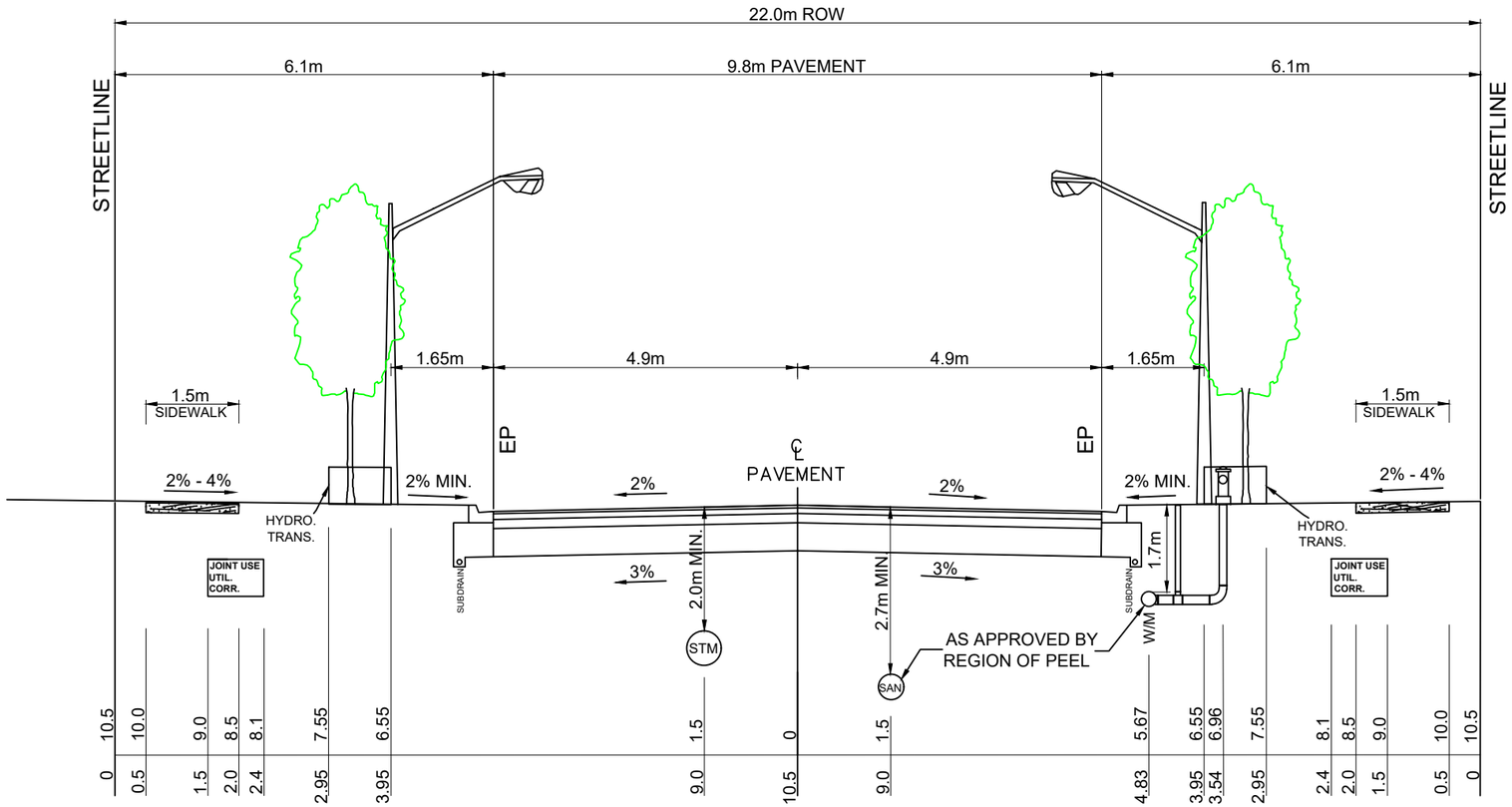
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INNIS LAKE ROAD FSR

TOWN OF CALEDON

TYPICAL ROAD SECTIONS - 20m ROW

SCALE: AS SHOWN | PROJECT No.: 22-1297
DATE: MAY 2026 | FIGURE: 14D



NOTES:

1. UTILITY CORRIDOR TO HAVE A MINIMUM COVER OF 0.9m.
2. WATERMAIN TO HAVE MINIMUM COVER OF 1.7m.
3. THE FOLLOWING IS A MINIMUM ROAD BASE AND WILL REQUIRE A SOILS REPORT VERIFICATION
   - 40mm HL3
   - 90mm HL8
   - 150mm GRANULAR "A"
   - 450mm GRANULAR 'B'
4. THE BOULEVARDS REQUIRE A MINIMUM OF 300mm OF TOPSOIL AND NURSERY SOD.
5. TREES TO BE PLACED IN LOCATIONS PER APPROVED LANDSCAPE PLAN
6. STREETLIGHT FIXTURE PER APPROVED TOWN STANDARD.
7. ON A CRESCENT THE WATERMAIN SHALL BE PLACED ON THE OUTSIDE.
8. FULL LENGTH MINIMUM 100mm DIA. SUB-DRAINS C/W FILTERCLOTH SHALL BE INSTALLED AS PER TOWN OF CALEDON APPROVED STANDARDS NO. 218.
9. SUB-GRADE SHALL BE COMPACTED TO A MINIMUM 95% OF S.P.D. AT OPTIMUM MOISTURE CONTENT.
10. 10. WHERE POSSIBLE MANHOLE LIDS TO BE LOCATED OUT OF TIRE LANE OF TRAFFIC.

TOWN OF CALEDON

21m LOCAL THROUGH/URBAN
10.4m ROADWAY (9.8m PAVEMENT)

NO.	REVISION	APR'D	DATE
5	TEXT AND SLOPE REVISIONS		MAY 19
4	DIMENSION AND TEXT REVISION		JAN. 09
3	DIMENSION AND LAYOUT REVISION		JULY 08
2	DIMENSION EDIT		JUNE 08
1	OFFSETS		APRIL 08

APR'D: C.C. DATE: JUNE 08
DRAWN: SCALE: N.T.S.

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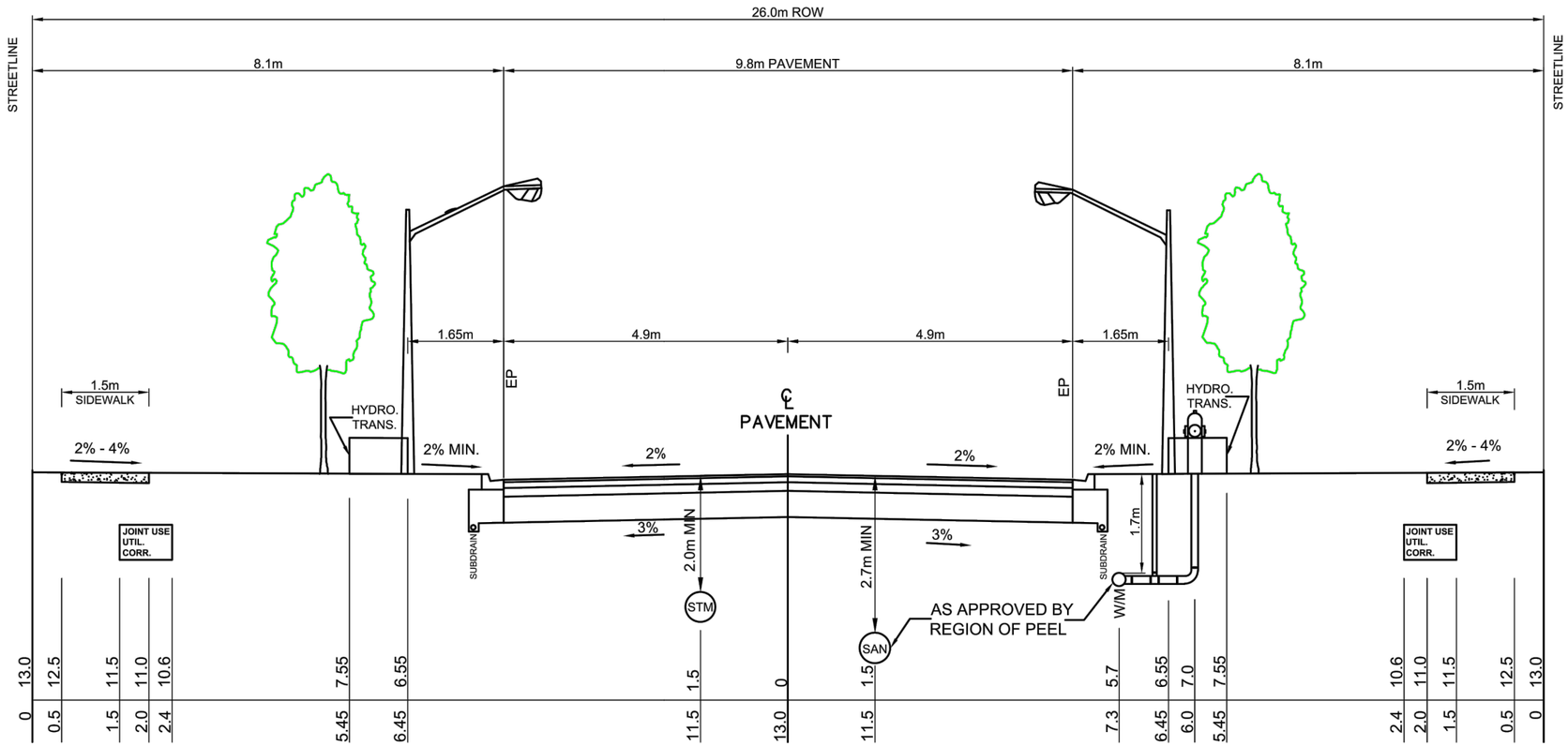
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TOWN OF CALEDON

TYPICAL ROAD SECTIONS - 22m ROW

SCALE:	AS SHOWN	PROJECT No.:	22-1297
DATE:	MAY 2026	FIGURE:	14E



NOTES:

1. UTILITY CORRIDOR TO HAVE A MINIMUM COVER OF 0.9m.
2. WATERMAIN TO HAVE A MINIMUM COVER OF 1.7m.
3. THE FOLLOWING IS A MINIMUM ROAD BASE AND WILL REQUIRE A SOILS REPORT VERIFICATION.
   - 40mm HL3 HS
   - 90mm HDBC
   - 150mm GRANULAR 'A'
   - 450 GRANULAR 'B'
4. THE BOULEVARDS REQUIRE A MINIMUM OF 300mm OF TOPSOIL AND SURSERY SOD.
5. TREES TO BE PLACED IN LOCATIONS PER APPROVED LANDSCAPE PLAN.
6. STREETLIGHT FIXTURE PER APPROVED TOWN STANDARD.
7. ON A CRESCENT, THE WATERMAIN SHALL BE PLACED ON THE OUTSIDE.
8. FULL LENGTH MINIMUM 100mm DIA. SUB-DRAINS C/W FILTERCLOTH SHALL BE INSTALLED AS PER TOWN OF CALEDON APPROVED STANDARDS NO. 218.
9. SUB-GRADE SHALL BE COMPACTED TO A MINIMUM 95% S.P.D. AT OPTIMUM MOISTURE CONTENT.
10. WHERE POSSIBLE, MANHOLE LIDS TO BE LOCATED OUT OF THE TIRE LANE OF TRAFFIC.

TOWN OF CALEDON

26.0m URBAN - COLLECTOR FULL/PART SERVICES
10.4m ROADWAY (9.8m PAVEMENT)

NO.	REVISION	APR'D	DATE
5			
4	TEXT AND SLOPE REVISION		APR 19
3	DIMENSION AND TEXT REVISION		JAN. 09
2	DIMENSION AND LAYOUT REVISION		JULY 08
1	DIMENSION EDIT		JUNE 08

APR'D: C.C. | DATE: 19/01/00
DRAWN: BJM | SCALE: N.T.S.

STANDARD No. 210

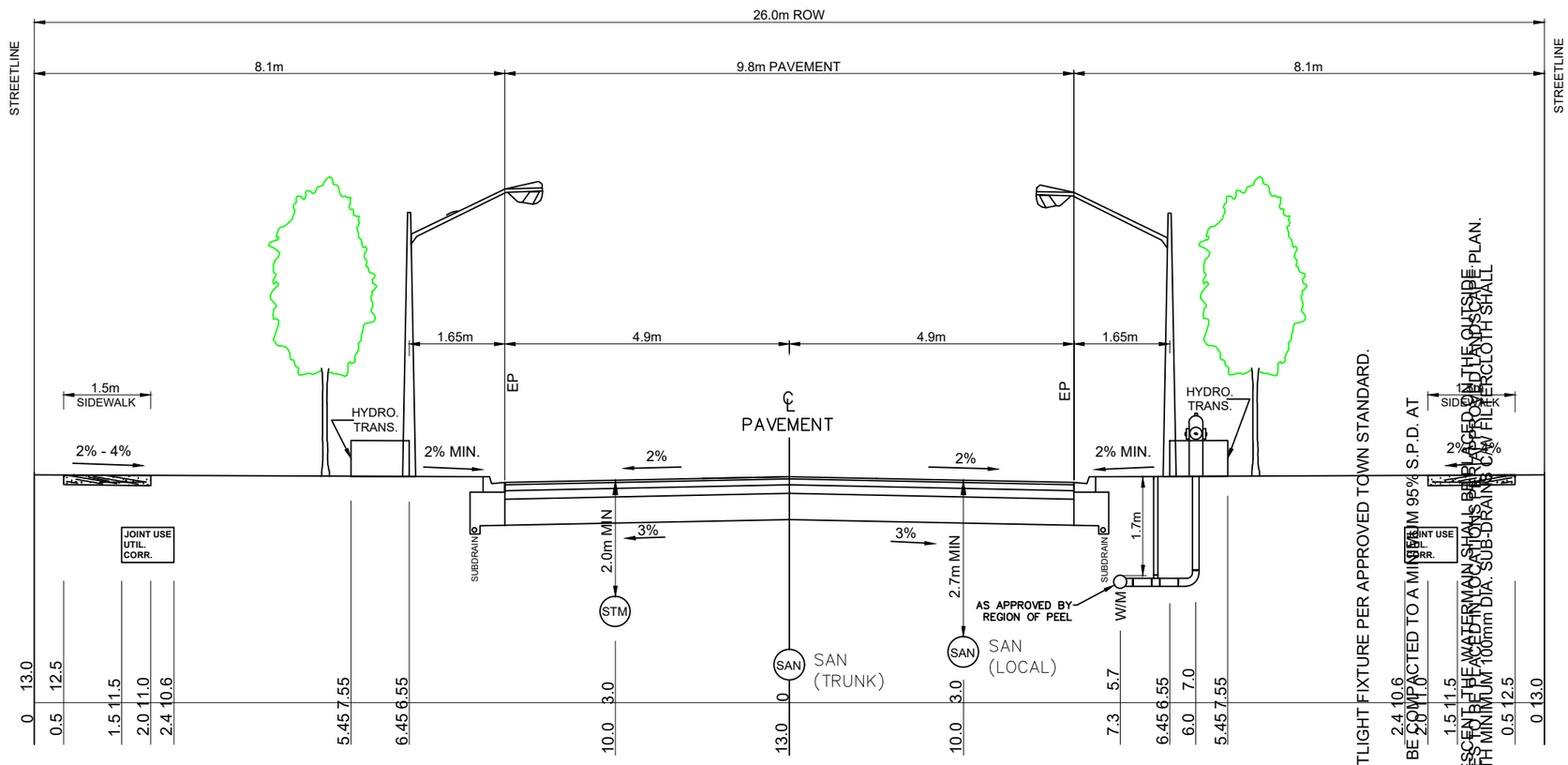
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INNIS LAKE ROAD FSR

TOWN OF CALEDON

TYPICAL ROAD SECTIONS - 26m ROW

SCALE: AS SHOWN | PROJECT No.: 22-1297
DATE: MAY 2026 | FIGURE: 14F



NOTES:

1. UTILITY CORRIDOR TO HAVE A MINIMUM COVER OF 0.9m.
2. WATERMAIN TO HAVE A MINIMUM COVER OF 1.7m.
3. THE FOLLOWING IS A MINIMUM ROAD BASE AND WILL REQUIRE A SOILS REPORT VERIFICATION.
   - 40mm HL3 HS
   - 90mm HDBC
   - 150mm GRANULAR 'A'
   - 450 GRANULAR 'B'
4. THE BOULEVARDS REQUIRE A MINIMUM OF 300mm OF TOPSOIL AND SURSERY SOD.
5.
6. STREETLIGHT FIXTURE PER APPROVED TOWN STANDARD.
7. ON A CRESCENT THE WATERMAIN SHALL BE PLACED ON THE OUTSIDE OF THE ROAD AS PER REGION OF PEEL STANDARD.
8. FULL LENGTH MINIMUM 100mm DIA. SUB-DRAINS C/W FILTERCLOTH SHALL BE INSTALLED AS PER TOWN OF CALEDON APPROVED STANDARDS NO. 218.
9. SUBGRADE SHALL BE COMPACTED TO A MINIMUM 95% S.P.D. AT OPTIMUM MOISTURE CONTENT.
10. WHERE POSSIBLE, MANHOLE LIDS TO BE LOCATED OUT OF THE TIRE LANE OF TRAFFIC.

TOWN OF CALEDON	NO.	REVISION	APR'D	DATE
	5			
	4	TEXT AND SLOPE REVISION		APR 19
	3	DIMENSION AND TEXT REVISION		JAN. 09
	2	DIMENSION AND LAYOUT REVISION		JULY 08
	1	DIMENSION EDIT		JUNE 08

26.0m LOCAL URBAN ROAD
10.4m ROADWAY (9.8m PAVEMENT)
(LOCAL SANITARY)

DRAWN: BJM APR'D: C.C. DATE: 19/01/00 SCALE: N.T.S.

STANDARD No. 210

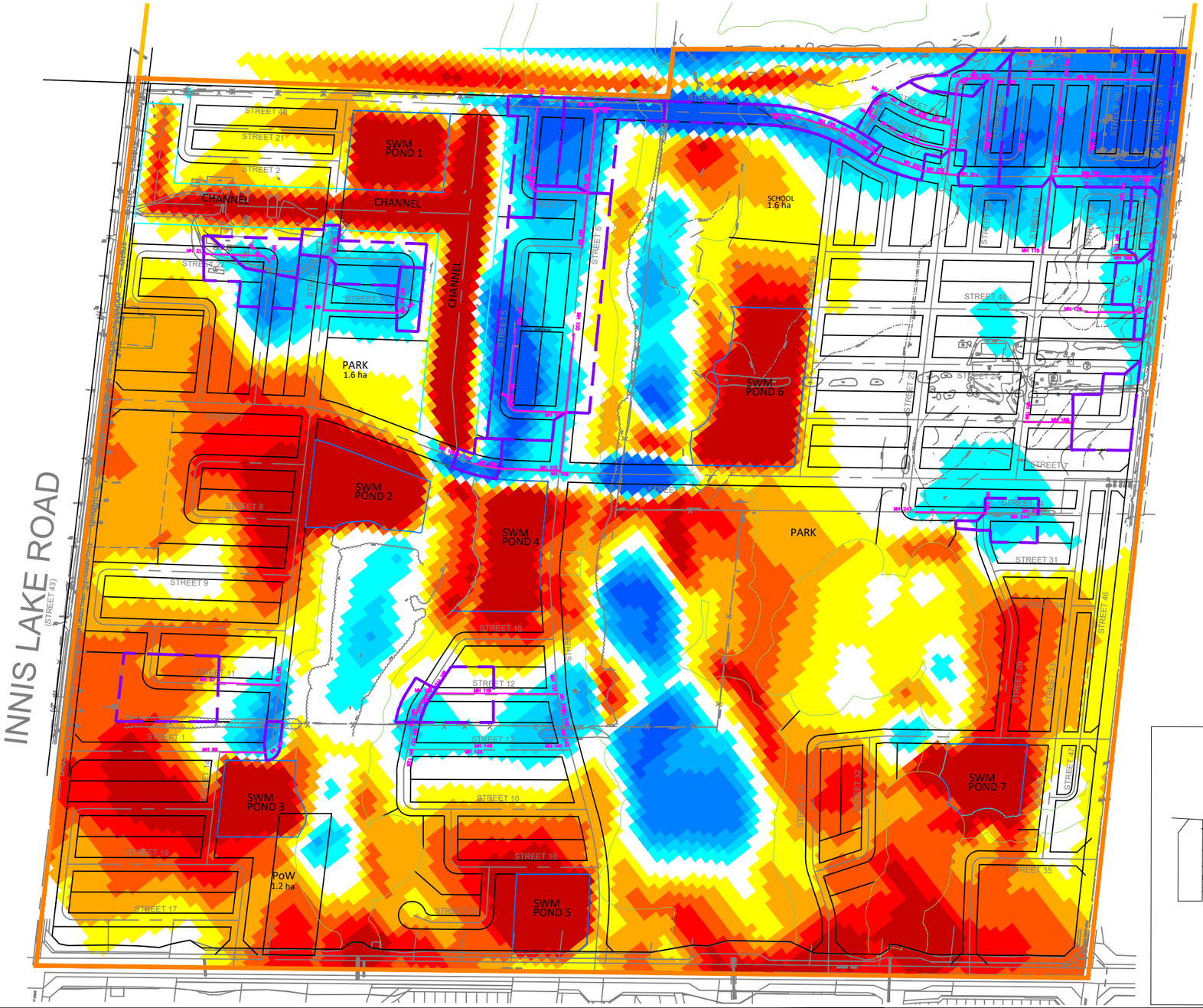
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MALONE GIVEN PARSONS.
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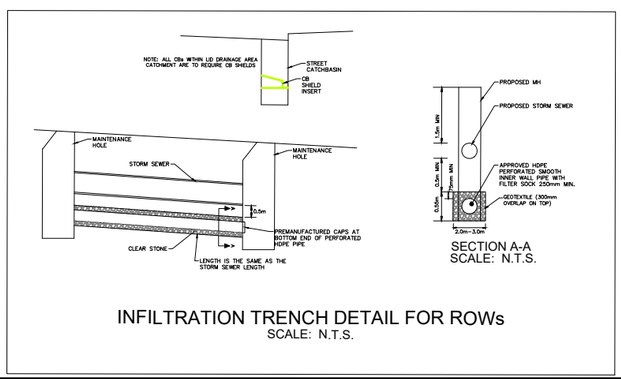
INNIS LAKE ROAD FSR

TOWN OF CALEDON

TYPICAL ROAD SECTIONS - 26m ROW (MOD)

SCALE:	AS SHOWN	PROJECT No.:	22-1297
DATE:	MAY 2026	FIGURE:	14G





SECTION A-A
SCALE: N.T.S.

INFILTRATION TRENCH DETAIL FOR ROWs
SCALE: N.T.S.

Depth to GW (m)

0~0.50:	
0.50~1.00:	
1.00~1.50:	
1.50~2.00:	
2.00~2.50:	
2.50~3.50:	
3.50~4.00:	
4.00~4.50:	
4.50~5.00:	
5.00~5.50:	
>5.50:	

LEGEND

SITE BOUNDARY

0.10Ha / 0.60 — TOTAL AREA / RUN-OFF COEFFICIENT

3.0m WIDE LID INFILTRATION TRENCH IN ROW

2.0m WIDE LID INFILTRATION TRENCH IN ROW

LID TRIBUTARY BOUNDARY

DAVID SCHAEFFER ENGINEERING LTD.

R.J.BURNSIDE & ASSOCIATES LIMITED

MALONE GIVEN PARSONS.

DS CONSULTANTS LTD.

INNIS LAKE ROAD FSR

TOWN OF CALEDON

POTENTIAL LID PLAN

SCALE:	1:6000	PROJECT No.:	22-1297
DATE:	MAY 2026	FIGURE:	15



LEGEND

- SITE BOUNDARY FOR DRAFT PLAN APPLICATION
- PROPOSED SIDEWALK (1.5m WIDE)
- EXISTING WATERCOURSE
- NHS BOUNDARY

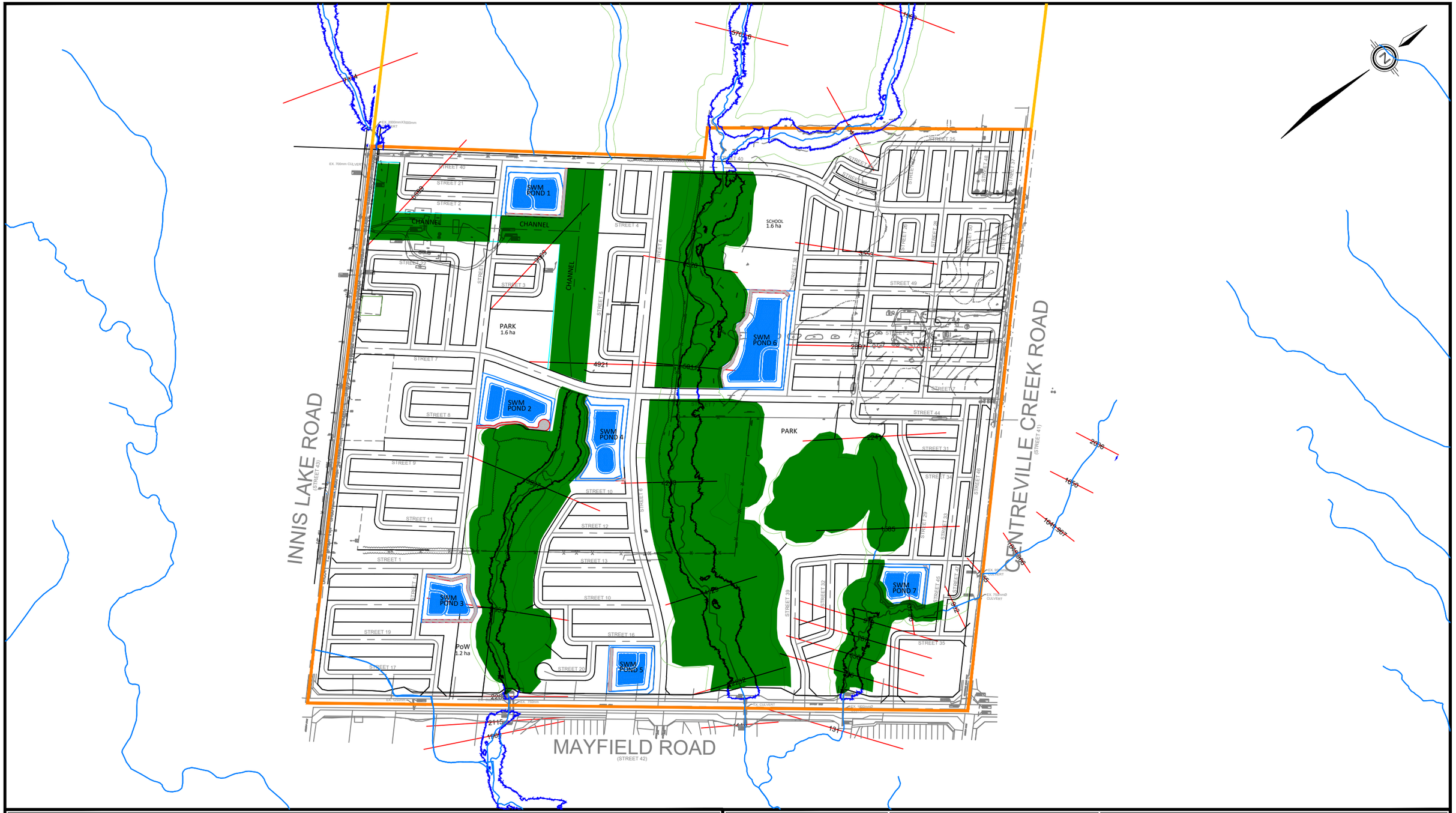
DAVID SCHAEFFER ENGINEERING LTD.	
R.J.BURNSIDE & ASSOCIATES LIMITED	
MALONE GIVEN PARSONS.	
DS CONSULTANTS LTD.	

INNIS LAKE ROAD FSR

TOWN OF CALEDON

SIDEWALK AND TRAIL LOCATION PLAN

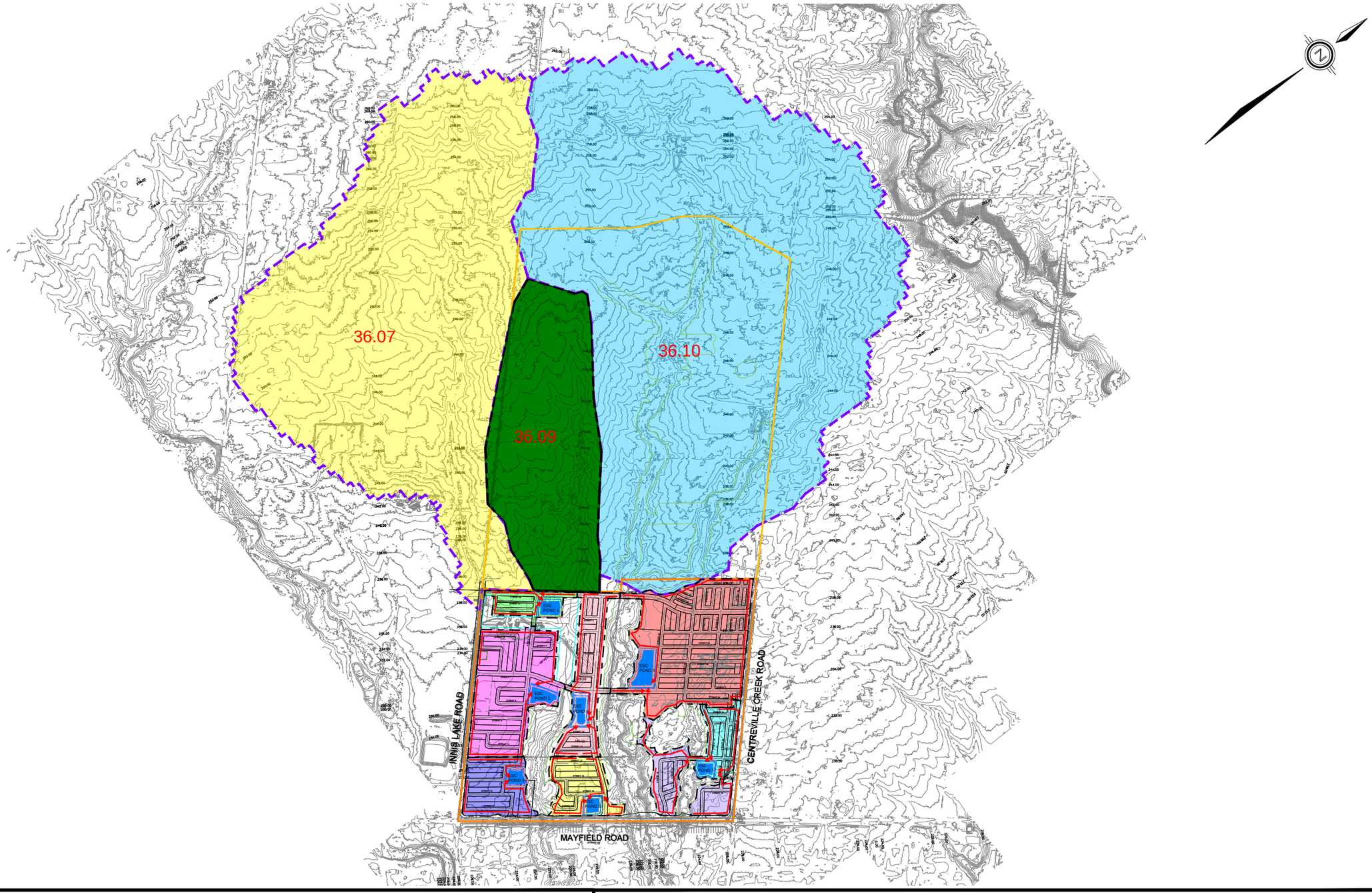
SCALE:	1:7500	PROJECT No.:	22-1297
DATE:	MAY 2026	FIGURE:	16



LEGEND

- SITE BOUNDARY FOR DRAFT PLAN APPLICATION
- 984 HEC-RAS SECTION AND STATION NUMBER
- REGIONAL FLOODLINE
- EX. WATERCOURSE

DAVID SCHAEFFER ENGINEERING LTD.	INNIS LAKE ROAD FSR	HEC-RAS STATIONS	
R.J.BURNSIDE & ASSOCIATES LIMITED			
MALONE GIVEN PARSONS.			
DS CONSULTANTS LTD.	TOWN OF CALEDON	SCALE: 1:7500	PROJECT No.: 22-1297
		DATE: MAY 2026	FIGURE: 17



LEGEND

- PHASE 1 STUDY AREA
- PHASE 2 STUDY AREA
- STORM TRIBUTARY AREA
- EXISTING WATERCOURSE
- NHS BOUNDARY
- POND 1 DRAINAGE AREA
- POND 2 DRAINAGE AREA
- SWALE
- ESC FENCING
- POND 3 DRAINAGE AREA
- POND 4 DRAINAGE AREA
- POND 5 DRAINAGE AREA
- POND 6 DRAINAGE AREA
- POND 7 DRAINAGE AREA
- OSC DRAINAGE AREA

NHS 1.81Ha / 0.90 — DRAINAGE DESTINATION, TOTAL AREA, RUN-OFF COEFFICIENT

POND E2 0.57Ha / 0.70 — DRAINAGE DESTINATION, EXTERNAL DRAINAGE AREA, RUN-OFF COEFFICIENT

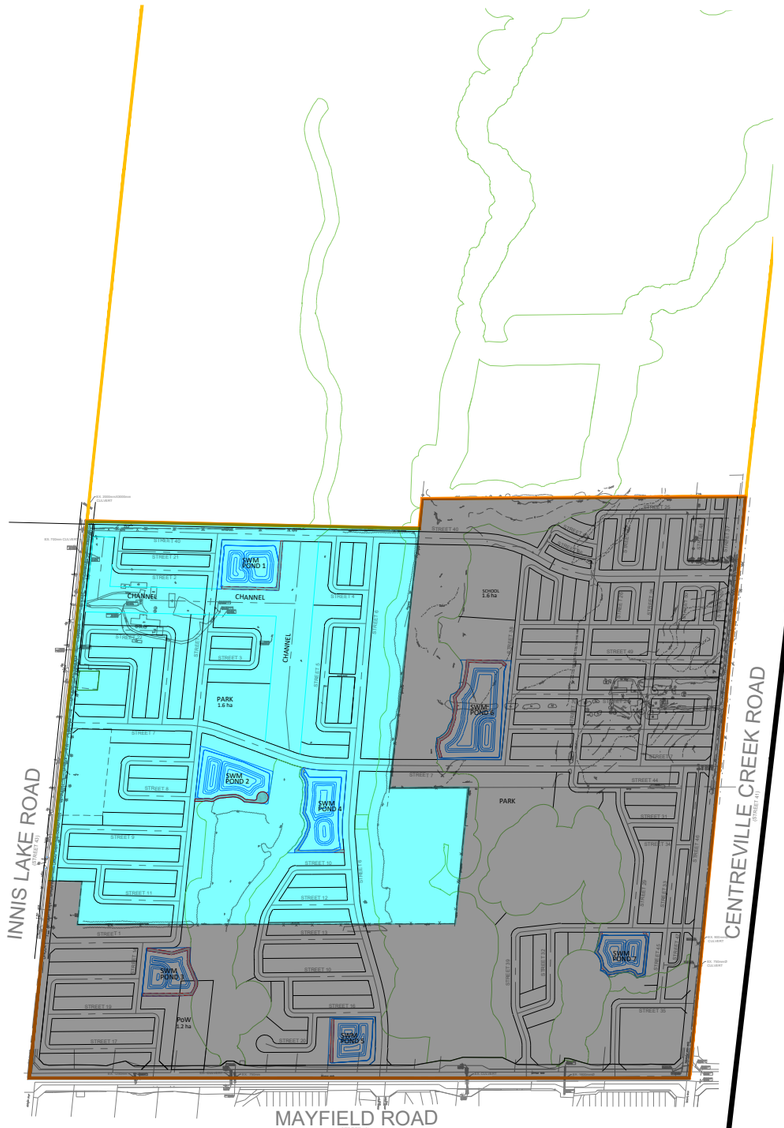
DAVID SCHAEFFER ENGINEERING LTD.
R.J.BURNSIDE & ASSOCIATES LIMITED
MALONE GIVEN PARSONS.
DS CONSULTANTS LTD.

INNIS LAKE ROAD FSR

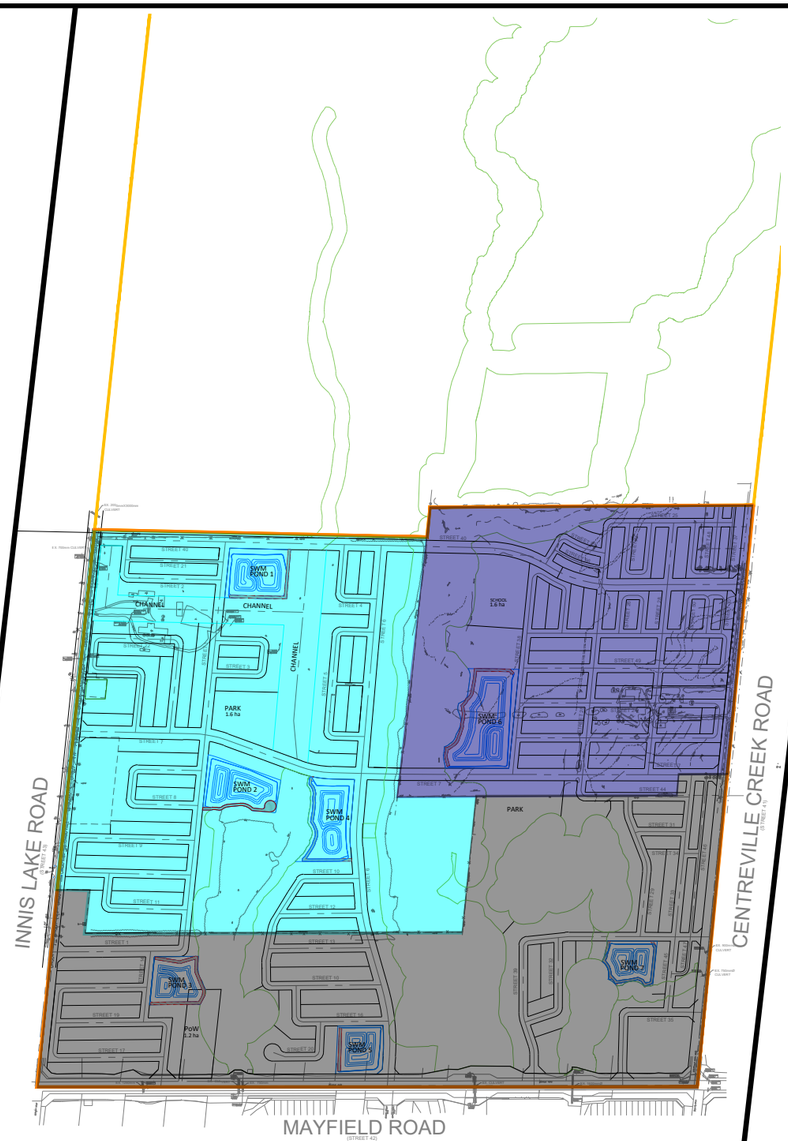
TOWN OF CALEDON

EROSION & SEDIMENT CONTROL

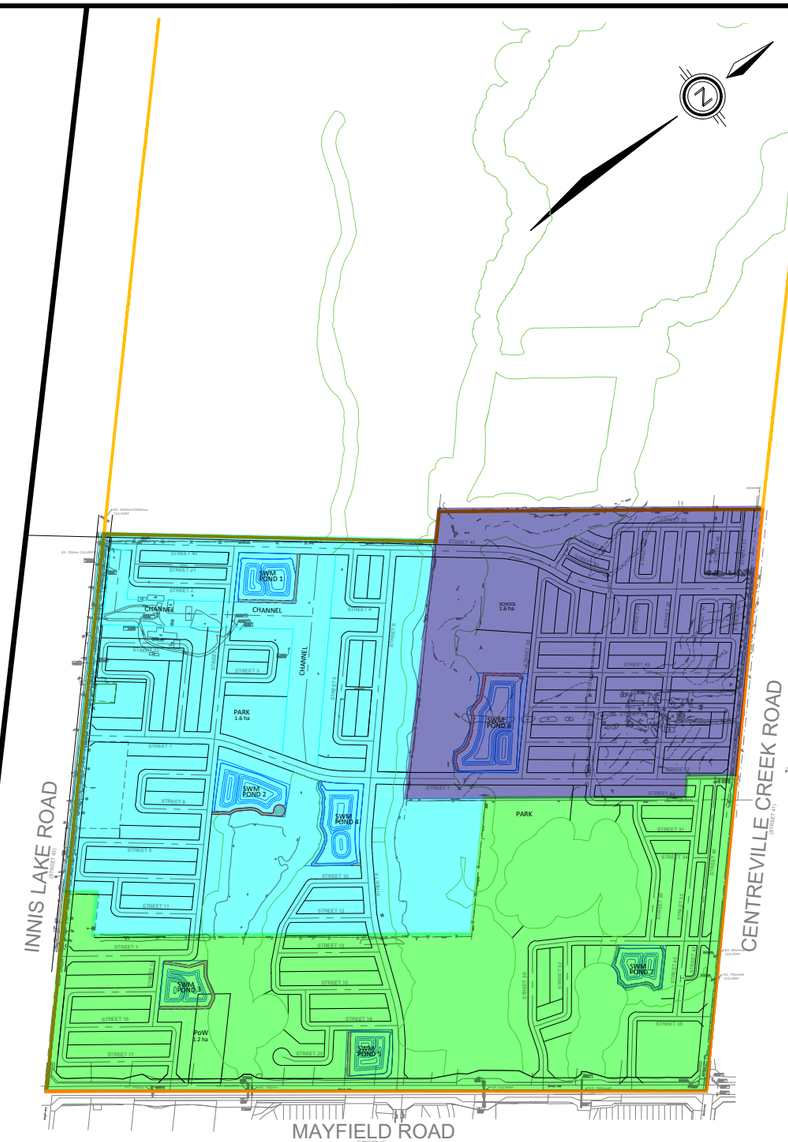
SCALE:	1:20000	PROJECT No.:	22-1297
DATE:	MAY 2026	FIGURE:	18



STAGE 1



STAGE 2

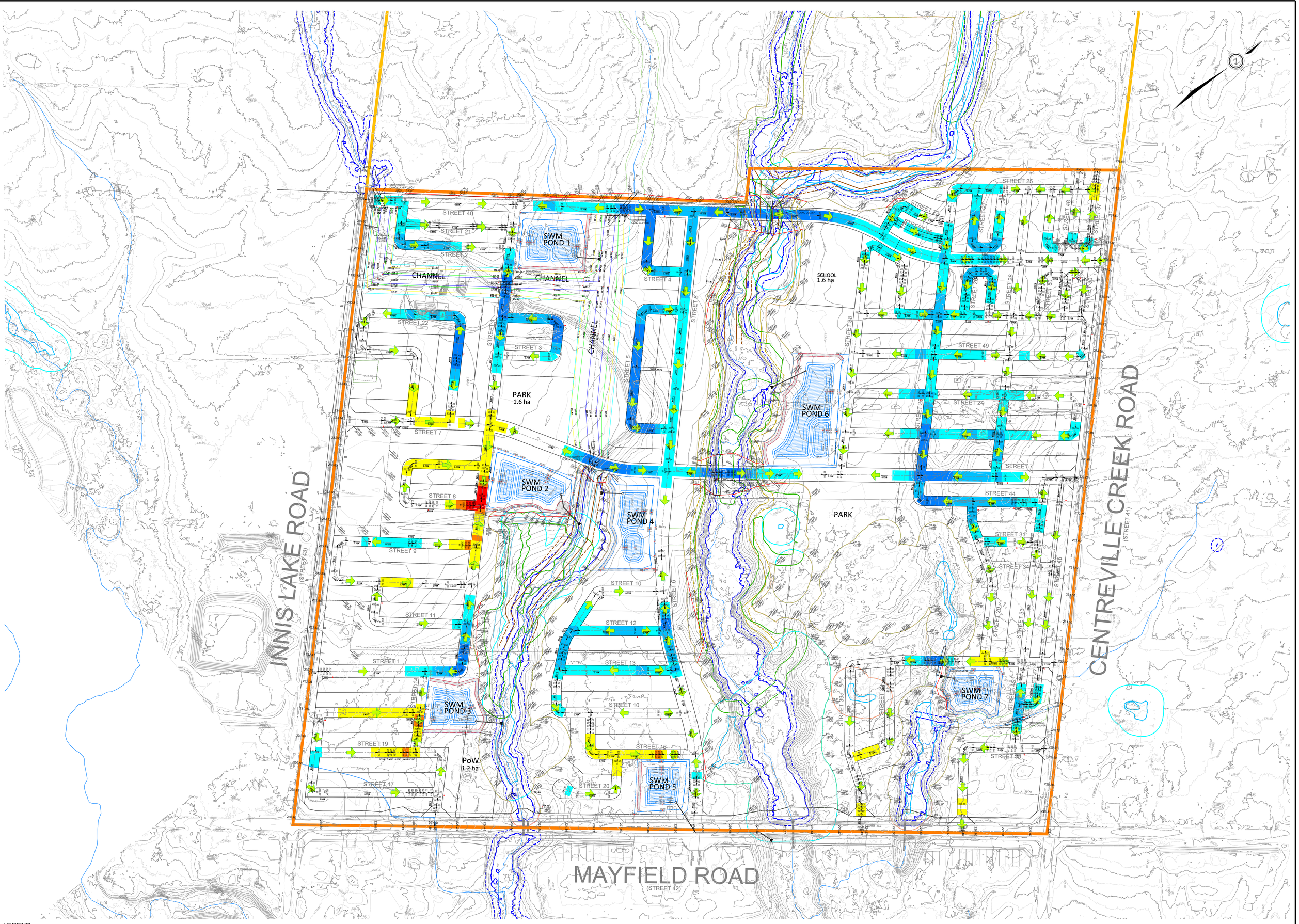


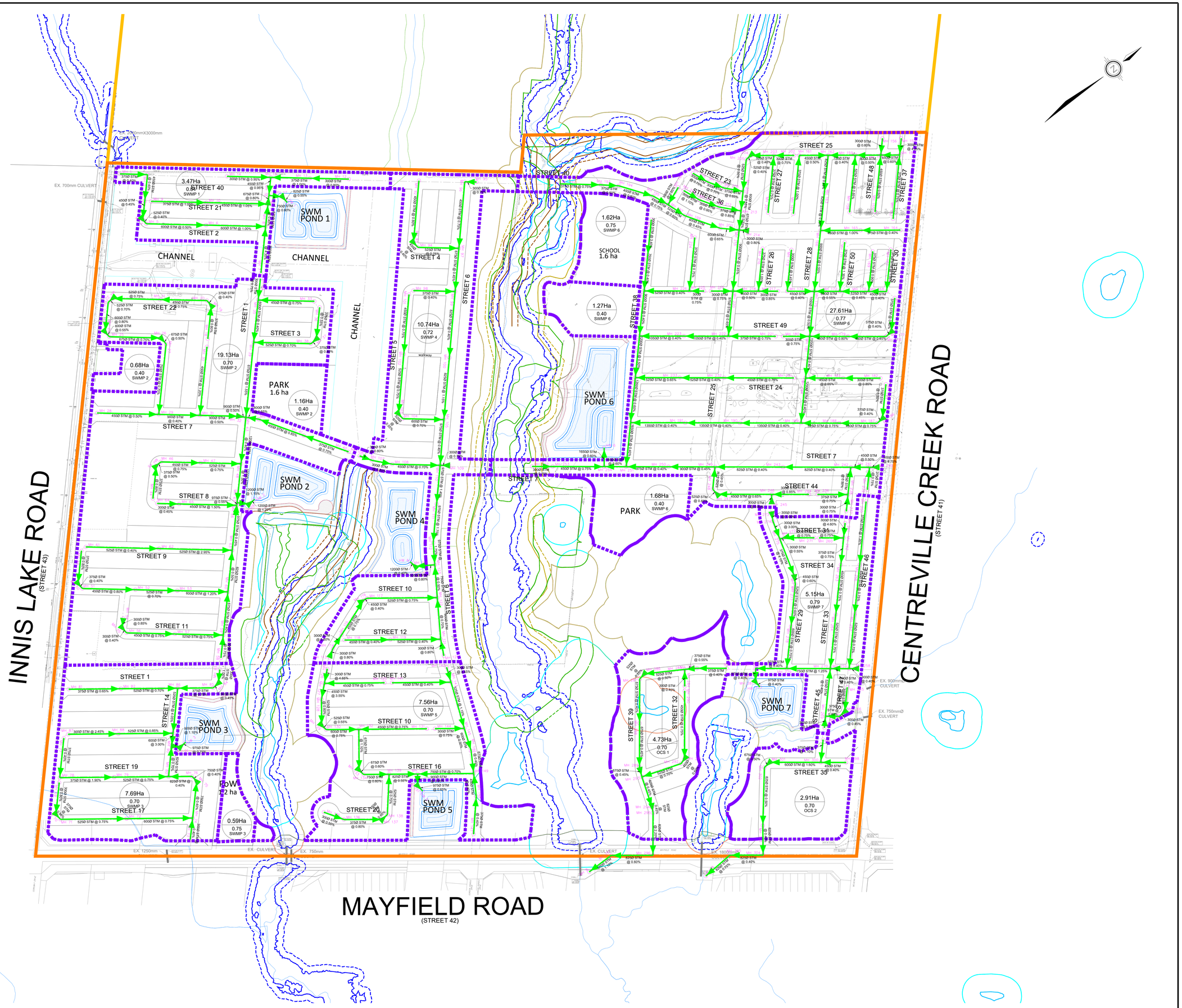
STAGE 3

LEGEND

- PHASE 1 STUDY AREA
- PHASE 2 STUDY AREA
- STAGE 1
- STAGE 2
- STAGE 3

DAVID SCHAEFFER ENGINEERING LTD.	INNIS LAKE ROAD FSR	STAGING & SEQUENCING PLAN	
R.J.BURNSIDE & ASSOCIATES LIMITED			
MALONE GIVEN PARSONS.			
DS CONSULTANTS LTD.	TOWN OF CALEDON	SCALE: 1:7500	PROJECT No.: 22-1297
		DATE: MAY 2026	FIGURE: 19

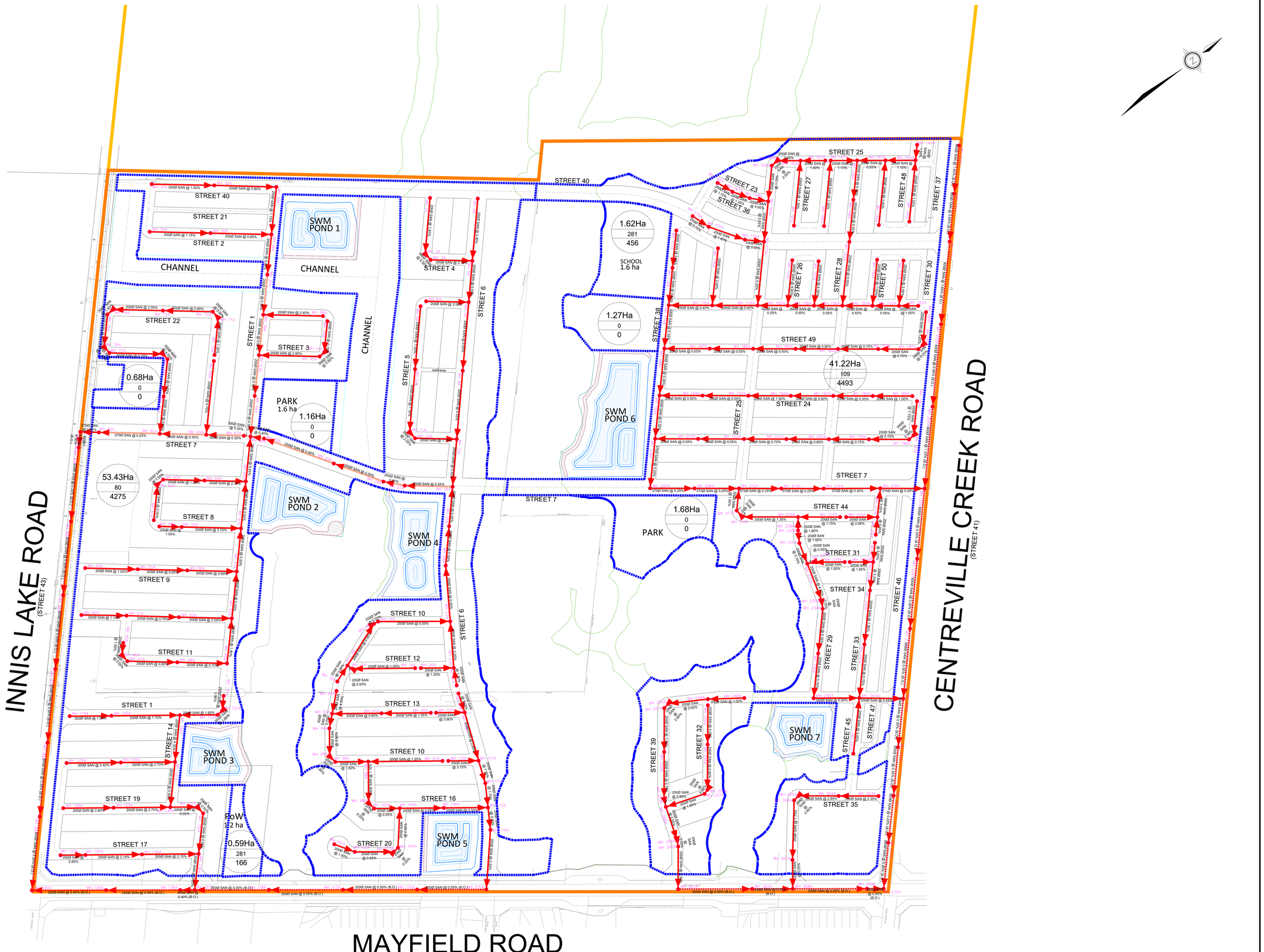

INNIS LAKE ROAD
(STREET 43)
CENTREVILLE CREEK
(STREET 41)
MAYFIELD ROAD
(STREET 42)
SWM POND 1
SWM POND 2
SWM POND 3
SWM POND 4
SWM POND 5
SWM POND 6
SWM POND 7
CHANNEL
CHANNEL
CHANNEL
PARK
1.6 ha
PARK
SCHOOL
1.6 ha
PoW
1.2 ha
STREET 1
STREET 2
STREET 3
STREET 4
STREET 5
STREET 6
STREET 7
STREET 8
STREET 9
STREET 10
STREET 11
STREET 12
STREET 13
STREET 14
STREET 15
STREET 16
STREET 17
STREET 18
STREET 19
STREET 20
STREET



LEGEND

- PHASE 1 STUDY AREA
- PHASE 2 STUDY AREA
- STORM TRIBUTARY AREA
- PROPOSED STORM SEWER
- PROPOSED STORM MAINTENANCE HOLE
- 0.08Ha / 0.65 / SWMP 1 — TOTAL AREA; RUN-OFF COEFFICIENT; DRAINAGE DESTINATION
- EXISTING WATERCOURSE
- TRCA REGULATION LIMIT
- TRCA ECOLOGICAL LAND CLASSIFICATION
- HEADWATER DRAINAGE FEATURE
- TOP OF SLOPE
- REGIONAL FLOODLINE
- 10m REGIONAL FLOODLINE BUFFER
- WETLANDS
- 30m WETLANDS BUFFER
- MEANDER BELT
- 10m MEANDER BELT BUFFER
- WOODLAND
- 20m WOODLAND BUFFER
- LONGTERM STABLE TOP OF SLOPE
- 10m LTSTOS BUFFER

DAVID SCHAEFFER ENGINEERING LTD. R.J.BURNSIDE & ASSOCIATES LIMITED MALONE GIVEN PARSONS. DS CONSULTANTS LTD.	INNIS LAKE ROAD FSR TOWN OF CALEDON	CONCEPTUAL STORM SERVICING PLAN
	SCALE: 1:20000	PROJECT No.: 22-1297
	DATE: MAY 2026	DRAWING: 2

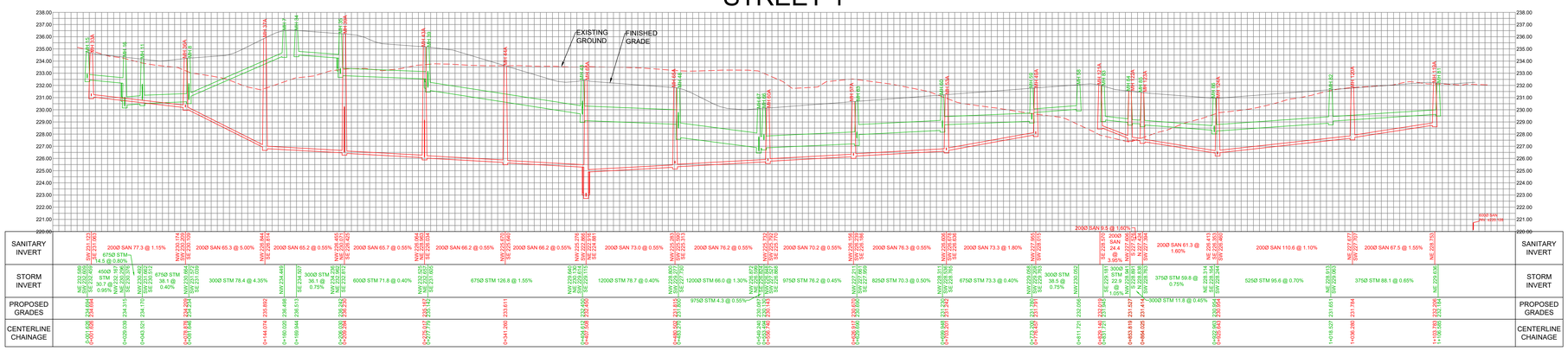


LEGEND

- PHASE 1 STUDY AREA
- PHASE 2 STUDY AREA
- PROPOSED SANITARY SEWER
- PROPOSED DEEP TRUNK AND LOCAL SANITARY SEWER
- SANITARY SEWER BY OTHERS
- SANITARY TRIBUTARY AREA
- SANITARY MANHOLE
- EXISTING WATERCOURSE
- NHS BOUNDARY
- 0.52Ha / 50 / 26 — DRAINAGE AREA / POPULATION DENSITY / POPULATION

DAVID SCHAEFFER ENGINEERING LTD. / R.J.BURNSIDE & ASSOCIATES LIMITED / MALONE GIVEN PARSONS. / DS CONSULTANTS LTD.	INNIS LAKE ROAD FSR TOWN OF CALEDON	CONCEPTUAL SANITARY SERVICING PLAN
		SCALE: 1:2000 PROJECT No.: 22-1297
		DATE: MAY 2026 DRAWING: 3

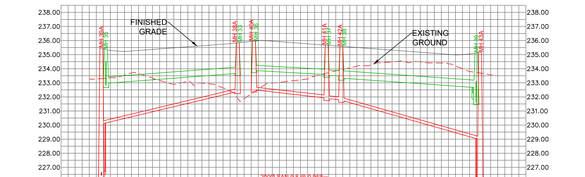
STREET 1



STREET 2



STREET 3



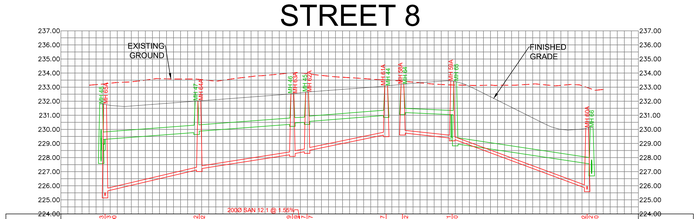
STREET 4



STREET 5



STREET 8



STREET 11

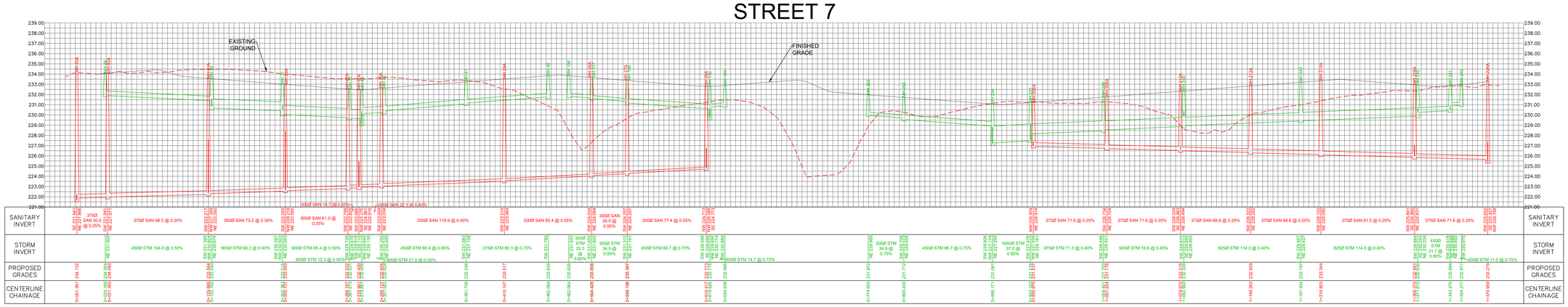


STREET 6

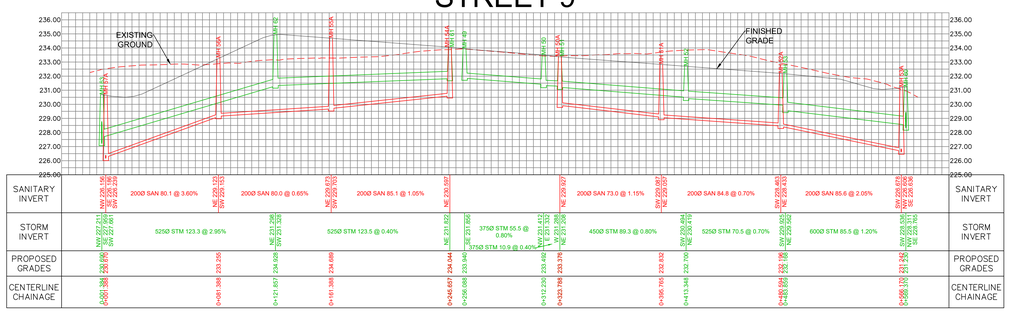


DAVID SCHAEFFER ENGINEERING LTD.	INNIS LAKE ROAD FSR
R.J BURNSIDE & ASSOCIATES LIMITED	TOWN OF CALEDON
MALONE GIVEN PARSONS.	PROFILE
DS CONSULTANTS LTD.	SCALE: AS SHOWN · PROJECT No.: 22-1297 · DATE: MAY 2026 · DRAWING: 4A

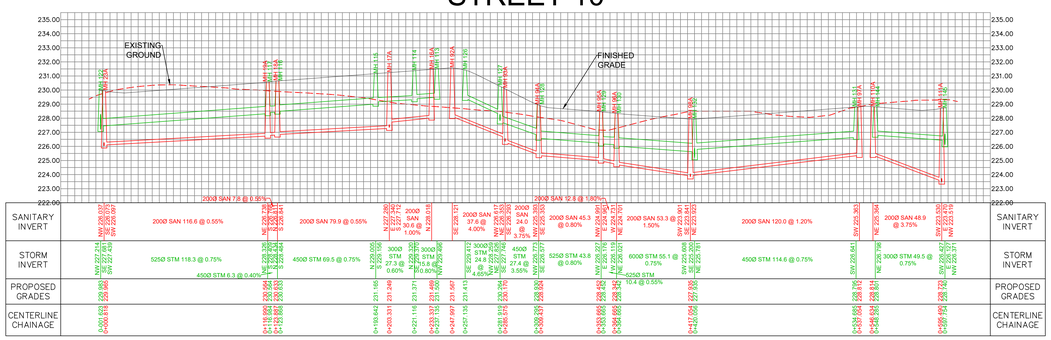
STREET 7



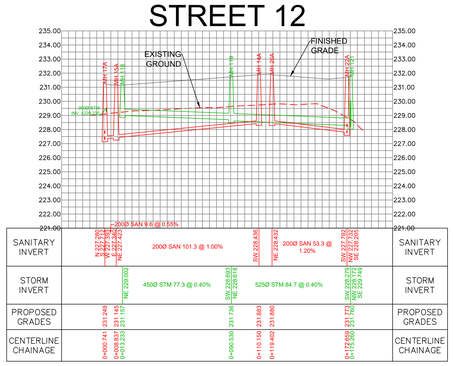
STREET 9



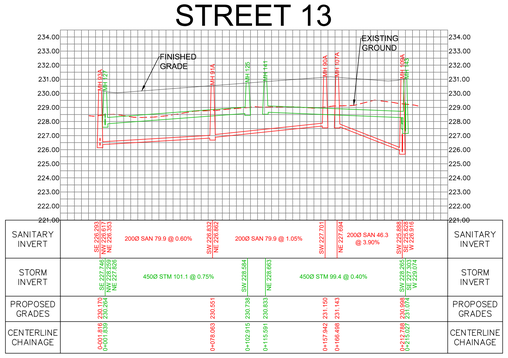
STREET 10



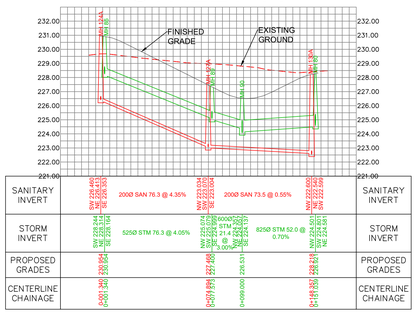
STREET 12



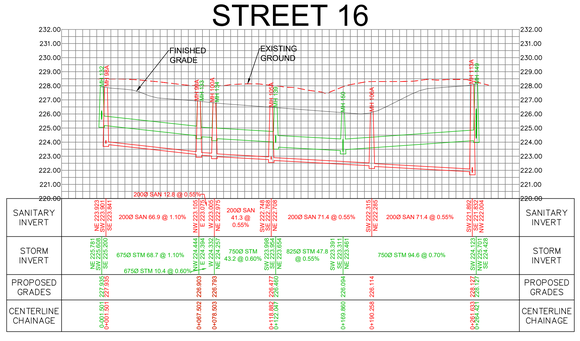
STREET 13



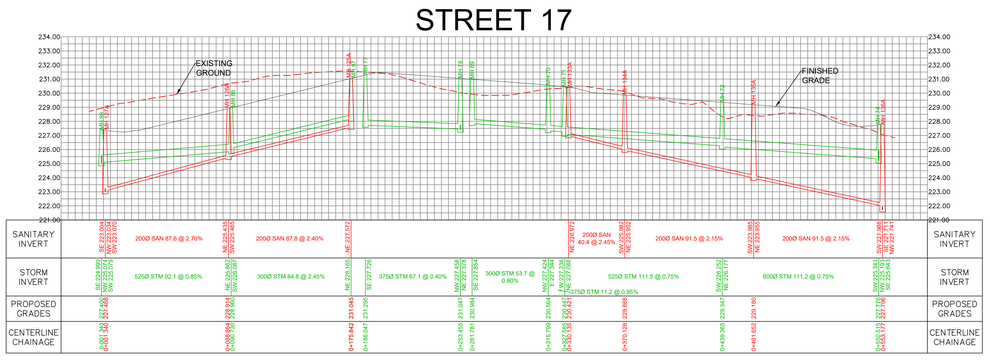
STREET 14



STREET 16

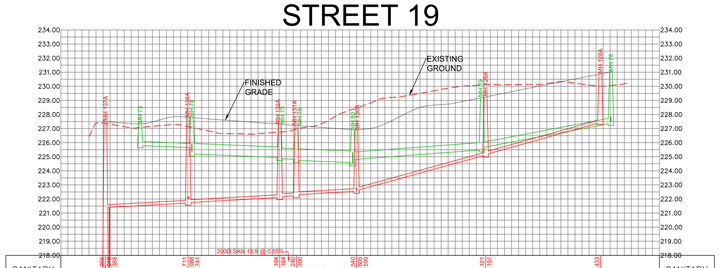


STREET 17



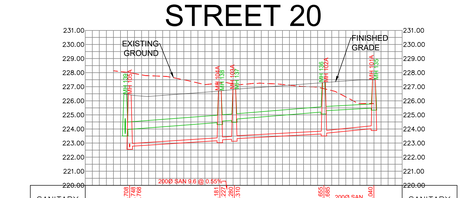
DAVID SCHAEFFER ENGINEERING LTD.	INNIS LAKE ROAD FSR
R.J BURNSIDE & ASSOCIATES LIMITED	
MALONE GIVEN PARSONS.	PROFILE
DS CONSULTANTS LTD.	TOWN OF CALEDON
	SCALE: AS SHOWN · PROJECT No.: 22-1297
	DATE: MAY 2026 · DRAWING: 4B

STREET 19



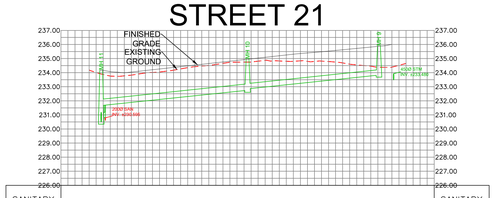
SANITARY INVERT	200Ø SAN 58.7 @ 0.55% · 200Ø SAN 66.0 @ 0.55% · 200Ø SAN 43.7 @ 0.55% · 200Ø SAN 91.7 @ 2.75% · 200Ø SAN 81.5 @ 2.80%	SANITARY INVERT
STORM INVERT	300Ø STM 36.8 @ 0.40% · 750Ø STM 62.0 @ 0.40% · 750Ø STM 11.2 @ 0.40% · 825Ø STM 39.8 @ 0.40% · 525Ø STM 91.6 @ 0.75% · 375Ø STM 91.6 @ 1.90%	STORM INVERT
PROPOSED GRADES		PROPOSED GRADES
CENTERLINE CHAINAGE	0+001.677 · 0+029.310 · 0+060.688 · 0+125.394 · 0+137.225 · 0+178.643 · 0+291.196 · 0+303.037 · 0+365.526	CENTERLINE CHAINAGE

STREET 20



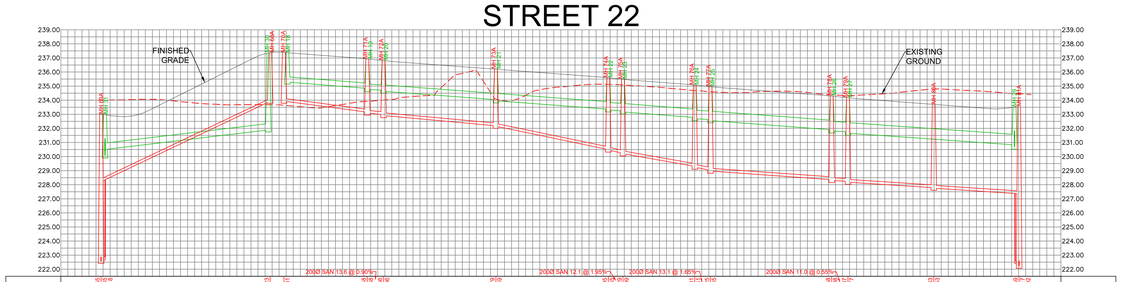
SANITARY INVERT	200Ø SAN 63.6 @ 0.65% · 200Ø SAN 62.8 @ 0.55% · 200Ø SAN 36.5 @ 1.00%	SANITARY INVERT
STORM INVERT	525Ø STM 68.0 @ 0.75% · 450Ø STM 12.0 @ 0.60% · 375Ø STM 64.5 @ 0.80% · 300Ø STM 30.0 @ 0.55%	STORM INVERT
PROPOSED GRADES		PROPOSED GRADES
CENTERLINE CHAINAGE	0+000.982 · 0+060.155 · 0+095.838 · 0+139.376 · 0+174.842	CENTERLINE CHAINAGE

STREET 21



SANITARY INVERT		SANITARY INVERT
STORM INVERT	450Ø STM 103.9 @ 1.05% · 375Ø STM 93.3 @ 1.05%	STORM INVERT
PROPOSED GRADES		PROPOSED GRADES
CENTERLINE CHAINAGE	0+001.387 · 0+102.499 · 0+195.777	CENTERLINE CHAINAGE

STREET 22



SANITARY INVERT	200Ø SAN 120.1 @ 4.75% · 200Ø SAN 60.2 @ 1.30% · 200Ø SAN 80.8 @ 0.90% · 200Ø SAN 80.7 @ 2.05% · 200Ø SAN 52.8 @ 1.70% · 200Ø SAN 86.7 @ 0.70% · 200Ø SAN 60.6 @ 0.65% · 200Ø SAN 60.6 @ 0.65%	SANITARY INVERT
STORM INVERT	450Ø STM 116.0 @ 1.20% · 375Ø STM 56.4 @ 0.80% · 375Ø STM 10.9 @ 0.40% · 450Ø STM 79.5 @ 0.75% · 525Ø STM 79.4 @ 0.75% · 525Ø STM 9.8 @ 0.70% · 600Ø STM 50.3 @ 0.80% · 675Ø STM 86.7 @ 0.75% · 300Ø STM 10.5 @ 0.55% · 750Ø STM 119.2 @ 0.70% · 375Ø STM 13.6 @ 0.50%	STORM INVERT
PROPOSED GRADES		PROPOSED GRADES
CENTERLINE CHAINAGE	0+001.384 · 0+117.282 · 0+178.830 · 0+192.262 · 0+199.973 · 0+213.183 · 0+218.830 · 0+288.198 · 0+312.129 · 0+348.861 · 0+360.683 · 0+417.271 · 0+426.830 · 0+469.705 · 0+485.724 · 0+505.556	CENTERLINE CHAINAGE

STREET 23



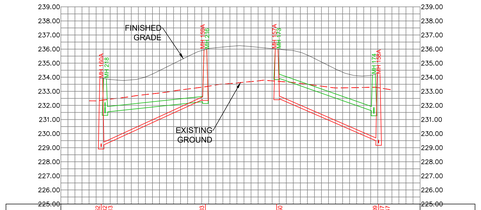
SANITARY INVERT	200Ø SAN 27.6 @ 1.70% · 200Ø SAN 29.9 @ 1.35% · 200Ø SAN 30.2 @ 3.95%	SANITARY INVERT
STORM INVERT	300Ø STM 33.8 @ 0.65% · 300Ø STM 28.6 @ 0.75% · 300Ø STM 29.4 @ 0.70% · 375Ø STM 32.7 @ 0.65%	STORM INVERT
PROPOSED GRADES		PROPOSED GRADES
CENTERLINE CHAINAGE	0+001.482 · 0+035.260 · 0+069.253 · 0+097.244 · 0+139.797 · 0+158.811	CENTERLINE CHAINAGE

STREET 24



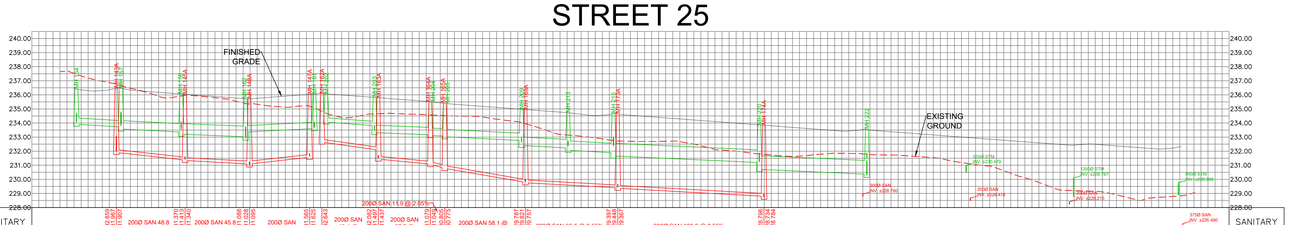
SANITARY INVERT	200Ø SAN 69.5 @ 0.55% · 200Ø SAN 74.2 @ 0.55% · 200Ø SAN 68.6 @ 1.55% · 200Ø SAN 68.6 @ 0.60% · 200Ø SAN 64.1 @ 0.55% · 200Ø SAN 64.1 @ 1.00% · 200Ø SAN 55.6 @ 1.15% · 200Ø SAN 65.0 @ 0.75% · 200Ø SAN 65.0 @ 0.75% · 200Ø SAN 68.6 @ 0.85% · 200Ø SAN 68.6 @ 0.70% · 200Ø SAN 74.3 @ 0.55% · 200Ø SAN 69.4 @ 0.55%	SANITARY INVERT
STORM INVERT	525Ø STM 74.9 @ 0.65% · 525Ø STM 74.9 @ 0.40% · 450Ø STM 117.4 @ 0.75% · 450Ø STM 63.1 @ 0.65% · 300Ø STM 63.1 @ 0.85% · 375Ø STM 58.1 @ 0.50% · 375Ø STM 11.9 @ 0.40% · 450Ø STM 64.2 @ 0.75% · 525Ø STM 64.2 @ 0.75% · 1350Ø STM 102.9 @ 0.40% · 1350Ø STM 92.1 @ 0.40% · 1350Ø STM 92.1 @ 0.40%	STORM INVERT
PROPOSED GRADES		PROPOSED GRADES
CENTERLINE CHAINAGE	0+001.386 · 0+075.556 · 0+145.508 · 0+213.600 · 0+285.806 · 0+296.720 · 0+346.306 · 0+363.274 · 0+376.874 · 0+422.383 · 0+478.561 · 0+488.885 · 0+552.776 · 0+564.110 · 0+618.706 · 0+633.115 · 0+697.898 · 0+719.275 · 0+756.285 · 0+811.364 · 0+835.560 · 0+899.696 · 0+920.402	CENTERLINE CHAINAGE

STREET 26



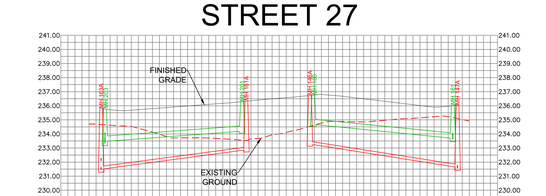
SANITARY INVERT	200Ø SAN 73.7 @ 4.60% · 200Ø SAN 72.2 @ 4.35%	SANITARY INVERT
STORM INVERT	375Ø STM 72.1 @ 1.05% · 300Ø STM 70.1 @ 3.45%	STORM INVERT
PROPOSED GRADES		PROPOSED GRADES
CENTERLINE CHAINAGE	0+001.358 · 0+472.601 · 0+123.196 · 0+195.570	CENTERLINE CHAINAGE

STREET 25



SANITARY INVERT	200Ø SAN 48.8 @ 1.10% · 200Ø SAN 45.8 @ 0.55% · 200Ø SAN 42.7 @ 1.10% · 200Ø SAN 40.1 @ 1.40% · 200Ø SAN 37.7 @ 0.95% · 200Ø SAN 58.1 @ 1.70% · 200Ø SAN 65.5 @ 0.55% · 200Ø SAN 103.8 @ 0.55% · 3150Ø SAN	SANITARY INVERT
STORM INVERT	450Ø STM 31.7 @ 0.60% · 600Ø STM 42.7 @ 0.50% · 750Ø STM 45.8 @ 0.40% · 450Ø STM 48.8 @ 0.50% · 300Ø STM 34.2 @ 0.75% · 525Ø STM 39.3 @ 0.40% · 525Ø STM 54.1 @ 0.50% · 600Ø STM 33.1 @ 0.55% · 675Ø STM 32.2 @ 0.55% · 900Ø STM 103.5 @ 0.45% · 975Ø STM 76.4 @ 0.45%	STORM INVERT
PROPOSED GRADES		PROPOSED GRADES
CENTERLINE CHAINAGE	0+001.699 · 0+035.720 · 0+076.013 · 0+124.852 · 0+167.240 · 0+179.650 · 0+213.026 · 0+252.854 · 0+259.198 · 0+303.386 · 0+317.279 · 0+350.677 · 0+400.791 · 0+417.271 · 0+424.478 · 0+485.724 · 0+494.104 · 0+650.844	CENTERLINE CHAINAGE

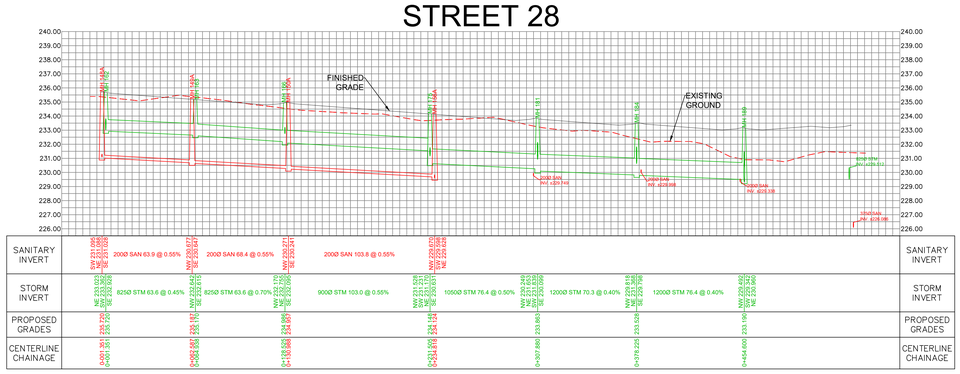
STREET 27



SANITARY INVERT	200Ø SAN 105.7 @ 1.30% · 200Ø SAN 106.5 @ 1.55%	SANITARY INVERT
STORM INVERT	375Ø STM 97.0 @ 0.75% · 375Ø STM 98.8 @ 1.00%	STORM INVERT
PROPOSED GRADES		PROPOSED GRADES
CENTERLINE CHAINAGE	0+001.387 · 0+095.621 · 0+145.570 · 0+247.302 · 0+279.833	CENTERLINE CHAINAGE

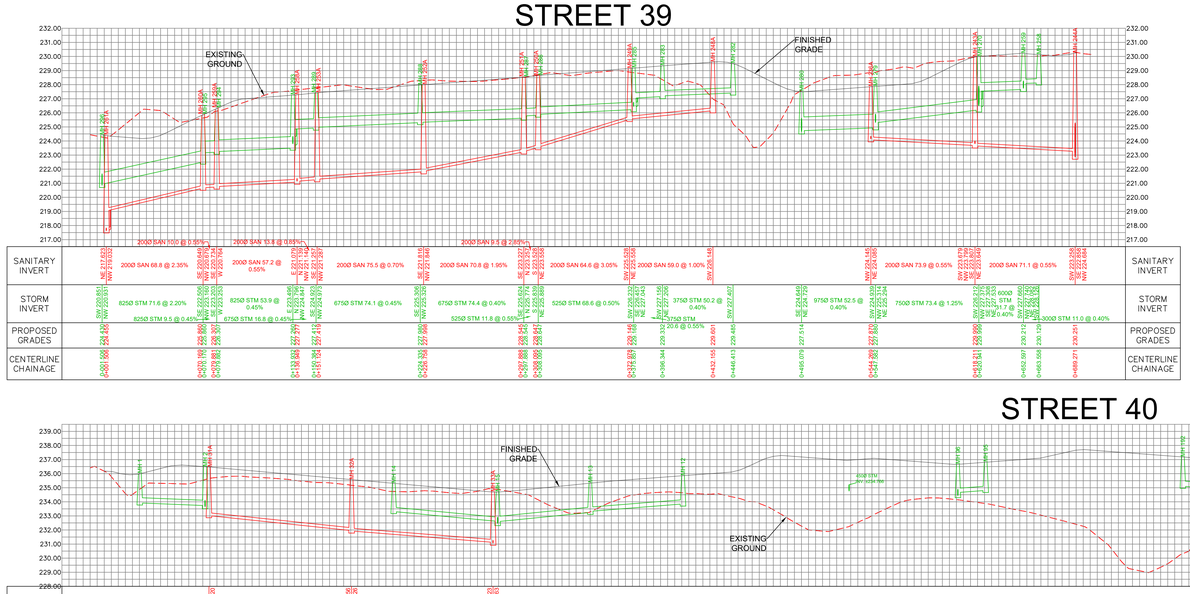
DAVID SCHAEFFER ENGINEERING LTD.	INNIS LAKE ROAD FSR	PROFILE	
R.J. BURNSIDE & ASSOCIATES LIMITED			
MALONE GIVEN PARSONS.	TOWN OF CALEDON	SCALE: AS SHOWN	PROJECT No.: 22-1297
DS CONSULTANTS LTD.		DATE: MAY 2026	DRAWING: 4C

STREET 28


FINISHED GRADE
EXISTING GROUND
240.00
239.00
238.00
237.00
236.00
235.00
234.00
233.00
232.00
231.00
230.00
229.00
228.00
227.00
226.00

| | | |

STREET 39



SANITARY INVERT	200Ø SAN 70.0 @ 0.55% · 200Ø SAN 68.8 @ 2.35% · 200Ø SAN 53.8 @ 0.85% · 200Ø SAN 57.2 @ 0.55% · 200Ø SAN 9.5 @ 2.00% · 200Ø SAN 75.5 @ 0.70% · 200Ø SAN 70.8 @ 1.95% · 200Ø SAN 64.6 @ 3.05% · 200Ø SAN 59.0 @ 1.00% · 200Ø SAN 73.9 @ 0.55% · 200Ø SAN 71.1 @ 0.55%	SANITARY INVERT
STORM INVERT	825Ø STM 71.6 @ 2.20% · 825Ø STM 9.5 @ 0.45% · 825Ø STM 53.9 @ 0.45% · 875Ø STM 16.8 @ 0.40% · 675Ø STM 74.1 @ 0.45% · 675Ø STM 74.4 @ 0.40% · 525Ø STM 68.6 @ 0.50% · 375Ø STM 50.2 @ 0.40% · 375Ø STM 20.6 @ 0.55% · 975Ø STM 52.5 @ 0.40% · 750Ø STM 73.4 @ 1.25% · 600Ø STM 17.7 @ 0.40% · 1,300Ø STM 11.0 @ 0.40%	STORM INVERT
PROPOSED GRADES		PROPOSED GRADES
CENTERLINE CHAINAGE	0+000.000 · 0+025.375 · 0+070.180 · 0+095.555 · 0+130.932 · 0+175.610 · 0+202.332 · 0+236.196 · 0+281.888 · 0+307.888 · 0+345.104 · 0+410.903 · 0+437.875 · 0+468.473 · 0+495.079 · 0+544.289 · 0+571.289 · 0+618.941 · 0+652.397 · 0+693.506 · 0+689.271	CENTERLINE CHAINAGE

STREET 44



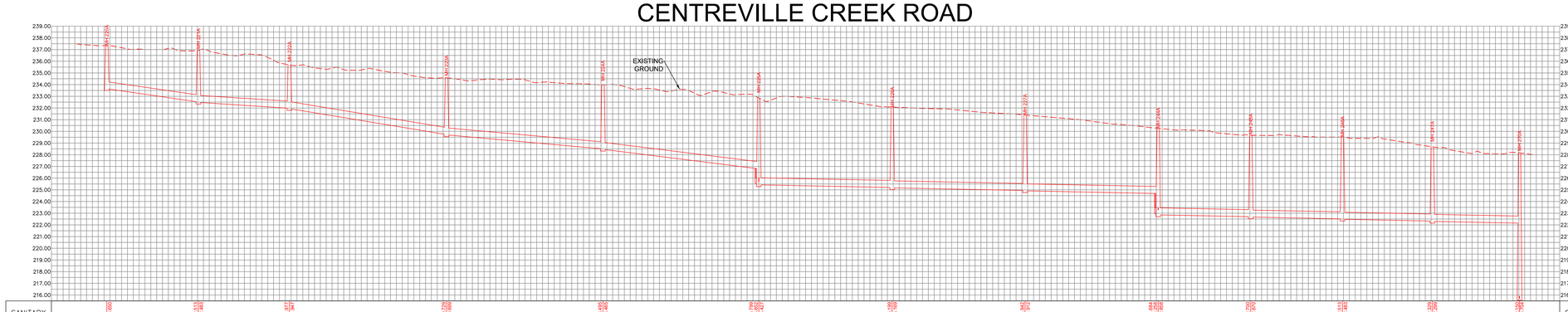
SANITARY INVERT	200Ø SAN 13.8 @ 2.15% · 200Ø SAN 35.9 @ 1.80% · 200Ø SAN 90.1 @ 1.35% · 200Ø SAN 68.0 @ 1.75% · 200Ø SAN 50.5 @ 2.95%	SANITARY INVERT
STORM INVERT	825Ø STM 38.6 @ 0.45% · 450Ø STM 91.8 @ 0.65% · 300Ø STM 62.6 @ 0.85% · 525Ø STM 11.1 @ 0.40% · 375Ø STM 51.3 @ 0.75%	STORM INVERT
PROPOSED GRADES		PROPOSED GRADES
CENTERLINE CHAINAGE	0+000.152 · 0+038.615 · 0+048.300 · 0+132.360 · 0+180.000 · 0+211.040 · 0+260.643 · 0+280.643	CENTERLINE CHAINAGE

STREET 40



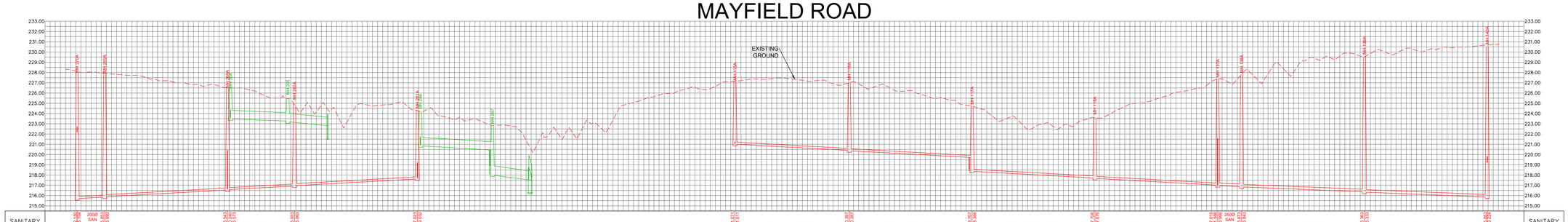
SANITARY INVERT	200Ø SAN 101.3 @ 1.05% · 200Ø SAN 100.4 @ 0.80% · 200Ø SAN 31.1 @ 2.15% · 200Ø SAN 62.2 @ 1.80% · 200Ø SAN 31.4 @ 3.05%	SANITARY INVERT
STORM INVERT	375Ø STM 46.3 @ 0.40% · 300Ø STM 73.8 @ 0.95% · 375Ø STM 65.8 @ 1.00% · 300Ø STM 65.8 @ 0.80% · 375Ø STM 69.7 @ 0.75% · 375Ø STM 30.3 @ 0.60% · 450Ø STM 60.5 @ 0.80% · 450Ø STM 28.7 @ 0.70% · 525Ø STM 33.4 @ 0.65% · 600Ø STM 63.8 @ 0.45% · 600Ø STM 21.9 @ 0.65% · 1,200Ø STM 14.2 @ 0.80%	STORM INVERT
PROPOSED GRADES		PROPOSED GRADES
CENTERLINE CHAINAGE	0+025.375 · 0+074.180 · 0+175.610 · 0+295.537 · 0+378.000 · 0+345.104 · 0+410.903 · 0+466.076 · 0+525.757 · 0+765.757 · 0+833.380 · 0+860.300 · 0+905.194 · 0+960.617 · 0+980.617 · 1+045.871 · 1+066.871 · 1+079.730 · 1+097.004 · 1+120.074 · 1+287.233 · 1+354.392	CENTERLINE CHAINAGE

CENTREVILLE CREEK ROAD



SANITARY INVERT	600Ø SAN 78.4 @ 1.45% · 600Ø SAN 77.8 @ 0.65% · 600Ø SAN 134.4 @ 1.65% · 600Ø SAN 133.8 @ 0.90% · 600Ø SAN 133.3 @ 1.25% · 600Ø SAN 114.2 @ 0.20% · 600Ø SAN 113.6 @ 0.20% · 600Ø SAN 113.9 @ 0.20% · 600Ø SAN 79.1 @ 0.20% · 600Ø SAN 78.5 @ 0.20% · 600Ø SAN 76.8 @ 0.20% · 600Ø SAN 74.6 @ 0.20%	SANITARY INVERT
STORM INVERT		STORM INVERT
PROPOSED GRADES		PROPOSED GRADES
CENTERLINE CHAINAGE	0+017.360 · 0+065.750 · 0+173.554 · 0+207.900 · 0+441.721 · 0+474.979 · 0+499.130 · 0+663.728 · 0+916.971 · 0+965.731 · 1+074.294 · 1+151.667 · 1+225.689	CENTERLINE CHAINAGE

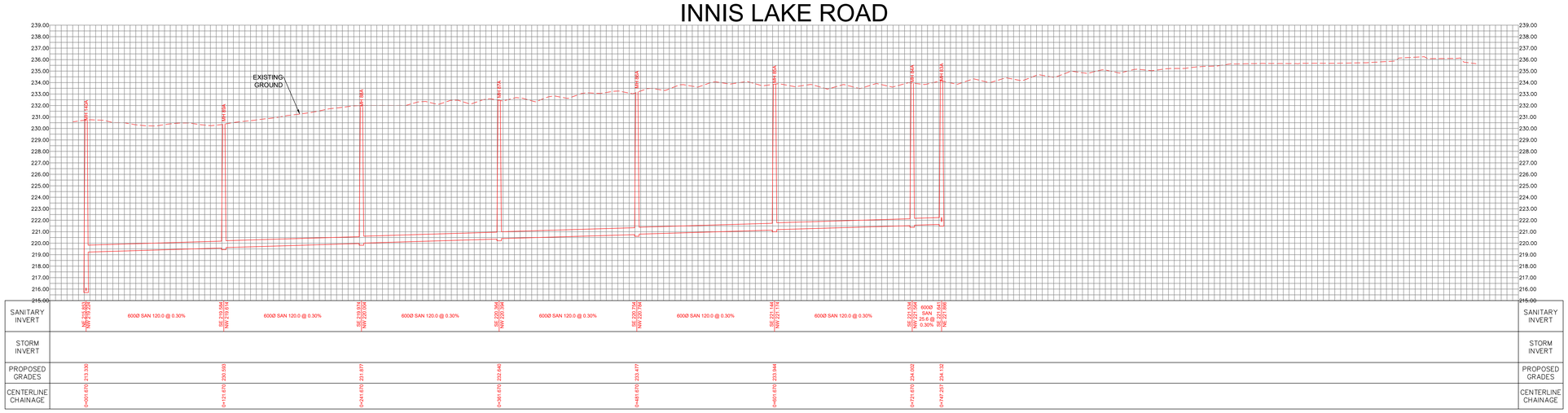
MAYFIELD ROAD



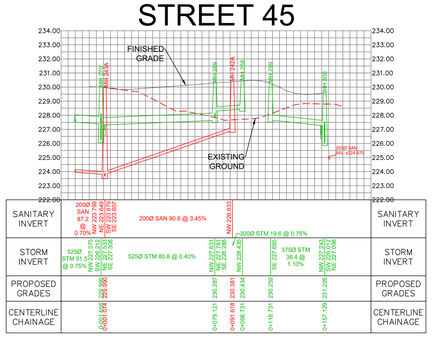
SANITARY INVERT	200Ø SAN 27.8 @ 0.55% · 200Ø SAN 120.0 @ 0.55% · 200Ø SAN 65.5 @ 0.55% · 200Ø SAN 120.0 @ 0.55% · 200Ø SAN 111.7 @ 0.55% · 200Ø SAN 120.0 @ 0.55% · 200Ø SAN 120.0 @ 0.55% · 200Ø SAN 120.0 @ 0.55% · 250Ø SAN 23.3 @ 0.40% · 250Ø SAN 120.0 @ 0.40% · 250Ø SAN 120.0 @ 0.40%	SANITARY INVERT
STORM INVERT	825Ø STM 56.0 @ 0.40% · 825Ø STM 53.7 @ 0.75% · 825Ø STM 70.3 @ 0.60% · 900Ø STM 46.2 @ 1.10%	STORM INVERT
PROPOSED GRADES		PROPOSED GRADES
CENTERLINE CHAINAGE	0+001.393 · 0+028.310 · 0+148.310 · 0+197.250 · 0+213.807 · 0+247.692 · 0+333.693 · 0+444.096 · 0+755.796 · 0+875.796 · 0+995.796 · 1+115.796 · 1+139.141 · 1+259.141 · 1+379.141	CENTERLINE CHAINAGE

DAVID SCHAEFFER ENGINEERING LTD. · R.J.BURNSIDE & ASSOCIATES LIMITED · MALONE GIVEN PARSONS. · DS CONSULTANTS LTD.	INNIS LAKE ROAD FSR · TOWN OF CALEDON	PROFILE	
		SCALE: AS SHOWN	PROJECT No.: 22-1297
		DATE: MAY 2026	DRAWING: 4E

INNIS LAKE ROAD



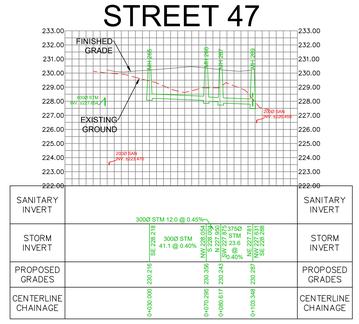
STREET 45



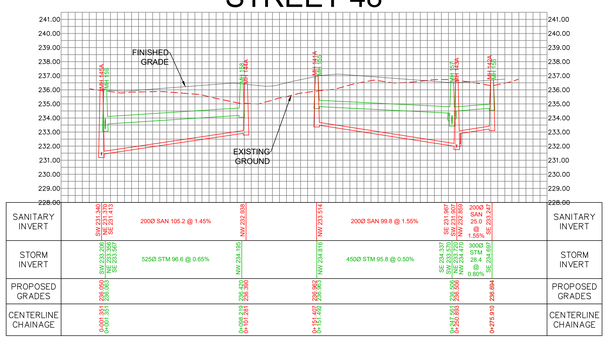
STREET 46



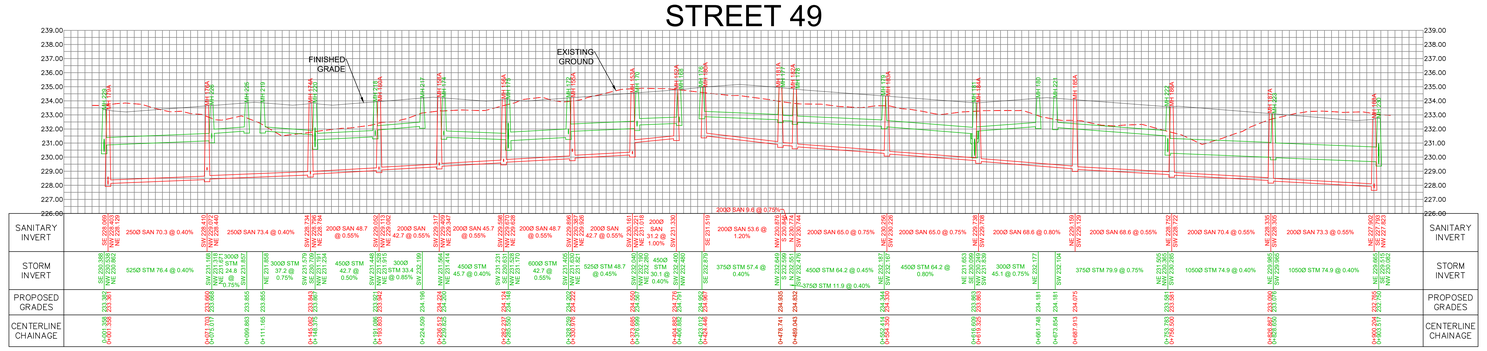
STREET 47



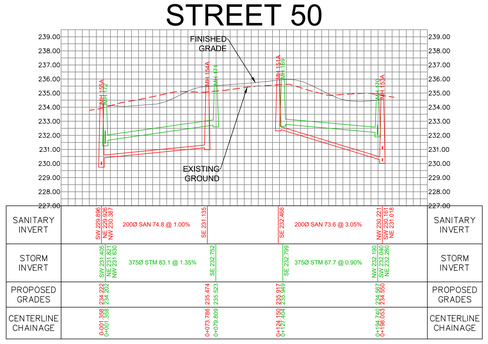
STREET 48



STREET 49



STREET 50

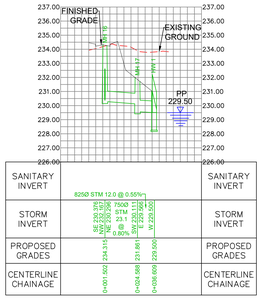


DAVID SCHAEFFER ENGINEERING LTD.	
R.J.BURNSIDE & ASSOCIATES LIMITED	INNIS LAKE ROAD FSR
MALONE GIVEN PARSONS.	
DS CONSULTANTS LTD.	TOWN OF CALEDON

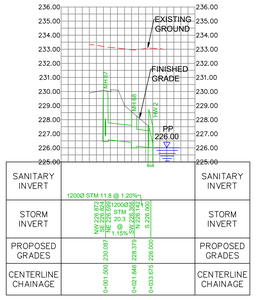
PROFILE

SCALE:	AS SHOWN	PROJECT No.:	22-1297
DATE:	MAY 2026	DRAWING:	4F

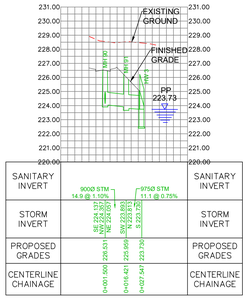
SWM POND 1 INLET



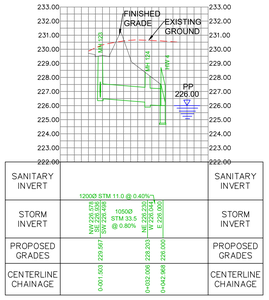
SWM POND 2 INLET



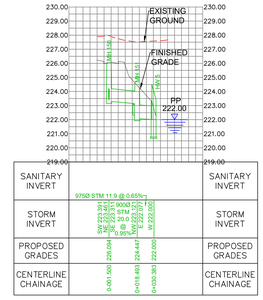
SWM POND 3 INLET



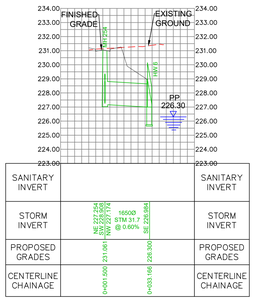
SWM POND 4 INLET



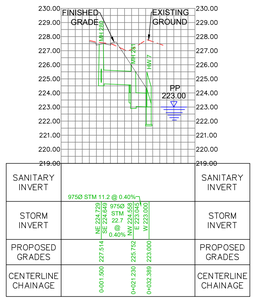
SWM POND 5 INLET



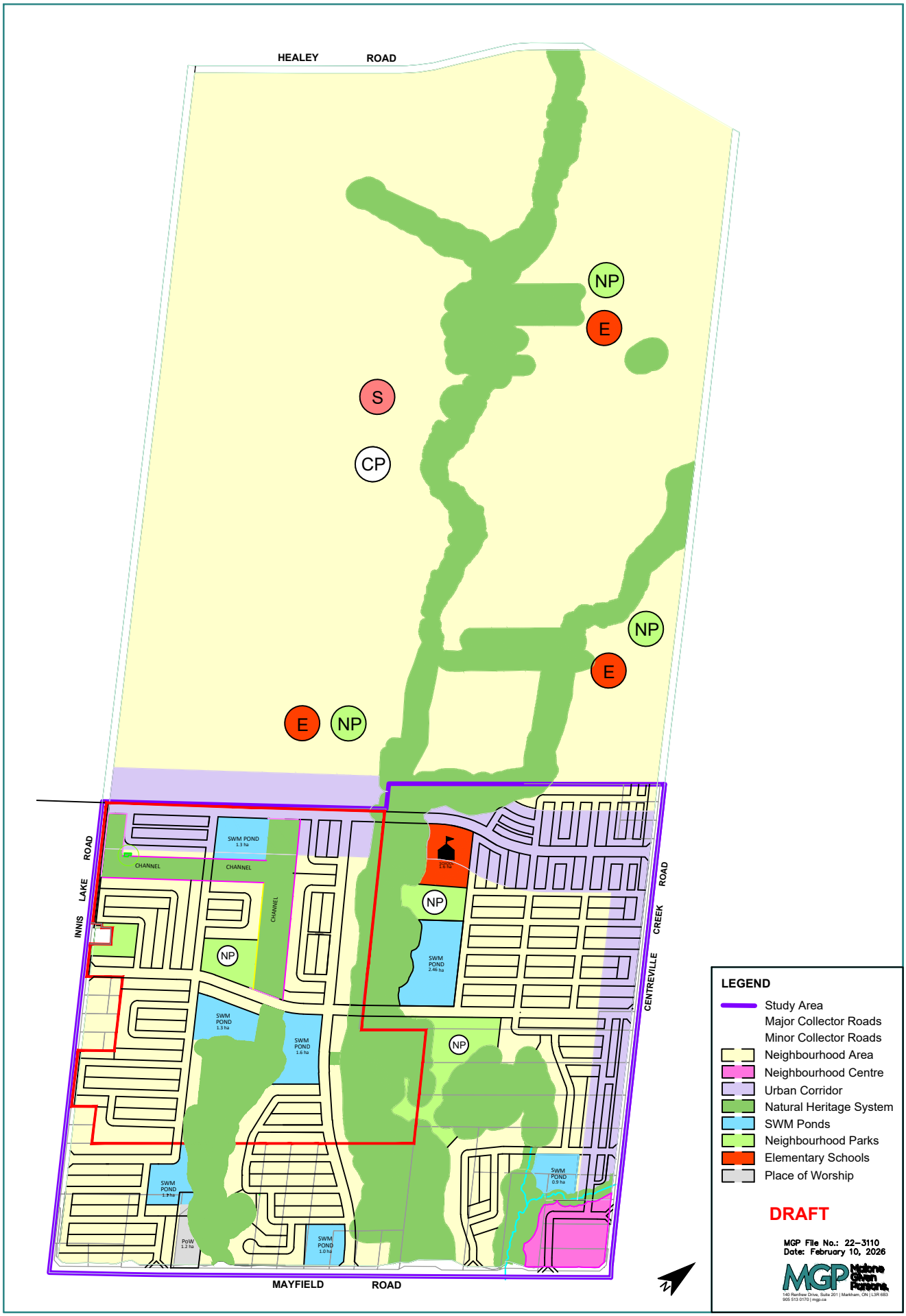
SWM POND 6 INLET



SWM POND 7 INLET



DAVID SCHAEFFER ENGINEERING LTD.	INNIS LAKE ROAD FSR	PROFILE	
R.J BURNSIDE & ASSOCIATES LIMITED			
MALONE GIVEN PARSONS.			
DS CONSULTANTS LTD.	TOWN OF CALEDON	SCALE: AS SHOWN	PROJECT No.: 22-1297
		DATE: MAY 2026	DRAWING: 4G



SECONDARY PLAN

TOWN OF CALEDON
REGION OF PEEL

DAVID SCHAEFFER ENGINEERING LTD.
600 ALDEN ROAD, SUITE 606
MARKHAM, ON L3R 0E7
TEL: (905) 475-3080
FAX: (905) 475-3081

STORM SEWER DESIGN

TOWN OF CALEDON

	LOCATION		5 YEAR				10 YEAR				100 YEAR				FLOW					SEWER DATA								
Street	From MH	To MH	AREA (Ha)	C	Indiv. 2.78 AC	Accum. 2.78 AC	AREA (Ha)	C	Indiv. 2.78 AC	Accum. 2.78 AC	AREA (Ha)	C	Indiv. 2.78 AC	Accum. 2.78 AC	Time of Conc. (min)	Intensity 5 Year (mm/h)	Intensity 10 Year (mm/h)	Intensity 100 Year (mm/h)	Peak Flow Q (l/s)	DIA. (mm) (actual)	DIA. (mm) (nominal)	TYPE	SLOPE (%)	LENGTH (m)	CAPACITY (l/s)	VELOCITY (m/s)	TIME OF FLOW (min.)	RATIO Q/Q full
STREET 32																												
	284	285	0.20	0.70	0.39	0.39			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	43	300	300	PVC	0.40	28.6	61	0.87	0.55	0.70
To STREET 39, Pipe 285 - 286						0.39				0.00				0.00	10.55													
	290	291	0.80	0.70	1.56	1.56			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	171	450	450	CONC	0.75	114.4	247	1.55	1.23	0.69
	291	292	0.07	0.70	0.14	1.69			0.00	0.00			0.00	0.00	11.23	104.30	127.70	188.55	177	450	450	CONC	0.60	9.9	221	1.39	0.12	0.80
	292	293	0.49	0.70	0.95	2.65			0.00	0.00			0.00	0.00	11.35	103.81	127.11	187.79	275	525	525	CONC	0.70	69.8	360	1.66	0.70	0.76
To STREET 39, Pipe 293 - 294						2.65				0.00				0.00	12.05													
STREET 35																												
	298	300	0.45	0.85	1.06	1.06			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	117	450	450	CONC	0.40	42.7	180	1.13	0.63	0.65
Contribution From STREET 45, Pipe 299 - 300						0.95				0.00				0.00	10.38													
	300	301	0.90	0.85	2.13	4.14			0.00	0.00			0.00	0.00	10.63	106.84	130.78	192.49	442	600	600	CONC	1.60	86.0	777	2.75	0.52	0.57
	301	302	0.13	0.85	0.31	4.44			0.00	0.00			0.00	0.00	11.15	104.63	128.10	189.06	465	675	675	CONC	0.50	12.6	594	1.66	0.13	0.78
	302	303	1.03	0.85	2.43	6.88			0.00	0.00			0.00	0.00	11.28	104.10	127.47	188.25	716	825	825	CONC	0.50	97.9	1015	1.90	0.86	0.71
	303	304			0.00	6.88			0.00	0.00			0.00	0.00	12.14	100.70	123.34	182.90	692	825	825	CONC	0.40	49.8	908	1.70	0.49	0.76
To MAYFIELD ROAD, Pipe 304 - 305						6.88				0.00				0.00	12.62													
MAYFIELD ROAD																												
Contribution From STREET 35, Pipe 303 - 304						6.88				0.00				0.00	12.62													
	304	305			0.00	6.88			0.00	0.00			0.00	0.00	12.62	98.86	121.11	180.00	680	825	825	CONC	0.40	56.0	908	1.70	0.55	0.75
	305	HW9			0.00	6.88			0.00	0.00			0.00	0.00	13.17	96.89	118.71	176.84	666	825	825	CONC	0.75	53.7	1243	2.33	0.38	0.54
Contribution From STREET 39, Pipe 295 - 296						9.19				0.00				0.00	14.75													
	296	297			0.00	9.19			0.00	0.00			0.00	0.00	14.75	91.64	112.32	168.36	842	825	825	CONC	0.60	70.3	1112	2.08	0.56	0.76
	297	HW8			0.00	9.19			0.00	0.00			0.00	0.00	15.32	89.91	110.22	165.54	826	900	900	CONC	1.10	46.2	1899	2.98	0.26	0.43
STREET 21																												
	9	10	0.36	0.84	0.84	0.84			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	92	375	375	PVC	1.05	93.3	180	1.63	0.96	0.51
	10	11	0.40	0.84	0.93	1.77			0.00	0.00			0.00	0.00	10.96	105.44	129.08	190.32	186	450	450	CONC	1.05	103.9	292	1.84	0.94	0.64
To STREET 1, Pipe 11 - 16						1.77				0.00				0.00	11.90													
STREET 2																												
Contribution From STREET 40, Pipe 1 - 2						0.00				0.00				0.42	10.77													
	2	3	0.17	0.84	0.40	0.40			0.00	0.00			0.00	0.42	10.77	106.23	130.04	191.55	122	450	450	CONC	0.40	45.1	180	1.13	0.66	0.68
	3	4	0.12	0.84	0.28	0.67			0.00	0.00			0.00	0.42	11.43	103.47	126.70	187.25	148	450	450	CONC	0.45	31.4	191	1.20	0.44	0.77
	4	5	0.04	0.84	0.09	0.77			0.00	0.00			0.00	0.42	11.87	101.74	124.60	184.54	155	525	525	CONC	0.40	9.2	272	1.26	0.12	0.57
	5	6	0.39	0.84	0.91	1.67			0.00	0.00			0.00	0.42	11.99	101.26	124.02	183.79	246	600	600	CONC	0.50	100.7	434	1.54	1.09	0.57
	6	8	0.39	0.84	0.91	2.58			0.00	0.00			0.00	0.42	13.08	97.21	119.11	177.36	325	600	600	CONC	1.00	100.4	614	2.17	0.77	0.53
To STREET 1, Pipe 8 - 11						2.58				0.00				0.42	13.85													
POND 1 INLET																												
Contribution From STREET 1, Pipe 11 - 16						5.53				0.00				0.42	14.39													
Contribution From STREET 1, Pipe 15 - 16						2.11				0.00				0.00	11.88													
	16	17			0.00	7.65			0.00	0.00			0.00	0.42	14.39	92.78	113.71	170.22	781	750	750	CONC	0.80	23.1	996	2.25	0.17	0.78
	17	HW1			0.00	7.65			0.00	0.00			0.00	0.42	14.57	92.23	113.05	169.33	776	825	825	CONC	0.55	12.0	1065	1.99	0.10	0.73
STREET 9																												
	61	62	0.77	0.70	1.50	1.50			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	164	525	525	CONC	0.40	123.5	272	1.26	1.64	0.60
	62	63	0.77	0.70	1.50	3.00			0.00	0.00			0.00	0.00	11.64	102.64	125.69	185.95	308	525	525	CONC	2.95	123.3	739	3.41	0.60	0.42
To STREET 1, Pipe 63 - 66						3.00				0.00				0.00	12.24													
	49	50	0.35	0.70	0.68	0.68			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	75	375	375	PVC	0.80	55.5	157	1.42	0.65	0.48
	50	51	0.07	0.70	0.14	0.82			0.00	0.00			0.00	0.00	10.65	106.74	130.65	192.33	87	375	375	PVC	0.40	10.9	111	1.00	0.18	0.79
	51	52	0.56	0.70	1.09	1.91			0.00	0.00			0.00	0.00	10.83	105.96	129.71	191.13	202	450	450	CONC	0.80	89.3	255	1.60	0.93	0.79
	52	53	0.44	0.70	0.86	2.76			0.00	0.00			0.00	0.00	11.76	102.15	125.10	185.19	282	525	525	CONC	0.70	70.5	360	1.66	0.71	0.78
	53	60	0.54	0.70	1.05	3.81			0.00	0.00			0.00	0.00	12.47	99.44	121.82	180.92	379	600	600	CONC	1.20	85.5	673	2.38	0.60	0.56
To STREET 1, Pipe 60 - 63						3.81				0.00				0.00	13.07													

Definitions:
Q = 2.78 AIC, where
Q = Peak Flow in Litres per second (L/s)
A = Areas in hectares (ha)
I = Rainfall Intensity (mm/h)
C = Runoff Coefficient

Notes:
1) Town of Caledon Rainfall-Intensity Curve
2) Min. Velocity = 0.75 m/s
3) Minimum 10 min time of concentration

Designed: K.D.	PROJECT: **Innis Lake Road**		
Checked: K.D.	LOCATION **TOWN OF CALEDON**		
Dwg. Reference: 0	File Ref: 22-1297	Date: May 2026	Sheet No. SHEET 1 OF 12

DAVID SCHAEFFER ENGINEERING LTD.
600 ALDEN ROAD, SUITE 606
MARKHAM, ON L3R 0E7
TEL: (905) 475-3080
FAX: (905) 475-3081

STORM SEWER DESIGN

TOWN OF CALEDON

	LOCATION		5 YEAR				10 YEAR				100 YEAR				FLOW					SEWER DATA								
			AREA	C	Indiv.	Accum.	AREA	C	Indiv.	Accum.	AREA	C	Indiv.	Accum.	Time of	Intensity	Intensity	Intensity	Peak Flow	DIA. (mm)	DIA. (mm)	TYPE	SLOPE	LENGTH	CAPACITY	VELOCITY	TIME OF	RATIO
Street	From MH	To MH	(Ha)		2.78 AC	2.78 AC	(Ha)		2.78 AC	2.78 AC	(Ha)		2.78 AC	2.78 AC	Conc. (min)	5 Year (mm/h)	10 Year (mm/h)	100 Year (mm/h)	Q (l/s)	(actual)	(nominal)		(%)	(m)	(l/s)	(m/s)	FLOW (min.)	Q/Q full

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STORM SEWER DESIGN

	LOCATION		5 YEAR				10 YEAR				100 YEAR				FLOW					SEWER DATA								
			AREA	C	Indiv.	Accum.	AREA	C	Indiv.	Accum.	AREA	C	Indiv.	Accum.	Time of	Intensity	Intensity	Intensity	Peak Flow	DIA. (mm)	DIA. (mm)	TYPE	SLOPE	LENGTH	CAPACITY	VELOCITY	TIME OF	RATIO
Street	From MH	To MH	(Ha)		2.78 AC	2.78 AC	(Ha)		2.78 AC	2.78 AC	(Ha)		2.78 AC	2.78 AC	Conc. (min)	5 Year (mm/h)	10 Year (mm/h)	100 Year (mm/h)	Q (l/s)	(actual)	(nominal)		(%)	(m)	(l/s)	(m/s)	FLOW (min.)	Q/Q full
STREET 11																												
	54	55	0.10	0.70	0.19	0.19			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	21	300	300	PVC	0.85	16.0	89	1.26	0.21	0.24
	55	56	0.07	0.70	0.14	0.33			0.00	0.00			0.00	0.00	10.21	108.68	133.00	195.32	36	300	300	PVC	0.40	11.0	61	0.87	0.21	0.59
	56	57	0.51	0.70	0.99	1.32			0.00	0.00			0.00	0.00	10.42	107.74	131.86	193.87	143	450	450	CONC	0.75	81.7	247	1.55	0.88	0.58
	57	59	0.51	0.70	0.99	2.32			0.00	0.00			0.00	0.00	11.30	104.00	127.35	188.09	241	525	525	CONC	0.75	81.4	372	1.72	0.79	0.65
To STREET 1, Pipe 59 - 60						2.32				0.00				0.00	12.09													
STREET 8																												
	64	65	0.23	0.70	0.45	0.45			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	49	300	300	PVC	0.45	37.2	65	0.92	0.68	0.76
	65	66	0.61	0.70	1.19	1.63			0.00	0.00			0.00	0.00	10.68	106.63	130.53	192.17	174	450	450	CONC	1.50	96.9	349	2.20	0.74	0.50
To STREET 1, Pipe 66 - 67						1.63				0.00				0.00	11.41													
	44	45	0.35	0.70	0.68	0.68			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	75	375	375	PVC	0.80	55.5	157	1.42	0.65	0.48
	45	46	0.06	0.70	0.12	0.80			0.00	0.00			0.00	0.00	10.65	106.74	130.65	192.33	85	375	375	PVC	0.50	9.8	124	1.12	0.15	0.69
	46	47	0.42	0.70	0.82	1.62			0.00	0.00			0.00	0.00	10.80	106.11	129.90	191.36	171	450	450	CONC	0.75	67.7	247	1.55	0.73	0.69
	47	48	0.42	0.70	0.82	2.43			0.00	0.00			0.00	0.00	11.52	103.10	126.25	186.67	251	525	525	CONC	0.75	67.7	372	1.72	0.66	0.67
To STREET 1, Pipe 48 - 67						2.43				0.00				0.00	12.18													
STREET 22																												
	30	31	0.73	0.70	1.42	1.42			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	156	450	450	CONC	1.20	116.0	312	1.96	0.98	0.50
To STREET 7, Pipe 31 - 32						1.42				0.00				0.00	10.98													
	18	19	0.35	0.70	0.68	0.68			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	75	375	375	PVC	0.80	56.4	157	1.42	0.66	0.48
	19	20	0.07	0.70	0.14	0.82			0.00	0.00			0.00	0.00	10.66	106.69	130.60	192.26	87	375	375	PVC	0.40	10.9	111	1.00	0.18	0.79
	20	21	0.50	0.70	0.97	1.79			0.00	0.00			0.00	0.00	10.84	105.92	129.66	191.06	190	450	450	CONC	0.75	79.5	247	1.55	0.85	0.77
	21	22	0.50	0.70	0.97	2.76			0.00	0.00			0.00	0.00	11.70	102.41	125.41	185.59	283	525	525	CONC	0.75	79.4	372	1.72	0.77	0.76
	22	23	0.06	0.70	0.12	2.88			0.00	0.00			0.00	0.00	12.47	99.45	121.83	180.93	286	525	525	CONC	0.70	9.8	360	1.66	0.10	0.80
	23	24	0.32	0.70	0.62	3.50			0.00	0.00			0.00	0.00	12.56	99.09	121.38	180.35	347	600	600	CONC	0.80	50.3	549	1.94	0.43	0.63
	24	25	0.07	0.70	0.14	3.64			0.00	0.00			0.00	0.00	13.00	97.52	119.48	177.85	355	600	600	CONC	0.55	10.5	455	1.61	0.11	0.78
	25	26	0.54	0.70	1.05	4.69			0.00	0.00			0.00	0.00	13.10	97.13	119.01	177.23	456	675	675	CONC	0.75	86.7	728	2.03	0.71	0.63
	26	27	0.09	0.70	0.18	4.87			0.00	0.00			0.00	0.00	13.81	94.68	116.03	173.30	461	675	675	CONC	0.50	13.6	594	1.66	0.14	0.77
			0.69	0.40	0.77	5.63			0.00	0.00			0.00	0.00														
	27	29	0.75	0.70	1.46	7.09			0.00	0.00			0.00	0.00	13.95	94.23	115.48	172.57	668	750	750	CONC	0.70	119.2	931	2.11	0.94	0.72
To STREET 7, Pipe 29 - 31						7.09				0.00				0.00	14.89													
STREET 3																												
	33	35	0.59	0.70	1.15	1.15			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	126	450	450	CONC	0.75	94.5	247	1.55	1.01	0.51
To STREET 1, Pipe 35 - 39						1.15				0.00				0.00	11.01													
	36	37	0.34	0.70	0.66	0.66			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	73	375	375	PVC	0.55	53.5	130	1.18	0.76	0.56
	37	38	0.08	0.70	0.16	0.82			0.00	0.00			0.00	0.00	10.76	106.28	130.10	191.63	87	375	375	PVC	0.40	12.1	111	1.00	0.20	0.78
	38	39	0.61	0.70	1.19	2.00			0.00	0.00			0.00	0.00	10.96	105.43	129.07	190.30	211	525	525	CONC	0.70	96.6	360	1.66	0.97	0.59
To STREET 1, Pipe 39 - 43						2.00				0.00				0.00	11.93													
POND 2 INLET																												
Contribution From STREET 1, Pipe 48 - 67						25.29				0.00				0.00	17.06													
Contribution From STREET 1, Pipe 66 - 67						13.97				0.00				0.00	14.35													
	67	68			0.00	39.26			0.00	0.00			0.00	0.00	17.06	84.99	104.20	157.39	3337	1200	1200	CONC	1.15	20.3	4181	3.70	0.09	0.80
	68	HW2			0.00	39.26			0.00	0.00			0.00	0.00	17.15	84.75	103.91	156.98	3327	1200	1200	CONC	1.20	11.8	4271	3.78	0.05	0.78
STREET 1																												
	81	82	0.52	0.70	1.01	1.01			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	111	375	375	PVC	0.65	88.1	141	1.28	1.15	0.78
	82	86	0.56	0.70	1.09	2.10			0.00	0.00			0.00	0.00	11.15	104.64	128.11	189.07	220	525	525	CONC	0.70	95.6	360	1.66	0.96	0.61
To STREET 14, Pipe 86 - 89						2.10				0.00				0.00	12.11													
	83	84	0.13	0.70	0.25	0.25			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	28	300	300	PVC	1.05	22.9	99	1.40	0.27	0.28
	84	85	0.07	0.70	0.14	0.39			0.00	0.00			0.00	0.00	10.27	108.41	132.67	194.91	42	300	300	PVC	0.45	11.8	65	0.92	0.21	0.65
	85	86	0.35	0.70	0.68	1.07			0.00	0.00			0.00	0.00	10.49	107.46	131.52	193.44	115	375	375	PVC	0.75	59.8	152	1.37	0.72	0.76
To STREET 14, Pipe 86 - 89						1.07				0.00				0.00	11.21													

Definitions:
Q = 2.78 AIC, where
Q = Peak Flow in Litres per second (L/s)
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C = Runoff Coefficient

Notes:
1) Town of Caledon Rainfall-Intensity Curve
2) Min. Velocity = 0.75 m/s
3) Minimum 10 min time of concentration

Designed: K.D.	PROJECT: **Innis Lake Road**		
Checked: K.D.	LOCATION **TOWN OF CALEDON**		
Dwg. Reference: 0	File Ref: 22-1297	Date: May 2026	Sheet No. SHEET 2 OF 12

DAVID SCHAEFFER ENGINEERING LTD.
600 ALDEN ROAD, SUITE 606
MARKHAM, ON L3R 0E7
TEL: (905) 475-3080
FAX: (905) 475-3081

STORM SEWER DESIGN

TOWN OF CALEDON

	LOCATION		5 YEAR				10 YEAR				100 YEAR				FLOW					SEWER DATA									
			AREA	C	Indiv.	Accum.	AREA	C	Indiv.	Accum.	AREA	C	Indiv.	Accum.	Time of	Intensity	Intensity	Intensity	Peak Flow	DIA. (mm)	DIA. (mm)	TYPE	SLOPE	LENGTH	CAPACITY	VELOCITY	TIME OF	RATIO
																											FLOW	
Street	From MH	To MH	(Ha)		2.78 AC	2.78 AC	(Ha)		2.78 AC	2.78 AC	(Ha)		2.78 AC	2.78 AC	Conc.	5 Year	10 Year	100 Year											
															(min)	(mm/h)	(mm/h)	(mm/h)	Q (l/s)	(actual)	(nominal)		(%)	(m)	(l/s)	(m/s)	(min.)	Q/Q full

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STORM SEWER DESIGN

	LOCATION		5 YEAR				10 YEAR				100 YEAR				FLOW					SEWER DATA									
			AREA	C	Indiv.	Accum.	AREA	C	Indiv.	Accum.	AREA	C	Indiv.	Accum.	Time of	Intensity	Intensity	Intensity	Peak Flow	DIA. (mm)	DIA. (mm)	TYPE	SLOPE	LENGTH	CAPACITY	VELOCITY	TIME OF	RATIO
																											FLOW	
Street	From MH	To MH	(Ha)		2.78 AC	2.78 AC	(Ha)		2.78 AC	2.78 AC	(Ha)		2.78 AC	2.78 AC	Conc.	5 Year	10 Year	100 Year											
															(min)	(mm/h)	(mm/h)	(mm/h)	Q (l/s)	(actual)	(nominal)		(%)	(m)	(l/s)	(m/s)	(min.)	Q/Q full
Contribution From STREET 40, Pipe 13 - 15						1.16				0.00				0.00	11.59													
Contribution From STREET 40, Pipe 14 - 15						0.67				0.00				0.00	10.92													
	15	16	0.12	0.84	0.28	2.11			0.00	0.00			0.00	0.00	11.59	102.84	125.94	186.27	218	450	450	CONC	0.95	30.7	278	1.75	0.29	0.78
To POND 1 INLET, Pipe 16 - 17						2.11				0.00				0.00	11.88													
	58	59	0.24	0.70	0.47	0.47			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	51	300	300	PVC	0.75	38.5	84	1.18	0.54	0.61
Contribution From STREET 11, Pipe 57 - 59						2.32				0.00				0.00	12.09													
	59	60	0.46	0.70	0.90	3.68			0.00	0.00			0.00	0.00	12.09	100.87	123.55	183.18	371	675	675	CONC	0.40	73.3	532	1.49	0.82	0.70
Contribution From STREET 9, Pipe 53 - 60						3.81				0.00				0.00	13.07													
	60	63	0.44	0.70	0.86	8.35			0.00	0.00			0.00	0.00	13.07	97.26	119.17	177.45	812	825	825	CONC	0.50	70.3	1015	1.90	0.62	0.80
Contribution From STREET 9, Pipe 62 - 63						3.00				0.00				0.00	12.24													
	63	66	0.48	0.70	0.93	12.28			0.00	0.00			0.00	0.00	13.68	95.12	116.57	174.01	1168	975	975	CONC	0.45	76.2	1503	2.01	0.63	0.78
Contribution From STREET 8, Pipe 65 - 66						1.63				0.00				0.00	11.41													
	66	67	0.03	0.70	0.06	13.97			0.00	0.00			0.00	0.00	14.31	93.04	114.03	170.64	1300	975	975	CONC	0.55	4.3	1662	2.23	0.03	0.78
To POND 2 INLET, Pipe 67 - 68						13.97				0.00				0.00	14.35													
	7	8	0.30	0.84	0.70	0.70			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	76	300	300	PVC	4.35	78.4	202	2.85	0.46	0.38
Contribution From STREET 2, Pipe 6 - 8						2.58				0.00				0.42	13.85													
	8	11	0.15	0.84	0.35	3.63			0.00	0.00			0.00	0.42	13.85	94.56	115.88	173.10	415	675	675	CONC	0.40	38.1	532	1.49	0.43	0.78
Contribution From STREET 21, Pipe 10 - 11						1.77				0.00				0.00	11.90													
	11	16	0.06	0.84	0.14	5.53			0.00	0.00			0.00	0.42	14.28	93.15	114.16	170.82	587	675	675	CONC	0.80	14.5	752	2.10	0.12	0.78
To POND 1 INLET, Pipe 16 - 17						5.53				0.00				0.42	14.39													
	34	35	0.23	0.70	0.45	0.45			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	49	300	300	PVC	0.75	36.1	84	1.18	0.51	0.59
Contribution From STREET 3, Pipe 33 - 35						1.15				0.00				0.00	11.01													
	35	39	0.45	0.70	0.88	2.47			0.00	0.00			0.00	0.00	11.01	105.19	128.78	189.94	260	600	600	CONC	0.40	71.8	388	1.37	0.87	0.67
Contribution From STREET 3, Pipe 38 - 39						2.00				0.00				0.00	11.93													
	39	43	0.80	0.70	1.56	6.03			0.00	0.00			0.00	0.00	11.93	101.50	124.31	184.17	612	675	675	CONC	1.55	126.8	1047	2.92	0.72	0.59
Contribution From STREET 7, Pipe 32 - 43						11.57				0.00				0.00	16.18													
Contribution From STREET 7, Pipe 42 - 43						3.51				0.00				0.00	12.01													
	43	48	0.49	0.70	0.95	22.06			0.00	0.00			0.00	0.00	16.18	87.41	107.16	161.41	1928	1200	1200	CONC	0.40	78.7	2466	2.18	0.60	0.78
Contribution From STREET 8, Pipe 47 - 48						2.43				0.00				0.00	12.18													
	48	67	0.41	0.70	0.80	25.29			0.00	0.00			0.00	0.00	16.78	85.74	105.12	158.64	2169	1200	1200	CONC	1.30	66.0	4445	3.93	0.28	0.49
To POND 2 INLET, Pipe 67 - 68						25.29				0.00				0.00	17.06													
STREET 17																												
	77	78	0.39	0.70	0.76	0.76			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	83	375	375	PVC	0.40	67.1	111	1.00	1.11	0.75
To STREET 19, Pipe 78 - 79						0.76				0.00				0.00	11.11													
	87	88	0.50	0.70	0.97	0.97			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	107	300	300	PVC	2.45	84.8	151	2.14	0.66	0.70
	88	89	0.54	0.70	1.05	2.02			0.00	0.00			0.00	0.00	10.66	106.70	130.61	192.28	216	525	525	CONC	0.85	92.1	396	1.83	0.84	0.54
To STREET 14, Pipe 89 - 90						2.02				0.00				0.00	11.50													
	69	70	0.31	0.70	0.60	0.60			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	66	300	300	PVC	0.80	53.7	86	1.22	0.73	0.76
	70	71	0.07	0.70	0.14	0.74			0.00	0.00			0.00	0.00	10.73	106.39	130.24	191.80	79	375	375	PVC	0.95	11.2	171	1.55	0.12	0.46
	71	72	0.65	0.70	1.26	2.00			0.00	0.00			0.00	0.00	10.85	105.88	129.61	191.00	212	525	525	CONC	0.75	111.5	372	1.72	1.08	0.57
	72	74	0.65	0.70	1.26	3.27			0.00	0.00			0.00	0.00	11.93	101.48	124.29	184.14	332	600	600	CONC	0.75	111.2	532	1.88	0.99	0.62
To STREET 19, Pipe 74 - 75						3.27				0.00				0.00	12.92													
STREET 19																												
Contribution From STREET 17, Pipe 77 - 78						0.76				0.00				0.00	11.11													
	78	79	0.54	0.70	1.05	1.81			0.00	0.00			0.00	0.00	11.11	104.77	128.28	189.29	190	375	375	PVC	1.90	91.6	242	2.19	0.70	0.78
	79	80	0.54	0.70	1.05	2.86			0.00	0.00			0.00	0.00	11.81	101.95	124.86	184.88	292	525	525	CONC	0.75	91.6	372	1.72	0.89	0.78
To STREET 14, Pipe 80 - 90						2.86				0.00				0.00	12.70													
	73	74	0.22	0.70	0.43	0.43			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	47	300	300	PVC	0.40	36.8	61	0.87	0.71	0.77
Contribution From STREET 17, Pipe 72 - 74						3.27				0.00				0.00	12.92													
			0.36	0.70	0.70	4.40			0.00	0.00			0.00	0.00														
	74	75	0.59	0.75	1.23	5.63			0.00	0.00			0.00	0.00	12.92	97.80	119.82	178.30	550	750	750	CONC	0.40	62.0	704	1.59	0.65	0.78

Definitions:
Q = 2.78 AIC, where
Q = Peak Flow in Litres per second (L/s)
A = Areas in hectares (ha)
I = Rainfall Intensity (mm/h)
C = Runoff Coefficient

Notes:
1) Town of Caledon Rainfall-Intensity Curve
2) Min. Velocity = 0.75 m/s
3) Minimum 10 min time of concentration

Designed: K.D.	PROJECT: **Innis Lake Road**		
Checked: K.D.	LOCATION **TOWN OF CALEDON**		
Dwg. Reference: 0	File Ref: 22-1297	Date: May 2026	Sheet No. SHEET 3 OF 12

DAVID SCHAEFFER ENGINEERING LTD.
600 ALDEN ROAD, SUITE 606
MARKHAM, ON L3R 0E7
TEL: (905) 475-3080
FAX: (905) 475-3081

STORM SEWER DESIGN

TOWN OF CALEDON

	LOCATION		5 YEAR				10 YEAR				100 YEAR				FLOW					SEWER DATA									
			AREA	C	Indiv.	Accum.	AREA	C	Indiv.	Accum.	AREA	C	Indiv.	Accum.	Time of	Intensity	Intensity	Intensity	Peak Flow	DIA. (mm)	DIA. (mm)	TYPE	SLOPE	LENGTH	CAPACITY	VELOCITY	TIME OF	RATIO
Street	From MH	To MH	(Ha)		2.78 AC	2.78 AC	(Ha)		2.78 AC	2.78 AC	(Ha)		2.78 AC	2.78 AC	Conc. (min)	5 Year (mm/h)	10 Year (mm/h)	100 Year (mm/h)	Q (l/s)	(actual)	(nominal)		(%)	(m)	(l/s)	(m/s)	FLOW (min.)	Q/Q full

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STORM SEWER DESIGN

	LOCATION		5 YEAR				10 YEAR				100 YEAR				FLOW					SEWER DATA									
			AREA	C	Indiv.	Accum.	AREA	C	Indiv.	Accum.	AREA	C	Indiv.	Accum.	Time of	Intensity	Intensity	Intensity	Peak Flow	DIA. (mm)	DIA. (mm)	TYPE	SLOPE	LENGTH	CAPACITY	VELOCITY	TIME OF	RATIO
Street	From MH	To MH	(Ha)		2.78 AC	2.78 AC	(Ha)		2.78 AC	2.78 AC	(Ha)		2.78 AC	2.78 AC	Conc. (min)	5 Year (mm/h)	10 Year (mm/h)	100 Year (mm/h)	Q (l/s)	(actual)	(nominal)		(%)	(m)	(l/s)	(m/s)	FLOW (min.)	Q/Q full
	75	76	0.07	0.70	0.14	5.76			0.00	0.00			0.00	0.00	13.57	95.52	117.06	174.66	551	750	750	CONC	0.40	11.2	704	1.59	0.12	0.78
	76	80	0.23	0.70	0.45	6.21			0.00	0.00			0.00	0.00	13.68	95.13	116.57	174.02	591	825	825	CONC	0.40	39.8	908	1.70	0.39	0.65
To STREET 14, Pipe 80 - 90						6.21				0.00				0.00	14.07													
STREET 14																												
Contribution From STREET 1, Pipe 82 - 86						2.10				0.00				0.00	12.11													
Contribution From STREET 1, Pipe 85 - 86						1.07				0.00				0.00	11.21													
	86	89	0.45	0.70	0.88	4.05			0.00	0.00			0.00	0.00	12.11	100.81	123.48	183.08	408	525	525	CONC	4.05	76.3	865	4.00	0.32	0.47
Contribution From STREET 17, Pipe 88 - 89						2.02				0.00				0.00	11.50													
	89	90	0.13	0.70	0.25	6.32			0.00	0.00			0.00	0.00	12.42	99.61	122.01	181.17	630	600	600	CONC	3.00	21.4	1063	3.76	0.09	0.59
To POND 3 INLET, Pipe 90 - 91						6.32				0.00				0.00	12.52													
Contribution From STREET 19, Pipe 76 - 80						6.21				0.00				0.00	14.07													
Contribution From STREET 19, Pipe 79 - 80						2.86				0.00				0.00	12.70													
	80	90	0.30	0.70	0.58	9.66			0.00	0.00			0.00	0.00	14.07	93.82	114.98	171.91	906	825	825	CONC	0.70	52.0	1201	2.25	0.39	0.75
To POND 3 INLET, Pipe 90 - 91						9.66				0.00				0.00	14.46													
POND 3 INLET																												
Contribution From STREET 14, Pipe 80 - 90						9.66				0.00				0.00	14.46													
Contribution From STREET 14, Pipe 89 - 90						6.32				0.00				0.00	12.52													
	90	91	0.09	0.70	0.18	16.16			0.00	0.00			0.00	0.00	14.46	92.57	113.46	169.88	1496	900	900	CONC	1.10	14.9	1899	2.98	0.08	0.79
	91	HW3			0.00	16.16			0.00	0.00			0.00	0.00	14.54	92.31	113.14	169.45	1491	975	975	CONC	0.75	11.1	1941	2.60	0.07	0.77
STREET 12																												
	118	119	0.43	0.72	0.87	0.87			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	95	450	450	CONC	0.40	77.3	180	1.13	1.14	0.53
	119	121	0.48	0.72	0.97	1.83			0.00	0.00			0.00	0.00	11.14	104.68	128.16	189.14	192	525	525	CONC	0.40	84.7	272	1.26	1.12	0.70
To STREET 6, Pipe 121 - 122						1.83				0.00				0.00	12.26													
STREET 5																												
	98	99	0.40	0.72	0.81	0.81			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	88	375	375	PVC	0.40	70.4	111	1.00	1.17	0.80
To STREET 6, Pipe 99 - 100						0.81				0.00				0.00	11.17													
	101	102	0.57	0.72	1.15	1.15			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	126	450	450	CONC	0.75	100.8	247	1.55	1.08	0.51
	102	103	0.57	0.72	1.15	2.29			0.00	0.00			0.00	0.00	11.08	104.91	128.44	189.49	241	525	525	CONC	0.75	100.9	372	1.72	0.98	0.65
	103	104	0.06	0.72	0.12	2.42			0.00	0.00			0.00	0.00	12.06	100.99	123.69	183.36	244	525	525	CONC	0.55	10.8	319	1.47	0.12	0.76
	104	105	0.39	0.72	0.78	3.20			0.00	0.00			0.00	0.00	12.18	100.52	123.12	182.62	322	600	600	CONC	0.70	69.2	514	1.82	0.63	0.63
To STREET 6, Pipe 105 - 110						3.20				0.00				0.00	12.82													
STREET 4																												
	92	93	0.59	0.72	1.19	1.19			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	130	450	450	CONC	0.80	104.5	255	1.60	1.09	0.51
	93	94	0.06	0.72	0.12	1.31			0.00	0.00			0.00	0.00	11.09	104.89	128.42	189.47	137	450	450	CONC	0.40	10.8	180	1.13	0.16	0.76
	94	97	0.39	0.72	0.78	2.09			0.00	0.00			0.00	0.00	11.25	104.23	127.62	188.44	218	525	525	CONC	0.75	69.2	372	1.72	0.67	0.59
To STREET 6, Pipe 97 - 99						2.09				0.00				0.00	11.92													
POND 4 INLET																												
Contribution From STREET 6, Pipe 112 - 123						15.36				0.00				0.00	15.80													
Contribution From STREET 6, Pipe 122 - 123						6.26				0.00				0.00	13.42													
	123	124			0.00	21.62			0.00	0.00			0.00	0.00	15.80	88.48	108.47	163.18	1913	1050	1050	CONC	0.80	33.5	2442	2.82	0.20	0.78
	124	HW4			0.00	21.62			0.00	0.00			0.00	0.00	16.00	87.91	107.77	162.24	1900	1200	1200	CONC	0.40	11.0	2466	2.18	0.08	0.77
STREET 6																												
	147	148	0.38	0.70	0.74	0.74			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	81	375	375	PVC	0.40	63.9	111	1.00	1.06	0.73
	148	149	0.23	0.70	0.45	1.19			0.00	0.00			0.00	0.00	11.06	105.00	128.55	189.63	125	450	450	CONC	0.40	38.7	180	1.13	0.57	0.69
To STREET 16, Pipe 149 - 150						1.19				0.00				0.00	11.63													
	142	143	0.15	0.70	0.29	0.29			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	32	300	300	PVC	3.45	26.1	180	2.54	0.17	0.18
Contribution From STREET 13, Pipe 141 - 143						1.15				0.00				0.00	11.46													
	143	145	0.48	0.70	0.93	2.37			0.00	0.00			0.00	0.00	11.46	103.35	126.55	187.07	245	525	525	CONC	1.15	81.0	461	2.13	0.63	0.53
Contribution From STREET 10, Pipe 144 - 145						0.56				0.00				0.00	10.70													
	145	146	0.23	0.70	0.45	3.39			0.00	0.00			0.00	0.00	12.09	100.85	123.53	183.15	341	600	600	CONC	0.50	39.5	434	1.54	0.43	0.79

Definitions:
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Notes:
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2) Min. Velocity = 0.75 m/s
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Designed: K.D.	PROJECT: **Innis Lake Road**		
Checked: K.D.	LOCATION **TOWN OF CALEDON**		
Dwg. Reference: 0	File Ref: 22-1297	Date: May 2026	Sheet No. SHEET 4 OF 12

DAVID SCHAEFFER ENGINEERING LTD.
600 ALDEN ROAD, SUITE 606
MARKHAM, ON L3R 0E7
TEL: (905) 475-3080
FAX: (905) 475-3081

STORM SEWER DESIGN

TOWN OF CALEDON

	LOCATION		5 YEAR				10 YEAR				100 YEAR				FLOW					SEWER DATA								
			AREA	C	Indiv.	Accum.	AREA	C	Indiv.	Accum.	AREA	C	Indiv.	Accum.	Time of	Intensity	Intensity	Intensity	Peak Flow	DIA. (mm)	DIA. (mm)	TYPE	SLOPE	LENGTH	CAPACITY	VELOCITY	TIME OF	RATIO
																											FLOW	
Street	From MH	To MH	(Ha)		2.78 AC	2.78 AC	(Ha)		2.78 AC	2.78 AC	(Ha)		2.78 AC	2.78 AC	Conc.	5 Year	10 Year	100 Year											
															(min)	(mm/h)	(mm/h)	(mm/h)	Q (l/s)	(actual)	(nominal)		(%)	(m)	(l/s)	(m/s)	(min.)	Q/Q full

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STORM SEWER DESIGN

	LOCATION		5 YEAR				10 YEAR				100 YEAR				FLOW					SEWER DATA								
			AREA	C	Indiv.	Accum.	AREA	C	Indiv.	Accum.	AREA	C	Indiv.	Accum.	Time of	Intensity	Intensity	Intensity	Peak Flow	DIA. (mm)	DIA. (mm)	TYPE	SLOPE	LENGTH	CAPACITY	VELOCITY	TIME OF	RATIO
																											FLOW	
Street	From MH	To MH	(Ha)		2.78 AC	2.78 AC	(Ha)		2.78 AC	2.78 AC	(Ha)		2.78 AC	2.78 AC	Conc.	5 Year	10 Year	100 Year											
															(min)	(mm/h)	(mm/h)	(mm/h)	Q (l/s)	(actual)	(nominal)		(%)	(m)	(l/s)	(m/s)	(min.)	Q/Q full
	146	149	0.23	0.70	0.45	3.83			0.00	0.00			0.00	0.00	12.52	99.23	121.56	180.59	380	675	675	CONC	0.40	38.3	532	1.49	0.43	0.72
To STREET 16, Pipe 149 - 150						3.83				0.00				0.00	12.95													
	120	121	0.16	0.72	0.32	0.32			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	35	300	300	PVC	0.80	28.4	86	1.22	0.39	0.41
Contribution From STREET 12, Pipe 119 - 121						1.83				0.00				0.00	12.26													
	121	122	0.39	0.72	0.78	2.94			0.00	0.00			0.00	0.00	12.26	100.22	122.76	182.15	295	600	600	CONC	0.70	70.2	514	1.82	0.64	0.57
Contribution From STREET 10, Pipe 117 - 122						2.70				0.00				0.00	12.63													
	122	123	0.31	0.72	0.62	6.26			0.00	0.00			0.00	0.00	12.90	97.85	119.88	178.38	612	750	750	CONC	0.50	55.5	787	1.78	0.52	0.78
To POND 4 INLET, Pipe 123 - 124						6.26				0.00				0.00	13.42													
Contribution From STREET 40, Pipe 95 - 96						0.22				0.00				0.00	10.28													
	96	97	0.63	0.72	1.27	1.49			0.00	0.00			0.00	0.00	10.28	108.39	132.65	194.87	161	450	450	CONC	0.75	112.4	247	1.55	1.21	0.65
Contribution From STREET 4, Pipe 94 - 97						2.09				0.00				0.00	11.92													
	97	99	0.41	0.72	0.83	4.41			0.00	0.00			0.00	0.00	11.92	101.55	124.37	184.24	448	675	675	CONC	0.45	73.2	564	1.58	0.77	0.79
Contribution From STREET 5, Pipe 98 - 99						0.81				0.00				0.00	11.17													
	99	100	0.63	0.72	1.27	6.48			0.00	0.00			0.00	0.00	12.69	98.62	120.82	179.61	639	825	825	CONC	0.40	111.9	908	1.70	1.10	0.70
	100	105	0.59	0.72	1.19	7.67			0.00	0.00			0.00	0.00	13.79	94.77	116.14	173.45	727	825	825	CONC	1.15	104.6	1539	2.88	0.61	0.47
Contribution From STREET 5, Pipe 104 - 105						3.20				0.00				0.00	12.82													
	105	110	0.43	0.72	0.87	11.73			0.00	0.00			0.00	0.00	14.39	92.78	113.72	170.23	1089	975	975	CONC	0.40	77.1	1417	1.90	0.68	0.77
Contribution From STREET 7, Pipe 108 - 110						1.55				0.00				0.00	11.66													
Contribution From STREET 7, Pipe 109 - 110						0.16				0.00				0.00	10.21													
	110	111	0.37	0.72	0.74	14.19			0.00	0.00			0.00	0.00	15.07	90.66	111.13	166.77	1286	975	975	CONC	1.45	65.6	2699	3.61	0.30	0.48
	111	112	0.37	0.72	0.74	14.93			0.00	0.00			0.00	0.00	15.37	89.75	110.02	165.27	1340	975	975	CONC	1.75	65.6	2965	3.97	0.28	0.45
	112	123	0.21	0.72	0.42	15.36			0.00	0.00			0.00	0.00	15.65	88.93	109.02	163.93	1366	975	975	CONC	1.75	37.1	2965	3.97	0.16	0.46
To POND 4 INLET, Pipe 123 - 124						15.36				0.00				0.00	15.80													
STREET 20																												
	135	136	0.21	0.70	0.41	0.41			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	45	300	300	PVC	0.55	36.0	72	1.01	0.59	0.62
	136	137	0.38	0.70	0.74	1.15			0.00	0.00			0.00	0.00	10.59	107.00	130.97	192.74	123	375	375	PVC	0.80	64.5	157	1.42	0.76	0.78
	137	138	0.07	0.70	0.14	1.28			0.00	0.00			0.00	0.00	11.35	103.81	127.11	187.78	133	450	450	CONC	0.60	12.0	221	1.39	0.14	0.60
	138	139	0.40	0.70	0.78	2.06			0.00	0.00			0.00	0.00	11.49	103.22	126.40	186.87	213	525	525	CONC	0.75	68.0	372	1.72	0.66	0.57
To STREET 16, Pipe 139 - 150						2.06				0.00				0.00	12.15													
STREET 13																												
	125	127	0.60	0.70	1.17	1.17			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	128	450	450	CONC	0.75	101.1	247	1.55	1.09	0.52
To STREET 10, Pipe 127 - 128						1.17				0.00				0.00	11.09													
	141	143	0.59	0.70	1.15	1.15			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	126	450	450	CONC	0.40	99.4	180	1.13	1.46	0.70
To STREET 6, Pipe 143 - 145						1.15				0.00				0.00	11.46													
STREET 10																												
	131	132	0.68	0.70	1.32	1.32			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	145	450	450	CONC	0.75	114.6	247	1.55	1.23	0.59
To STREET 16, Pipe 132 - 133						1.32				0.00				0.00	11.23													
	144	145	0.29	0.70	0.56	0.56			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	62	300	300	PVC	0.75	49.5	84	1.18	0.70	0.74
To STREET 6, Pipe 145 - 146						0.56				0.00				0.00	10.70													
	113	114	0.09	0.72	0.18	0.18			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	20	300	300	PVC	0.80	15.8	86	1.22	0.22	0.23
	114	115	0.15	0.72	0.30	0.48			0.00	0.00			0.00	0.00	10.22	108.67	132.98	195.30	52	300	300	PVC	0.60	27.3	75	1.06	0.43	0.70
	115	116	0.39	0.72	0.78	1.27			0.00	0.00			0.00	0.00	10.64	106.77	130.69	192.38	135	450	450	CONC	0.75	69.5	247	1.55	0.75	0.55
	116	117	0.04	0.72	0.08	1.35			0.00	0.00			0.00	0.00	11.39	103.63	126.90	187.51	140	450	450	CONC	0.40	6.3	180	1.13	0.09	0.78
	117	122	0.67	0.72	1.35	2.70			0.00	0.00			0.00	0.00	11.48	103.26	126.44	186.93	278	525	525	CONC	0.75	118.3	372	1.72	1.15	0.75
To STREET 6, Pipe 122 - 123						2.70				0.00				0.00	12.63													
	126	127	0.15	0.70	0.29	0.29			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	32	300	300	PVC	4.65	24.8	209	2.95	0.14	0.15
Contribution From STREET 13, Pipe 125 - 127						1.17				0.00				0.00	11.09													
	127	128	0.16	0.70	0.31	1.77			0.00	0.00			0.00	0.00	11.09	104.89	128.42	189.47	186	450	450	CONC	3.55	27.4	537	3.38	0.14	0.35
	128	129	0.26	0.70	0.51	2.28			0.00	0.00			0.00	0.00	11.22	104.33	127.74	188.60	238	525	525	CONC	0.80	43.8	385	1.78	0.41	0.62
	129	130	0.06	0.70	0.12	2.39			0.00	0.00			0.00	0.00	11.63	102.67	125.72	186.00	246	525	525	CONC	0.55	10.4	319	1.47	0.12	0.77

Definitions:
Q = 2.78 AIC, where
Q = Peak Flow in Litres per second (L/s)
A = Areas in hectares (ha)
I = Rainfall Intensity (mm/h)
C = Runoff Coefficient

Notes:
1) Town of Caledon Rainfall-Intensity Curve
2) Min. Velocity = 0.75 m/s
3) Minimum 10 min time of concentration

Designed: K.D.	PROJECT: **Innis Lake Road**		
Checked: K.D.	LOCATION **TOWN OF CALEDON**		
Dwg. Reference: 0	File Ref: 22-1297	Date: May 2026	Sheet No. SHEET 5 OF 12

DAVID SCHAEFFER ENGINEERING LTD.
600 ALDEN ROAD, SUITE 606
MARKHAM, ON L3R 0E7
TEL: (905) 475-3080
FAX: (905) 475-3081

STORM SEWER DESIGN

TOWN OF CALEDON

	LOCATION		5 YEAR				10 YEAR				100 YEAR				FLOW					SEWER DATA									
			AREA	C	Indiv.	Accum.	AREA	C	Indiv.	Accum.	AREA	C	Indiv.	Accum.	Time of	Intensity	Intensity	Intensity	Peak Flow	DIA. (mm)	DIA. (mm)	TYPE	SLOPE	LENGTH	CAPACITY	VELOCITY	TIME OF	RATIO
																											FLOW	
Street	From MH	To MH	(Ha)		2.78 AC	2.78 AC	(Ha)		2.78 AC	2.78 AC	(Ha)		2.78 AC	2.78 AC	Conc.	5 Year	10 Year	100 Year											
															(min)	(mm/h)	(mm/h)	(mm/h)	Q (l/s)	(actual)	(nominal)		(%)	(m)	(l/s)	(m/s)	(min.)	Q/Q full

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			AREA	C	Indiv.	Accum.	AREA	C	Indiv.	Accum.	AREA	C	Indiv.	Accum.	Time of	Intensity	Intensity	Intensity	Peak Flow	DIA. (mm)	DIA. (mm)	TYPE	SLOPE	LENGTH	CAPACITY	VELOCITY	TIME OF	RATIO
																											FLOW	
Street	From MH	To MH	(Ha)		2.78 AC	2.78 AC	(Ha)		2.78 AC	2.78 AC	(Ha)		2.78 AC	2.78 AC	Conc.	5 Year	10 Year	100 Year											
															(min)	(mm/h)	(mm/h)	(mm/h)	Q (l/s)	(actual)	(nominal)		(%)	(m)	(l/s)	(m/s)	(min.)	Q/Q full
	130	132	0.33	0.70	0.64	3.04			0.00	0.00			0.00	0.00	11.75	102.20	125.16	185.26	310	600	600	CONC	0.75	55.1	532	1.88	0.49	0.58
To STREET 16, Pipe 132 - 133						3.04				0.00				0.00	12.24													
STREET 16																												
Contribution From STREET 6, Pipe 146 - 149						3.83				0.00				0.00	12.95													
Contribution From STREET 6, Pipe 148 - 149						1.19				0.00				0.00	11.63													
	149	150	0.56	0.70	1.09	6.11			0.00	0.00			0.00	0.00	12.95	97.67	119.66	178.09	597	750	750	CONC	0.70	94.6	931	2.11	0.75	0.64
To POND 5 INLET, Pipe 150 - 151						6.11				0.00				0.00	13.70													
Contribution From STREET 10, Pipe 130 - 132						3.04				0.00				0.00	12.24													
Contribution From STREET 10, Pipe 131 - 132						1.32				0.00				0.00	11.23													
	132	133	0.41	0.70	0.80	5.16			0.00	0.00			0.00	0.00	12.24	100.31	122.87	182.29	517	675	675	CONC	1.10	68.7	882	2.46	0.46	0.59
	133	134	0.06	0.70	0.12	5.27			0.00	0.00			0.00	0.00	12.70	98.58	120.77	179.54	520	675	675	CONC	0.60	10.4	651	1.82	0.10	0.80
	134	139	0.26	0.70	0.51	5.78			0.00	0.00			0.00	0.00	12.80	98.23	120.35	178.99	568	750	750	CONC	0.60	43.2	862	1.95	0.37	0.66
Contribution From STREET 20, Pipe 138 - 139						2.06				0.00				0.00	12.15													
	139	150	0.28	0.70	0.54	8.39			0.00	0.00			0.00	0.00	13.17	96.91	118.74	176.88	813	825	825	CONC	0.55	47.8	1065	1.99	0.40	0.76
To POND 5 INLET, Pipe 150 - 151						8.39				0.00				0.00	13.57													
POND 5 INLET																												
Contribution From STREET 16, Pipe 139 - 150						8.39				0.00				0.00	13.57													
Contribution From STREET 16, Pipe 149 - 150						6.11				0.00				0.00	13.70													
	150	151	0.12	0.70	0.23	14.73			0.00	0.00			0.00	0.00	13.70	95.06	116.50	173.92	1400	900	900	CONC	0.95	20.0	1764	2.77	0.12	0.79
	151	HW5			0.00	14.73			0.00	0.00			0.00	0.00	13.82	94.66	116.00	173.27	1394	975	975	CONC	0.65	11.9	1807	2.42	0.08	0.77
STREET 50																												
	169	170	0.32	0.77	0.68	0.68			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	75	375	375	PVC	0.90	67.7	166	1.51	0.75	0.45
To STREET 49, Pipe 170 - 172						0.68				0.00				0.00	10.75													
	171	172	0.39	0.77	0.83	0.83			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	91	375	375	PVC	1.35	83.1	204	1.84	0.75	0.45
To STREET 49, Pipe 172 - 175						0.83				0.00				0.00	10.75													
STREET 30																												
	167	168	0.34	0.77	0.72	0.72			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	79	375	375	PVC	1.05	71.0	180	1.63	0.73	0.44
To STREET 49, Pipe 168 - 170						0.72				0.00				0.00	10.73													
STREET 48																												
	155	157	0.45	0.77	0.96	0.96			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	105	450	450	CONC	0.50	95.8	202	1.27	1.26	0.52
To STREET 25, Pipe 157 - 159						0.96				0.00				0.00	11.26													
	156	157	0.13	0.77	0.28	0.28			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	30	300	300	PVC	0.80	28.4	86	1.22	0.39	0.35
To STREET 25, Pipe 157 - 159						0.28				0.00				0.00	10.39													
	158	159			0.00	0.00			0.00	0.00	0.46	0.77	0.98	0.98	10.00	109.64	134.16	196.80	193	525	525	CONC	0.65	96.6	347	1.60	1.01	0.56
To STREET 25, Pipe 159 - 162						0.00				0.00				0.98	11.01													
STREET 37																												
	152	154	0.51	0.77	1.09	1.09			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	119	375	375	PVC	0.75	108.0	152	1.37	1.31	0.78
To STREET 25, Pipe 154 - 157						1.09				0.00				0.00	11.31													
	153	154	0.13	0.77	0.28	0.28			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	30	300	300	PVC	4.25	28.4	199	2.82	0.17	0.15
To STREET 25, Pipe 154 - 157						0.28				0.00				0.00	10.17													
STREET 28																												
Contribution From STREET 25, Pipe 159 - 162						3.81				0.00				0.98	12.63													
Contribution From STREET 25, Pipe 161 - 162						1.49				0.00				0.00	11.68													
	162	163	0.30	0.77	0.64	5.95			0.00	0.00			0.00	0.98	12.63	98.83	121.08	179.95	764	825	825	CONC	0.45	63.6	963	1.80	0.59	0.79
	163	166	0.30	0.77	0.64	6.58			0.00	0.00			0.00	0.98	13.22	96.72	118.51	176.58	810	825	825	CONC	0.70	63.6	1201	2.25	0.47	0.67
Contribution From STREET 40, Pipe 165 - 166						1.36				0.00				0.00	11.74													
	166	175	0.49	0.77	1.04	8.99			0.00	0.00			0.00	0.98	13.69	95.09	116.53	173.97	1026	900	900	CONC	0.55	103.0	1343	2.11	0.81	0.76

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Dwg. Reference: 0	File Ref: 22-1297	Date: May 2026	Sheet No. SHEET 6 OF 12

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STORM SEWER DESIGN

TOWN OF CALEDON

	LOCATION		5 YEAR				10 YEAR				100 YEAR				FLOW					SEWER DATA								
			AREA	C	Indiv.	Accum.	AREA	C	Indiv.	Accum.	AREA	C	Indiv.	Accum.	Time of	Intensity	Intensity	Intensity	Peak Flow	DIA. (mm)	DIA. (mm)	TYPE	SLOPE	LENGTH	CAPACITY	VELOCITY	TIME OF	RATIO
Street	From MH	To MH	(Ha)		2.78 AC	2.78 AC	(Ha)		2.78 AC	2.78 AC	(Ha)		2.78 AC	2.78 AC	Conc. (min)	5 Year (mm/h)	10 Year (mm/h)	100 Year (mm/h)	Q (l/s)	(actual)	(nominal)		(%)	(m)	(l/s)	(m/s)	FLOW (min.)	Q/Q full

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STORM SEWER DESIGN

	LOCATION		5 YEAR				10 YEAR				100 YEAR				FLOW					SEWER DATA								
			AREA	C	Indiv.	Accum.	AREA	C	Indiv.	Accum.	AREA	C	Indiv.	Accum.	Time of	Intensity	Intensity	Intensity	Peak Flow	DIA. (mm)	DIA. (mm)	TYPE	SLOPE	LENGTH	CAPACITY	VELOCITY	TIME OF	RATIO
Street	From MH	To MH	(Ha)		2.78 AC	2.78 AC	(Ha)		2.78 AC	2.78 AC	(Ha)		2.78 AC	2.78 AC	Conc. (min)	5 Year (mm/h)	10 Year (mm/h)	100 Year (mm/h)	Q (l/s)	(actual)	(nominal)		(%)	(m)	(l/s)	(m/s)	FLOW (min.)	Q/Q full
Contribution From STREET 49, Pipe 172 - 175						3.45				0.00				0.00	12.22													
Contribution From STREET 49, Pipe 174 - 175						1.17				0.00				0.00	11.13													
	175	181	0.36	0.77	0.77	14.38			0.00	0.00			0.00	0.98	14.51	92.42	113.28	169.64	1496	1050	1050	CONC	0.50	76.4	1931	2.23	0.57	0.77
Contribution From STREET 49, Pipe 179 - 181						1.98				0.00				0.00	12.71													
Contribution From STREET 49, Pipe 180 - 181						0.45				0.00				0.00	10.63													
	181	184	0.33	0.77	0.70	17.52			0.00	0.00			0.00	0.98	15.08	90.64	111.11	166.74	1751	1200	1200	CONC	0.40	70.3	2466	2.18	0.54	0.71
Contribution From STREET 24, Pipe 183 - 184						1.28				0.00				0.00	11.56													
	184	189	0.36	0.77	0.77	19.56			0.00	0.00			0.00	0.98	15.61	89.03	109.14	164.09	1902	1200	1200	CONC	0.40	76.4	2466	2.18	0.58	0.77
To STREET 24, Pipe 189 - 190						19.56				0.00				0.98	16.20													
STREET 24																												
	182	183	0.30	0.77	0.64	0.64			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	70	300	300	PVC	0.85	63.1	89	1.26	0.83	0.79
	183	184	0.30	0.77	0.64	1.28			0.00	0.00			0.00	0.00	10.83	105.95	129.71	191.12	135	450	450	CONC	0.65	63.1	230	1.45	0.73	0.59
To STREET 28, Pipe 184 - 189						1.28				0.00				0.00	11.56													
	231	232	0.56	0.77	1.19	1.19			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	131	450	450	CONC	0.75	117.4	247	1.55	1.26	0.53
	232	233	0.36	0.77	0.77	1.96			0.00	0.00			0.00	0.00	11.26	104.17	127.54	188.35	204	525	525	CONC	0.40	74.9	272	1.26	0.99	0.75
	233	234	0.36	0.77	0.77	2.73			0.00	0.00			0.00	0.00	12.25	100.25	122.79	182.19	273	525	525	CONC	0.65	74.9	347	1.60	0.78	0.79
To STREET 38, Pipe 234 - 235						2.73				0.00				0.00	13.03													
	185	186	0.28	0.77	0.60	0.60			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	65	375	375	PVC	0.50	58.1	124	1.12	0.86	0.53
	186	187	0.06	0.77	0.13	0.72			0.00	0.00			0.00	0.00	10.86	105.83	129.56	190.93	77	375	375	PVC	0.40	11.9	111	1.00	0.20	0.69
	187	188	0.30	0.77	0.64	1.36			0.00	0.00			0.00	0.00	11.06	105.00	128.55	189.64	143	450	450	CONC	0.75	64.2	247	1.55	0.69	0.58
	188	189	0.30	0.77	0.64	2.00			0.00	0.00			0.00	0.00	11.75	102.20	125.16	185.26	205	525	525	CONC	0.75	64.2	372	1.72	0.62	0.55
Contribution From STREET 28, Pipe 184 - 189						19.56				0.00				0.98	16.20													
	189	190	0.49	0.77	1.04	22.61			0.00	0.00			0.00	0.98	16.20	87.35	107.09	161.31	2133	1350	1350	CONC	0.40	102.9	3376	2.36	0.73	0.63
	190	191	0.44	0.77	0.94	23.55			0.00	0.00			0.00	0.98	16.93	85.35	104.64	157.99	2164	1350	1350	CONC	0.40	92.1	3376	2.36	0.65	0.64
	191	235	0.44	0.77	0.94	24.48			0.00	0.00			0.00	0.98	17.58	83.63	102.55	155.12	2200	1350	1350	CONC	0.40	92.1	3376	2.36	0.65	0.65
To STREET 38, Pipe 235 - 251						24.48				0.00				0.98	18.23													
STREET 40																												
	1	2			0.00	0.00			0.00	0.00	0.18	0.84	0.42	0.42	10.00	109.64	134.16	196.80	82	375	375	PVC	0.40	46.3	111	1.00	0.77	0.74
To STREET 2, Pipe 2 - 3						0.00				0.00				0.42	10.77													
	14	15	0.29	0.84	0.67	0.67			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	74	300	300	PVC	0.95	73.8	94	1.33	0.92	0.78
To STREET 1, Pipe 15 - 16						0.67				0.00				0.00	10.92													
	214	215	0.07	0.77	0.15	0.15			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	16	300	300	PVC	0.80	14.2	86	1.22	0.19	0.19
To STREET 25, Pipe 215 - 220						0.15				0.00				0.00	10.19													
	95	96	0.11	0.72	0.22	0.22			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	24	300	300	PVC	0.75	19.7	84	1.18	0.28	0.29
To STREET 6, Pipe 96 - 97						0.22				0.00				0.00	10.28													
	12	13	0.25	0.84	0.58	0.58			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	64	300	300	PVC	0.80	65.8	86	1.22	0.90	0.74
	13	15	0.25	0.84	0.58	1.16			0.00	0.00			0.00	0.00	10.90	105.69	129.38	190.71	123	375	375	PVC	1.00	65.8	175	1.59	0.69	0.70
To STREET 1, Pipe 15 - 16						1.16				0.00				0.00	11.59													
	164	165	0.32	0.77	0.68	0.68			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	75	375	375	PVC	0.40	67.2	111	1.00	1.12	0.67
	165	166	0.32	0.77	0.68	1.36			0.00	0.00			0.00	0.00	11.12	104.77	128.27	189.28	143	450	450	CONC	1.00	67.2	285	1.79	0.62	0.50
To STREET 28, Pipe 166 - 175						1.36				0.00				0.00	11.74													
	192	193	0.33	0.77	0.70	0.70			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	77	375	375	PVC	0.75	69.7	152	1.37	0.84	0.51
	193	194	0.14	0.77	0.30	1.00			0.00	0.00			0.00	0.00	10.84	105.91	129.65	191.05	106	375	375	PVC	0.60	30.3	136	1.23	0.41	0.78
	194	195	0.29	0.77	0.62	1.62			0.00	0.00			0.00	0.00	11.26	104.19	127.57	188.38	169	450	450	CONC	0.80	60.5	255	1.60	0.63	0.66
	195	197	0.14	0.77	0.30	1.92			0.00	0.00			0.00	0.00	11.88	101.67	124.51	184.43	195	450	450	CONC	0.75	28.7	247	1.55	0.31	0.79
Contribution From STREET 23, Pipe 196 - 197						0.34				0.00				0.00	10.51													
	197	199	0.16	0.77	0.34	2.60			0.00	0.00			0.00	0.00	12.19	100.48	123.07	182.56	261	525	525	CONC	0.60	33.4	333	1.54	0.36	0.78
	199	200	0.30	0.77	0.64	3.24			0.00	0.00			0.00	0.00	12.55	99.12	121.43	180.41	321	600	600	CONC	0.45	63.8	412	1.46	0.73	0.78

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MARKHAM, ON L3R 0E7
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FAX: (905) 475-3081

STORM SEWER DESIGN

	LOCATION		5 YEAR				10 YEAR				100 YEAR				FLOW					SEWER DATA								
			AREA	C	Indiv.	Accum.	AREA	C	Indiv.	Accum.	AREA	C	Indiv.	Accum.	Time of	Intensity	Intensity	Intensity	Peak Flow	DIA. (mm)	DIA. (mm)	TYPE	SLOPE	LENGTH	CAPACITY	VELOCITY	TIME OF	RATIO
																											FLOW	
Street	From MH	To MH	(Ha)		2.78 AC	2.78 AC	(Ha)		2.78 AC	2.78 AC	(Ha)		2.78 AC	2.78 AC	Conc.	5 Year	10 Year	100 Year											
															(min)	(mm/h)	(mm/h)	(mm/h)	Q (l/s)	(actual)	(nominal)		(%)	(m)	(l/s)	(m/s)	(min.)	Q/Q full
	200	215	0.15	0.77	0.32	3.56			0.00	0.00			0.00	0.00	13.28	96.50	118.24	176.22	343	600	600	CONC	0.65	31.9	495	1.75	0.30	0.69
To STREET 25, Pipe 215 - 220						3.56				0.00				0.00	13.59													
STREET 36																												
	210	211	0.14	0.77	0.30	0.30			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	33	300	300	PVC	1.10	30.3	101	1.43	0.35	0.32
	211	212	0.17	0.77	0.36	0.66			0.00	0.00			0.00	0.00	10.35	108.05	132.24	194.36	71	300	300	PVC	0.95	35.3	94	1.33	0.44	0.76
	212	213	0.18	0.77	0.38	1.04			0.00	0.00			0.00	0.00	10.79	106.13	129.92	191.39	111	375	375	PVC	0.85	38.1	162	1.46	0.43	0.69
To STREET 25, Pipe 213 - 215						1.04				0.00				0.00	11.23													
STREET 23																												
	196	197	0.16	0.77	0.34	0.34			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	37	300	300	PVC	0.65	33.8	78	1.10	0.51	0.48
To STREET 40, Pipe 197 - 199						0.34				0.00				0.00	10.51													
	206	207	0.14	0.77	0.30	0.30			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	33	300	300	PVC	0.75	28.8	84	1.18	0.41	0.39
	207	208	0.14	0.77	0.30	0.60			0.00	0.00			0.00	0.00	10.41	107.82	131.96	194.00	64	300	300	PVC	0.70	29.4	81	1.14	0.43	0.80
	208	209	0.16	0.77	0.34	0.94			0.00	0.00			0.00	0.00	10.83	105.96	129.71	191.12	99	375	375	PVC	0.65	32.7	141	1.28	0.43	0.70
To STREET 25, Pipe 209 - 213						0.94				0.00				0.00	11.26													
STREET 27																												
	160	161	0.47	0.77	1.00	1.00			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	110	375	375	PVC	1.00	98.8	175	1.59	1.04	0.63
To STREET 25, Pipe 161 - 162						1.00				0.00				0.00	11.04													
	201	203	0.46	0.77	0.98	0.98			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	107	375	375	PVC	0.75	97.0	152	1.37	1.18	0.71
To STREET 25, Pipe 203 - 204						0.98				0.00				0.00	11.18													
STREET 25																												
Contribution From STREET 27, Pipe 160 - 161						1.00				0.00				0.00	11.04													
	161	162	0.23	0.77	0.49	1.49			0.00	0.00			0.00	0.00	11.04	105.09	128.67	189.79	157	450	450	CONC	0.50	48.8	202	1.27	0.64	0.78
To STREET 28, Pipe 162 - 163						1.49				0.00				0.00	11.68													
Contribution From STREET 37, Pipe 152 - 154						1.09				0.00				0.00	11.31													
Contribution From STREET 37, Pipe 153 - 154						0.28				0.00				0.00	10.17													
	154	157	0.15	0.77	0.32	1.68			0.00	0.00			0.00	0.00	11.31	103.97	127.30	188.03	175	450	450	CONC	0.60	31.7	221	1.39	0.38	0.79
Contribution From STREET 48, Pipe 155 - 157						0.96				0.00				0.00	11.26													
Contribution From STREET 48, Pipe 156 - 157						0.28				0.00				0.00	10.39													
	157	159	0.20	0.77	0.43	3.35			0.00	0.00			0.00	0.00	11.69	102.43	125.44	185.63	343	600	600	CONC	0.50	42.7	434	1.54	0.46	0.79
Contribution From STREET 48, Pipe 158 - 159						0.00				0.00				0.98	11.01													
	159	162	0.22	0.77	0.47	3.81			0.00	0.00			0.00	0.98	12.15	100.63	123.26	182.79	563	750	750	CONC	0.40	45.8	704	1.59	0.48	0.80
To STREET 28, Pipe 162 - 163						3.81				0.00				0.98	12.63													
	202	203	0.16	0.77	0.34	0.34			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	37	300	300	PVC	0.75	34.2	84	1.18	0.48	0.45
Contribution From STREET 27, Pipe 201 - 203						0.98				0.00				0.00	11.18													
	203	204	0.19	0.77	0.40	1.73			0.00	0.00			0.00	0.00	11.18	104.52	127.97	188.89	180	525	525	CONC	0.40	39.3	272	1.26	0.52	0.66
	204	205	0.05	0.77	0.11	1.83			0.00	0.00			0.00	0.00	11.70	102.40	125.41	185.59	188	525	525	CONC	0.40	9.6	272	1.26	0.13	0.69
	205	209	0.26	0.77	0.55	2.39			0.00	0.00			0.00	0.00	11.82	101.90	124.80	184.80	243	525	525	CONC	0.50	54.1	304	1.40	0.64	0.80
Contribution From STREET 23, Pipe 208 - 209						0.94				0.00				0.00	11.26													
	209	213	0.16	0.77	0.34	3.67			0.00	0.00			0.00	0.00	12.47	99.45	121.82	180.92	364	600	600	CONC	0.55	33.1	455	1.61	0.34	0.80
Contribution From STREET 36, Pipe 212 - 213						1.04				0.00				0.00	11.23													
	213	215	0.15	0.77	0.32	5.03			0.00	0.00			0.00	0.00	12.81	98.19	120.29	178.92	494	675	675	CONC	0.55	32.2	623	1.74	0.31	0.79
Contribution From STREET 40, Pipe 200 - 215						3.56				0.00				0.00	13.59													
Contribution From STREET 40, Pipe 214 - 215						0.15				0.00				0.00	10.19													
	215	220	0.49	0.77	1.04	9.78			0.00	0.00			0.00	0.00	13.59	95.45	116.96	174.54	934	900	900	CONC	0.45	103.5	1214	1.91	0.90	0.77
Contribution From STREET 49, Pipe 218 - 220						1.49				0.00				0.00	11.30													
Contribution From STREET 49, Pipe 219 - 220						0.38				0.00				0.00	10.52													
	220	222	0.36	0.77	0.77	12.42			0.00	0.00			0.00	0.00	14.49	92.47	113.34	169.72	1149	975	975	CONC	0.45	76.4	1503	2.01	0.63	0.76
To STREET 49, Pipe 222 - 223						12.42				0.00				0.00	15.12													
STREET 26																												
	173	174	0.33	0.77	0.70	0.70			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	77	300	300	PVC	3.45	70.1	180	2.54	0.46	0.43
To STREET 49, Pipe 174 - 175						0.70				0.00				0.00	10.46													

Definitions:
Q = 2.78 AIC, where
Q = Peak Flow in Litres per second (L/s)
A = Areas in hectares (ha)
I = Rainfall Intensity (mm/h)
C = Runoff Coefficient

Notes:
1) Town of Caledon Rainfall-Intensity Curve
2) Min. Velocity = 0.75 m/s
3) Minimum 10 min time of concentration

Designed: K.D.	PROJECT: **Innis Lake Road**		
Checked: K.D.	LOCATION **TOWN OF CALEDON**		
Dwg. Reference: 0	File Ref: 22-1297	Date: May 2026	Sheet No. SHEET 8 OF 12

DAVID SCHAEFFER ENGINEERING LTD.
600 ALDEN ROAD, SUITE 606
MARKHAM, ON L3R 0E7
TEL: (905) 475-3080
FAX: (905) 475-3081

STORM SEWER DESIGN

TOWN OF CALEDON

	LOCATION		5 YEAR				10 YEAR				100 YEAR				FLOW					SEWER DATA								
			AREA	C	Indiv.	Accum.	AREA	C	Indiv.	Accum.	AREA	C	Indiv.	Accum.	Time of	Intensity	Intensity	Intensity	Peak Flow	DIA. (mm)	DIA. (mm)	TYPE	SLOPE	LENGTH	CAPACITY	VELOCITY	TIME OF	RATIO
Street	From MH	To MH	(Ha)		2.78 AC	2.78 AC	(Ha)		2.78 AC	2.78 AC	(Ha)		2.78 AC	2.78 AC	Conc.	5 Year	10 Year	100 Year									FLOW	
															(min)	(mm/h)	(mm/h)	(mm/h)	Q (l/s)	(actual)	(nominal)		(%)	(m)	(l/s)	(m/s)	(min.)	Q/Q full

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STORM SEWER DESIGN

	LOCATION		5 YEAR				10 YEAR				100 YEAR				FLOW					SEWER DATA								
			AREA	C	Indiv.	Accum.	AREA	C	Indiv.	Accum.	AREA	C	Indiv.	Accum.	Time of	Intensity	Intensity	Intensity	Peak Flow	DIA. (mm)	DIA. (mm)	TYPE	SLOPE	LENGTH	CAPACITY	VELOCITY	TIME OF	RATIO
Street	From MH	To MH	(Ha)		2.78 AC	2.78 AC	(Ha)		2.78 AC	2.78 AC	(Ha)		2.78 AC	2.78 AC	Conc.	5 Year	10 Year	100 Year									FLOW	
															(min)	(mm/h)	(mm/h)	(mm/h)	Q (l/s)	(actual)	(nominal)		(%)	(m)	(l/s)	(m/s)	(min.)	Q/Q full
	216	218	0.34	0.77	0.72	0.72			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	79	375	375	PVC	1.05	72.1	180	1.63	0.74	0.44
To STREET 49, Pipe 218 - 220						0.72				0.00				0.00	10.74													
STREET 49																												
	180	181	0.21	0.77	0.45	0.45			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	49	300	300	PVC	0.75	45.1	84	1.18	0.63	0.59
To STREET 28, Pipe 181 - 184						0.45				0.00				0.00	10.63													
	219	220	0.18	0.77	0.38	0.38			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	42	300	300	PVC	0.75	37.2	84	1.18	0.52	0.50
To STREET 25, Pipe 220 - 222						0.38				0.00				0.00	10.52													
	217	218	0.16	0.77	0.34	0.34			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	37	300	300	PVC	0.85	33.4	89	1.26	0.44	0.42
Contribution From STREET 26, Pipe 216 - 218						0.72				0.00				0.00	10.74													
	218	220	0.20	0.77	0.43	1.49			0.00	0.00			0.00	0.00	10.74	106.36	130.20	191.75	159	450	450	CONC	0.50	42.7	202	1.27	0.56	0.79
To STREET 25, Pipe 220 - 222						1.49				0.00				0.00	11.30													
	225	226	0.12	0.77	0.26	0.26			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	28	300	300	PVC	0.75	24.8	84	1.18	0.35	0.33
Contribution From STREET 38, Pipe 224 - 226						0.92				0.00				0.00	11.10													
	226	229	0.36	0.77	0.77	1.94			0.00	0.00			0.00	0.00	11.10	104.84	128.36	189.40	203	525	525	CONC	0.40	76.4	272	1.26	1.01	0.75
To STREET 38, Pipe 229 - 230						1.94				0.00				0.00	12.11													
Contribution From STREET 26, Pipe 173 - 174						0.70				0.00				0.00	10.46													
	174	175	0.22	0.77	0.47	1.17			0.00	0.00			0.00	0.00	10.46	107.58	131.67	193.62	126	450	450	CONC	0.40	45.7	180	1.13	0.67	0.70
To STREET 28, Pipe 175 - 181						1.17				0.00				0.00	11.13													
	176	177	0.27	0.77	0.58	0.58			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	63	375	375	PVC	0.40	57.4	111	1.00	0.95	0.57
	177	178	0.06	0.77	0.13	0.70			0.00	0.00			0.00	0.00	10.95	105.45	129.09	190.34	74	375	375	PVC	0.40	11.9	111	1.00	0.20	0.67
	178	179	0.30	0.77	0.64	1.34			0.00	0.00			0.00	0.00	11.15	104.62	128.09	189.05	140	450	450	CONC	0.45	64.2	191	1.20	0.89	0.73
	179	181	0.30	0.77	0.64	1.98			0.00	0.00			0.00	0.00	12.04	101.06	123.78	183.48	200	450	450	CONC	0.80	64.2	255	1.60	0.67	0.79
To STREET 28, Pipe 181 - 184						1.98				0.00				0.00	12.71													
Contribution From STREET 30, Pipe 167 - 168						0.72				0.00				0.00	10.73													
	168	170	0.14	0.77	0.30	1.02			0.00	0.00			0.00	0.00	10.73	106.41	130.26	191.83	109	450	450	CONC	0.40	30.1	180	1.13	0.44	0.60
Contribution From STREET 50, Pipe 169 - 170						0.68				0.00				0.00	10.75													
	170	172	0.23	0.77	0.49	2.19			0.00	0.00			0.00	0.00	11.17	104.54	128.00	188.93	229	525	525	CONC	0.45	48.7	288	1.33	0.61	0.80
Contribution From STREET 50, Pipe 171 - 172						0.83				0.00				0.00	10.75													
	172	175	0.20	0.77	0.43	3.45			0.00	0.00			0.00	0.00	11.78	102.08	125.02	185.08	352	600	600	CONC	0.55	42.7	455	1.61	0.44	0.77
To STREET 28, Pipe 175 - 181						3.45				0.00				0.00	12.22													
	221	222	0.38	0.77	0.81	0.81			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	89	375	375	PVC	0.75	79.9	152	1.37	0.97	0.58
Contribution From STREET 25, Pipe 220 - 222						12.42				0.00				0.00	15.12													
	222	223	0.36	0.77	0.77	14.00			0.00	0.00			0.00	0.00	15.12	90.50	110.93	166.50	1267	1050	1050	CONC	0.40	74.9	1727	1.99	0.63	0.73
	223	230	0.36	0.77	0.77	14.77			0.00	0.00			0.00	0.00	15.75	88.63	108.66	163.44	1309	1050	1050	CONC	0.40	74.9	1727	1.99	0.63	0.76
To STREET 38, Pipe 230 - 234						14.77				0.00				0.00	16.38													
STREET 38																												
	224	226	0.43	0.77	0.92	0.92			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	100	375	375	PVC	0.75	90.5	152	1.37	1.10	0.66
To STREET 49, Pipe 226 - 229						0.92				0.00				0.00	11.10													
	227	228	0.29	0.77	0.62	0.62			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	68	300	300	PVC	3.40	60.3	178	2.52	0.40	0.38
			0.29	0.77	0.62	1.24			0.00	0.00			0.00	0.00														
	228	229	1.62	0.75	3.38	4.61			0.00	0.00			0.00	0.00	10.40	107.85	131.99	194.04	498	750	750	CONC	0.40	60.3	704	1.59	0.63	0.71
Contribution From STREET 49, Pipe 226 - 229						1.94				0.00				0.00	12.11													
			0.36	0.77	0.77	7.32			0.00	0.00			0.00	0.00														
	229	230	1.27	0.40	1.41	8.73			0.00	0.00			0.00	0.00	12.11	100.79	123.45	183.05	880	900	900	CONC	0.40	76.4	1145	1.80	0.71	0.77
Contribution From STREET 49, Pipe 223 - 230						14.77				0.00				0.00	16.38													
	230	234	0.33	0.77	0.70	24.20			0.00	0.00			0.00	0.00	16.38	86.85	106.48	160.49	2102	1200	1200	CONC	0.50	70.3	2757	2.44	0.48	0.76
Contribution From STREET 24, Pipe 233 - 234						2.73				0.00				0.00	13.03													
	234	235	0.36	0.77	0.77	27.70			0.00	0.00			0.00	0.00	16.86	85.53	104.87	158.30	2369	1200	1200	CONC	0.60	76.4	3020	2.67	0.48	0.78

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Q = 2.78 AIC, where
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Notes:
1) Town of Caledon Rainfall-Intensity Curve
2) Min. Velocity = 0.75 m/s
3) Minimum 10 min time of concentration

Designed: K.D.	PROJECT: **Innis Lake Road**		
Checked: K.D.	LOCATION **TOWN OF CALEDON**		
Dwg. Reference: 0	File Ref: 22-1297	Date: May 2026	Sheet No. SHEET 9 OF 12

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STORM SEWER DESIGN

TOWN OF CALEDON

	LOCATION		5 YEAR				10 YEAR				100 YEAR				FLOW					SEWER DATA								
			AREA	C	Indiv.	Accum.	AREA	C	Indiv.	Accum.	AREA	C	Indiv.	Accum.	Time of	Intensity	Intensity	Intensity	Peak Flow	DIA. (mm)	DIA. (mm)	TYPE	SLOPE	LENGTH	CAPACITY	VELOCITY	TIME OF	RATIO
Street	From MH	To MH	(Ha)		2.78 AC	2.78 AC	(Ha)		2.78 AC	2.78 AC	(Ha)		2.78 AC	2.78 AC	Conc. (min)	5 Year (mm/h)	10 Year (mm/h)	100 Year (mm/h)	Q (l/s)	(actual)	(nominal)		(%)	(m)	(l/s)	(m/s)	FLOW (min.)	Q/Q full
Contribution From STREET 24, Pipe 191 - 235						24.48				0.00				0.98	18.23													
	235	251	0.35	0.77	0.75	52.93			0.00	0.00			0.00	0.98	18.23	81.99	100.54	152.37	4489	1650	1650	CONC	0.40	74.4	5764	2.70	0.46	0.78
To STREET 7, Pipe 251 - 254						52.93				0.00				0.98	18.69													
STREET 44																												
	236	238			0.00	0.00			0.00	0.00	0.24	0.77	0.51	0.51	10.00	109.64	134.16	196.80	101	375	375	PVC	0.75	51.3	152	1.37	0.62	0.66
To STREET 33, Pipe 238 - 242						0.00				0.00				0.51	10.62													
	244	246	0.30	0.77	0.64	0.64			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	70	300	300	PVC	0.85	62.6	89	1.26	0.83	0.79
Contribution From STREET 29, Pipe 245 - 246						0.13				0.00				0.00	10.23													
	246	247	0.44	0.77	0.94	1.70			0.00	0.00			0.00	0.00	10.83	105.98	129.74	191.16	181	450	450	CONC	0.65	91.8	230	1.45	1.06	0.79
	247	248	0.05	0.77	0.11	1.81			0.00	0.00			0.00	0.00	11.89	101.66	124.51	184.42	184	525	525	CONC	0.40	11.1	272	1.26	0.15	0.68
	248	249	0.18	0.77	0.38	2.19			0.00	0.00			0.00	0.00	12.03	101.09	123.82	183.52	222	525	525	CONC	0.45	38.0	288	1.33	0.48	0.77
To STREET 7, Pipe 249 - 250						2.19				0.00				0.00	12.51													
STREET 7																												
	109	110	0.08	0.72	0.16	0.16			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	18	300	300	PVC	0.75	14.7	84	1.18	0.21	0.21
To STREET 6, Pipe 110 - 111						0.16				0.00				0.00	10.21													
	252	253	0.17	0.77	0.36	0.36			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	40	300	300	PVC	0.75	34.8	84	1.18	0.49	0.47
	253	254	0.41	0.77	0.87	1.24			0.00	0.00			0.00	0.00	10.49	107.45	131.51	193.42	133	450	450	CONC	0.75	86.7	247	1.55	0.93	0.54
To POND 6 INLET, Pipe 254 - HW6						1.24				0.00				0.00	11.42													
	106	107	0.13	0.72	0.26	0.26			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	29	300	300	PVC	0.80	22.3	86	1.22	0.30	0.33
	107	108	0.19	0.72	0.38	0.64			0.00	0.00			0.00	0.00	10.30	108.27	132.50	194.69	70	300	300	PVC	0.85	34.5	89	1.26	0.46	0.78
	108	110	0.45	0.72	0.91	1.55			0.00	0.00			0.00	0.00	10.76	106.27	130.09	191.61	165	450	450	CONC	0.70	80.7	239	1.50	0.90	0.69
To STREET 6, Pipe 110 - 111						1.55				0.00				0.00	11.66													
	40	41	0.50	0.70	0.97	0.97			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	107	375	375	PVC	0.75	80.3	152	1.37	0.97	0.70
	41	42	0.50	0.70	0.97	1.95			0.00	0.00			0.00	0.00	10.97	105.36	128.99	190.20	205	450	450	CONC	0.85	80.4	263	1.65	0.81	0.78
			0.14	0.70	0.27	2.22			0.00	0.00			0.00	0.00														
	42	43	1.16	0.40	1.29	3.51			0.00	0.00			0.00	0.00	11.78	102.06	124.99	185.05	358	600	600	CONC	0.55	21.9	455	1.61	0.23	0.79
To STREET 1, Pipe 43 - 48						3.51				0.00				0.00	12.01													
	28	29	0.65	0.70	1.26	1.26			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	139	450	450	CONC	0.50	104.0	202	1.27	1.37	0.69
Contribution From STREET 22, Pipe 27 - 29						7.09				0.00				0.00	14.89													
	29	31	0.43	0.70	0.84	9.19			0.00	0.00			0.00	0.00	14.89	91.21	111.80	167.66	839	900	900	CONC	0.40	69.2	1145	1.80	0.64	0.73
Contribution From STREET 22, Pipe 30 - 31						1.42				0.00				0.00	10.98													
	31	32	0.41	0.70	0.80	11.41			0.00	0.00			0.00	0.00	15.53	89.27	109.43	164.48	1019	900	900	CONC	0.50	65.4	1280	2.01	0.54	0.80
	32	43	0.08	0.70	0.16	11.57			0.00	0.00			0.00	0.00	16.08	87.70	107.51	161.89	1014	900	900	CONC	0.50	12.3	1280	2.01	0.10	0.79
To STREET 1, Pipe 43 - 48						11.57				0.00				0.00	16.18													
	240	241			0.00	0.00			0.00	0.00	0.05	0.77	0.11	0.11	10.00	109.64	134.16	196.80	21	300	300	PVC	0.75	11.0	84	1.18	0.15	0.25
Contribution From STREET 46, Pipe 239 - 241						0.00				0.00				0.38	10.46													
	241	242			0.00	0.00			0.00	0.00	0.15	0.77	0.32	0.81	10.46	107.57	131.65	193.61	157	450	450	CONC	0.50	31.7	202	1.27	0.42	0.78
Contribution From STREET 33, Pipe 238 - 242						0.00				0.00				1.26	11.17													
	242	243			0.00	0.00			0.00	0.00	0.54	0.77	1.15	3.22	11.17	104.54	128.00	188.93	608	825	825	CONC	0.40	114.3	908	1.70	1.12	0.67
	243	249	0.54	0.77	1.15	1.15			0.00	0.00			0.00	3.22	12.29	100.10	122.62	181.96	701	825	825	CONC	0.40	114.3	908	1.70	1.12	0.77
Contribution From STREET 44, Pipe 248 - 249						2.19				0.00				0.00	12.51													
	249	250	0.37	0.77	0.79	4.13			0.00	0.00			0.00	3.22	13.41	96.05	117.69	175.50	962	900	900	CONC	0.45	78.6	1214	1.91	0.69	0.79
	250	251	0.34	0.77	0.72	4.86			0.00	0.00			0.00	3.22	14.10	93.74	114.88	171.77	1008	975	975	CONC	0.40	71.3	1417	1.90	0.63	0.71
Contribution From STREET 38, Pipe 235 - 251						52.93				0.00				0.98	18.69													
			0.18	0.77	0.38	58.17			0.00	0.00			0.00	4.20														
	251	254	1.68	0.40	1.87	60.04			0.00	0.00			0.00	4.20	18.69	80.88	99.17	150.48	5487	1650	1650	CONC	0.60	37.0	7060	3.30	0.19	0.78
To POND 6 INLET, Pipe 254 - HW6						60.04				0.00				4.20	18.87													

Definitions:
Q = 2.78 AIC, where
Q = Peak Flow in Litres per second (L/s)
A = Areas in hectares (ha)
I = Rainfall Intensity (mm/h)
C = Runoff Coefficient

Notes:
1) Town of Caledon Rainfall-Intensity Curve
2) Min. Velocity = 0.75 m/s
3) Minimum 10 min time of concentration

Designed: K.D.	PROJECT: **Innis Lake Road**		
Checked: K.D.	LOCATION **TOWN OF CALEDON**		
Dwg. Reference: 0	File Ref: 22-1297	Date: May 2026	Sheet No. SHEET 10 OF 12

DAVID SCHAEFFER ENGINEERING LTD.
600 ALDEN ROAD, SUITE 606
MARKHAM, ON L3R 0E7
TEL: (905) 475-3080
FAX: (905) 475-3081

STORM SEWER DESIGN

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TOWN OF CALEDON

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STORM SEWER DESIGN

	LOCATION		5 YEAR				10 YEAR				100 YEAR				FLOW					SEWER DATA								
			AREA	C	Indiv.	Accum.	AREA	C	Indiv.	Accum.	AREA	C	Indiv.	Accum.	Time of	Intensity	Intensity	Intensity	Peak Flow	DIA. (mm)	DIA. (mm)	TYPE	SLOPE	LENGTH	CAPACITY	VELOCITY	TIME OF	RATIO
Street	From MH	To MH	(Ha)		2.78 AC	2.78 AC	(Ha)		2.78 AC	2.78 AC	(Ha)		2.78 AC	2.78 AC	Conc. (min)	5 Year (mm/h)	10 Year (mm/h)	100 Year (mm/h)	Q (l/s)	(actual)	(nominal)		(%)	(m)	(l/s)	(m/s)	FLOW (min.)	Q/Q full
POND 6 INLET																												
Contribution From STREET 7, Pipe 251 - 254						60.04				0.00				4.20	18.87													
Contribution From STREET 7, Pipe 253 - 254						1.24				0.00				0.00	11.42													
	254	HW6			0.00	61.27			0.00	0.00			0.00	4.20	18.87	80.43	98.63	149.72	5557	1650	1650	CONC	0.60	31.7	7060	3.30	0.16	0.79
STREET 29																												
	245	246	0.06	0.77	0.13	0.13			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	14	300	300	PVC	0.40	11.8	61	0.87	0.23	0.23
To STREET 44, Pipe 246 - 247						0.13				0.00				0.00	10.23													
	273	274	0.06	0.79	0.13	0.13			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	14	300	300	PVC	1.00	13.8	97	1.37	0.17	0.15
	274	275	0.13	0.79	0.28	0.42			0.00	0.00			0.00	0.00	10.17	108.88	133.24	195.62	45	300	300	PVC	3.00	32.0	167	2.37	0.23	0.27
Contribution From STREET 31, Pipe 272 - 275						0.52				0.00				0.00	10.84													
	275	276	0.28	0.79	0.61	1.55			0.00	0.00			0.00	0.00	10.84	105.93	129.68	191.08	164	375	375	PVC	4.10	66.7	355	3.21	0.35	0.46
	276	277	0.06	0.79	0.13	1.68			0.00	0.00			0.00	0.00	11.19	104.48	127.92	188.83	176	450	450	CONC	0.60	14.4	221	1.39	0.17	0.80
	277	278	0.30	0.79	0.66	2.34			0.00	0.00			0.00	0.00	11.36	103.77	127.06	187.72	243	525	525	CONC	0.60	71.3	333	1.54	0.77	0.73
	278	279	0.29	0.79	0.63	2.97			0.00	0.00			0.00	0.00	12.13	100.72	123.36	182.93	299	600	600	CONC	0.75	71.3	532	1.88	0.63	0.56
To STREET 39, Pipe 279 - 280						2.97				0.00				0.00	12.76													
STREET 31																												
	260	262	0.17	0.79	0.37	0.37			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	41	300	300	PVC	0.75	41.4	84	1.18	0.58	0.49
To STREET 33, Pipe 262 - 263						0.37				0.00				0.00	10.58													
	271	272	0.21	0.79	0.46	0.46			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	50	300	300	PVC	0.75	50.7	84	1.18	0.71	0.60
	272	275	0.03	0.79	0.07	0.52			0.00	0.00			0.00	0.00	10.71	106.47	130.33	191.92	56	300	300	PVC	0.55	7.7	72	1.01	0.13	0.78
To STREET 29, Pipe 275 - 276						0.52				0.00				0.00	10.84													
STREET 33																												
	237	238			0.00	0.00			0.00	0.00	0.13	0.77	0.28	0.28	10.00	109.64	134.16	196.80	55	300	300	PVC	0.75	28.3	84	1.18	0.40	0.65
Contribution From STREET 44, Pipe 236 - 238						0.00				0.00				0.51	10.62													
	238	242			0.00	0.00			0.00	0.00	0.22	0.77	0.47	1.26	10.62	106.87	130.81	192.53	242	525	525	CONC	0.50	46.2	304	1.40	0.55	0.80
To STREET 7, Pipe 242 - 243						0.00				0.00				1.26	11.17													
	261	262	0.10	0.79	0.22	0.22			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	24	300	300	PVC	4.60	25.0	207	2.93	0.14	0.12
Contribution From STREET 31, Pipe 260 - 262						0.37				0.00				0.00	10.58													
	262	263	0.19	0.79	0.42	1.01			0.00	0.00			0.00	0.00	10.58	107.04	131.02	192.80	108	375	375	PVC	0.75	45.7	152	1.37	0.55	0.71
	263	264	0.35	0.79	0.76	1.77			0.00	0.00			0.00	0.00	11.14	104.68	128.16	189.14	185	450	450	CONC	0.75	84.0	247	1.55	0.90	0.75
	264	270	0.38	0.79	0.83	2.60			0.00	0.00			0.00	0.00	12.04	101.07	123.79	183.49	263	525	525	CONC	0.75	91.5	372	1.72	0.89	0.71
To STREET 39, Pipe 270 - 279						2.60				0.00				0.00	12.92													
STREET 47																												
	265	266	0.17	0.79	0.37	0.37			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	41	300	300	PVC	0.40	41.1	61	0.87	0.79	0.67
	266	267	0.05	0.79	0.11	0.48			0.00	0.00			0.00	0.00	10.79	106.13	129.92	191.40	51	300	300	PVC	0.45	12.0	65	0.92	0.22	0.79
	267	269	0.10	0.79	0.22	0.70			0.00	0.00			0.00	0.00	11.01	105.21	128.81	189.97	74	375	375	PVC	0.40	23.6	111	1.00	0.39	0.66
To STREET 45, Pipe 269 - 270						0.70				0.00				0.00	11.40													
STREET 45																												
	299	300	0.40	0.85	0.95	0.95			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	104	375	375	PVC	1.10	38.4	184	1.66	0.38	0.56
To STREET 35, Pipe 300 - 301						0.95				0.00				0.00	10.38													
	268	269	0.08	0.79	0.17	0.17			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	19	300	300	PVC	0.75	19.6	84	1.18	0.28	0.23
Contribution From STREET 47, Pipe 267 - 269						0.70				0.00				0.00	11.40													
	269	270	0.33	0.79	0.72	1.60			0.00	0.00			0.00	0.00	11.40	103.59	126.85	187.45	165	525	525	CONC	0.40	80.8	272	1.26	1.07	0.61
To STREET 39, Pipe 270 - 279						1.60				0.00				0.00	12.47													
STREET 46																												
	239	241			0.00	0.00			0.00	0.00	0.18	0.77	0.38	0.38	10.00	109.64	134.16	196.80	75	375	375	PVC	0.75	38.1	152	1.37	0.46	0.50
To STREET 7, Pipe 241 - 242						0.00				0.00				0.38	10.46													
	255	256	0.44	0.79	0.96	0.96			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	105	375	375	PVC	1.20	107.2	192	1.74	1.03	0.55

Definitions:
Q = 2.78 AIC, where
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Notes:
1) Town of Caledon Rainfall-Intensity Curve
2) Min. Velocity = 0.75 m/s
3) Minimum 10 min time of concentration

Designed: K.D.	PROJECT: **Innis Lake Road**		
Checked: K.D.	LOCATION **TOWN OF CALEDON**		
Dwg. Reference: 0	File Ref: 22-1297	Date: May 2026	Sheet No. SHEET 11 OF 12

DAVID SCHAEFFER ENGINEERING LTD.
600 ALDEN ROAD, SUITE 606
MARKHAM, ON L3R 0E7
TEL: (905) 475-3080
FAX: (905) 475-3081

STORM SEWER DESIGN

TOWN OF CALEDON

	LOCATION		5 YEAR				10 YEAR				100 YEAR				FLOW					SEWER DATA								
			AREA	C	Indiv.	Accum.	AREA	C	Indiv.	Accum.	AREA	C	Indiv.	Accum.	Time of	Intensity	Intensity	Intensity	Peak Flow	DIA. (mm)	DIA. (mm)	TYPE	SLOPE	LENGTH	CAPACITY	VELOCITY	TIME OF	RATIO
																											FLOW	
Street	From MH	To MH	(Ha)		2.78 AC	2.78 AC	(Ha)		2.78 AC	2.78 AC	(Ha)		2.78 AC	2.78 AC	Conc.	5 Year	10 Year	100 Year										
															(min)	(mm/h)	(mm/h)	(mm/h)	Q (l/s)	(actual)	(nominal)		(%)	(m)	(l/s)	(m/s)	(min.)	Q/Q full

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STORM SEWER DESIGN

	LOCATION		5 YEAR				10 YEAR				100 YEAR				FLOW					SEWER DATA								
			AREA	C	Indiv.	Accum.	AREA	C	Indiv.	Accum.	AREA	C	Indiv.	Accum.	Time of	Intensity	Intensity	Intensity	Peak Flow	DIA. (mm)	DIA. (mm)	TYPE	SLOPE	LENGTH	CAPACITY	VELOCITY	TIME OF	RATIO
																											FLOW	
Street	From MH	To MH	(Ha)		2.78 AC	2.78 AC	(Ha)		2.78 AC	2.78 AC	(Ha)		2.78 AC	2.78 AC	Conc.	5 Year	10 Year	100 Year										
															(min)	(mm/h)	(mm/h)	(mm/h)	Q (l/s)	(actual)	(nominal)		(%)	(m)	(l/s)	(m/s)	(min.)	Q/Q full
	256	257	0.35	0.79	0.76	1.73			0.00	0.00			0.00	0.00	11.03	105.14	128.72	189.85	181	450	450	CONC	0.75	84.0	247	1.55	0.90	0.74
	257	259	0.38	0.79	0.83	2.56			0.00	0.00			0.00	0.00	11.93	101.49	124.30	184.15	259	525	525	CONC	0.75	91.5	372	1.72	0.89	0.70
To STREET 39, Pipe 259 - 270						2.56				0.00				0.00	12.82													
STREET 39																												
	258	259	0.05	0.79	0.11	0.11			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	12	300	300	PVC	0.40	11.0	61	0.87	0.21	0.20
Contribution From STREET 46, Pipe 257 - 259						2.56				0.00				0.00	12.82													
	259	270	0.13	0.79	0.28	2.95			0.00	0.00			0.00	0.00	12.82	98.16	120.26	178.88	290	600	600	CONC	0.40	31.7	388	1.37	0.38	0.75
Contribution From STREET 33, Pipe 264 - 270						2.60				0.00				0.00	12.92													
Contribution From STREET 45, Pipe 269 - 270						1.60				0.00				0.00	12.47													
	270	279	0.30	0.79	0.66	7.80			0.00	0.00			0.00	0.00	13.20	96.79	118.60	176.69	755	750	750	CONC	1.25	73.4	1245	2.82	0.43	0.61
Contribution From STREET 29, Pipe 278 - 279						2.97				0.00				0.00	12.76													
	279	280	0.22	0.79	0.48	11.25			0.00	0.00			0.00	0.00	13.63	95.29	116.77	174.28	1072	975	975	CONC	0.40	52.5	1417	1.90	0.46	0.76
To POND 7 INLET, Pipe 280 - 281						11.25				0.00				0.00	14.10													
	282	283	0.35	0.70	0.68	0.68			0.00	0.00			0.00	0.00	10.00	109.64	134.16	196.80	75	375	375	PVC	0.40	50.2	111	1.00	0.83	0.67
	283	285	0.14	0.70	0.27	0.95			0.00	0.00			0.00	0.00	10.83	105.96	129.71	191.12	101	375	375	PVC	0.55	20.6	130	1.18	0.29	0.78
Contribution From STREET 32, Pipe 284 - 285						0.39				0.00				0.00	10.55													
	285	286	0.48	0.70	0.93	2.28			0.00	0.00			0.00	0.00	11.12	104.73	128.22	189.22	238	525	525	CONC	0.50	68.6	304	1.40	0.81	0.78
	286	287	0.08	0.70	0.16	2.43			0.00	0.00			0.00	0.00	11.94	101.45	124.26	184.10	247	525	525	CONC	0.55	11.8	319	1.47	0.13	0.77
	287	288	0.52	0.70	1.01	3.44			0.00	0.00			0.00	0.00	12.07	100.94	123.63	183.28	348	675	675	CONC	0.40	74.4	532	1.49	0.83	0.65
	288	289	0.52	0.70	1.01	4.46			0.00	0.00			0.00	0.00	12.91	97.83	119.86	178.36	436	675	675	CONC	0.45	74.1	564	1.58	0.78	0.77
	289	293	0.12	0.70	0.23	4.69			0.00	0.00			0.00	0.00	13.69	95.10	116.54	173.97	446	675	675	CONC	0.45	16.8	564	1.58	0.18	0.79
Contribution From STREET 32, Pipe 292 - 293						2.65				0.00				0.00	12.05													
	293	294	0.38	0.70	0.74	8.08			0.00	0.00			0.00	0.00	13.87	94.50	115.81	173.01	763	825	825	CONC	0.45	53.9	963	1.80	0.50	0.79
	294	295	0.07	0.70	0.14	8.21			0.00	0.00			0.00	0.00	14.37	92.87	113.82	170.36	763	825	825	CONC	0.45	9.5	963	1.80	0.09	0.79
	295	296	0.50	0.70	0.97	9.19			0.00	0.00			0.00	0.00	14.46	92.59	113.48	169.91	850	825	825	CONC	2.20	71.6	2129	3.98	0.30	0.40
To MAYFIELD ROAD, Pipe 296 - 297						9.19				0.00				0.00	14.75													
POND 7 INLET																												
Contribution From STREET 39, Pipe 279 - 280						11.25				0.00				0.00	14.10													
	280	281	0.23	0.79	0.51	11.76			0.00	0.00			0.00	0.00	14.10	93.75	114.90	171.80	1102	975	975	CONC	0.40	22.7	1417	1.90	0.20	0.78
	281	HW7			0.00	11.76			0.00	0.00			0.00	0.00	14.29	93.10	114.11	170.74	1095	975	975	CONC	0.40	11.2	1417	1.90	0.10	0.77

Definitions:
Q = 2.78 AIC, where
Q = Peak Flow in Litres per second (L/s)
A = Areas in hectares (ha)
I = Rainfall Intensity (mm/h)
C = Runoff Coefficient

Notes:
1) Town of Caledon Rainfall-Intensity Curve
2) Min. Velocity = 0.75 m/s
3) Minimum 10 min time of concentration

Designed: K.D.	PROJECT: **Innis Lake Road**		
Checked: K.D.	LOCATION **TOWN OF CALEDON**		
Dwg. Reference: 0	File Ref: 22-1297	Date: May 2026	Sheet No. SHEET 12 OF 12

Innis Lake Subcatchments Imperviousness

Land Use	Runoff Coefficient (C)	Imperviousness (%)	Innis Lake Subcatchment 1	
			Area (ha)	A x C
Neighbourhood Area	0.70	71.4%	2.76	1.93
Neighbourhood Centre	0.75	78.6%	0.00	0.00
Urban Corridor	0.85	92.9%	4.53	3.85
Natural Heritage System	0.25	7.1%	1.90	0.48
SWM Ponds	0.55	50.0%	0.26	0.14
Neigbourhood Parks	0.40	28.6%	0.00	0.00
Elementary School	0.80	85.7%	0.00	0.00
Totals			9.45	6.40
Average Runoff Coefficient (C) for Subcatchment			0.68	
Average Imperviousness for Subcatchment			68%	

Land Use	Areas (ha)
Neighbourhood Area	2.76
Neighbourhood Centre	0.00
Urban Corridor	4.53
Natural Heritage System	1.90
SWM Ponds	0.26
Neigbourhood Parks	0.00
Elementary School	0.00

Innis Lake Subcatchments Imperviousness

Land Use	Runoff Coefficient (C)	Imperviousness (%)	Innis Lake Subcatchment 2	
			Area (ha)	A x C
Neighbourhood Area	0.70	71.4%	1.09	0.76
Neighbourhood Centre	0.75	78.6%	0.00	0.00
Urban Corridor	0.85	92.9%	4.85	4.12
Natural Heritage System	0.25	7.1%	1.62	0.41
SWM Ponds	0.55	50.0%	1.07	0.59
Neigbourhood Parks	0.40	28.6%	0.00	0.00
Elementary School	0.80	85.7%	0.00	
Totals			8.63	5.88
Average Runoff Coefficient (C) for Subcatchment			0.68	
Average Imperviousness for Subcatchment			69%	

Land Use	Areas (ha)
Neighbourhood Area	1.09
Neighbourhood Centre	0.00
Urban Corridor	4.85
Natural Heritage System	1.62
SWM Ponds	1.07
Neigbourhood Parks	0.00
Elementary School	0.00

Innis Lake Subcatchments Imperviousness

Land Use	Runoff Coefficient (C)	Imperviousness (%)	Innis Lake Subcatchment 3	
			Area (ha)	A x C
Neighbourhood Area	0.70	71.4%	0.39	0.27
Neighbourhood Centre	0.75	78.6%	0.00	0.00
Urban Corridor	0.85	92.9%	1.18	1.00
Natural Heritage System	0.25	7.1%	2.05	0.51
SWM Ponds	0.55	50.0%	0.00	0.00
Neigbourhood Parks	0.40	28.6%	0.00	0.00
Elementary School	0.80	85.7%	0.05	
Totals			3.67	1.79
Average Runoff Coefficient (C) for Subcatchment			0.49	
Average Imperviousness for Subcatchment			41%	

Land Use	Areas (ha)
Neighbourhood Area	0.39
Neighbourhood Centre	0.00
Urban Corridor	1.18
Natural Heritage System	2.05
SWM Ponds	0.00
Neigbourhood Parks	0.00
Elementary School	0.05

Innis Lake Subcatchments Imperviousness

Land Use	Runoff Coefficient (C)	Imperviousness (%)	Innis Lake Subcatchment 4	
			Area (ha)	A x C
Neighbourhood Area	0.70	71.4%	36.21	25.35
Neighbourhood Centre	0.75	78.6%	0.00	0.00
Urban Corridor	0.85	92.9%	0.00	0.00
Natural Heritage System	0.25	7.1%	9.37	2.34
SWM Ponds	0.55	50.0%	4.03	2.22
Neigbourhood Parks	0.40	28.6%	1.84	0.74
Elementary School	0.80	85.7%	0.59	
Totals			52.04	30.64
Average Runoff Coefficient (C) for Subcatchment			0.59	
Average Imperviousness for Subcatchment			56%	

Land Use	Areas (ha)
Neighbourhood Area	36.21
Neighbourhood Centre	0.00
Urban Corridor	0.00
Natural Heritage System	9.37
SWM Ponds	4.03
Neigbourhood Parks	1.84
Place of Worship	0.59

Innis Lake Subcatchments Imperviousness

Land Use	Runoff Coefficient (C)	Imperviousness (%)	Innis Lake Subcatchment 5	
			Area (ha)	A x C
Neighbourhood Area	0.70	71.4%	31.14	21.80
Neighbourhood Centre	0.75	78.6%	2.92	2.19
Urban Corridor	0.85	92.9%	15.73	13.37
Natural Heritage System	0.25	7.1%	27.12	6.78
SWM Ponds	0.55	50.0%	4.44	2.44
Neigbourhood Parks	0.40	28.6%	3.82	1.53
Elementary School	0.80	85.7%	1.56	
Totals			86.73	48.11
Average Runoff Coefficient (C) for Subcatchment			0.55	
Average Imperviousness for Subcatchment			51%	

Land Use	Areas (ha)
Neighbourhood Area	31.14
Neighbourhood Centre	2.92
Urban Corridor	15.73
Natural Heritage System	27.12
SWM Ponds	4.44
Neigbourhood Parks	3.82
Elementary School	1.56

Innis Lake Subcatchments Imperviousness

Land Use	Runoff Coefficient (C)	Imperviousness (%)	Innis Lake Subcatchment 1	
			Area (ha)	A x C
Pre-Dev	0.25	7.1%	12.53	3.13
Totals			12.53	3.13
Average Runoff Coefficient (C) for Subcatchment			0.25	
Average Imperviousness for Subcatchment			7%	

Land Use	Areas (ha)
	12.53

Innis Lake Subcatchments Imperviousness

Land Use	Runoff Coefficient (C)	Imperviousness (%)	Innis Lake Subcatchment 2	
			Area (ha)	A x C
Pre-Dev	0.25	7.1%	73.44	18.36
Totals			73.44	18.36
Average Runoff Coefficient (C) for Subcatchment			0.25	
Average Imperviousness for Subcatchment			7%	

Land Use	Areas (ha)
	73.44

Innis Lake Subcatchments Imperviousness

Land Use	Runoff Coefficient (C)	Imperviousness (%)	Innis Lake Subcatchment 3	
			Area (ha)	A x C
Pre-Dev	0.25	7.1%	165.16	41.29
Totals			165.16	41.29
Average Runoff Coefficient (C) for Subcatchment			0.25	
Average Imperviousness for Subcatchment			7%	

Land Use	Areas (ha)
	165.16

Innis Lake Subcatchments Imperviousness

Land Use	Runoff Coefficient (C)	Imperviousness (%)	Innis Lake Subcatchment 4	
			Area (ha)	A x C
Pre-Dev	0.25	7.1%	52.04	13.01
Totals			52.04	13.01
Average Runoff Coefficient (C) for Subcatchment			0.25	
Average Imperviousness for Subcatchment			7%	

Land Use	Areas (ha)
	52.04

Innis Lake Subcatchments Imperviousness

Land Use	Runoff Coefficient (C)	Imperviousness (%)	Innis Lake Subcatchment 5	
			Area (ha)	A x C
Pre-Dev	0.25	7.1%	89.72	22.43
Totals			89.72	22.43
Average Runoff Coefficient (C) for Subcatchment			0.25	
Average Imperviousness for Subcatchment			7%	

Land Use	Areas (ha)
	89.72

	Pre-Development	Post-Development	
Catchment ID	**Area**	**Area**	**Imperviousness**
36.07	12.53	9.45	68%
36.09	73.44	8.63	69%
36.10	165.16	3.67	41%
36.08	52.04	52.04	56%
36.11	89.72	86.73	51%

PROJECT 1297 — 12351 Innis Lake Road, Caledon

Stormwater Management Pond Sizing — Summary Appendix C

Table 1: Pond Design Summary — All Ponds

Pond	Node ID	DA (ha)	Imp. Frac.	Safety Factor	PP Bot Elev. (m)	PP Top Elev. (m)	PP Req. (m^3)	PP Prov. (m^3)	EC Q (m^3/s)	EC Vol (m^3)	100yr Q (m^3/s)	EC Draw-down (h)
Pond 1	0012	24.11	0.82	0.78	227.500	229.500	4,943	4,206	0.09644	3,954	0.7233	22.8
Pond 2	0013	24.14	0.67	0.83	224.000	226.000	4,949	4,965	0.09656	3,235	0.7242	18.6
Pond 3	0014	9.79	0.70	0.78	220.750	223.730	2,007	2,816	0.03916	1,371	0.2937	19.4
Pond 4	0015	14.66	0.72	0.78	223.000	226.000	3,005	4,643	0.05864	2,111	0.4398	20.0
Pond 5	0007	9.33	0.69	0.83	220.000	222.000	1,913	2,000	0.03732	1,288	0.2799	19.2
Pond 6	0020	32.18	0.68	0.85	224.300	226.300	6,597	10,768	0.12872	4,376	0.9654	18.9
Pond 7	0021	9.95	0.80	0.78	221.000	223.000	2,040	2,090	0.03980	1,592	0.0768	22.2

PROJECT 1297 — 12351 Innis Lake Road, Caledon

Table 1A — Drainage Area Summary Appendix C May 7, 2026

Table 1A: Drainage Area and Impervious Fraction — All Ponds

Pond	Node ID	Total DA (ha)	Gross Imp. Frac.	Net Imp. Area (ha)	EC Release Rate (m^3/s/total DA·ha)	EC Max. Release (m^3/s)	EC Volume (m^3 / net imp·ha)
Pond 1	0012	24.11	0.820	19.77	0.004	0.09644	200
Pond 2	0013	24.14	0.670	16.17	0.004	0.09656	200
Pond 3	0014	9.79	0.700	6.85	0.004	0.03916	200
Pond 4	0015	14.66	0.720	10.56	0.004	0.05864	200
Pond 5	0007	9.33	0.690	6.44	0.004	0.03732	200
Pond 6	0020	32.18	0.680	21.88	0.004	0.12872	200
Pond 7	0021	9.95	0.800	7.96	0.004	0.03980	200

Notes: Net impervious area = Total DA × Gross Impervious Fraction. EC release rate = 0.004 m^3/s per total drainage area hectare (Basis: JFSA, September 12, 2017). EC volume = 200 m^3 per net impervious hectare.

PROJECT 1297 — 12351 Innis Lake Road, Caledon

Table 1B — Allowable Release Rates and Required Volumes Appendix C May 7, 2026

Table 1B: Design Control Points — Allowable Release Rates and Required Volumes

Pond	Node ID	EC Q (m^3/s)	EC Vol (m^3)	EC Elev (m)	100-yr Q (m^3/s)	100-yr Elev (m)	Regional Q (m^3/s)
Pond 1	0012	0.09644	3,954	230.369	0.7233	231.814	2.6087
Pond 2	0013	0.09656	3,235	226.641	0.7242	227.779	2.6119
Pond 3	0014	0.03916	1,371	224.173	0.2937	225.030	1.0593
Pond 4	0015	0.05864	2,111	226.554	0.4398	227.469	1.5862
Pond 5	0007	0.03732	1,288	222.476	0.2799	223.274	1.0095
Pond 6	0020	0.12872	4,376	226.784	0.9654	228.059	3.4819
Pond 7	0021	0.03980	1,592	223.603	0.0768	224.729	0.0799

PROJECT 1297 — 12351 Innis Lake Road, Caledon

Forebay Sizing Calculations Appendix H-1 May 7, 2026

Forebay Sizing — Settling Criteria and Dispersion Criteria (SWMP Manual, MOE 2003)

Pond	r = L/W	EC Qp (m^3/s)	Settling Lmin (m)	Q10 Inflow (m^3/s)	Depth used for Dispersion d	Vf (m/s)	Dispersion Lmin (m)	Governing Criterion	Governing Lmin (m)	Provided Length (m)	Margin (m)	Reference Formula
Pond 1	2.811	0.09644	30.06	5.929	2	0.5	47.43	Dispersion	47.43	46	-1.43	L=√(r·Qp/Vs); L=8Q10/(d·Vf)
Pond 2	2.811	0.09656	30.08	3.170	1.50	0.50	33.81	Dispersion	33.81	35.0	1.19	L=√(r·Qp/Vs); L=8Q10/(d·Vf)
Pond 3	2.811	0.03916	19.15	3.170	1.50	0.50	33.81	Dispersion	33.81	35.0	1.19	L=√(r·Qp/Vs); L=8Q10/(d·Vf)
Pond 4	2.811	0.05864	23.44	3.170	1.50	0.50	33.81	Dispersion	33.81	35.0	1.19	L=√(r·Qp/Vs); L=8Q10/(d·Vf)
Pond 5	2.811	0.03732	18.70	3.170	1.50	0.50	33.81	Dispersion	33.81	35.0	1.19	L=√(r·Qp/Vs); L=8Q10/(d·Vf)
Pond 6	2.811	0.12872	34.73	6.911	2.00	0.50	55.29	Dispersion	55.29	55.0	-0.29	L=√(r·Qp/Vs); L=8Q10/(d·Vf)
Pond 7	2.811	0.03980	19.31	3.170	1.50	0.50	33.81	Dispersion	33.81	35.0	1.19	L=√(r·Qp/Vs); L=8Q10/(d·Vf)

PROJECT 1297 — 12351 Innis Lake Road, Caledon

Forebay Bottom Width and Velocity Check Appendix C May 7, 2026

Forebay Minimum Bottom Width and Velocity Check

Pond	Governing L_min (m)	Min. Bottom Width = L/8 (m)	Bottom Width Provided (m)	Forebay Depth (m)	Avg. Width (m)	Q_10 Inflow (m^3/s)	Velocity V = Q/(d×W) (m/s)
Pond 1	47.43	5.930	6.0	2.0	36	5.929	0.08200
Pond 2	33.81	4.230	5.0	1.5	35	3.170	0.06000
Pond 3	33.81	4.230	5.0	1.5	35	3.170	0.06000
Pond 4	33.81	4.230	5.0	1.5	35	3.170	0.06000
Pond 5	33.81	4.230	5.0	1.5	35	3.170	0.06000
Pond 6	55.29	6.910	7.0	1.5	37	6.911	0.12500
Pond 7	33.81	4.230	5.0	1.5	35	3.170	0.06000

PROJECT 1297 — 12351 Innis Lake Road, Caledon

EC Volume Drawdown Time Summary Appendix C May 7, 2026

Table 2: Erosion Control Volume Drawdown Time Summary — All Ponds

Pond	Node ID	PP Top Elev. (m)	EC Elev. (m)	Active Storage at EC (m^3)	EC Release Flow (m^3/s)	Drawdown Time (h)	Drawdown Time (days)
Pond 1	0012	229.500	230.369	3,954	0.09644	22.8	0.95
Pond 2	0013	226.000	226.641	3,235	0.09656	18.6	0.78
Pond 3	0014	223.730	224.173	1,371	0.03916	19.5	0.81
Pond 4	0015	226.000	226.554	2,111	0.05864	20.0	0.83
Pond 5	0007	222.000	222.476	1,288	0.03732	19.2	0.80
Pond 6	0020	226.300	226.784	4,376	0.12872	18.9	0.79
Pond 7	0021	223.000	223.603	1,592	0.03980	22.2	0.93

All ponds drain the EC volume within 48 hours based on the summarized storage-discharge rating curves.

PROJECT 1297 — 12351 Innis Lake Road, Caledon

Pond 1 — Stage-Storage-Discharge (RouteReservoir Input) Appendix C May 7, 2026

Table A-3: Pond 1 (0012) — Stage-Storage-Discharge Curve (VO RouteReservoir Format)

Permanent Pool Top Elev.	229.500 m
Permanent Pool Bottom Elev.	227.500 m
EC Release Rate	0.09644 m³/s
100-Year Peak Release	0.7233 m³/s
Regional Peak Release	2.6087 m³/s

VO RouteReservoir Input — Discharge (DISCH, m³/s) vs. Active Storage (STORAGE, ha·m)

Control Zone	Water Surface Elev. (m)	Active Storage above PP Top (m³)	Active Storage (ha·m)	Outflow Q (m³/s)	Drawdown Time (h)	Notes
PP Top	**229.500**	**0**	**0.0000**	**0.00000**	**0.0**	**PP Top — zero active storage baseline**
EC	**230.369**	**3,954**	**0.3954**	**0.09640**	**22.8**	**EC control — orifice release**
25-Year	231.232	8,897	0.8897	0.24350	30.9	25-year storm control
100-Year	231.814	12,703	1.2703	0.72330	33.1	100-year storm control
Regional	Ext.*	27,465	2.7465	2.60870	35.5	Regional (Hazel) storm — overflow weir — elevation outside stage-storage table

PROJECT 1297 — 12351 Innis Lake Road, Caledon

Pond 2 — Stage-Storage-Discharge (RouteReservoir Input) Appendix C May 7, 2026

Table A-3: Pond 2 (0013) — Stage-Storage-Discharge Curve (VO RouteReservoir Format)

Permanent Pool Top Elev.	226.000 m
Permanent Pool Bottom Elev.	224.000 m
EC Release Rate	0.09656 m³/s
100-Year Peak Release	0.7242 m³/s
Regional Peak Release	2.6119 m³/s

VO RouteReservoir Input — Discharge (DISCH, m³/s) vs. Active Storage (STORAGE, ha·m)

Control Zone	Water Surface Elev. (m)	Active Storage above PP Top (m³)	Active Storage (ha·m)	Outflow Q (m³/s)	Drawdown Time (h)	Notes
PP Top	**226.000**	**0**	**0.0000**	**0.00000**	**0.0**	**PP Top — zero active storage baseline**
EC	**226.641**	**3,235**	**0.3235**	**0.09660**	**18.6**	**EC control — orifice release**
100-Year	227.779	10,714	1.0714	0.72420	23.7	100-year storm control
Regional	228.959	20,352	2.0352	2.61190	25.3	Regional (Hazel) storm — overflow weir

PROJECT 1297 — 12351 Innis Lake Road, Caledon

Pond 3 — Stage-Storage-Discharge (RouteReservoir Input) Appendix C May 7, 2026

Table A-3: Pond 3 (0014) — Stage-Storage-Discharge Curve (VO RouteReservoir Format)

Permanent Pool Top Elev.	223.730 m
Permanent Pool Bottom Elev.	220.750 m
EC Release Rate	0.03916 m³/s
100-Year Peak Release	0.2937 m³/s
Regional Peak Release	1.0593 m³/s

VO RouteReservoir Input — Discharge (DISCH, m³/s) vs. Active Storage (STORAGE, ha·m)

Control Zone	Water Surface Elev. (m)	Active Storage above PP Top (m³)	Active Storage (ha·m)	Outflow Q (m³/s)	Drawdown Time (h)	Notes
PP Top	**223.730**	**0**	**0.0000**	**0.00000**	**0.0**	**PP Top — zero active storage baseline**
EC	**224.173**	**1,371**	**0.1371**	**0.03920**	**19.4**	**EC control — orifice release**
25-Year	224.602	3,084	0.3084	0.09890	26.3	25-year storm control
100-Year	225.030	4,975	0.4975	0.29370	29.0	100-year storm control
Regional	225.755	8,602	0.8602	1.05930	30.5	Regional (Hazel) storm — overflow weir

PROJECT 1297 — 12351 Innis Lake Road, Caledon

Pond 4 — Stage-Storage-Discharge (RouteReservoir Input) Appendix C May 7, 2026

Table A-3: Pond 4 (0015) — Stage-Storage-Discharge Curve (VO RouteReservoir Format)

Permanent Pool Top Elev.	226.000 m
Permanent Pool Bottom Elev.	223.000 m
EC Release Rate	0.05864 m³/s
100-Year Peak Release	0.4398 m³/s
Regional Peak Release	1.5862 m³/s

VO RouteReservoir Input — Discharge (DISCH, m³/s) vs. Active Storage (STORAGE, ha·m)

Control Zone	Water Surface Elev. (m)	Active Storage above PP Top (m³)	Active Storage (ha·m)	Outflow Q (m³/s)	Drawdown Time (h)	Notes
PP Top	**226.000**	**0**	**0.0000**	**0.00000**	**0.0**	**PP Top — zero active storage baseline**
EC	**226.554**	**2,111**	**0.2111**	**0.05860**	**20.0**	**EC control — orifice release**
25-Year	227.099	4,750	0.4750	0.14810	27.1	25-year storm control
100-Year	227.469	6,766	0.6766	0.43980	29.0	100-year storm control
Regional	228.540	13,729	1.3729	1.58620	30.9	Regional (Hazel) storm — overflow weir

PROJECT 1297 — 12351 Innis Lake Road, Caledon

Pond 5 — Source Workbook Stage-Storage-Discharge Appendix C May 7, 2026

Table A-3: Pond 5 — Stage-Storage-Discharge Curve from Updated PondVolumes Workbook

Permanent Pool Top Elev.	222.000 m
Permanent Pool Bottom Elev.	220.000 m
EC Release Rate	0.03732 m³/s
100-Year Peak Release	0.2799 m³/s
Regional Peak Release	1.0095 m³/s

Source Workbook

Control Zone	Water Surface Elev. (m)	Active Storage above PP Top (m³)	Active Storage (ha·m)	Outflow Q (m³/s)	Drawdown Time (h)	Notes
NOTE: Pond 5/6 SSD values in this v04 workbook use the updated source PondVolumes workbook target release rates. They intentionally do not match VO iteration 12 actual routed outflow for 100-year and Regional controls.						
PP Top	**222**	**0**	**0.0000**	**0.00000**	**0.0**	**PP Top — zero active storage baseline**
EC	**222.476**	**1,288**	**0.1288**	**0.03732**	**19.2**	**Source workbook EROSION CONTROL target**
25-Year	222.928	2,897	0.2897	0.09423	26.0	Source workbook 25 YEAR target
100-Year	223.274	4,256	0.4256	0.27990	28.0	Source workbook 100 YEAR target
Regional	225.223	14,114	1.4114	1.00951	32.2	Source workbook REGIONAL target

PROJECT 1297 — 12351 Innis Lake Road, Caledon

Pond 6 — Source Workbook Stage-Storage-Discharge Appendix C May 7, 2026

Table A-3: Pond 6 — Stage-Storage-Discharge Curve from Updated PondVolumes Workbook

Permanent Pool Top Elev.	226.300 m
Permanent Pool Bottom Elev.	224.300 m
EC Release Rate	0.12872 m³/s
100-Year Peak Release	0.9654 m³/s
Regional Peak Release	3.4819 m³/s

Control Zone	Water Surface Elev. (m)	Active Storage above PP Top (m³)	Active Storage (ha·m)	Outflow Q (m³/s)	Drawdown Time (h)	Notes
NOTE: Pond 5/6 SSD values in this v04 workbook use the updated source PondVolumes workbook target release rates. They intentionally do not match VO iteration 12 actual routed outflow for 100-year and Regional controls.						
PP Top	**226.3**	**0**	**0.0000**	**0.00000**	**0.0**	**PP Top — zero active storage baseline**
EC	**226.784**	**4,376**	**0.4376**	**0.12872**	**18.9**	**Source workbook EROSION CONTROL target**
25-Year	227.297	9,847	0.9847	0.32502	25.6	Source workbook 25 YEAR target
100-Year	228.059	18,878	1.8878	0.96540	29.5	Source workbook 100 YEAR target
Regional	230.851	61,596	6.1596	3.48188	34.8	Source workbook REGIONAL target

PROJECT 1297 — 12351 Innis Lake Road, Caledon	
Pond 7 — Stage-Storage-Discharge (RouteReservoir Input) Appendix C May 7, 2026	
Table A-3: Pond 7 (0021) — Stage-Storage-Discharge Curve (VO RouteReservoir Format)	
Permanent Pool Top Elev.	223.000 m
Permanent Pool Bottom Elev.	221.000 m
EC Release Rate	0.03980 m³/s
100-Year Peak Release	0.0768 m³/s
Regional Peak Release	0.0799 m³/s

VO RouteReservoir Input — Discharge (DISCH, m³/s) vs. Active Storage (STORAGE, ha·m)						
Control Zone	**Water Surface Elev. (m)**	**Active Storage above PP Top (m³)**	**Active Storage (ha·m)**	**Outflow Q (m³/s)**	**Drawdown Time (h)**	**Notes**
NOTE: Source: 060648 calculation basis. Pond 5/6/7 discharge-storage points are VO iteration 12 rating-curve points. 100-year and Regional values above are interpolated at design control storage and may not coincide exactly with a listed curve point.						
PP Top	**223**	**0**	**0.0000**	**0.00000**	**0.0**	**PP Top — zero active storage baseline**
EC	**223.603**	**1,592**	**0.1592**	**0.03980**	**22.2**	**EC control — orifice release**
25-Year	224.178	3,582	0.3582	0.07500	31.9	25-year storm control
Curve Point 3	225.6	9,800	0.9800	0.08000	54.1	VO iteration 12 rating-curve point.
Curve Point 4	226	11,970	1.1970	0.08500	61.4	VO iteration 12 rating-curve point.
High Curve Point	Ext.*	16,000	1.6000	0.10500	73.2	Rating-curve point exceeds stage-storage table; do not use without updated storage support.

LID SUMMARY								Conceptual LID Design											
LID Number	Description	Location	Type	CB T/G	Top of LID Trench (mbgs)	Bottom of LID Trench (mbgs)	Trench Depth (m)	Approx. Length (m)	LID Trench Width (m)	Area (m2)	Depth of Water in LID (m)	Porosity*	LID Volume (m3)	Approx. Contributing Area (m2)	IMP	Rainfall Event Storage (mm)	Storage Volume (m3)	Percolation Rate** (mm/hr)	Drawdown Time (hr)***
DSEL DESIGN																			
36.07																			
21	Public	Roads	Infiltration Trench	266.81	265.61	265.1	0.55	55	3.0	165	0.55	0.4	36.3	4238	0.67	12.8	36.3	4.8	45.8
35/39	Public	Roads	Infiltration Trench	266.81	265.61	265.1	0.55	72	3.0	216	0.55	0.4	47.5	7689	0.67	9.2	47.5	4.8	45.8
36.08																			
P4-115	Public	Roads	Infiltration Trench	264.45	263.25	262.7	0.55	43	2.0	86	0.55	0.4	18.9	1756	0.74	14.5	18.9	4.8	45.8
P4-105	Public	Roads	Infiltration Trench	264.45	263.25	262.7	0.55	366	2.0	732	0.55	0.4	161.0	40613	0.74	5.3	161.0	4.8	45.8
P4-110	Public	Roads	Infiltration Trench	264.45	263.25	262.7	0.55	137	2.0	274	0.55	0.4	60.3	2418	0.74	25.0	44.9	4.8	45.8
P4-119	Public	Roads	Infiltration Trench	264.45	263.25	262.7	0.55	77	2.0	154	0.55	0.4	33.9	5763	0.74	7.9	33.9	4.8	45.8
P2-59	Public	Roads	Infiltration Trench	264.45	263.25	262.7	0.55	81	2.0	162	0.55	0.4	35.6	11343	0.67	4.7	35.6	4.8	45.8
P2-39	Public	Roads	Infiltration Trench	264.96	263.76	263.2	0.55	108	2.0	216	0.55	0.4	47.5	2605	0.67	25.0	43.7	4.8	45.8
P2-21	Public	Roads	Infiltration Trench	265.18	263.98	263.4	0.55	35	2.0	70	0.55	0.4	15.4	5494	0.67	4.2	15.4	4.8	45.8
P3-86	Public	Roads	Infiltration Trench	265.18	263.98	263.4	0.55	60	2.0	120	0.55	0.4	26.4	963	0.71	25.0	17.2	4.8	45.8
36.09																			
97	Public	Roads	Infiltration Trench	264.23	263.03	262.5	0.55	180	2.0	360	0.55	0.4	79.2	8693	0.74	12.3	79.2	4.8	45.8
36.10																			
204	Public	Roads	Infiltration Trench	266.17	264.97	264.4	0.55	49	2.0	98	0.55	0.4	21.6	3827	0.70	8.0	21.6	4.8	45.8
199	Public	Roads	Infiltration Trench	266.17	264.97	264.4	0.55	153	2.0	306	0.55	0.4	67.3	7440	0.70	12.9	67.3	4.8	45.8
36.11																			
P4-121	Public	Roads	Infiltration Trench	264.5	263.3	262.8	0.55	85	3.0	255	0.55	0.4	56.1	5763	0.74	13.1	56.1	4.8	45.8
P4-99	Public	Roads	Infiltration Trench	264.5	263.3	262.8	0.55	185	3.0	555	0.55	0.4	122.1	10273	0.74	16.0	122.1	4.8	45.8
247	Public	Roads	Infiltration Trench	264.5	263.3	262.8	0.55	92	3.0	276	0.55	0.4	60.7	4415	0.76	18.2	60.7	4.8	45.8
215	Public	Roads	Infiltration Trench	264.5	263.3	262.8	0.55	454	3.0	1362	0.55	0.4	299.6	19334	0.76	20.5	299.6	4.8	45.8
175	Public	Roads	Infiltration Trench	264.5	263.3	262.8	0.55	628	3.0	1884	0.55	0.4	414.5	38167	0.76	14.3	414.5	4.8	45.8
168	Public	Roads	Infiltration Trench	264.5	263.3	262.8	0.55	168	2.0	336	0.55	0.4	73.9	3165	0.76	25.0	59.9	4.8	45.8
179	Public	Roads	Infiltration Trench	264.5	263.3	262.8	0.55	76	3.0	228	0.55	0.4	50.2	3348	0.76	19.8	50.2	4.8	45.8
189	Public	Roads	Infiltration Trench	264.24	263.04	262.5	0.55	64	3.0	192	0.55	0.4	42.2	7276	0.76	7.7	42.2	4.8	45.8

Hydraulic Capacity and Modeling Analysis
Caledon Block G1 Development

Technical Memorandum

Final

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Project ID: 2025-089-DSE

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Revision No.	Date	Document Description	Revised By	Reviewed By
R0	March 9, 2026	Draft	Joshua Ip	Werner de Schaetzen
R1	March 23, 2026	Updated Draft	Joshua Ip	Werner de Schaetzen
R2	March 30, 2026	Updated Draft	Joshua Ip	Werner de Schaetzen
R3	April 7, 2026	Final	Joshua Ip	Werner de Schaetzen

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1 Introduction

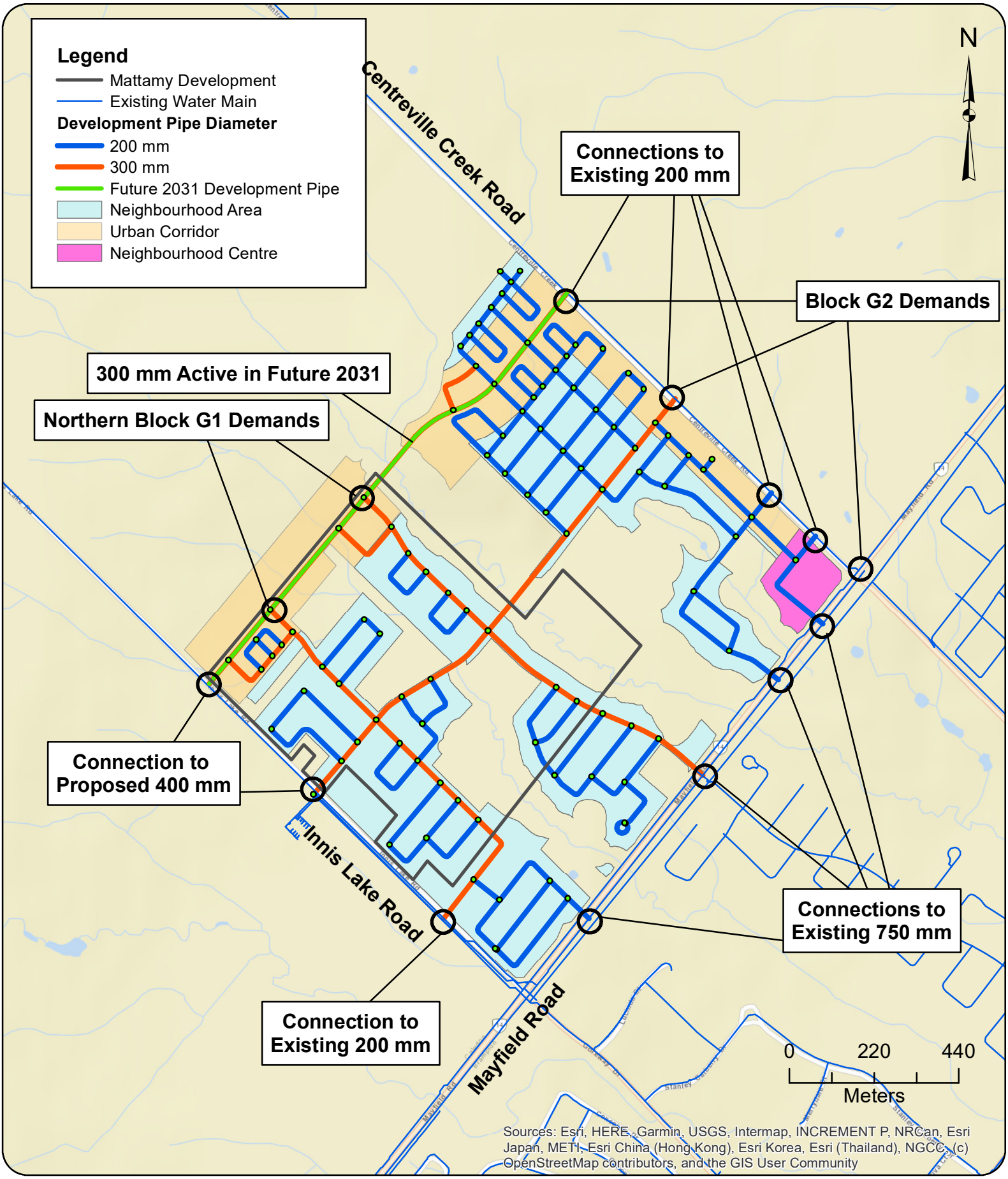
GeoAdvice Engineering Inc. (GeoAdvice) was retained by David Schaeffer Engineering Ltd. (DSEL) to complete the hydraulic modeling and pipe network sizing of the Caledon Block G1 (Development) located in the Town of Caledon, Region of Peel (Region).

The Caledon G1 development is located north of Mayfield Road and between Innis Lake Road and Centreville Creek Road in Caledon, ON. The site is shown in **Figure 1.1** on the following page, illustrating the site layout, proposed water distribution system and connection points.

The development will occur in three phases:

- Interim 2026: Mattamy Development only (one (1) connection to the system on Innis Lake Road). Total residential population of 4,672.
- Full 2026: Expands upon Interim 2026 by incorporating the rest of the Block G1 Development. The development population of the northern half of Block G1 is assumed to be the same as the southern half. Total residential population of 30,348.
- Future 2031: Includes the development demands of the Block G2 development (assumed to have the same development population as Block G1. Point load allocation along Centreville Creek Road).

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GeoAdvice Engineering Inc.

Project: **Hydraulic Capacity and Modeling Analysis**
Caledon Block G1 Development
2025-089-DSE
Client: **David Schaeffer Engineering Ltd.**
Date: **March 2026**
Created by: **JI**
Reviewed by: **WdS**

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Site Layout

Figure 1.1

The development will be connected to Pressure Zone 6, as summarized below:

Scenario 1 – Interim 2026 (Mattamy Development Only):

- One (1) connection to the proposed 400 mm main on Innis Lake Road

Scenario 2 – Full 2026 (Complete Block G1 Development):
Innis Lake Road – Two (2) Connections:

- One (1) connection to the 400 mm main from the Mattamy connection
- One (1) connection to the existing 200 mm main on the south side of Innis Lake Road

Mayfield Road – Four (4) Connections:

- All four (4) connections will connect to the existing 750 mm main within Pressure Zone 6

Centreville Creek Road – Three (3) Connections:

- Three (3) connections to the existing 200 mm main

Scenario 3 – Future 2031 (Complete Block G1 and G2 Developments):
The connections of the Future 2031 scenario will be the same as the Full 2026 scenario with the addition of a proposed trunk main connecting Innis Lake Road and Centreville Creek Road.

This memo describes the assumptions and results of the hydraulic modeling and capacity analysis using the Region of Peel InfoWater Pro water model dated on January 24, 2023 (Autodesk Software). InfoWater Pro is a GIS water distribution system modeling and management software application. The development water network was incorporated into the Region model in order to complete the hydraulic and sizing analysis.

The results presented in this memo are based on the analysis of steady state simulations. The predicted available fire flows, as calculated by the hydraulic model, represent the flow available in the water main while maintaining a residual pressure of 22 psi at the hydrant. No extended period simulations were completed in this analysis to assess the water quality or to assess the hydraulic capacity of storage and pumping facilities in Pressure Zone 6.

2 Demands

2.1 Consumer Demands

To estimate the total development population requiring water service, population data were first calculated in accordance with the development's site plan. Population estimates were then multiplied by the rates provided in the Region of Peel's Development Charges Background Study (2020).

The assumptions used in estimating water demand for the development are summarized in **Table 2.1.**

Table 2.1: Region of Peel Per Capita Water Demand Rates*

Demand Type	Amount	Units
Average Day Demand (ADD)		
Residential	270	L/c/d
Maximum Daily Demand (MDD)		
Residential	1.8 x ADD	L/c/d
Peak Hour Demand (PHD)		
Residential	3.0 x ADD	L/c/d

***Based on Region of Peel Development Charges Background Study (2020)**

Table 2.2 and **Table 2.3** summarize the water demand calculations for the Interim 2026, Full 2026 & Future 2031 scenarios.

Table 2.2: Residential Water Demand Calculations – Interim 2026

Dwelling Type	Area (ha)	Persons Per Hectare*	Population	Average Day Demand (L/s)	Maximum Day Demand (L/s)	Peak Hour Demand (L/s)
Neighbourhood Area	31.8	115	3,657	11.4	20.6	34.3
Urban Corridor	5.8	175	1,015	3.2	5.7	9.5
Total	**37.6**		**4,672**	**14.6**	**26.3**	**43.8**

***Density provided by DSEL on February 26, 2026.**

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Table 2.3: Residential Water Demand Calculations Southern Portion – Full 2026 & Future 2031*

Residential Zone	Area	Persons Per Hectare**	Population	Average Day Demand (L/s)	Maximum Day Demand (L/s)	Peak Hour Demand (L/s)
Neighbourhood Area	74.1	115	8,522	26.6	47.9	79.9
Urban Corridor	29.6	175	5,180	16.2	29.1	48.6
Neighbourhood Centre	3.1	475	1,473	4.6	8.4	13.8
Total	**106.8**		**15,174**	**47.4**	**85.4**	**142.3**

***Total population and demands of Block G1 are assumed to be 2x the population calculated.**
****Density provided by DSEL on February 26, 2026.**

The demands for the northern portion of Block G1 were assumed to be the same as those calculated for the southern portion. The total demand was split evenly between the two junctions, as shown in **Figure 1.1** (marked as Northern Block G1 Demands). Detailed demand calculations are provided in **Appendix A**.

2.2 Fire Flows

Fire flow demands were provided by DSEL on February 24, 2026 and are as follows:

- Neighbourhood Area: 9,000 L/min (150 L/s)
- Urban Corridor: 12,000 L/min (200 L/s)
- Neighbourhood Centre: 12,000 L/min (200 L/s)

Fire flow simulations were completed at each model node. The locations of nodes do not necessarily represent hydrant locations. The spatial allocation of the required fire flows is shown in **Appendix B**.

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3 Modeling Considerations

3.1 Water Main Configuration

The water main network was laid out based on the development layout prepared by David Schaeffer Engineering (1297_wmServ_2026-02-26.dwg) and provided to GeoAdvice on February 26, 2026.

3.2 Pressure Requirements

As outlined in the Region of Peel Design Guidelines, the generally accepted best practice is to design new water distribution systems to operate between 40 psi and 100 psi. Pressure requirements are outlined in **Table 3.1**.

Table 3.1: Region of Peel Pressure Requirements

Type	Minimum Pressure (psi)	Maximum Pressure (psi)
Minimum Distribution Pressure	40	-
Maximum Distribution Pressure	-	100
Maximum Day Plus Fire	22	-

3.3 Elevations

Elevations of the modeled junctions were assumed to be 230 m as agreed upon by DSEL on March 4, 2026.

3.4 Pipe Characteristics

Pipe diameters and Hazen-Williams C-factors were assigned in the model according to the Region of Peel Design Guidelines and the Ministry of Environment. Pipe characteristics used for the development are outlined in **Table 3.2** below.

Table 3.2: Model Pipe Characteristics

Nominal Diameter (mm)	Hazen Williams C-Factor
200	110
300	120

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4 Modeling Results

The proposed water mains within the development were sized to the minimum diameter which would satisfy the greater of maximum day plus fire and peak hour demand. Modeling was carried out for peak hour and maximum day plus fire flow using InfoWater Pro.

4.1 Pressure Analysis

The modeling results indicate that the development can be adequately serviced by the proposed water main layout with the recommended sizes. Modeled service pressures for the development are summarized in **Table 4.1** and **Table 4.2** below.

Table 4.1: Summary of Pressures (ADD)

Scenario	Maximum Pressure (psi)	Average Pressure (psi)	Minimum Pressure (psi)
Interim 2026	90.5	90.4	90.4
Full 2026	97.9	97.1	96.8
Future 2031	90.8	90.4	90.1

The average pressure difference between the Interim 2026 and Full 2026 scenarios is caused by the activation of Pump #1 at the Wildfield Pump Station in the Full 2026 scenario.

As outlined in the Region of Peel Design Guidelines, the generally accepted best practice is to design new water distribution systems to operate between 40 psi and 100 psi. As summarized in the table above, the model predicts that ADD pressures do not exceed 100 psi. As such, local PRVs may not be required within the development. Refer to **Appendix C** for detailed ADD pressure map results.

Table 4.2: Summary of Pressures (PHD)

Scenario	Maximum Pressure (psi)	Average Pressure (psi)	Minimum Pressure (psi)
Interim 2026	92.8	92.5	92.4
Full 2026	89.0	86.6	83.8
Future 2031	89.8	86.9	85.1

As summarized in the table above, the model predicts that no pressures are below 40 psi within the development. Additionally, the model predicts that no water main will reach a velocity in excess of 2.0 m/s under PHD conditions. Refer to **Appendix C** for detailed PHD pressure map results.

4.2 Fire Flow Analysis

The minimum allowable pressure under fire flow conditions is 22 psi at the location of the fire. A summary of available fire flows is shown in **Table 4.3**.

Table 4.3: Summary of Available Fire Flows (MDD + FF) @ 22 psi*

Scenario	Maximum Available Fire Flow (L/s)	Average Available Fire Flow (L/s)	Minimum Available Fire Flow (L/s)
Interim 2026	> 500	371	244
Full 2026	> 500	468	176
Future 2031	> 500	> 500	199

*The predicted available fire flows, as calculated by the hydraulic model, represent the flow available in the water main while maintaining a residual pressure of 22 psi at the hydrant. High available fire flows (>500 L/s) are theoretical values. Actual available fire flow is limited by the hydraulic losses through the hydrant lateral and hydrant port sizes.

If the 3.5 m/s velocity constraint is applied, the following nine (9) junctions will experience low fire flows in the Future 2031 scenario, as summarized in **Table 4.4**. Junctions on dead-end pipes may experience high velocities, creating a trade-off between maintaining adequate velocity and preserving water quality. Upsizing these pipes from 200 mm to 300 mm would help reduce velocity but could negatively impact water turnover.

Table 4.4: Fire Flow Junctions Deficient with 3.5 m/s Velocity Constraint – Future 2031

Junction ID	Required Fire Flow (L/s)	Fire Flow @ 22 psi (L/s)	Fire Flow @ 22 psi and @ 3.5 m/s (L/s)
GA-JCT-J114	150	200	110
GA-JCT-J124	200	402	156
GA-JCT-J126	200	380	166
GA-JCT-J128	200	268	108
GA-JCT-J130	150	212	107
GA-JCT-J146	200	310	110
GA-JCT-J172	200	199	110
GA-JCT-J200	200	245	108
GA-JCT-J90	200	215	107

Detailed fire flow maps can be found in **Appendix B**.

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Submission

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April 7, 2026

Werner de Schaetzen, Ph.D., P.Eng.
Senior Modeling Review

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Appendix A Demand Calculations

Consumer Water Demands - Caledon Block G1 Development

Mattamy Development (Interim 2026)

Dwelling Type	Area (ha)	Population		Average Day Demand			Max Day	Peak Hour
		Persons per Hectare†	Population Per Dwelling Type	(L/c/d)	(L/d)	(L/s)	1.8 x Avg. Day (L/s)	3 x Avg. Day (L/s)
Neighbourhood Area	31.80	115	3,657	270	987,390	11.43	20.57	34.28
Urban Corridor	5.80	175	1,015	270	274,050	3.17	5.71	9.52
Subtotal	**37.60**		**4,672**		**1,261,440**	**14.60**	**26.28**	**43.80**

Caledon Block G1 Full 2026 Residential Demands

Dwelling Type	Area (ha)	Population		Average Day Demand			Max Day	Peak Hour
		Persons per Unit†	Population Per Dwelling Type	(L/c/d)	(L/d)	(L/s)	1.8 x Avg. Day (L/s)	3 x Avg. Day (L/s)
Neighbourhood Area	74.10	115	8,522		2,300,805	26.63	47.93	79.89
Urban Corridor and School	29.60	175	5,180	270	1,398,600	16.19	29.14	48.56
Neighbourhood Centre	3.10	475	1,473		397,575	4.60	8.28	13.80
Subtotal	**106.80**		**15,174**	**Mapped Area**	**4,096,980**	**47.42**	**85.35**	**142.26**
				Full G1 Demand (2 * Mapped Area)	**8,193,960**	**95**	**171**	**285**

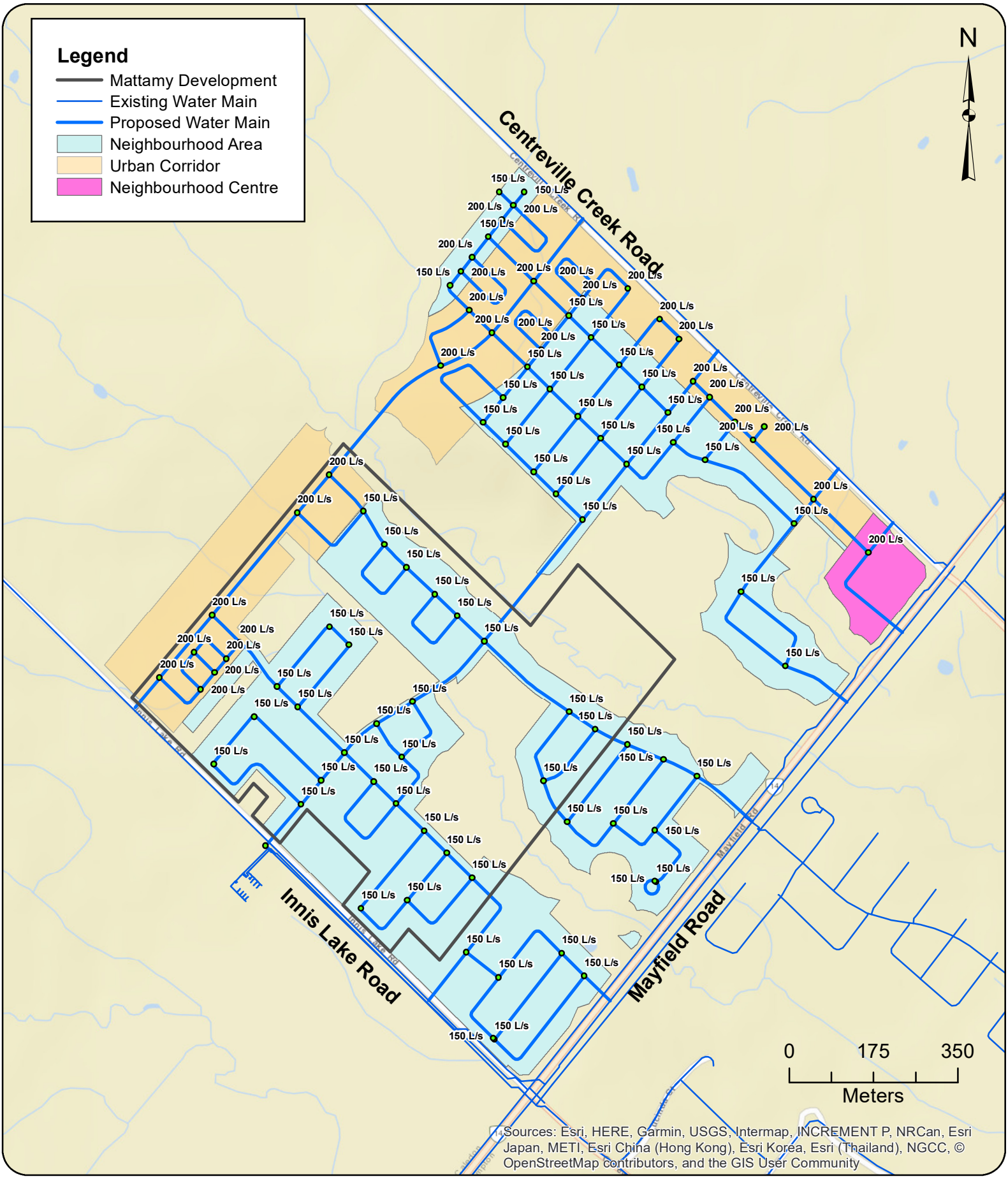
Development Demand Summary	**ADD**	**MDD**	**PHD**
Mattamy Development (Interim 2026)*	**14.60**	**26.28**	**43.80**
Caledon Block G1 Complete (Full 2026)**	**94.84**	**170.71**	**284.51**
Caledon Block G1 + Block G2 Demand (Future 2031)†	**189.68**	**341.42**	**569.03**

*Based on population and allocation data provided by DSEL, and the Development Charges Background Study completed by the Region of Peel in 2020.

**Assumed to be 2x the mapped area provided by DSEL, population and allocation data provided by DSEL

†Block G2 is assumed to be identical to Block G1

Appendix B Fire Flow Modeling Results



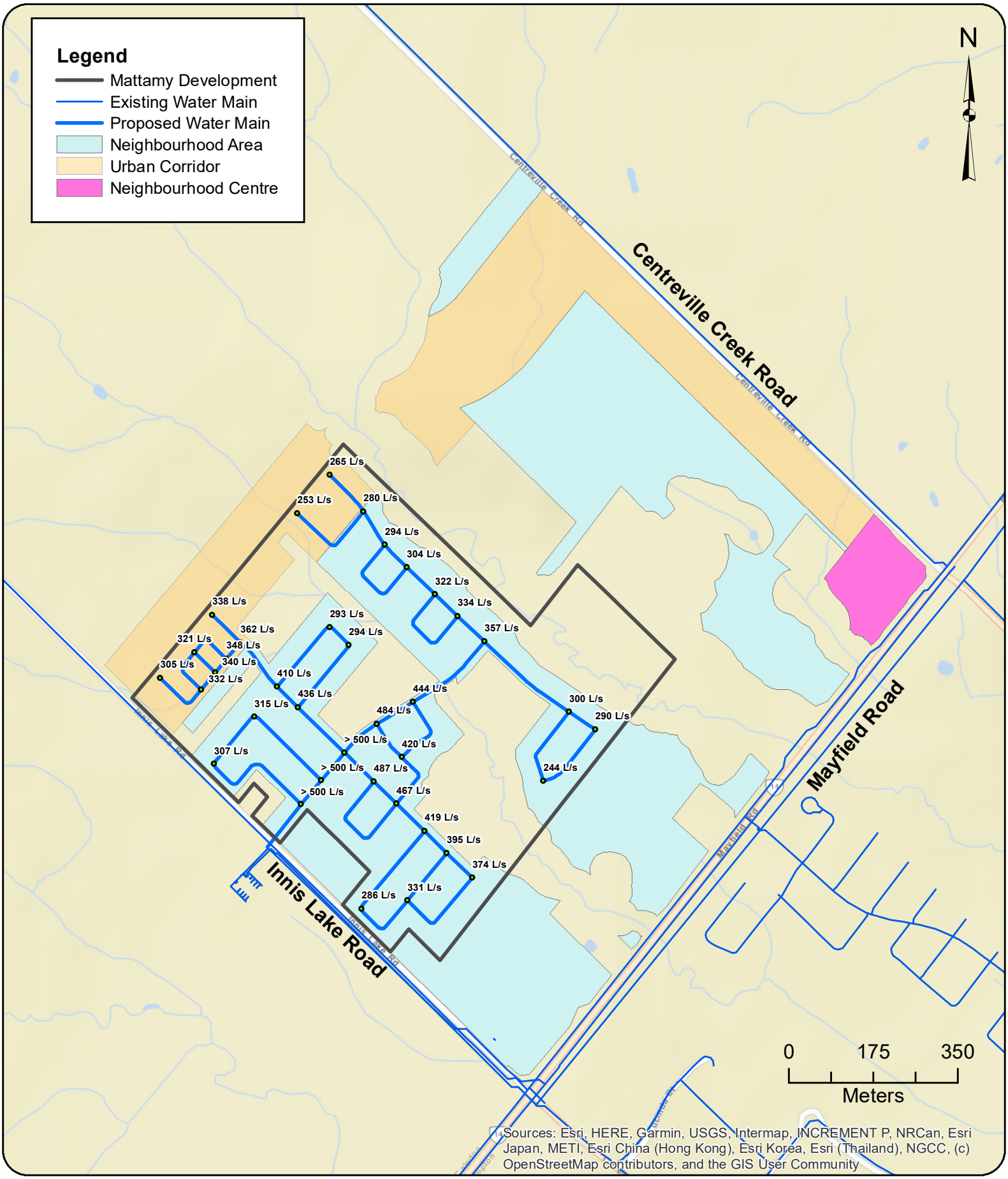
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Project: **Hydraulic Capacity and Modeling Analysis**
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Client: **David Schaeffer Engineering Ltd.**
Date: **March 2026**
Created by: **JI**
Reviewed by: **WdS**

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Required Fire Flow

Figure B.1



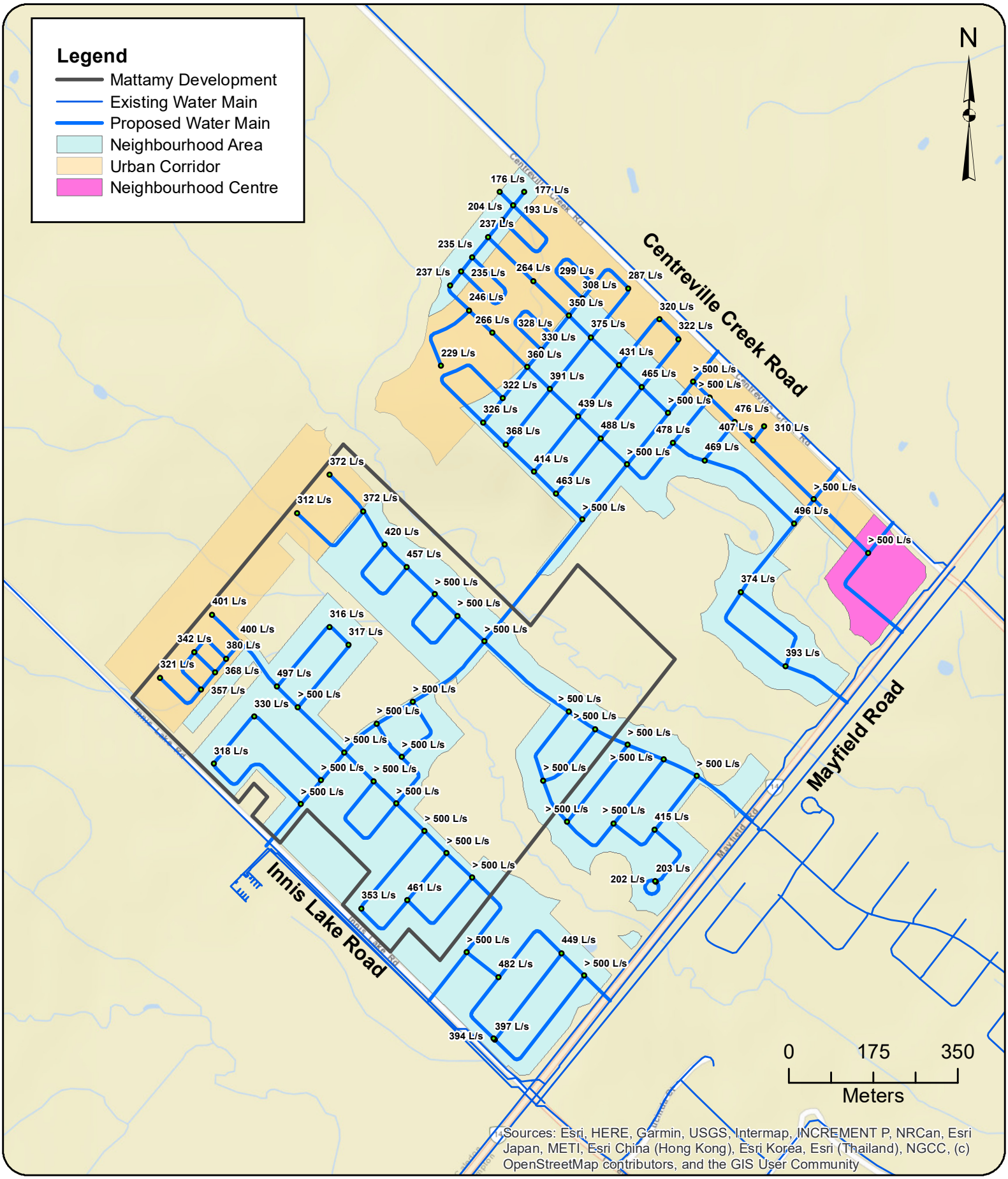
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Caledon Block G1 Development
2025-089-DSE
Client: **David Schaeffer Engineering Ltd.**
Date: **March 2026**
Created by: **JI**
Reviewed by: **WdS**

DISCLAIMER: GeoAdvice does not warrant in any way the accuracy and completeness of the information shown on this map. Field verification of the accuracy and completeness of the information shown on this map is the sole responsibility of the user.

Interim 2026
Available Fire Flow
@ 22 psi

Figure B.2



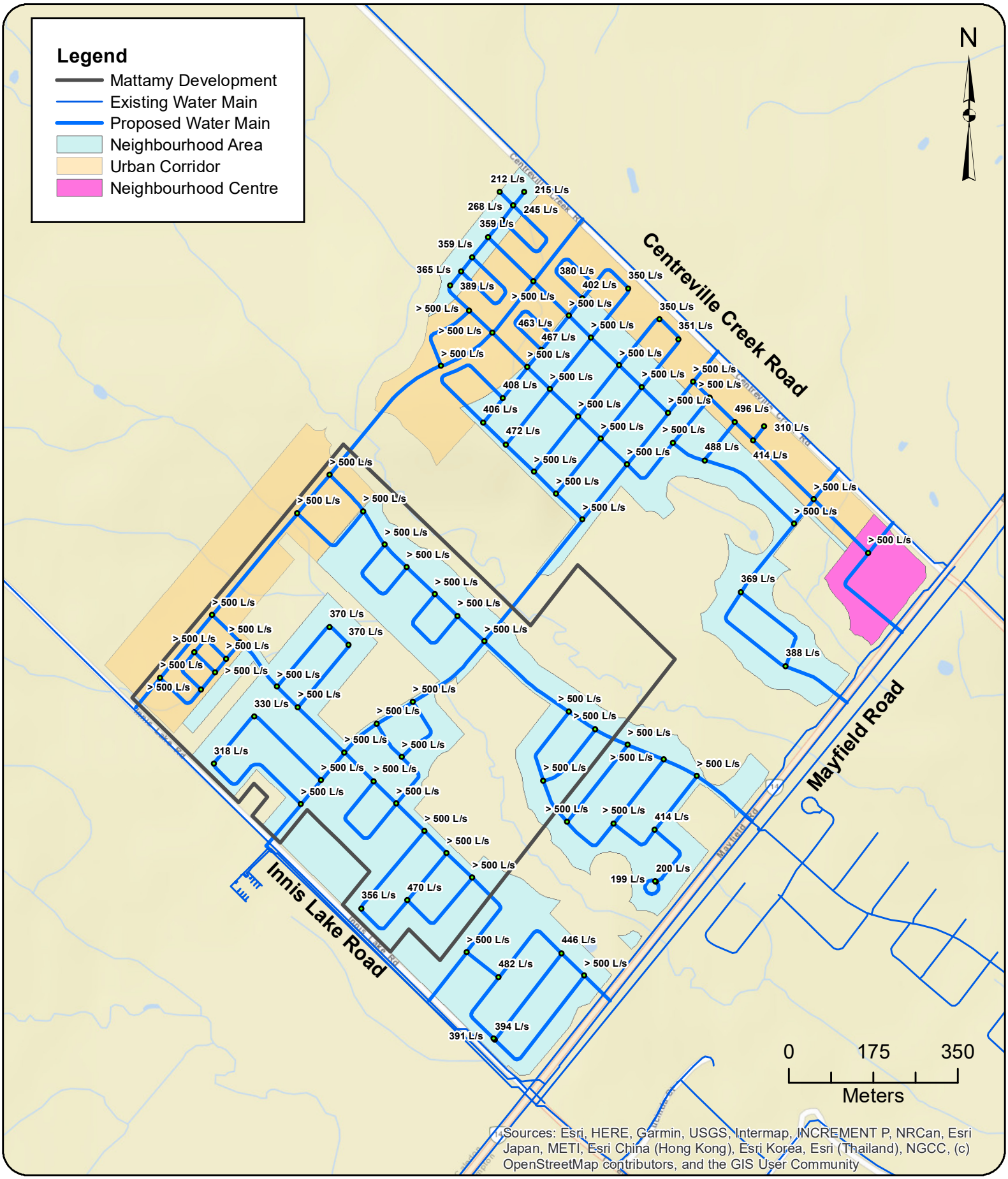
GeoAdvice Engineering Inc.

Project: **Hydraulic Capacity and Modeling Analysis**
Caledon Block G1 Development
2025-089-DSE
Client: **David Schaeffer Engineering Ltd.**
Date: **March 2026**
Created by: **JI**
Reviewed by: **WdS**

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Full 2026 Available Fire Flow @ 22 psi

Figure B.3



GeoAdvice Engineering Inc.

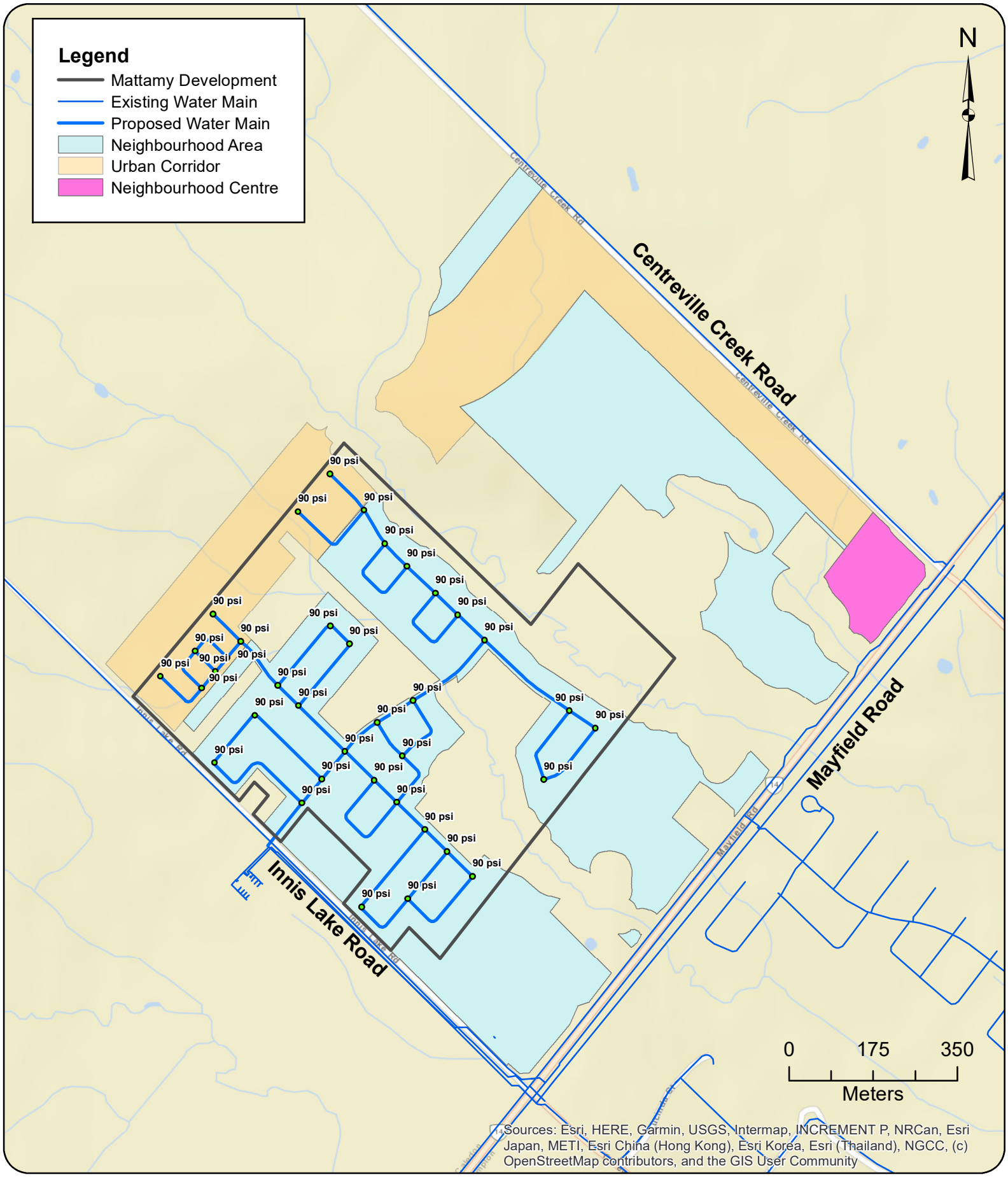
Project: **Hydraulic Capacity and Modeling Analysis**
Caledon Block G1 Development
2025-089-DSE
Client: **David Schaeffer Engineering Ltd.**
Date: **March 2026**
Created by: **JI**
Reviewed by: **WdS**

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Future 2031
Available Fire Flow
@ 22 psi

Figure B.4

Appendix C Pressure Modeling Results



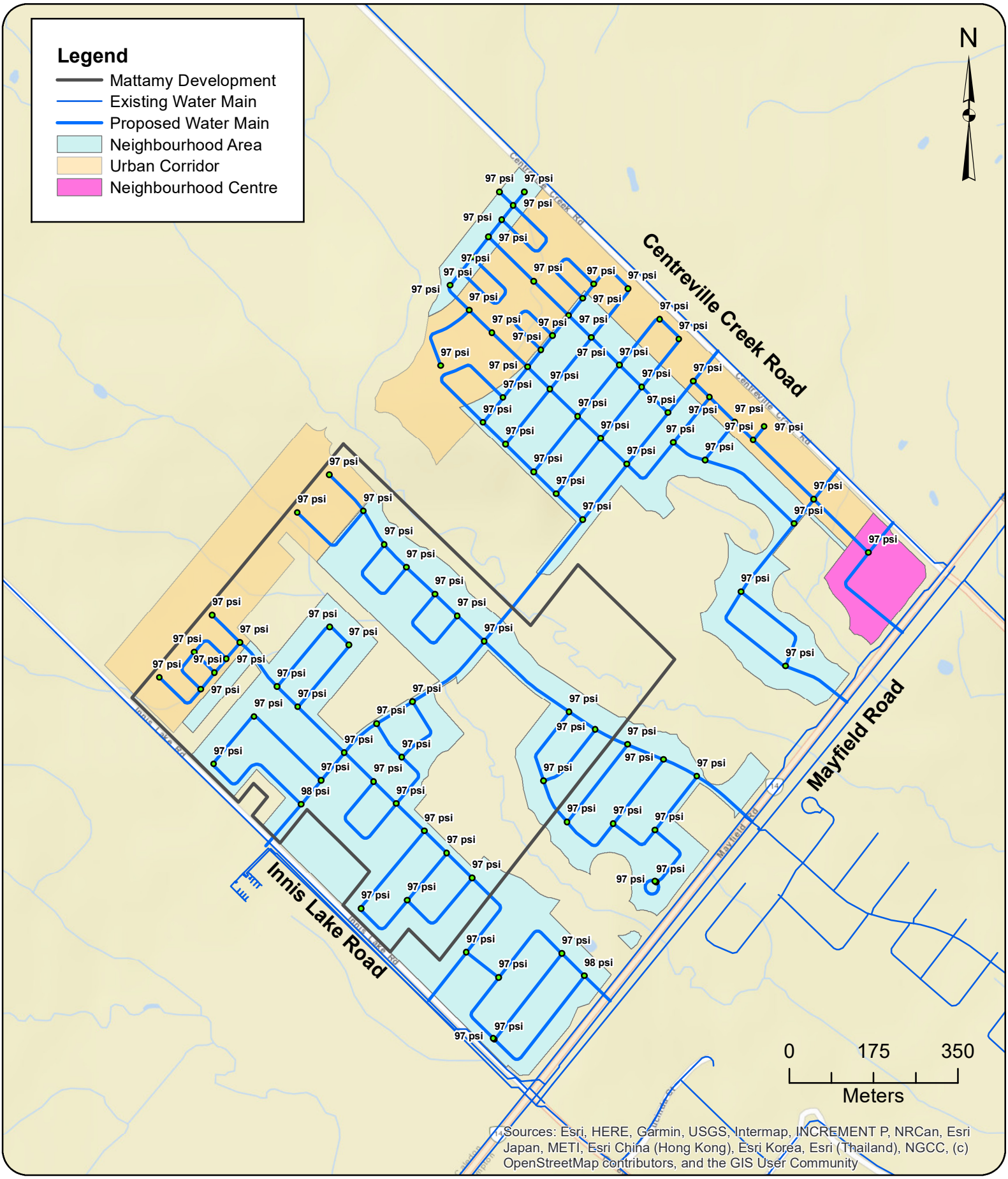
GeoAdvice Engineering Inc.

Project: **Hydraulic Capacity and Modeling Analysis**
Caledon Block G1 Development
2025-089-DSE
Client: **David Schaeffer Engineering Ltd.**
Date: **March 2026**
Created by: **JI**
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Interim 2026 ADD Pressure Modeling Results

Figure C.1



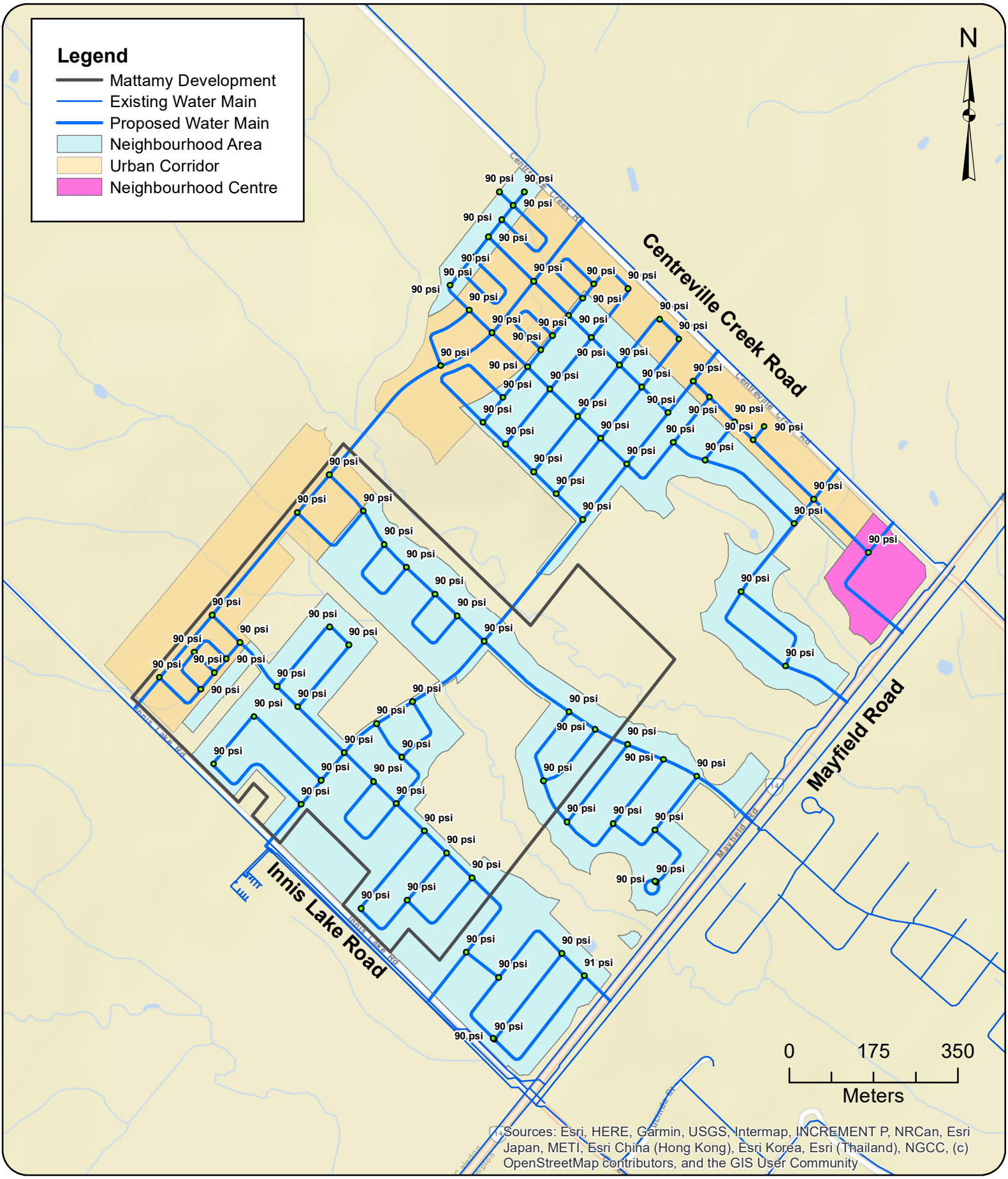
GeoAdvice Engineering Inc.

Project: **Hydraulic Capacity and Modeling Analysis**
Caledon Block G1 Development
2025-089-DSE
Client: **David Schaeffer Engineering Ltd.**
Date: **March 2026**
Created by: **JI**
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Full 2026 ADD Pressure Modeling Results

Figure C.2



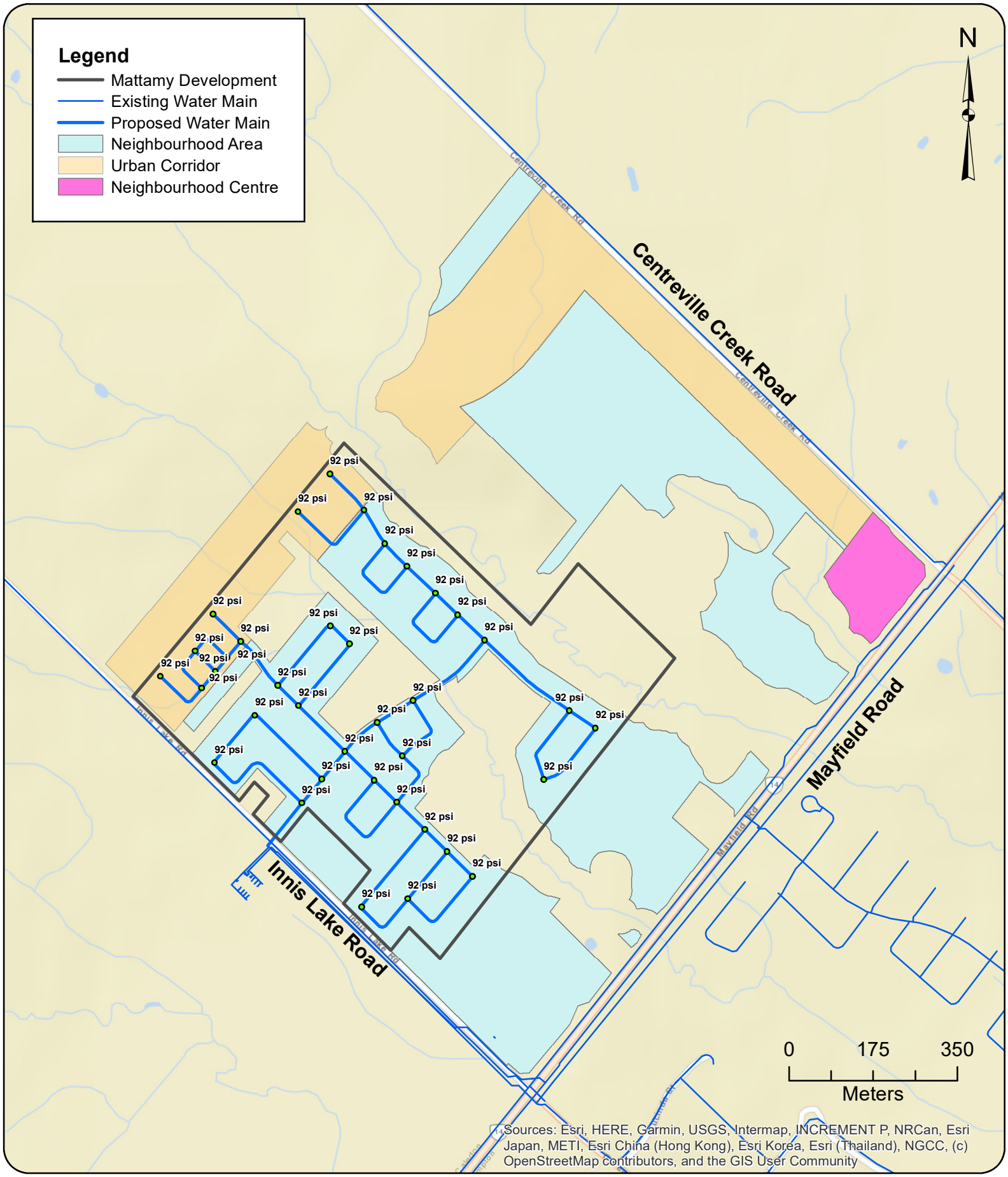
GeoAdvice Engineering Inc.

Project: **Hydraulic Capacity and Modeling Analysis**
Caledon Block G1 Development
2025-089-DSE
Client: **David Schaeffer Engineering Ltd.**
Date: **March 2026**
Created by: **JI**
Reviewed by: **WdS**

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Future 2031
ADD Pressure
Modeling Results

Figure C.3



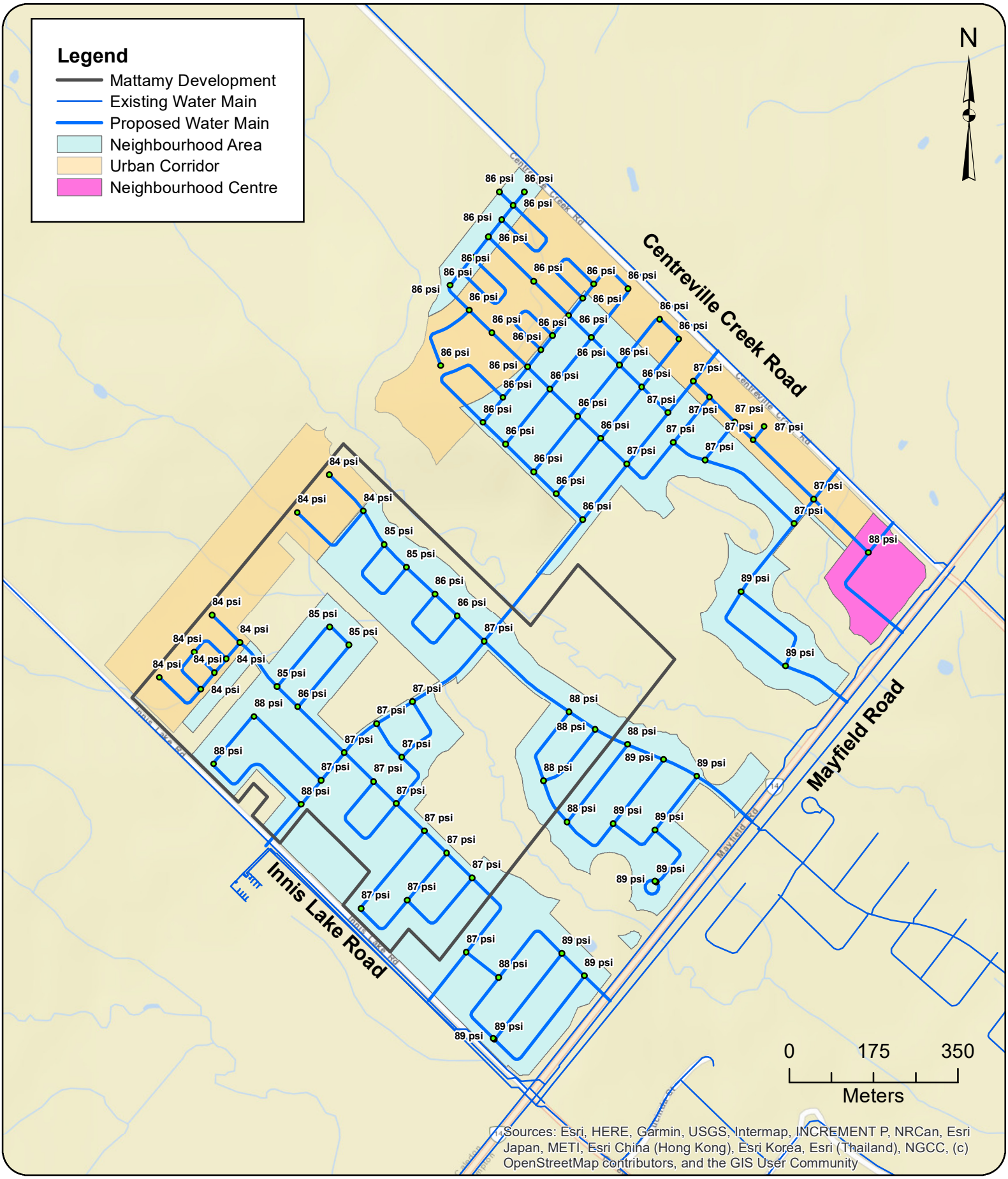
GeoAdvice Engineering Inc.

Project: **Hydraulic Capacity and Modeling Analysis**
Caledon Block G1 Development
2025-089-DSE
Client: **David Schaeffer Engineering Ltd.**
Date: **March 2026**
Created by: **JI**
Reviewed by: **WdS**

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Interim 2026 PHD Pressure Modeling Results

Figure C.4



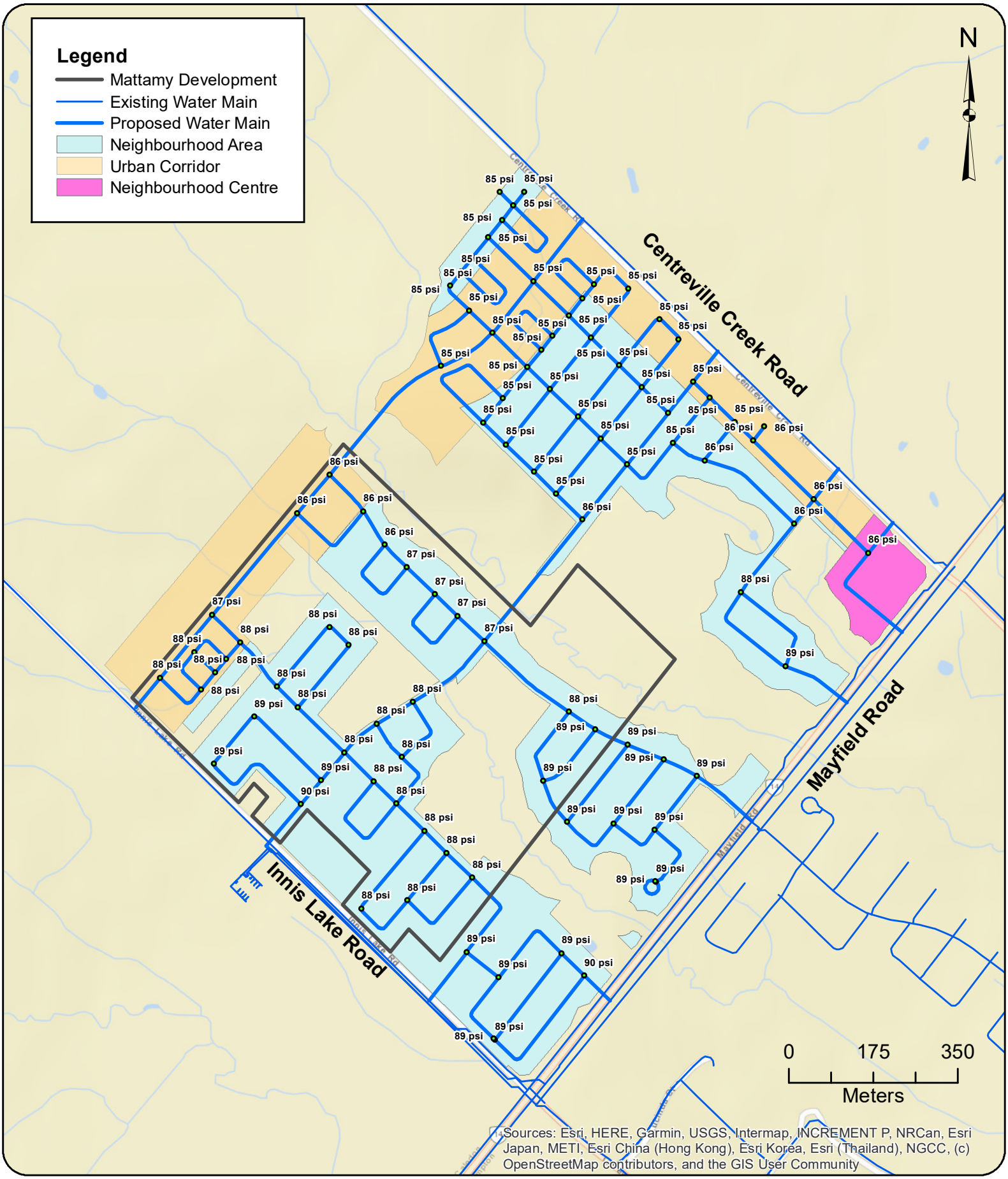
GeoAdvice Engineering Inc.

Project: **Hydraulic Capacity and Modeling Analysis**
Caledon Block G1 Development
2025-089-DSE
Client: **David Schaeffer Engineering Ltd.**
Date: **March 2026**
Created by: **JI**
Reviewed by: **WdS**

DISCLAIMER: GeoAdvice does not warrant in any way the accuracy and completeness of the information shown on this map. Field verification of the accuracy and completeness of the information shown on this map is the sole responsibility of the user.

Full 2026 PHD Pressure Modeling Results

Figure C.5



GeoAdvice Engineering Inc.

Project: **Hydraulic Capacity and Modeling Analysis**
Caledon Block G1 Development
2025-089-DSE
Client: **David Schaeffer Engineering Ltd.**
Date: **March 2026**
Created by: **JI**
Reviewed by: **WdS**

DISCLAIMER: GeoAdvice does not warrant in any way the accuracy and completeness of the information shown on this map. Field verification of the accuracy and completeness of the information shown on this map is the sole responsibility of the user.

Future 2031
PHD Pressure
Modeling Results

Figure C.6

SANITARY SEWER CALCULATION SHEET

DSEL

STREET	MANHOLE		LENGTH (m)	PHASE	TRIBUTARY AREA HECTARE											POPULATION TRIBUTARY											AVG. L/s	AVG. L/s	PEAKING	MAX	INF.	MAX FLOW	SEWER					PIPE		Q/Qf	REMARKS
					INCREMENT											INCREMENT																				VEL (m/s)				
	FROM	TO			West	East	TOWNHOUSE	CONDO	SCHOOL	PARK	INSTITUTIONAL	COMMERCIAL	EXTERNAL	INFILT	TOTAL	West	East	TOWNHOUSE	CONDO	SCHOOL	PARK	INSTITUTIONAL	COMMERCIAL	EXTERNAL	TOTAL	INC.	TOTAL	FACTOR	L/s	L/s	EXP.	SIZE	SLOPE	Q L/s	FULL	ACT.	TYPE	CLASS		
STREET 45																																							
	242A	243A	90.60			0.58									0.58		64									64	0.21	0.21	4.00	0.86	0.15	1.01	200	3.45	60.92	1.94	0.70	PVC	SDR-35	0.02	
To STREET 39, Pipe 243A - 244A															0.58									64															
STREET 31																																							
	237A	239A	37.70			0.24									0.24		27									27	0.09	0.09	4.00	0.36	0.06	0.42	200	1.85	44.61	1.42	0.43	PVC	SDR-35	0.01	
To STREET 33, Pipe 239A - 240A															0.24									27															
	228A	229A	50.70			0.32									0.32		35									35	0.12	0.12	4.00	0.47	0.08	0.55	200	1.00	32.80	1.04	0.39	PVC	SDR-35	0.02	
	229A	232A	10.00			0.06									0.38		7									42	0.02	0.14	4.00	0.56	0.10	0.66	200	0.55	24.32	0.77	0.33	PVC	SDR-35	0.03	
To STREET 29, Pipe 232A - 233A															0.38									42															
STREET 33																																							
	216A	217A	28.50			0.18									0.18		20									20	0.07	0.07	4.00	0.27	0.05	0.32	200	5.05	73.71	2.35	0.56	PVC	SDR-35	0.00	
Contribution From STREET 44, Pipe 215A - 217A															0.32									35															
	217A	218A	46.90			0.30									0.80		33									88	0.11	0.30	4.00	1.18	0.21	1.39	200	3.05	57.28	1.82	0.75	PVC	SDR-35	0.02	
To STREET 7, Pipe 218A - 225A															0.80									88															
	238A	239A	31.30			0.20									0.20		22									22	0.07	0.07	4.00	0.30	0.05	0.35	200	5.00	73.34	2.33	0.56	PVC	SDR-35	0.00	
Contribution From STREET 31, Pipe 237A - 239A															0.24									27															
	239A	240A	46.30			0.30									0.74		33									82	0.11	0.28	4.00	1.10	0.19	1.29	200	3.25	59.13	1.88	0.76	PVC	SDR-35	0.02	
	240A	241A	87.80			0.56									1.30		62									144	0.21	0.48	4.00	1.93	0.34	2.27	200	1.95	45.80	1.46	0.75	PVC	SDR-35	0.05	
	241A	243A	87.20			0.56									1.86		62									206	0.21	0.69	4.00	2.77	0.48	3.25	200	0.70	27.44	0.87	0.58	PVC	SDR-35	0.12	
To STREET 39, Pipe 243A - 244A															1.86									206															
STREET 29																																							
	208A	209A	15.70			0.10									0.10		11									11	0.04	0.04	4.00	0.15	0.03	0.17	200	1.80	44.00	1.40	0.34	PVC	SDR-35	0.00	
To STREET 44, Pipe 209A - 210A															0.10									11															
	230A	231A	20.70			0.13									0.13		15									15	0.05	0.05	4.00	0.20	0.03	0.24	200	1.00	32.80	1.04	0.30	PVC	SDR-35	0.01	
	231A	232A	35.80			0.23									0.36		26									41	0.09	0.14	4.00	0.55	0.09	0.64	200	3.10	57.75	1.84	0.59	PVC	SDR-35	0.01	
Contribution From STREET 31, Pipe 229A - 232A															0.38									42															
	232A	233A	63.60			0.41									1.15		45									128	0.15	0.43	4.00	1.72	0.30	2.02	200	4.05	66.01	2.10	0.92	PVC	SDR-35	0.03	
	233A	234A	13.60			0.09									1.24		10									138	0.03	0.46	4.00	1.85	0.32	2.18	200	0.55	24.32	0.77	0.48	PVC	SDR-35	0.09	
	234A	235A	72.80			0.47									1.71		52									190	0.17	0.64	4.00	2.55	0.44	3.00	200	0.55	24.32	0.77	0.52	PVC	SDR-35	0.12	
	235A	236A	72.80			0.47									2.18		52									242	0.17	0.81	4.00	3.25	0.57	3.82	200	0.70	27.44	0.87	0.61	PVC	SDR-35	0.14	
To STREET 39, Pipe 236A - 243A															2.18									242															
STREET 44																																							
	215A	217A	50.50			0.32									0.32		35									35	0.12	0.12	4.00	0.47	0.08	0.55	200	2.95	56.33	1.79	0.57	PVC	SDR-35	0.01	
To STREET 33, Pipe 217A - 218A															0.32									35															
	207A	209A	68.00			0.43									0.43		47									47	0.16	0.16	4.00	0.63	0.11	0.74	200	1.75	43.39	1.38	0.52	PVC	SDR-35	0.02	
Contribution From STREET 29, Pipe 208A - 209A															0.10									11															
	209A	210A	90.10			0.58									1.11		64									122	0.21	0.41	4.00	1.64	0.29	1.93	200	1.35	38.11	1.21	0.63	PVC	SDR-35	0.05	
	210A	211A	13.80			0.09									1.20		10									132	0.03	0.44	4.00	1.77	0.31	2.08	200	2.15	48.09	1.53	0.76	PVC	SDR-35	0.04	
	211A	212A	35.90			0.23									1.43		26									158	0.09	0.53	4.00	2.12	0.37	2.49	200	1.80	44.00	1.40	0.75	PVC	SDR-35	0.06	
To STREET 7, Pipe 212A - 213A															1.43									158															

DESIGN PARAMETERS

West	80	pph	School:	0	pph
East	109	pph	Park:	0	pph
Townhouse:	0	pph	Community Services:	40	pph
Condo:	0	pph	Commercial:	90	pph
			Infil.Flow (INF):	0.26	L/s/ha

Note: To be conservative, industrial Kav is considered to be 1
Manning's n = (Conc) 0.013 (Pvc) 0.013

Designed: JY	PROJECT: **Innis Lake Road**		
Checked: KD	LOCATION: **Peel Region**		
Dwg. Reference: 0	File Ref: **0**	Date: **12 May 2026**	Sheet No. 1 of 11

SANITARY SEWER CALCULATION SHEET

STREET	MANHOLE		LENGTH (m)	PHASE	TRIBUTARY AREA HECTARE											POPULATION TRIBUTARY											AVG. L/s	AVG. L/s	PEAKING	MAX	INF.	MAX FLOW	SEWER					PIPE		Q/Qf	REMARKS
					INCREMENT										TOTAL	INCREMENT										TOTAL														
	FROM	TO			SINGLE F.	SEMI.	TOWNHOUSE	CONDO	SCHOOL	PARK	INSTITUTIONAL	COMMERCIAL	EXTERNAL	INFILT		SINGLE F.	SEMI.	TOWNHOUSE	CONDO	SCHOOL	PARK	INSTITUTIONAL	COMMERCIAL	EXTERNAL		INC.	TOTAL	FACTOR	L/s	L/s	EXP.	SIZE	SLOPE	Q L/s	VEL (m/s) FULL	VEL (m/s) ACT.	TYPE	CLASS		
STREET 24																																							
	189A	190A	64.10			0.41									0.41		45								45	0.15	0.15	4.00	0.60	0.11	0.71	200	1.00	32.80	1.04	0.42	PVC	SDR-35	0.02	
	190A	191A	64.10			0.41									0.82		45								90	0.15	0.30	4.00	1.21	0.21	1.42	200	0.55	24.32	0.77	0.42	PVC	SDR-35	0.06	
	191A	192A	68.60			0.44									1.26		48								138	0.16	0.46	4.00	1.85	0.33	2.18	200	0.60	25.41	0.81	0.49	PVC	SDR-35	0.09	
	192A	193A	68.60			0.44									1.70		48								186	0.16	0.62	4.00	2.50	0.44	2.94	200	1.55	40.83	1.30	0.75	PVC	SDR-35	0.07	
	193A	194A	74.20			0.47									2.17		52								238	0.17	0.80	4.00	3.20	0.56	3.76	200	0.55	24.32	0.77	0.56	PVC	SDR-35	0.15	
	194A	195A	69.50			0.44									2.61		48								286	0.16	0.96	4.00	3.84	0.68	4.52	200	0.55	24.32	0.77	0.59	PVC	SDR-35	0.19	
To STREET 38, Pipe 195A - 204A															2.61										286														
	196A	197A	55.60			0.36									0.36		40								40	0.13	0.13	4.00	0.54	0.09	0.63	200	1.15	35.17	1.12	0.42	PVC	SDR-35	0.02	
	197A	198A	9.60			0.06									0.42		7								47	0.02	0.16	4.00	0.63	0.11	0.74	200	0.75	28.40	0.90	0.39	PVC	SDR-35	0.03	
	198A	199A	65.00			0.42									0.84		46								93	0.15	0.31	4.00	1.25	0.22	1.47	200	0.75	28.40	0.90	0.47	PVC	SDR-35	0.05	
	199A	200A	65.00			0.42									1.26		46								139	0.15	0.47	4.00	1.87	0.33	2.19	200	0.75	28.40	0.90	0.53	PVC	SDR-35	0.08	
	200A	201A	68.60			0.44									1.70		48								187	0.16	0.63	4.00	2.51	0.44	2.95	200	0.85	30.24	0.96	0.61	PVC	SDR-35	0.10	
	201A	202A	68.60			0.44									2.14		48								235	0.16	0.79	4.00	3.16	0.56	3.71	200	0.70	27.44	0.87	0.60	PVC	SDR-35	0.14	
	202A	203A	74.30			0.47									2.61		52								287	0.17	0.96	4.00	3.85	0.68	4.53	200	0.55	24.32	0.77	0.59	PVC	SDR-35	0.19	
	203A	204A	69.40			0.44									3.05		48								335	0.16	1.12	4.00	4.50	0.79	5.29	200	0.55	24.32	0.77	0.62	PVC	SDR-35	0.22	
To STREET 38, Pipe 204A - 205A															3.05										335														
STREET 23																																							
	166A	167A	27.80			0.18									0.18		20								20	0.07	0.07	4.00	0.27	0.05	0.32	200	1.75	43.39	1.38	0.40	PVC	SDR-35	0.01	
	167A	168A	29.90			0.19									0.37		21								41	0.07	0.14	4.00	0.55	0.10	0.65	200	1.35	38.11	1.21	0.46	PVC	SDR-35	0.02	
	168A	169A	30.20			0.19									0.56		21								62	0.07	0.21	4.00	0.83	0.15	0.98	200	3.95	65.19	2.07	0.75	PVC	SDR-35	0.02	
To STREET 25, Pipe 169A - 173A															0.56										62														
STREET 26																																							
	157A	158A	72.20			0.46									0.46		51								51	0.17	0.17	4.00	0.68	0.12	0.80	200	4.35	68.41	2.18	0.73	PVC	SDR-35	0.01	
To STREET 49, Pipe 158A - 160A															0.46										51														
	159A	160A	73.70			0.47									0.47		52								52	0.17	0.17	4.00	0.70	0.12	0.82	200	4.60	70.34	2.24	0.75	PVC	SDR-35	0.01	
To STREET 49, Pipe 160A - 174A															0.47										52														
STREET 27																																							
	146A	147A	106.50			0.68									0.68		75								75	0.25	0.25	4.00	1.01	0.18	1.18	200	1.55	40.83	1.30	0.57	PVC	SDR-35	0.03	
To STREET 25, Pipe 147A - 148A															0.68										75														
	161A	163A	105.70			0.68									0.68		75								75	0.25	0.25	4.00	1.01	0.18	1.18	200	1.30	37.40	1.19	0.54	PVC	SDR-35	0.03	
To STREET 25, Pipe 163A - 164A															0.68										75														
STREET 48																																							
	141A	143A	99.80			0.64									0.64		70								70	0.23	0.23	4.00	0.94	0.17	1.11	200	1.55	40.83	1.30	0.55	PVC	SDR-35	0.03	
To STREET 25, Pipe 143A - 145A															0.64										70														
	142A	143A	25.00			0.16									0.16		18								18	0.06	0.06	4.00	0.24	0.04	0.28	200	1.55	40.83	1.30	0.36	PVC	SDR-35	0.01	
To STREET 25, Pipe 143A - 145A															0.16										18														

DESIGN PARAMETERS

Single Family:	80	pph	School:	0	pph
Semi-detached:	109	pph	Park:	0	pph
Townhouse:	0	pph	Community Services:	40	pph
Condo:	0	pph	Commercial:	90	pph
			Infil.Flow (INF):	0.26	L/s/ha

Note: To be conservative, industrial Kav is considered to be 1

Manning's n = (Conc) 0.013 (Pvc) 0.013

Designed: JY	PROJECT: **Innis Lake Road**		
Checked: KD	LOCATION: **Peel Region**		
Dwg. Reference: 0	File Ref: **0**	Date: **12 May 2026**	Sheet No. 2 of 11

SANITARY SEWER CALCULATION SHEET

STREET	MANHOLE		LENGTH (m)	PHASE	TRIBUTARY AREA HECTARE											POPULATION TRIBUTARY											AVG. L/s	AVG. L/s	PEAKING	MAX	INF.	MAX FLOW	SEWER					PIPE		Q/Qf	REMARKS
					INCREMENT										TOTAL	INCREMENT										TOTAL							SIZE	SLOPE	Q	VEL (m/s)					
	FROM	TO			SINGLE F.	SEMI.	TOWNHOUSE	CONDO	SCHOOL	PARK	INSTITUTIONAL	COMMERCIAL	EXTERNAL	INFILT		SINGLE F.	SEMI.	TOWNHOUSE	CONDO	SCHOOL	PARK	INSTITUTIONAL	COMMERCIAL	EXTERNAL		INC.	TOTAL	FACTOR	L/s	L/s	EXP.			L/s	FULL	ACT.	TYPE	CLASS		
	144A	145A	105.20			0.67									0.67		74								74	0.25	0.25	4.00	0.99	0.17	1.17	200	1.45	39.49	1.26	0.55	PVC	SDR-35	0.03	
To STREET 25, Pipe 145A - 148A															0.67										74														
STREET 25																																							
Contribution From STREET 27, Pipe 146A - 147A															0.68										75														
	147A	148A	42.70			0.27									0.95		30								105	0.10	0.35	4.00	1.41	0.25	1.66	200	1.10	34.40	1.09	0.55	PVC	SDR-35	0.05	
To STREET 28, Pipe 148A - 149A															0.95										105														
Contribution From STREET 48, Pipe 141A - 143A															0.64										70														
Contribution From STREET 48, Pipe 142A - 143A															0.16										18														
	143A	145A	48.80			0.31									1.11		34								122	0.11	0.41	4.00	1.64	0.29	1.93	200	1.10	34.40	1.09	0.59	PVC	SDR-35	0.06	
Contribution From STREET 48, Pipe 144A - 145A															0.67										74														
	145A	148A	45.80			0.29									2.07		32								228	0.11	0.77	4.00	3.06	0.54	3.60	200	0.55	24.32	0.77	0.55	PVC	SDR-35	0.15	
To STREET 28, Pipe 148A - 149A															2.07										228														
	162A	163A	40.10			0.26									0.26		29								29	0.10	0.10	4.00	0.39	0.07	0.46	200	1.40	38.81	1.24	0.41	PVC	SDR-35	0.01	
Contribution From STREET 27, Pipe 161A - 163A															0.68										75														
	163A	164A	37.70			0.24									1.18		27								131	0.09	0.44	4.00	1.76	0.31	2.07	200	0.95	31.97	1.02	0.57	PVC	SDR-35	0.06	
	164A	165A	11.90			0.08									1.26		9								140	0.03	0.47	4.00	1.88	0.33	2.21	200	2.05	46.96	1.49	0.76	PVC	SDR-35	0.05	
	165A	169A	58.10			0.37									1.63		41								181	0.14	0.61	4.00	2.43	0.42	2.85	200	1.70	42.76	1.36	0.77	PVC	SDR-35	0.07	
Contribution From STREET 23, Pipe 168A - 169A															0.56										62														
	169A	173A	65.50			0.42									2.61		46								289	0.15	0.97	4.00	3.88	0.68	4.56	200	0.55	24.32	0.77	0.59	PVC	SDR-35	0.19	
Contribution From STREET 40, Pipe 172A - 173A															0.80										88														
	173A	174A	103.80			0.66									4.07		72								449	0.24	1.51	4.00	6.03	1.06	7.09	200	0.55	24.32	0.77	0.67	PVC	SDR-35	0.29	
To STREET 49, Pipe 174A - 176A															4.07										449														
STREET 28																																							
Contribution From STREET 25, Pipe 145A - 148A															2.07										228														
Contribution From STREET 25, Pipe 147A - 148A															0.95										105														
	148A	149A	63.90			0.41									3.43		45								378	0.15	1.27	4.00	5.08	0.89	5.97	200	0.55	24.32	0.77	0.64	PVC	SDR-35	0.25	
	149A	150A	68.40			0.44									3.87		48								426	0.16	1.43	4.00	5.72	1.01	6.73	200	0.55	24.32	0.77	0.66	PVC	SDR-35	0.28	
	150A	156A	103.80			0.66									4.53		72								498	0.24	1.67	3.98	6.65	1.18	7.83	200	0.55	24.32	0.77	0.69	PVC	SDR-35	0.32	
To STREET 49, Pipe 156A - 158A															4.53										498														
STREET 50																																							
	151A	153A	73.60			0.47									0.47		52								52	0.17	0.17	4.00	0.70	0.12	0.82	200	3.05	57.28	1.82	0.63	PVC	SDR-35	0.01	
To STREET 49, Pipe 153A - 155A															0.47										52														
	154A	155A	74.80			0.48									0.48		53								53	0.18	0.18	4.00	0.71	0.12	0.84	200	1.00	32.80	1.04	0.44	PVC	SDR-35	0.03	
To STREET 49, Pipe 155A - 156A															0.48										53														
STREET 49																																							
	180A	181A	53.60			0.34									0.34		38								38	0.13	0.13	4.00	0.51	0.09	0.60	200	1.20	35.93	1.14	0.41	PVC	SDR-35	0.02	
	181A	182A	9.60			0.06									0.40		7								45	0.02	0.15	4.00	0.60	0.10	0.71	200	0.75	28.40	0.90	0.37	PVC	SDR-35	0.02	
	182A	183A	65.00			0.42									0.82		46								91	0.15	0.31	4.00	1.22	0.21	1.43	200	0.75	28.40	0.90	0.47	PVC	SDR-35	0.05	
	183A	184A	65.00			0.42									1.24		46								137	0.15	0.46	4.00	1.84	0.32	2.16	200	0.75	28.40	0.90	0.53	PVC	SDR-35	0.08	
	184A	185A	68.60			0.44									1.68		48								185	0.16	0.62	4.00	2.48	0.44	2.92	200	0.80	29.34	0.93	0.59	PVC	SDR-35	0.10	
	185A	186A	68.60			0.44									2.12		48								233	0.16	0.78	4.00	3.13	0.55	3.68	200	0.55	24.32	0.77	0.55	PVC	SDR-35	0.15	

DESIGN PARAMETERS

Single Family:	80	pph	School:	0	pph
Semi-detached:	109	pph	Park:	0	pph
Townhouse:	0	pph	Community Services:	40	pph
Condo:	0	pph	Commercial:	90	pph
			Infil.Flow (INF):	0.26	L/s/ha

Note: To be conservative, industrial Kav is considered to be 1

Manning's n = (Conc) 0.013 (Pvc) 0.013

Designed: JY	PROJECT: **Innis Lake Road**		
Checked: KD	LOCATION: **Peel Region**		
Dwg. Reference: 0	File Ref: **0**	Date: **12 May 2026**	Sheet No. 3 of 11

SANITARY SEWER CALCULATION SHEET

STREET	MANHOLE		LENGTH (m)	PHASE	TRIBUTARY AREA HECTARE											POPULATION TRIBUTARY											AVG. L/s	AVG. L/s	PEAKING	MAX	INF.	MAX FLOW	SEWER					PIPE		Q/Qf	REMARKS
					INCREMENT										TOTAL	INCREMENT										TOTAL							SIZE	SLOPE	Q	VEL (m/s)					
	FROM	TO			SINGLE F.	SEMI.	TOWNHOUSE	CONDO	SCHOOL	PARK	INSTITUTIONAL	COMMERCIAL	EXTERNAL	INFILT		SINGLE F.	SEMI.	TOWNHOUSE	CONDO	SCHOOL	PARK	INSTITUTIONAL	COMMERCIAL	EXTERNAL		INC.	TOTAL	FACTOR	L/s	L/s	EXP.			L/s	FULL	ACT.	TYPE	CLASS		
	186A	187A	70.40			0.45									2.57		50								283	0.17	0.95	4.00	3.80	0.67	4.47	200	0.55	24.32	0.77	0.59	PVC	SDR-35	0.18	
	187A	188A	73.30			0.47									3.04		52								335	0.17	1.12	4.00	4.50	0.79	5.29	200	0.55	24.32	0.77	0.62	PVC	SDR-35	0.22	
To STREET 38, Pipe 188A - 195A															3.04										335														
	152A	153A	31.20			0.20									0.20		22								22	0.07	0.07	4.00	0.30	0.05	0.35	200	1.00	32.80	1.04	0.33	PVC	SDR-35	0.01	
Contribution From STREET 50, Pipe 151A - 153A															0.47										52														
	153A	155A	42.70			0.27									0.94		30								104	0.10	0.35	4.00	1.40	0.24	1.64	200	0.55	24.32	0.77	0.44	PVC	SDR-35	0.07	
Contribution From STREET 50, Pipe 154A - 155A															0.48										53														
	155A	156A	48.70			0.31									1.73		34								191	0.11	0.64	4.00	2.56	0.45	3.01	200	0.55	24.32	0.77	0.52	PVC	SDR-35	0.12	
Contribution From STREET 28, Pipe 150A - 156A															4.53										498														
	156A	158A	45.70			0.29									6.55		32								721	0.11	2.42	3.89	9.41	1.70	11.12	200	0.55	24.32	0.77	0.75	PVC	SDR-35	0.46	
Contribution From STREET 26, Pipe 157A - 158A															0.46										51														
	158A	160A	42.70			0.27									7.28		30								802	0.10	2.69	3.86	10.39	1.89	12.28	200	0.55	24.32	0.77	0.77	PVC	SDR-35	0.50	
Contribution From STREET 26, Pipe 159A - 160A															0.47										52														
	160A	174A	48.70			0.31									8.06		34								888	0.11	2.98	3.83	11.42	2.10	13.51	200	0.55	24.32	0.77	0.79	PVC	SDR-35	0.56	
Contribution From STREET 25, Pipe 173A - 174A															4.07										449														
	174A	176A	73.40			0.47									12.60		52								1389	0.17	4.66	3.70	17.25	3.28	20.53	250	0.40	37.61	0.77	0.78	PVC	SDR-35	0.55	
Contribution From STREET 38, Pipe 175A - 176A															0.59										65														
	176A	179A	70.30			0.45									13.64		50								1504	0.17	5.05	3.68	18.58	3.55	22.12	250	0.40	37.61	0.77	0.80	PVC	SDR-35	0.59	
To STREET 38, Pipe 179A - 188A															13.64										1504														
STREET 38																																							
	175A	176A	92.80			0.59									0.59		65								65	0.22	0.22	4.00	0.87	0.15	1.03	200	2.40	50.81	1.62	0.63	PVC	SDR-35	0.02	
To STREET 49, Pipe 176A - 179A															0.59										65														
	177A	178A	60.90			0.39									0.39		43								43	0.14	0.14	4.00	0.58	0.10	0.68	200	5.05	73.71	2.35	0.71	PVC	SDR-35	0.01	
	178A	179A	60.80			0.39					1.62				2.40		43					65			151	0.36	0.51	4.00	2.03	0.62	2.65	200	0.55	24.32	0.77	0.50	PVC	SDR-35	0.11	
Contribution From STREET 49, Pipe 176A - 179A															13.64										1504														
	179A	188A	70.30			0.45				1.27					17.76		50				0				1705	0.17	5.72	3.64	20.83	4.62	25.45	300	0.35	57.21	0.81	0.78	PVC	SDR-35	0.44	
Contribution From STREET 49, Pipe 187A - 188A															3.04										335														
	188A	195A	76.40			0.49									21.29		54								2094	0.18	7.03	3.57	25.09	5.54	30.63	300	0.35	57.21	0.81	0.82	PVC	SDR-35	0.54	
Contribution From STREET 24, Pipe 194A - 195A															2.61										286														
	195A	204A	70.30			0.45									24.35		50								2430	0.17	8.16	3.52	28.71	6.33	35.04	300	0.35	57.21	0.81	0.85	PVC	SDR-35	0.61	
Contribution From STREET 24, Pipe 203A - 204A															3.05										335														
	204A	205A	80.50			0.51									27.91		56								2821	0.19	9.47	3.46	32.76	7.26	40.02	375	0.25	87.67	0.79	0.77	PVC	SDR-35	0.46	
To STREET 7, Pipe 205A - 206A															27.91										2821														
CENTREVILLE CREEK ROAD																																							
	220A	221A	78.40												0.00										0	0.00	0.00	4.00	0.00	0.00	0.00	600	1.45	739.37	2.61	0.15	CONC	140-D	0.00	
	221A	222A	77.80												0.00										0	0.00	0.00	4.00	0.00	0.00	0.00	600	0.65	495.03	1.75	0.10	CONC	140-D	0.00	
	222A	223A	134.40												0.00										0	0.00	0.00	4.00	0.00	0.00	0.00	600	1.65	788.71	2.79	0.16	CONC	140-D	0.00	
	223A	224A	133.80												0.00										0	0.00	0.00	4.00	0.00	0.00	0.00	600	0.90	582.50	2.06	0.12	CONC	140-D	0.00	
	224A	225A	133.30												0.00										0	0.00	0.00	4.00	0.00	0.00	0.00	600	1.25	686.49	2.43	0.14	CONC	140-D	0.00	
Contribution From STREET 7, Pipe 218A - 225A															34.20										3397														
	225A	226A	114.20												34.20										3397	0.00	11.40	3.40	38.77	8.89	47.66	600	0.20	274.59	0.97	0.73	CONC	180-D	0.17	
	226A	227A	113.60												34.20										3397	0.00	11.40	3.40	38.77	8.89	47.66	600	0.20	274.59	0.97	0.73	CONC	140-D	0.17	
	227A	244A	113.90												34.20										3397	0.00	11.40	3.40	38.77	8.89	47.66	600	0.20	274.59	0.97	0.73	CONC	140-D	0.17	

DESIGN PARAMETERS

Single Family:	80	pph	School:	0	pph
Semi-detached:	109	pph	Park:	0	pph
Townhouse:	0	pph	Community Services:	40	pph
Condo:	0	pph	Commercial:	90	pph
			Infil.Flow (INF):	0.26	L/s/ha

Note: To be conservative, industrial Kav is considered to be 1

Manning's n = (Conc) 0.013 (Pvc) 0.013

Designed: JY	PROJECT: **Innis Lake Road**		
Checked: KD	LOCATION: **Peel Region**		
Dwg. Reference: 0	File Ref: **0**	Date: **12 May 2026**	Sheet No. 4 of 11

SANITARY SEWER CALCULATION SHEET

STREET	MANHOLE		LENGTH (m)	PHASE	TRIBUTARY AREA HECTARE											POPULATION TRIBUTARY											AVG. L/s	AVG. L/s	PEAKING	MAX	INF.	MAX FLOW	SEWER					PIPE		Q/Qf	REMARKS
					INCREMENT										TOTAL	INCREMENT										TOTAL							SIZE	SLOPE	Q	VEL (m/s)					
	FROM	TO			SINGLE F.	SEMI.	TOWNHOUSE	CONDO	SCHOOL	PARK	INSTITUTIONAL	COMMERCIAL	EXTERNAL	INFILT		SINGLE F.	SEMI.	TOWNHOUSE	CONDO	SCHOOL	PARK	INSTITUTIONAL	COMMERCIAL	EXTERNAL		INC.	TOTAL	FACTOR	L/s	L/s	EXP.			L/s	FULL	ACT.	TYPE	CLASS		
Contribution From STREET 39, Pipe 243A - 244A															5.54										614														
	244A	245A	79.10												39.74										4011	0.00	13.46	3.33	44.83	10.33	55.16	600	0.20	274.59	0.97	0.75	CONC	180-D	0.20	
	245A	246A	78.50												39.74										4011	0.00	13.46	3.33	44.83	10.33	55.16	600	0.20	274.59	0.97	0.75	CONC	180-D	0.20	
	246A	247A	76.80												39.74										4011	0.00	13.46	3.33	44.83	10.33	55.16	600	0.20	274.59	0.97	0.75	CONC	180-D	0.20	
	247A	270A	74.60												39.74										4011	0.00	13.46	3.33	44.83	10.33	55.16	600	0.20	274.59	0.97	0.75	CONC	140-D	0.20	
STREET 35																																							
	263A	264A	64.50			0.41									0.41		45								45	0.15	0.15	4.00	0.60	0.11	0.71	200	2.35	50.28	1.60	0.56	PVC	SDR-35	0.01	
	264A	265A	64.50			0.41									0.82		45								90	0.15	0.30	4.00	1.21	0.21	1.42	200	2.85	55.37	1.76	0.75	PVC	SDR-35	0.03	
	265A	266A	10.20			0.07									0.89		8								98	0.03	0.33	4.00	1.32	0.23	1.55	200	2.85	55.37	1.76	0.75	PVC	SDR-35	0.03	
	266A	267A	96.60			0.62									1.51		68								166	0.23	0.56	4.00	2.23	0.39	2.62	200	1.75	43.39	1.38	0.76	PVC	SDR-35	0.06	
	267A	268A	46.80			0.47									1.98		52								218	0.17	0.73	4.00	2.93	0.51	3.44	200	0.55	24.32	0.77	0.54	PVC	SDR-35	0.14	
To MAYFIELD ROAD, Pipe 268A - 269A															1.98										218														
STREET 32																																							
	254A	255A	63.50			0.41									0.41		45								45	0.15	0.15	4.00	0.60	0.11	0.71	200	4.00	65.60	2.09	0.67	PVC	SDR-35	0.01	
	255A	256A	73.40			0.47									0.88		52								97	0.17	0.33	4.00	1.30	0.23	1.53	200	0.60	25.41	0.81	0.44	PVC	SDR-35	0.06	
	256A	257A	8.00			0.05									0.93		6								103	0.02	0.35	4.00	1.38	0.24	1.62	200	0.95	31.97	1.02	0.53	PVC	SDR-35	0.05	
	257A	258A	65.90			0.42									1.35		46								149	0.15	0.50	4.00	2.00	0.35	2.35	200	1.95	45.80	1.46	0.75	PVC	SDR-35	0.05	
To STREET 39, Pipe 258A - 259A															1.35										149														
STREET 39																																							
Contribution From STREET 29, Pipe 235A - 236A															2.18										242														
	236A	243A	73.90			0.47									2.65		52								294	0.17	0.99	4.00	3.95	0.69	4.64	200	0.55	24.32	0.77	0.60	PVC	SDR-35	0.19	
Contribution From STREET 33, Pipe 241A - 243A															1.86										206														
Contribution From STREET 45, Pipe 242A - 243A															0.58										64														
	243A	244A	71.10			0.45									5.54		50								614	0.17	2.06	3.93	8.10	1.44	9.54	200	0.55	24.32	0.77	0.72	PVC	SDR-26	0.39	
To CENTREVILLE CREEK ROAD, Pipe 244A - 245A															5.54										614														
	248A	249A	59.00			0.38									0.38		42								42	0.14	0.14	4.00	0.56	0.10	0.66	200	1.00	32.80	1.04	0.41	PVC	SDR-35	0.02	
	249A	250A	64.60			0.41									0.79		45								87	0.15	0.29	4.00	1.17	0.21	1.37	200	3.05	57.28	1.82	0.75	PVC	SDR-35	0.02	
	250A	251A	9.50			0.06									0.85		7								94	0.02	0.32	4.00	1.26	0.22	1.48	200	2.85	55.37	1.76	0.75	PVC	SDR-35	0.03	
	251A	252A	70.80			0.45									1.30		50								144	0.17	0.48	4.00	1.93	0.34	2.27	200	1.95	45.80	1.46	0.75	PVC	SDR-35	0.05	
	252A	253A	75.50			0.48									1.78		53								197	0.18	0.66	4.00	2.64	0.46	3.11	200	0.70	27.44	0.87	0.58	PVC	SDR-35	0.11	
	253A	258A	13.80			0.09									1.87		10								207	0.03	0.69	4.00	2.78	0.49	3.27	200	0.85	30.24	0.96	0.63	PVC	SDR-35	0.11	
Contribution From STREET 32, Pipe 257A - 258A															1.35										149														
	258A	259A	57.20			0.37									3.59		41								397	0.14	1.33	4.00	5.33	0.93	6.26	200	0.55	24.32	0.77	0.65	PVC	SDR-35	0.26	
	259A	260A	10.00			0.06									3.65		7								404	0.02	1.36	4.00	5.42	0.95	6.37	200	0.55	24.32	0.77	0.65	PVC	SDR-35	0.26	
	260A	261A	68.80			0.44									4.09		48								452	0.16	1.52	4.00	6.07	1.06	7.13	200	2.35	50.28	1.60	1.12	PVC	SDR-35	0.14	
To MAYFIELD ROAD, Pipe 261A - 262A															4.09										452														
STREET 17																																							
	125A	126A	87.80		0.59										0.59	48									48	0.16	0.16	4.00	0.64	0.15	0.80	200	2.40	50.81	1.62	0.59	PVC	SDR-35	0.02	
	126A	127A	87.60		0.59										1.18	48									96	0.16	0.32	4.00	1.29	0.31	1.60	200	2.70	53.89	1.72	0.75	PVC	SDR-35	0.03	
To STREET 14, Pipe 127A - 130A															1.18										96														
	133A	134A	40.40		0.27										0.27	22									22	0.07	0.07	4.00	0.30	0.07	0.37	200	2.45	51.34	1.63	0.47	PVC	SDR-35	0.01	
	134A	135A	91.50		0.62										0.89	50									72	0.17	0.24	4.00	0.97	0.23	1.20	200	2.15	48.09	1.53	0.63	PVC	SDR-35	0.02	

DESIGN PARAMETERS

Single Family:	80	pph	School:	0	pph
Semi-detached:	109	pph	Park:	0	pph
Townhouse:	0	pph	Community Services:	40	pph
Condo:	0	pph	Commercial:	90	pph
			Infil.Flow (INF):	0.26	L/s/ha

Note: To be conservative, industrial Kav is considered to be 1

Manning's n = (Conc) 0.013 (Pvc) 0.013

Designed: JY	PROJECT: **Innis Lake Road**		
Checked: KD	LOCATION: **Peel Region**		
Dwg. Reference: 0	File Ref: **0**	Date: **12 May 2026**	Sheet No. 5 of 11

SANITARY SEWER CALCULATION SHEET

STREET	MANHOLE		LENGTH (m)	PHASE	TRIBUTARY AREA HECTARE											POPULATION TRIBUTARY											AVG. L/s	AVG. L/s	PEAKING	MAX	INF.	MAX FLOW	SEWER					PIPE		Q/Qf	REMARKS
					INCREMENT										TOTAL	INCREMENT										TOTAL							SIZE	SLOPE	Q	VEL (m/s)					
	FROM	TO			SINGLE F.	SEMI.	TOWNHOUSE	CONDO	SCHOOL	PARK	INSTITUTIONAL	COMMERCIAL	EXTERNAL	INFILT		SINGLE F.	SEMI.	TOWNHOUSE	CONDO	SCHOOL	PARK	INSTITUTIONAL	COMMERCIAL	EXTERNAL		INC.	TOTAL	FACTOR	L/s	L/s	EXP.			L/s	FULL	ACT.	TYPE	CLASS		
	135A	136A	91.50		0.62										1.51	50									122	0.17	0.41	4.00	1.64	0.39	2.03	200	2.15	48.09	1.53	0.76	PVC	SDR-35	0.04	
To STREET 19, Pipe 136A - 137A															1.51										122														
STREET 14																																							
Contribution From STREET 1, Pipe 120A - 124A															1.21										97														
Contribution From STREET 1, Pipe 123A - 124A															0.64										52														
	124A	127A	76.30		0.52										2.37	42									191	0.14	0.64	4.00	2.56	0.62	3.18	200	4.35	68.41	2.18	1.10	PVC	SDR-35	0.05	
Contribution From STREET 17, Pipe 126A - 127A															1.18										96														
	127A	130A	73.50		0.50										4.05	40									327	0.13	1.10	4.00	4.39	1.05	5.44	200	0.55	24.32	0.77	0.62	PVC	SDR-35	0.22	
To STREET 19, Pipe 130A - 131A															4.05										327														
STREET 19																																							
	128A	129A	81.50		0.55										0.55	44									44	0.15	0.15	4.00	0.59	0.14	0.73	200	2.80	54.88	1.75	0.61	PVC	SDR-35	0.01	
	129A	130A	91.70		0.62										1.17	50									94	0.17	0.32	4.00	1.26	0.30	1.57	200	2.75	54.39	1.73	0.76	PVC	SDR-35	0.03	
Contribution From STREET 14, Pipe 127A - 130A															4.05										327														
	130A	131A	43.70		0.30										5.52	24									445	0.08	1.49	4.00	5.97	1.44	7.41	200	0.55	24.32	0.77	0.68	PVC	SDR-35	0.30	
	131A	132A	13.90		0.09										5.61	8									453	0.03	1.52	4.00	6.08	1.46	7.54	200	0.55	24.32	0.77	0.68	PVC	SDR-35	0.31	
	132A	136A	66.00		0.45						0.59				6.65	36						24			513	0.20	1.72	3.97	6.84	1.73	8.56	200	0.55	24.32	0.77	0.70	PVC	SDR-35	0.35	
Contribution From STREET 17, Pipe 135A - 136A															1.51										122														
	136A	137A	58.70		0.40										8.56	32									667	0.11	2.24	3.91	8.75	2.23	10.98	200	0.55	24.32	0.77	0.75	PVC	SDR-35	0.45	
To MAYFIELD ROAD, Pipe 137A - 138A															8.56										667														
STREET 20																																							
	101A	102A	35.50		0.24										0.24	20									20	0.07	0.07	4.00	0.27	0.06	0.33	200	1.00	32.80	1.04	0.33	PVC	SDR-35	0.01	
	102A	103A	62.80		0.43										0.67	35									55	0.12	0.18	4.00	0.74	0.17	0.91	200	0.55	24.32	0.77	0.37	PVC	SDR-35	0.04	
	103A	104A	9.60		0.07										0.74	6									61	0.02	0.20	4.00	0.82	0.19	1.01	200	0.55	24.32	0.77	0.37	PVC	SDR-35	0.04	
	104A	105A	63.60		0.43										1.17	35									96	0.12	0.32	4.00	1.29	0.30	1.59	200	0.65	26.44	0.84	0.46	PVC	SDR-35	0.06	
To STREET 16, Pipe 105A - 106A															1.17										96														
STREET 16																																							
Contribution From STREET 10, Pipe 96A - 98A															2.25										183														
Contribution From STREET 10, Pipe 97A - 98A															0.81										65														
	98A	99A	66.90		0.45										3.51	36									284	0.12	0.95	4.00	3.81	0.91	4.73	200	1.10	34.40	1.09	0.77	PVC	SDR-35	0.14	
	99A	100A	12.80		0.09										3.60	8									292	0.03	0.98	4.00	3.92	0.94	4.86	200	0.55	24.32	0.77	0.60	PVC	SDR-35	0.20	
	100A	105A	41.30		0.28										3.88	23									315	0.08	1.06	4.00	4.23	1.01	5.24	200	0.55	24.32	0.77	0.62	PVC	SDR-35	0.22	
Contribution From STREET 20, Pipe 104A - 105A															1.17										96														
	105A	106A	71.40		0.48										5.53	39									450	0.13	1.51	4.00	6.04	1.44	7.48	200	0.55	24.32	0.77	0.68	PVC	SDR-35	0.31	
	106A	113A	71.40		0.48										6.01	39									489	0.13	1.64	3.98	6.53	1.56	8.10	200	0.55	24.32	0.77	0.69	PVC	SDR-35	0.33	
To STREET 6, Pipe 113A - 114A															6.01										489														
STREET 13																																							
	107A	109A	46.30		0.31										0.31	25									25	0.08	0.08	4.00	0.34	0.08	0.42	200	3.90	64.77	2.06	0.56	PVC	SDR-35	0.01	
To STREET 6, Pipe 109A - 111A															0.31										25														
	90A	91A	79.90		0.54										0.54	44									44	0.15	0.15	4.00	0.59	0.14	0.73	200	1.05	33.61	1.07	0.43	PVC	SDR-35	0.02	
	91A	93A	79.90		0.54										1.08	44									88	0.15	0.30	4.00	1.18	0.28	1.46	200	0.60	25.41	0.81	0.43	PVC	SDR-35	0.06	
To STREET 10, Pipe 93A - 94A															1.08										88														

DESIGN PARAMETERS

Single Family:	80	pph	School:	0	pph
Semi-detached:	109	pph	Park:	0	pph
Townhouse:	0	pph	Community Services:	40	pph
Condo:	0	pph	Commercial:	90	pph
			Infil.Flow (INF):	0.26	L/s/ha

Note: To be conservative, industrial Kav is considered to be 1

Manning's n = (Conc) 0.013 (Pvc) 0.013

Designed: JY	PROJECT: **Innis Lake Road**		
Checked: KD	LOCATION: **Peel Region**		
Dwg. Reference: 0	File Ref: **0**	Date: **12 May 2026**	Sheet No. 6 of 11

SANITARY SEWER CALCULATION SHEET

STREET	MANHOLE		LENGTH (m)	PHASE	TRIBUTARY AREA HECTARE											POPULATION TRIBUTARY											AVG. L/s	AVG. L/s	PEAKING	MAX	INF.	MAX FLOW	SEWER					PIPE		Q/Qf	REMARKS
					INCREMENT										TOTAL	INCREMENT										TOTAL							SIZE	SLOPE	Q	VEL (m/s)					
	FROM	TO			SINGLE F.	SEMI.	TOWNHOUSE	CONDO	SCHOOL	PARK	INSTITUTIONAL	COMMERCIAL	EXTERNAL	INFILT		SINGLE F.	SEMI.	TOWNHOUSE	CONDO	SCHOOL	PARK	INSTITUTIONAL	COMMERCIAL	EXTERNAL		INC.	TOTAL	FACTOR	L/s	L/s	EXP.			L/s	FULL	ACT.	TYPE	CLASS		
MAYFIELD ROAD																																							
Contribution From STREET 39, Pipe 260A - 261A															4.09										452														
	261A	262A	120.00												4.09										452	0.00	1.52	4.00	6.07	1.06	7.13	200	0.55	24.32	0.77	0.67	PVC	SDR-26	0.29	
	262A	268A	65.50												4.09										452	0.00	1.52	4.00	6.07	1.06	7.13	200	0.55	24.32	0.77	0.67	PVC	SDR-26	0.29	
Contribution From STREET 35, Pipe 267A - 268A															1.98										218														
	268A	269A	120.00												6.07										670	0.00	2.25	3.91	8.79	1.58	10.37	200	0.55	24.32	0.77	0.74	PVC	SDR-26	0.43	
	269A	270A	27.00												6.07										670	0.00	2.25	3.91	8.79	1.58	10.37	200	0.55	24.32	0.77	0.74	PVC	SDR-26	0.43	
Contribution From STREET 6, Pipe 114A - 115A															8.85										718														
	115A	116A	111.70												8.85										718	0.00	2.41	3.89	9.37	2.30	11.68	200	0.55	24.32	0.77	0.76	PVC	SDR-26	0.48	
	116A	117A	120.00												8.85										718	0.00	2.41	3.89	9.37	2.30	11.68	200	0.55	24.32	0.77	0.76	PVC	SDR-26	0.48	
	117A	118A	120.00												8.85										718	0.00	2.41	3.89	9.37	2.30	11.68	200	0.55	24.32	0.77	0.76	PVC	SDR-26	0.48	
	118A	137A	120.00												8.85										718	0.00	2.41	3.89	9.37	2.30	11.68	200	0.55	24.32	0.77	0.76	PVC	SDR-26	0.48	
Contribution From STREET 19, Pipe 136A - 137A															8.56										667														
	137A	138A	23.30												17.41										1385	0.00	4.65	3.70	17.20	4.53	21.73	250	0.40	37.61	0.77	0.79	PVC	SDR-26	0.58	
	138A	139A	120.00												17.41										1385	0.00	4.65	3.70	17.20	4.53	21.73	250	0.40	37.61	0.77	0.79	PVC	SDR-26	0.58	
	139A	140A	120.00												17.41										1385	0.00	4.65	3.70	17.20	4.53	21.73	250	0.40	37.61	0.77	0.79	PVC	SDR-26	0.58	
STREET 22																																							
	68A	69A	120.10		0.81										0.81	65									65	0.22	0.22	4.00	0.87	0.21	1.08	200	4.75	71.48	2.28	0.82	PVC	SDR-35	0.02	
To STREET 7, Pipe 69A - 81A															0.81										65														
	70A	71A	60.20		0.41										0.41	33									33	0.11	0.11	4.00	0.44	0.11	0.55	200	1.30	37.40	1.19	0.41	PVC	SDR-35	0.01	
	71A	72A	13.60		0.09										0.50	8									41	0.03	0.14	4.00	0.55	0.13	0.68	200	0.90	31.12	0.99	0.40	PVC	SDR-35	0.02	
	72A	73A	80.80		0.55										1.05	44									85	0.15	0.29	4.00	1.14	0.27	1.41	200	0.90	31.12	0.99	0.50	PVC	SDR-35	0.05	
	73A	74A	80.70		0.55										1.60	44									129	0.15	0.43	4.00	1.73	0.42	2.15	200	2.05	46.96	1.49	0.76	PVC	SDR-35	0.05	
	74A	75A	12.10		0.08										1.68	7									136	0.02	0.46	4.00	1.83	0.44	2.26	200	1.95	45.80	1.46	0.75	PVC	SDR-35	0.05	
	75A	76A	52.80		0.36										2.04	29									165	0.10	0.55	4.00	2.22	0.53	2.75	200	1.70	42.76	1.36	0.76	PVC	SDR-35	0.06	
	76A	77A	13.10		0.09										2.13	8									173	0.03	0.58	4.00	2.32	0.55	2.88	200	1.65	42.13	1.34	0.76	PVC	SDR-35	0.07	
	77A	78A	86.70		0.59										2.72	48									221	0.16	0.74	4.00	2.97	0.71	3.67	200	0.70	27.44	0.87	0.60	PVC	SDR-35	0.13	
	78A	79A	11.00		0.07										2.79	6									227	0.02	0.76	4.00	3.05	0.73	3.77	200	0.55	24.32	0.77	0.56	PVC	SDR-35	0.16	
	79A	80A	60.60		0.41						0.69				3.89	33						28			288	0.20	0.97	4.00	3.87	1.01	4.88	200	0.65	26.44	0.84	0.64	PVC	SDR-35	0.18	
	80A	81A	60.60		0.41										4.30	33									321	0.11	1.08	4.00	4.31	1.12	5.43	200	0.65	26.44	0.84	0.66	PVC	SDR-35	0.21	
To STREET 7, Pipe 81A - 82A															4.30										321														
STREET 3																																							
	38A	39A	96.50		0.65										0.65	52									52	0.17	0.17	4.00	0.70	0.17	0.87	200	2.40	50.81	1.62	0.61	PVC	SDR-35	0.02	
To STREET 1, Pipe 39A - 43A															0.65										52														
	40A	41A	51.00		0.35										0.35	28									28	0.09	0.09	4.00	0.38	0.09	0.47	200	1.15	35.17	1.12	0.39	PVC	SDR-35	0.01	
	41A	42A	9.80		0.07										0.42	6									34	0.02	0.11	4.00	0.46	0.11	0.57	200	0.95	31.97	1.02	0.38	PVC	SDR-35	0.02	
	42A	43A	98.20		0.67										1.09	54									88	0.18	0.30	4.00	1.18	0.28	1.46	200	2.85	55.37	1.76	0.75	PVC	SDR-35	0.03	
To STREET 1, Pipe 43A - 44A															1.09										88														
STREET 2																																							
	34A	35A	98.60		0.67										0.67	54									54	0.18	0.18	4.00	0.73	0.17	0.90	200	1.15	35.17	1.12	0.48	PVC	SDR-35	0.03	
	35A	36A	98.40		0.67										1.34	54									108	0.18	0.36	4.00	1.45	0.35	1.80	200	0.85	30.24	0.96	0.53	PVC	SDR-35	0.06	
To STREET 1, Pipe 36A - 37A															1.34										108														

DESIGN PARAMETERS

Single Family:	80	pph	School:	0	pph
Semi-detached:	109	pph	Park:	0	pph
Townhouse:	0	pph	Community Services:	40	pph
Condo:	0	pph	Commercial:	90	pph
			Infil.Flow (INF):	0.26	L/s/ha

Note: To be conservative, industrial Kav is considered to be 1

Manning's n = (Conc) 0.013 (Pvc) 0.013

Designed: JY	PROJECT: **Innis Lake Road**		
Checked: KD	LOCATION: **Peel Region**		
Dwg. Reference: 0	File Ref: **0**	Date: **12 May 2026**	Sheet No. 7 of 11

SANITARY SEWER CALCULATION SHEET

STREET	MANHOLE		LENGTH (m)	PHASE	TRIBUTARY AREA HECTARE											POPULATION TRIBUTARY											AVG. L/s	AVG. L/s	PEAKING	MAX	INF.	MAX FLOW	SEWER					PIPE		Q/Qf	REMARKS
					INCREMENT										TOTAL	INCREMENT										TOTAL							SIZE	SLOPE	Q	VEL (m/s)					
	FROM	TO			SINGLE F.	SEMI.	TOWNHOUSE	CONDO	SCHOOL	PARK	INSTITUTIONAL	COMMERCIAL	EXTERNAL	INFILT		SINGLE F.	SEMI.	TOWNHOUSE	CONDO	SCHOOL	PARK	INSTITUTIONAL	COMMERCIAL	EXTERNAL		INC.	TOTAL	FACTOR	L/s	L/s	EXP.			L/s	FULL	ACT.	TYPE	CLASS		
STREET 40																																							
	31A	32A	101.30		0.69										0.69	56									56	0.19	0.19	4.00	0.75	0.18	0.93	200	1.05	33.61	1.07	0.46	PVC	SDR-35	0.03	
	32A	33A	100.40		0.68										1.37	55									111	0.18	0.37	4.00	1.49	0.36	1.85	200	0.80	29.34	0.93	0.52	PVC	SDR-35	0.06	
To STREET 1, Pipe 33A - 36A															1.37										111														
	170A	171A	31.10			0.20									0.20		22								22	0.07	0.07	4.00	0.30	0.05	0.35	200	2.15	48.09	1.53	0.44	PVC	SDR-35	0.01	
	171A	172A	62.20			0.40									0.60		44								66	0.15	0.22	4.00	0.89	0.16	1.04	200	1.80	44.00	1.40	0.58	PVC	SDR-35	0.02	
	172A	173A	31.10			0.20									0.80		22								88	0.07	0.30	4.00	1.18	0.21	1.39	200	3.05	57.28	1.82	0.75	PVC	SDR-35	0.02	
To STREET 25, Pipe 173A - 174A															0.80										88														
STREET 8																																							
	58A	59A	36.30		0.25										0.25	20									20	0.07	0.07	4.00	0.27	0.07	0.33	200	1.05	33.61	1.07	0.34	PVC	SDR-35	0.01	
	59A	60A	95.90		0.65										0.90	52									72	0.17	0.24	4.00	0.97	0.23	1.20	200	3.70	63.09	2.01	0.78	PVC	SDR-35	0.02	
To STREET 1, Pipe 60A - 65A															0.90										72														
	61A	62A	58.00		0.39										0.39	32									32	0.11	0.11	4.00	0.43	0.10	0.53	200	2.00	46.38	1.48	0.49	PVC	SDR-35	0.01	
	62A	63A	12.10		0.08										0.47	7									39	0.02	0.13	4.00	0.52	0.12	0.65	200	1.55	40.83	1.30	0.47	PVC	SDR-35	0.02	
	63A	64A	66.90		0.45										0.92	36									75	0.12	0.25	4.00	1.01	0.24	1.25	200	1.55	40.83	1.30	0.57	PVC	SDR-35	0.03	
	64A	65A	66.90		0.45										1.37	36									111	0.12	0.37	4.00	1.49	0.36	1.85	200	2.35	50.28	1.60	0.76	PVC	SDR-35	0.04	
To STREET 1, Pipe 65A - 66A															1.37										111														
STREET 9																																							
	50A	51A	73.00		0.49										0.49	40									40	0.13	0.13	4.00	0.54	0.13	0.66	200	1.15	35.17	1.12	0.43	PVC	SDR-35	0.02	
	51A	52A	84.80		0.57										1.06	46									86	0.15	0.29	4.00	1.15	0.28	1.43	200	0.70	27.44	0.87	0.46	PVC	SDR-35	0.05	
	52A	53A	85.60		0.58										1.64	47									133	0.16	0.45	4.00	1.79	0.43	2.21	200	2.05	46.96	1.49	0.76	PVC	SDR-35	0.05	
To STREET 1, Pipe 53A - 57A															1.64										133														
	54A	55A	85.10		0.58										0.58	47									47	0.16	0.16	4.00	0.63	0.15	0.78	200	1.05	33.61	1.07	0.44	PVC	SDR-35	0.02	
	55A	56A	80.00		0.54										1.12	44									91	0.15	0.31	4.00	1.22	0.29	1.51	200	0.65	26.44	0.84	0.45	PVC	SDR-35	0.06	
	56A	57A	80.10		0.54										1.66	44									135	0.15	0.45	4.00	1.81	0.43	2.24	200	3.60	62.23	1.98	0.91	PVC	SDR-35	0.04	
To STREET 1, Pipe 57A - 60A															1.66										135														
STREET 11																																							
	45A	46A	19.50		0.13										0.13	11									11	0.04	0.04	4.00	0.15	0.03	0.18	200	1.00	32.80	1.04	0.27	PVC	SDR-35	0.01	
	46A	47A	13.60		0.09										0.22	8									19	0.03	0.06	4.00	0.26	0.06	0.31	200	0.55	24.32	0.77	0.26	PVC	SDR-35	0.01	
	47A	48A	80.80		0.55										0.77	44									63	0.15	0.21	4.00	0.85	0.20	1.05	200	0.60	25.41	0.81	0.39	PVC	SDR-35	0.04	
	48A	49A	80.40		0.54										1.31	44									107	0.15	0.36	4.00	1.44	0.34	1.78	200	0.70	27.44	0.87	0.49	PVC	SDR-35	0.06	
To STREET 1, Pipe 49A - 53A															1.31										107														
STREET 1																																							
	119A	120A	67.50		0.46										0.46	37									37	0.12	0.12	4.00	0.50	0.12	0.62	200	1.55	40.83	1.30	0.47	PVC	SDR-35	0.02	
	120A	124A	110.60		0.75										1.21	60									97	0.20	0.33	4.00	1.30	0.31	1.62	200	1.10	34.40	1.09	0.55	PVC	SDR-35	0.05	
To STREET 14, Pipe 124A - 127A															1.21										97														
	121A	122A	24.40		0.16										0.16	13									13	0.04	0.04	4.00	0.17	0.04	0.22	200	3.95	65.19	2.07	0.46	PVC	SDR-35	0.00	
	122A	123A	9.50		0.06										0.22	5									18	0.02	0.06	4.00	0.24	0.06	0.30	200	1.60	41.49	1.32	0.38	PVC	SDR-35	0.01	
	123A	124A	61.30		0.42										0.64	34									52	0.11	0.17	4.00	0.70	0.17	0.86	200	1.60	41.49	1.32	0.51	PVC	SDR-35	0.02	
To STREET 14, Pipe 124A - 127A															0.64										52														

DESIGN PARAMETERS

Single Family:	80	pph	School:	0	pph
Semi-detached:	109	pph	Park:	0	pph
Townhouse:	0	pph	Community Services:	40	pph
Condo:	0	pph	Commercial:	90	pph
			Infil.Flow (INF):	0.26	L/s/ha

Note: To be conservative, industrial Kav is considered to be 1

Manning's n = (Conc) 0.013 (Pvc) 0.013

Designed: JY

Checked: KD

Dwg. Reference: 0

PROJECT: **Innis Lake Road**

LOCATION: **Peel Region**

File Ref: **0**

Date: **12 May 2026**

Sheet No. 8 of 11

SANITARY SEWER CALCULATION SHEET

STREET	MANHOLE		LENGTH (m)	PHASE	TRIBUTARY AREA HECTARE											POPULATION TRIBUTARY											AVG. L/s	AVG. L/s	PEAKING	MAX	INF.	MAX FLOW	SEWER					PIPE		Q/Qf	REMARKS
					INCREMENT										TOTAL	INCREMENT										TOTAL							SIZE	SLOPE	Q	VEL (m/s)					
	FROM	TO			SINGLE F.	SEMI.	TOWNHOUSE	CONDO	SCHOOL	PARK	INSTITUTIONAL	COMMERCIAL	EXTERNAL	INFILT		SINGLE F.	SEMI.	TOWNHOUSE	CONDO	SCHOOL	PARK	INSTITUTIONAL	COMMERCIAL	EXTERNAL		INC.	TOTAL	FACTOR	L/s	L/s	EXP.			L/s	FULL	ACT.	TYPE	CLASS		
Contribution From STREET 40, Pipe 32A - 33A															1.37										111														
	33A	36A	77.30		0.52										1.89	42									153	0.14	0.51	4.00	2.05	0.49	2.55	200	1.15	35.17	1.12	0.65	PVC	SDR-35	0.07	
Contribution From STREET 2, Pipe 35A - 36A															1.34										108														
	36A	37A	65.30		0.44										3.67	36									297	0.12	1.00	4.00	3.99	0.95	4.94	200	5.00	73.34	2.33	1.33	PVC	SDR-26	0.07	
	37A	39A	65.20		0.44										4.11	36									333	0.12	1.12	4.00	4.47	1.07	5.54	200	0.55	24.32	0.77	0.62	PVC	SDR-26	0.23	
Contribution From STREET 3, Pipe 38A - 39A															0.65										52														
	39A	43A	65.70		0.45										5.21	36									421	0.12	1.41	4.00	5.65	1.35	7.01	200	0.55	24.32	0.77	0.67	PVC	SDR-26	0.29	
Contribution From STREET 3, Pipe 42A - 43A															1.09										88														
	43A	44A	66.20		0.45										6.75	36									545	0.12	1.83	3.95	7.23	1.76	8.98	200	0.55	24.32	0.77	0.72	PVC	SDR-26	0.37	
	44A	66A	66.20		0.45										7.20	36									581	0.12	1.95	3.94	7.68	1.87	9.56	200	0.55	24.32	0.77	0.73	PVC	SDR-26	0.39	
To STREET 7, Pipe 66A - 67A															7.20										581														
Contribution From STREET 11, Pipe 48A - 49A															1.31										107														
	49A	53A	73.30		0.50										1.81	40									147	0.13	0.49	4.00	1.97	0.47	2.44	200	1.80	44.00	1.40	0.75	PVC	SDR-35	0.06	
Contribution From STREET 9, Pipe 52A - 53A															1.64										133														
	53A	57A	76.30		0.52										3.97	42									322	0.14	1.08	4.00	4.32	1.03	5.36	200	0.55	24.32	0.77	0.62	PVC	SDR-35	0.22	
Contribution From STREET 9, Pipe 56A - 57A															1.66										135														
	57A	60A	70.20		0.48										6.11	39									496	0.13	1.66	3.98	6.63	1.59	8.21	200	0.55	24.32	0.77	0.70	PVC	SDR-35	0.34	
Contribution From STREET 8, Pipe 59A - 60A															0.90										72														
	60A	65A	76.20		0.52										7.53	42									610	0.14	2.05	3.93	8.05	1.96	10.00	200	0.55	24.32	0.77	0.74	PVC	SDR-26	0.41	
Contribution From STREET 8, Pipe 64A - 65A															1.37										111														
	65A	66A	73.00		0.49										9.39	40									761	0.13	2.55	3.87	9.89	2.44	12.33	200	0.55	24.32	0.77	0.77	PVC	SDR-26	0.51	
To STREET 7, Pipe 66A - 67A															9.39										761														
STREET 10																																							
	110A	111A	48.90		0.33										0.33	27									27	0.09	0.09	4.00	0.36	0.09	0.45	200	3.75	63.51	2.02	0.55	PVC	SDR-35	0.01	
To STREET 6, Pipe 111A - 112A															0.33										27														
	97A	98A	120.00		0.81										0.81	65									65	0.22	0.22	4.00	0.87	0.21	1.08	200	1.20	35.93	1.14	0.50	PVC	SDR-35	0.03	
To STREET 16, Pipe 98A - 99A															0.81										65														
	16A	17A	30.60		0.21										0.21	17									17	0.06	0.06	4.00	0.23	0.05	0.28	200	1.00	32.80	1.04	0.32	PVC	SDR-35	0.01	
Contribution From STREET 12, Pipe 15A - 17A															0.76										62														
	17A	18A	79.90		0.54										1.51	44									123	0.15	0.41	4.00	1.65	0.39	2.04	200	0.55	24.32	0.77	0.47	PVC	SDR-35	0.08	
	18A	19A	7.80		0.05										1.56	4									127	0.01	0.43	4.00	1.71	0.41	2.11	200	0.55	24.32	0.77	0.47	PVC	SDR-35	0.09	
	19A	23A	116.60		0.79										2.35	64									191	0.21	0.64	4.00	2.56	0.61	3.18	200	0.55	24.32	0.77	0.53	PVC	SDR-35	0.13	
To STREET 6, Pipe 23A - 24A															2.35										191														
	92A	93A	37.60		0.25										0.25	20									20	0.07	0.07	4.00	0.27	0.07	0.33	200	4.00	65.60	2.09	0.54	PVC	SDR-35	0.01	
Contribution From STREET 13, Pipe 91A - 93A															1.08										88														
	93A	94A	24.00		0.16										1.49	13									121	0.04	0.41	4.00	1.62	0.39	2.01	200	3.75	63.51	2.02	0.91	PVC	SDR-35	0.03	
	94A	95A	45.30		0.31										1.80	25									146	0.08	0.49	4.00	1.96	0.47	2.43	200	0.80	29.34	0.93	0.56	PVC	SDR-35	0.08	
	95A	96A	12.80		0.09										1.89	8									154	0.03	0.52	4.00	2.07	0.49	2.56	200	1.80	44.00	1.40	0.75	PVC	SDR-35	0.06	
	96A	98A	53.30		0.36										2.25	29									183	0.10	0.61	4.00	2.46	0.59	3.04	200	1.50	40.17	1.28	0.75	PVC	SDR-35	0.08	
To STREET 16, Pipe 98A - 99A															2.25										183														
STREET 12																																							
	20A	22A	53.30		0.36										0.36	29									29	0.10	0.10	4.00	0.39	0.09	0.48	200	1.20	35.93	1.14	0.40	PVC	SDR-35	0.01	
To STREET 6, Pipe 22A - 23A															0.36										29														

DESIGN PARAMETERS

Single Family:	80	pph	School:	0	pph
Semi-detached:	109	pph	Park:	0	pph
Townhouse:	0	pph	Community Services:	40	pph
Condo:	0	pph	Commercial:	90	pph
			Infil.Flow (INF):	0.26	L/s/ha

Note: To be conservative, industrial Kav is considered to be 1

Manning's n = (Conc) 0.013 (Pvc) 0.013

Designed: JY	PROJECT: **Innis Lake Road**		
Checked: KD	LOCATION: **Peel Region**		
Dwg. Reference: 0	File Ref: **0**	Date: **12 May 2026**	Sheet No. 9 of 11

SANITARY SEWER CALCULATION SHEET

STREET	MANHOLE		LENGTH (m)	PHASE	TRIBUTARY AREA HECTARE											POPULATION TRIBUTARY											AVG. L/s	AVG. L/s	PEAKING	MAX	INF.	MAX FLOW	SEWER					PIPE		Q/Qf	REMARKS
					INCREMENT										TOTAL	INCREMENT										TOTAL							SIZE	SLOPE	Q	VEL (m/s)					
	FROM	TO			SINGLE F.	SEMI.	TOWNHOUSE	CONDO	SCHOOL	PARK	INSTITUTIONAL	COMMERCIAL	EXTERNAL	INFILT		SINGLE F.	SEMI.	TOWNHOUSE	CONDO	SCHOOL	PARK	INSTITUTIONAL	COMMERCIAL	EXTERNAL		INC.	TOTAL	FACTOR	L/s	L/s	EXP.			L/s	FULL	ACT.	TYPE	CLASS		
	14A	15A	101.30		0.69										0.69	56									56	0.19	0.19	4.00	0.75	0.18	0.93	200	1.00	32.80	1.04	0.46	PVC	SDR-35	0.03	
	15A	17A	9.60		0.07										0.76	6									62	0.02	0.21	4.00	0.83	0.20	1.03	200	0.55	24.32	0.77	0.38	PVC	SDR-35	0.04	
To STREET 10, Pipe 17A - 18A															0.76										62														
STREET 5																																							
	6A	7A	68.80		0.47										0.47	38									38	0.13	0.13	4.00	0.51	0.12	0.63	200	3.50	61.36	1.95	0.62	PVC	SDR-35	0.01	
To STREET 6, Pipe 7A - 8A															0.47										38														
	9A	10A	102.10		0.69										0.69	56									56	0.19	0.19	4.00	0.75	0.18	0.93	200	1.55	40.83	1.30	0.52	PVC	SDR-35	0.02	
	10A	11A	102.20		0.69										1.38	56									112	0.19	0.38	4.00	1.50	0.36	1.86	200	1.10	34.40	1.09	0.58	PVC	SDR-35	0.05	
	11A	12A	13.40		0.09										1.47	8									120	0.03	0.40	4.00	1.61	0.38	1.99	200	2.25	49.20	1.57	0.76	PVC	SDR-35	0.04	
	12A	13A	67.40		0.46										1.93	37									157	0.12	0.53	4.00	2.11	0.50	2.61	200	1.75	43.39	1.38	0.76	PVC	SDR-35	0.06	
To STREET 6, Pipe 13A - 26A															1.93										157														
STREET 4																																							
	1A	2A	90.60		0.61										0.61	49									49	0.16	0.16	4.00	0.66	0.16	0.82	200	1.40	38.81	1.24	0.50	PVC	SDR-35	0.02	
	2A	3A	13.40		0.09										0.70	8									57	0.03	0.19	4.00	0.77	0.18	0.95	200	4.30	68.01	2.16	0.75	PVC	SDR-35	0.01	
	3A	5A	67.40		0.46										1.16	37									94	0.12	0.32	4.00	1.26	0.30	1.56	200	2.70	53.89	1.72	0.75	PVC	SDR-35	0.03	
To STREET 6, Pipe 5A - 7A															1.16										94														
STREET 6																																							
	4A	5A	101.20		0.69										0.69	56									56	0.19	0.19	4.00	0.75	0.18	0.93	200	3.40	60.48	1.93	0.70	PVC	SDR-35	0.02	
Contribution From STREET 4, Pipe 3A - 5A															1.16										94														
	5A	7A	67.10		0.45										2.30	36									186	0.12	0.62	4.00	2.50	0.60	3.10	200	0.55	24.32	0.77	0.53	PVC	SDR-35	0.13	
Contribution From STREET 5, Pipe 6A - 7A															0.47										38														
	7A	8A	111.20		0.75										3.52	60									284	0.20	0.95	4.00	3.81	0.92	4.73	200	0.55	24.32	0.77	0.60	PVC	SDR-35	0.19	
	8A	13A	111.20		0.75										4.27	60									344	0.20	1.15	4.00	4.62	1.11	5.73	200	0.55	24.32	0.77	0.63	PVC	SDR-35	0.24	
Contribution From STREET 5, Pipe 12A - 13A															1.93										157														
	13A	26A	77.20		0.52										6.72	42									543	0.14	1.82	3.96	7.22	1.75	8.96	200	0.55	24.32	0.77	0.72	PVC	SDR-35	0.37	
To STREET 7, Pipe 26A - 27A															6.72										543														
	21A	22A	28.70		0.19										0.19	16									16	0.05	0.05	4.00	0.21	0.05	0.26	200	1.20	35.93	1.14	0.33	PVC	SDR-35	0.01	
Contribution From STREET 12, Pipe 20A - 22A															0.36										29														
	22A	23A	75.40		0.51										1.06	41									86	0.14	0.29	4.00	1.15	0.28	1.43	200	2.20	48.65	1.55	0.68	PVC	SDR-35	0.03	
Contribution From STREET 10, Pipe 19A - 23A															2.35										191														
	23A	24A	90.50		0.61										4.02	49									326	0.16	1.09	4.00	4.38	1.05	5.42	200	0.55	24.32	0.77	0.62	PVC	SDR-35	0.22	
	24A	25A	64.10		0.43										4.45	35									361	0.12	1.21	4.00	4.85	1.16	6.00	200	0.55	24.32	0.77	0.64	PVC	SDR-35	0.25	
	25A	26A	64.10		0.43										4.88	35									396	0.12	1.33	4.00	5.32	1.27	6.59	200	0.55	24.32	0.77	0.66	PVC	SDR-26	0.27	
To STREET 7, Pipe 26A - 27A															4.88										396														
	108A	109A	32.60		0.22										0.22	18									18	0.06	0.06	4.00	0.24	0.06	0.30	200	5.05	73.71	2.35	0.56	PVC	SDR-35	0.00	
Contribution From STREET 13, Pipe 107A - 109A															0.31										25														
	109A	111A	81.00		0.55										1.08	44									87	0.15	0.29	4.00	1.17	0.28	1.45	200	2.85	55.37	1.76	0.75	PVC	SDR-35	0.03	
Contribution From STREET 10, Pipe 110A - 111A															0.33										27														
	111A	112A	38.20		0.26										1.67	21									135	0.07	0.45	4.00	1.81	0.43	2.25	200	1.95	45.80	1.46	0.75	PVC	SDR-35	0.05	
	112A	113A	39.50		0.27										1.94	22									157	0.07	0.53	4.00	2.11	0.50	2.61	200	1.75	43.39	1.38	0.76	PVC	SDR-35	0.06	

DESIGN PARAMETERS

Single Family:	80	pph	School:	0	pph
Semi-detached:	109	pph	Park:	0	pph
Townhouse:	0	pph	Community Services:	40	pph
Condo:	0	pph	Commercial:	90	pph
			Infil.Flow (INF):	0.26	L/s/ha

Note: To be conservative, industrial Kav is considered to be 1

Manning's n = (Conc) 0.013 (Pvc) 0.013

Designed: JY	PROJECT: **Innis Lake Road**		
Checked: KD	LOCATION: **Peel Region**		
Dwg. Reference: 0	File Ref: **0**	Date: **12 May 2026**	Sheet No. 10 of 11

SANITARY SEWER CALCULATION SHEET

STREET	MANHOLE		LENGTH (m)	PHASE	TRIBUTARY AREA HECTARE											POPULATION TRIBUTARY											AVG. L/s	AVG. L/s	PEAKING	MAX	INF.	MAX FLOW	SEWER					PIPE		Q/Qf	REMARKS
					INCREMENT										TOTAL	INCREMENT										TOTAL							SIZE	SLOPE	Q	VEL (m/s)					
	FROM	TO			SINGLE F.	SEMI.	TOWNHOUSE	CONDO	SCHOOL	PARK	INSTITUTIONAL	COMMERCIAL	EXTERNAL	INFILT		SINGLE F.	SEMI.	TOWNHOUSE	CONDO	SCHOOL	PARK	INSTITUTIONAL	COMMERCIAL	EXTERNAL		INC.	TOTAL	FACTOR	L/s	L/s	EXP.			L/s	FULL	ACT.	TYPE	CLASS		
Contribution From STREET 16, Pipe 106A - 113A															6.01										489														
	113A	114A	36.40		0.25										8.20	20									666	0.07	2.24	3.91	8.74	2.13	10.87	200	0.55	24.32	0.77	0.75	PVC	SDR-26	0.45	
	114A	115A	96.50		0.65										8.85	52									718	0.17	2.41	3.89	9.37	2.30	11.68	200	0.55	24.32	0.77	0.76	PVC	SDR-26	0.48	
To MAYFIELD ROAD, Pipe 115A - 116A															8.85										718														
STREET 7																																							
Contribution From STREET 6, Pipe 13A - 26A															6.72										543														
Contribution From STREET 6, Pipe 25A - 26A															4.88										396														
	26A	27A	77.40		0.52										12.12	42									981	0.14	3.29	3.81	12.55	3.15	15.70	200	0.55	24.32	0.77	0.82	PVC	SDR-26	0.65	
	27A	28A	35.00		0.24										12.36	20									1001	0.07	3.36	3.80	12.77	3.21	15.98	200	0.55	24.32	0.77	0.83	PVC	SDR-26	0.66	
	28A	29A	85.40		0.58										12.94	47									1048	0.16	3.52	3.79	13.33	3.36	16.70	200	0.55	24.32	0.77	0.83	PVC	SDR-26	0.69	
	29A	30A	119.90		0.81						1.16				14.91	65						47			1160	0.38	3.89	3.76	14.64	3.88	18.52	250	0.40	37.61	0.77	0.76	PVC	SDR-26	0.49	
	30A	66A	22.10		0.15										15.06	12									1172	0.04	3.93	3.75	14.75	3.92	18.67	250	0.40	37.61	0.77	0.76	PVC	SDR-26	0.50	
Contribution From STREET 1, Pipe 44A - 66A															7.20										581														
Contribution From STREET 1, Pipe 65A - 66A															9.39										761														
	66A	67A	10.70		0.07										31.72	6									2520	0.02	8.46	3.51	29.69	8.25	37.94	300	0.35	57.21	0.81	0.86	PVC	SDR-26	0.66	
	67A	69A	61.00		0.41										32.13	33									2553	0.11	8.57	3.50	29.99	8.35	38.35	300	0.35	57.21	0.81	0.87	PVC		0.67	
Contribution From STREET 22, Pipe 68A - 69A															0.81										65														
	69A	81A	75.20		0.51										33.45	41									2659	0.14	8.92	3.49	31.15	8.70	39.84	300	0.35	57.21	0.81	0.87	PVC		0.70	
Contribution From STREET 22, Pipe 80A - 81A															4.30										321														
	81A	82A	98.50		0.67										38.42	54									3034	0.18	10.18	3.44	35.03	9.99	45.02	375	0.25	87.67	0.79	0.80	PVC	SDR-26	0.51	
	82A	83A	30.00		0.30										38.72	24									3058	0.08	10.26	3.44	35.31	10.07	45.38	375	0.25	87.67	0.79	0.80	PVC	SDR-26	0.52	
To INNIS LAKE ROAD, Pipe 83A - 84A															38.72										3058														
Contribution From STREET 38, Pipe 204A - 205A															27.91										2821														
	205A	206A	71.80			0.46					1.68				30.05		51					68			2940	0.40	9.87	3.45	34.04	7.81	41.86	375	0.25	87.67	0.79	0.78	PVC	SDR-35	0.48	
	206A	212A	71.80			0.46									30.51		51								2991	0.17	10.04	3.44	34.53	7.93	42.47	375	0.25	87.67	0.79	0.79	PVC	SDR-35	0.48	
Contribution From STREET 44, Pipe 211A - 212A															1.43										158														
	212A	213A	68.60			0.44									32.38		48								3197	0.16	10.73	3.42	36.70	8.42	45.12	375	0.25	87.67	0.79	0.80	PVC	SDR-26	0.51	
	213A	214A	68.60			0.44									32.82		48								3245	0.16	10.89	3.41	37.14	8.53	45.67	375	0.25	87.67	0.79	0.80	PVC	SDR-26	0.52	
	214A	218A	91.50			0.58									33.40		64								3309	0.21	11.11	3.41	37.87	8.68	46.56	375	0.25	87.67	0.79	0.80	PVC	SDR-26	0.53	
Contribution From STREET 33, Pipe 217A - 218A															0.80										88														
	218A	225A	71.60												34.20										3397	0.00	11.40	3.40	38.77	8.89	47.66	375	0.25	87.67	0.79	0.81	PVC	SDR-26	0.54	
To CENTREVILLE CREEK ROAD, Pipe 225A - 226A															34.20										3397														
INNIS LAKE ROAD																																							
Contribution From STREET 7, Pipe 82A - 83A															38.72										3058														
	83A	84A	25.60												38.72										3058	0.00	10.26	3.44	35.31	10.07	45.38	600	0.30	336.31	1.19	0.82	CONC	180-D	0.13	
	84A	85A	120.00												38.72										3058	0.00	10.26	3.44	35.31	10.07	45.38	600	0.30	336.31	1.19	0.82	CONC	180-D	0.13	
	85A	86A	120.00												38.72										3058	0.00	10.26	3.44	35.31	10.07	45.38	600	0.30	336.31	1.19	0.82	CONC	180-D	0.13	
	86A	87A	120.00												38.72										3058	0.00	10.26	3.44	35.31	10.07	45.38	600	0.30	336.31	1.19	0.82	CONC	180-D	0.13	
	87A	88A	120.00												38.72										3058	0.00	10.26	3.44	35.31	10.07	45.38	600	0.30	336.31	1.19	0.82	CONC	180-D	0.13	
	88A	89A	120.00												38.72										3058	0.00	10.26	3.44	35.31	10.07	45.38	600	0.30	336.31	1.19	0.82	CONC	180-D	0.13	
	89A	140A	120.00												38.72										3058	0.00	10.26	3.44	35.31	10.07	45.38	600	0.30	336.31	1.19	0.82	CONC	180-D	0.13	

DESIGN PARAMETERS

Single Family:	80	pph	School:	0	pph
Semi-detached:	109	pph	Park:	0	pph
Townhouse:	0	pph	Community Services:	40	pph
Condo:	0	pph	Commercial:	90	pph
			Infil.Flow (INF):	0.26	L/s/ha

Note: To be conservative, industrial Kav is considered to be 1

Manning's n = (Conc) 0.013 (Pvc) 0.013

Designed: JY	PROJECT: **Innis Lake Road**		
Checked: KD	LOCATION: **Peel Region**		
Dwg. Reference: 0	File Ref: **0**	Date: **12 May 2026**	Sheet No. 11 of 11



PROJECT No. 24-2166

PROPOSED 600mm SANITARY SEWER

GOREWAY DRIVE

FROM COUNTRYSIDE DRIVE TO MAYFIELD ROAD

TOWN OF CALEDON

ISSUED FOR 30% DESIGN REVIEW

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Document XXXX-XXXT

SHEET No.	DRAWING No.	DRAWING DESCRIPTION 1	DRAWING DESCRIPTION 2
1	00001-D	COVER SHEET	
2	00002-D	DRAWING INDEX	
3	00003-D	LEGENDS AND ABBREVIATIONS	
4	00004-D	KEY PLAN	
5	00005-D	PROP. 600mm SANITARY SEWER	STA. 1+000 TO STA. 1+200
6	00006-D	PROP. 600mm SANITARY SEWER	STA. 0+000 TO STA. 0+240
7	00007-D	PROP. 600mm SANITARY SEWER	STA. 0+240 TO STA. 0+500
8	00008-D	PROP. 600mm SANITARY SEWER	STA. 0+500 TO STA. 0+780
9	00009-D	PROP. 600mm SANITARY SEWER	STA. 0+780 TO STA. 1+060
10	00010-D	PROP. 600mm SANITARY SEWER	STA. 1+060 TO STA. 1+340
11	00011-D	PROP. 600mm SANITARY SEWER	STA. 1+340 TO STA. 1+660

REVISIONS

DATE	DETAILS	INIT.
OCT 17, 2025	ISSUED FOR 30% PRELIMINARY DESIGN	K.A.
MAR 17, 2026	REISSUED FOR 30% PRELIMINARY DESIGN	K.A.

Designed by _____ Chkd. _____

Approved by _____

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INDEX SHEET

CAD Area	X-XX	Area	X-XX	Project No.	24-2166
Checked by	K.A	Drawn by	V.Y	Plan No.	00002-D
Date	MARCH 2026	Sheet	02 OF 11		

LEGENDS:

- PROP. WATERMAIN
- PROP. SANITARY SEWER
- PROP. TUNNEL
- PROP. LAUNCH/RECEIVING SHAFT
- PROP. SANITARY MANHOLE
- STORM SEWER
- SANITARY SEWER
- WATERMAIN
- ABANDONED WATERMAIN
- GAS MAIN
- CTV CONDUITS
- BELL CONDUITS
- HYDRO CONDUITS
- FENCE
- TRCA FLOODPLAIN
- FUTURE WORK BY OTHERS
- EX. ROW
- EX. PROPERTY LINE
- EX. SINGLE CATCH BASIN
- EX. CATCH BASIN MANHOLE
- EX. DOUBLE CATCH BASIN
- EX. DITCH INLET CATCHBASIN
- EX. BELL MANHOLE
- EX. BELL PEDESTAL
- EX. BOLLARD
- EX. HYDRANT
- EX. HYDRO JUNCTION BOX
- EX. HYDRO LIGHT POLE
- EX. HYDRO MANHOLE
- EX. HYDRO POLE
- EX. HYDRO GUYWIRE
- EX. SANITARY MANHOLE
- EX. SIGNAL CTRL BOX
- EX. STORM MANHOLE
- STREET SIGN
- EX. VALVE BOX
- EX. VALVE CHAMBER
- EX. WATER CURB STOP
- FENCE SIGN
- EX. CABLE PEDESTAL
- CONIFEROUS TREE
- DECIDUOUS TREE

ABBREVIATIONS:

ABND	ABANDONED
BOL	BOLLARD
CB	CATCHBASIN
CPP	CONCRETE PRESSURE PIPE
DCB	DOUBLE CATCHBASIN
DICB	DITCH INLET CATCHBASIN
D.I.	DUCTILE IRON
DIA	DIAMETER
DWG	DRAWING
EX.	EXISTING
EL.	ELEVATION
GM	GAS MAIN
HP	HYDRO POLE
HYD	HYDRANT
INV.	INVERT
INC	INCLINOMETER
MH	MAINTENANCE HOLE
MIN	MINIMUM
MAX	MAXIMUM
NTS	NOT TO SCALE
NOM	NOMINAL
OPSD	ONTARIO PROVINCIAL STANDARD DRAWING
PROP.	PROPOSED
PVC	POLYVINYL CHLORIDE
STA.	STATION
STM	STORM
SAN	SANITARY
WM	WATERMAIN
UMPI	UTILITY MONITORING POINT

REVISIONS

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Designed by ____ Chkd. ____

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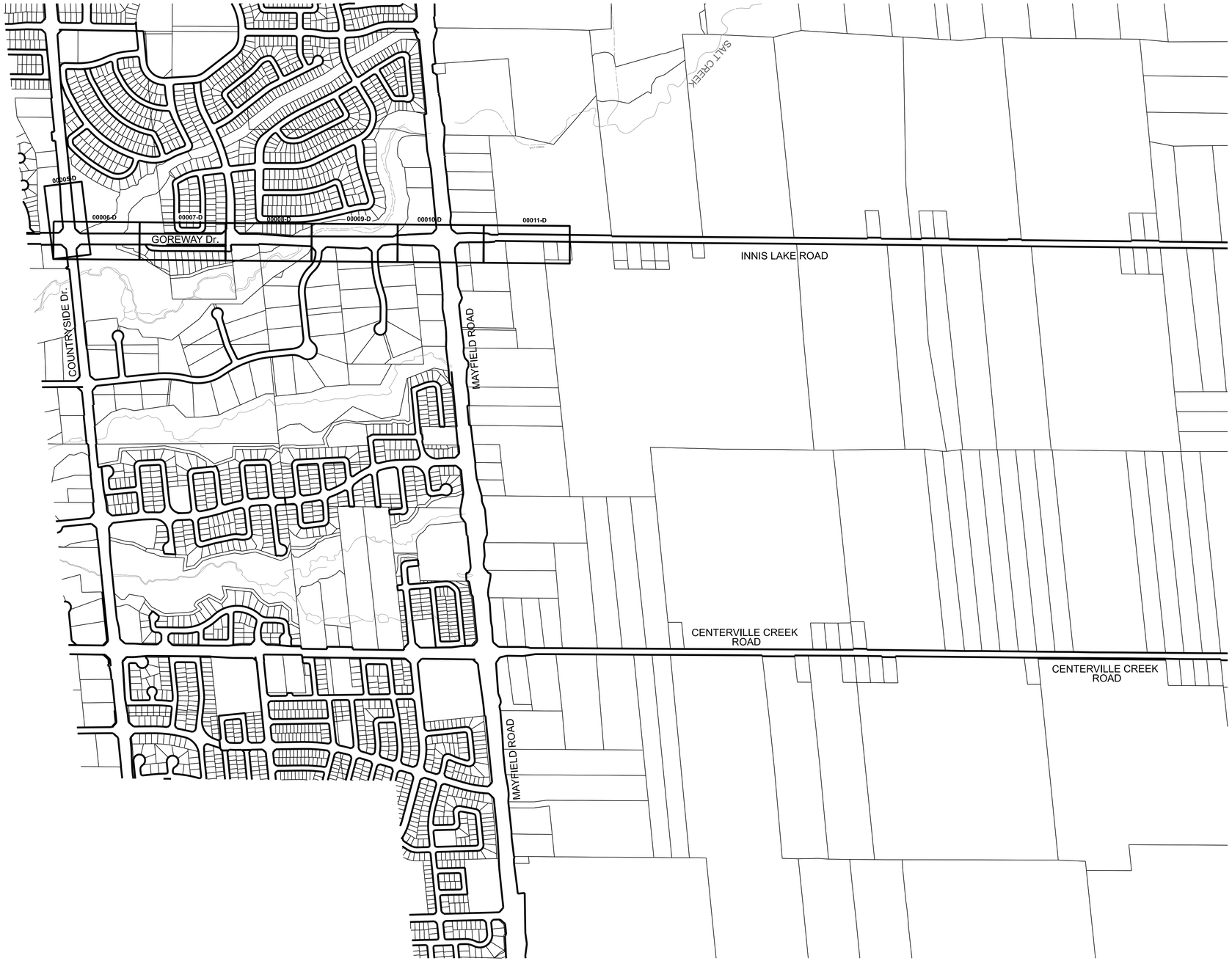
Peel Region
working with you

LEGENDS AND ABBREVIATIONS

CAD Area	X-XX	Area	X-XX
Checked by	K.A	Drawn by	V.Y
Date	MARCH 2026	Sheet	03 OF 11

Project No. 24-2166

Plan No. **00003-D**



REVISIONS		
DATE	DETAILS	INIT.
OCT 17, 2025	ISSUED FOR 30% PRELIMINARY DESIGN	K.A.
MAR 17, 2026	REISSUED FOR 30% PRELIMINARY DESIGN	K.A.

Designed by ____ Chkd. ____

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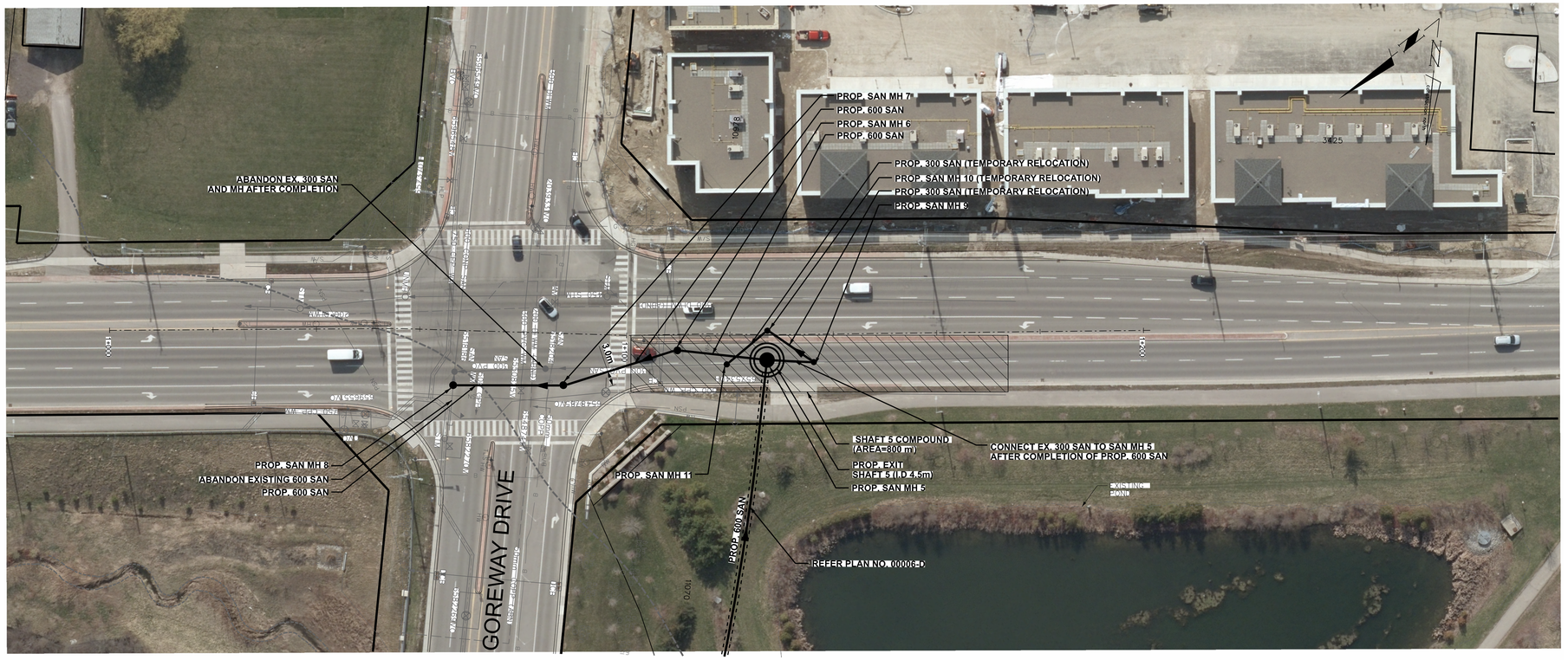
RVA

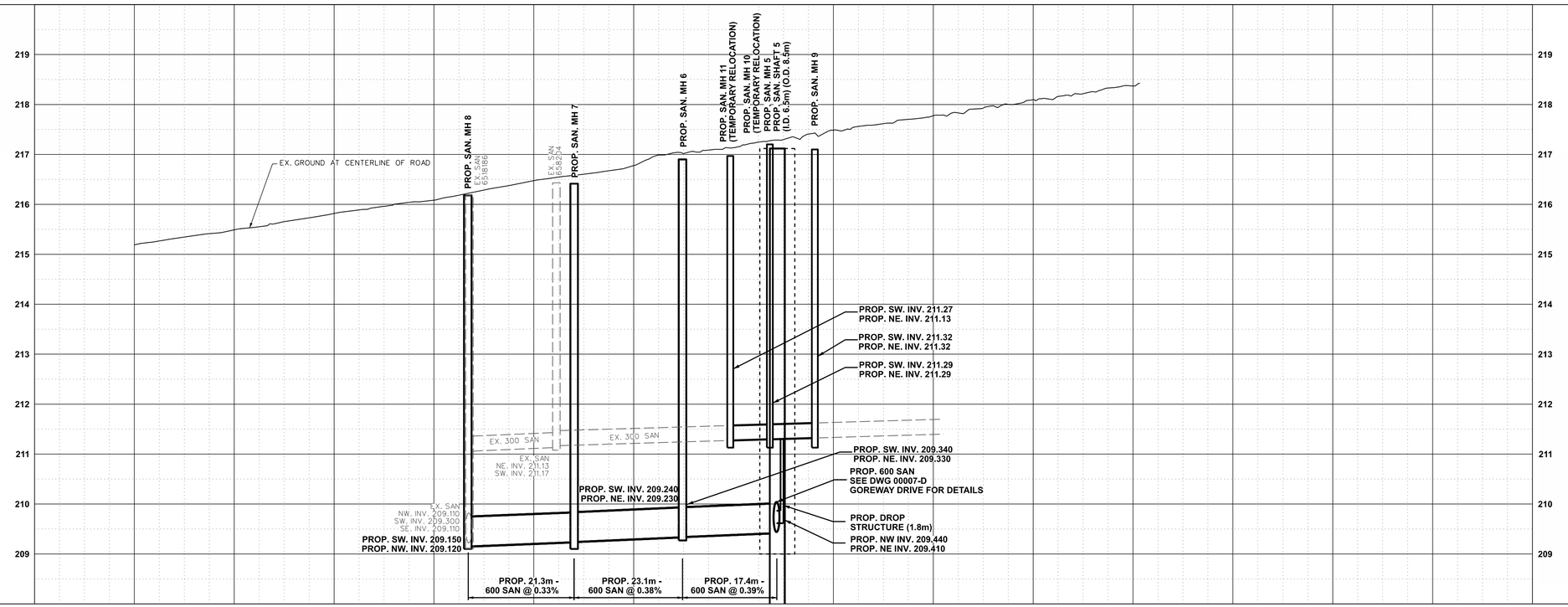
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KEY MAP

CAD Area	X-XX	Area	X-XX	Project No.	24-2166
Checked by	K.A	Drawn by	R.B	Plan No.	00004-D
Date	MARCH 2026	Sheet	04 OF 11		

COUNTRYSIDE DRIVE

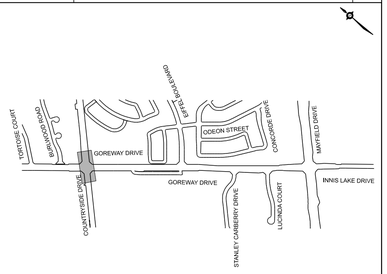




215.19	215.49	215.82	216.08	216.48	216.78	217.14	217.48	217.78	218.10	218.37	EX. ROAD ELEV.
1+000	1+020	1+040	1+060	1+080	1+100	1+120	1+140	1+160	1+180	1+200	ROAD CHAINAGE

REVISIONS

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KEY PLAN (N.T.S.)

NOTES:

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3. LOCAL ACCES TO RESIDENTS IS TO BE PROVIDED AT ALL TIMES DURING CONSTRUCTION.

10m 0 10 20 30m — HORIZONTAL SCALE 1:500

1m 0 1 2 3m — VERTICAL SCALE 1:50

General Notes

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All Horizontal And Vertical Bends Are In Degrees

Agency:
B.M. No.
Elev. XXX.XXX (Geodetic)
Coordinate System: UTM NAD83 (Orlginal)

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NOTICE TO CONTRACTOR

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BELL CANADA
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ALLSTREAM (ZAYO)
PSN (PUBLIC SECTOR NETWORK)
FUTUREWAY (FCI BROADBAND)
GT FIBER/360 NETWORK INC.
TELUS COMMUNICATION
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Chkd.
Approved by

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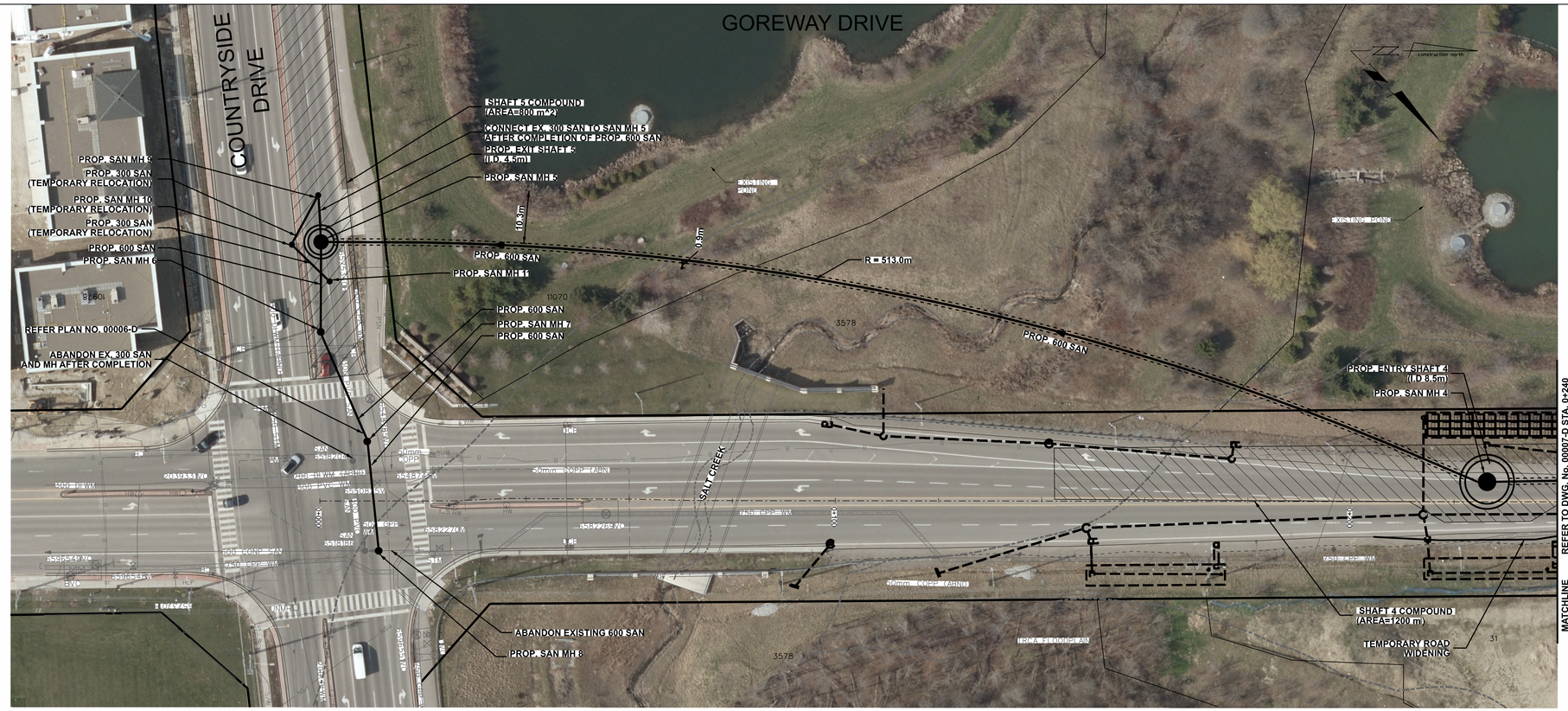
COUNTRYSIDE DRIVE

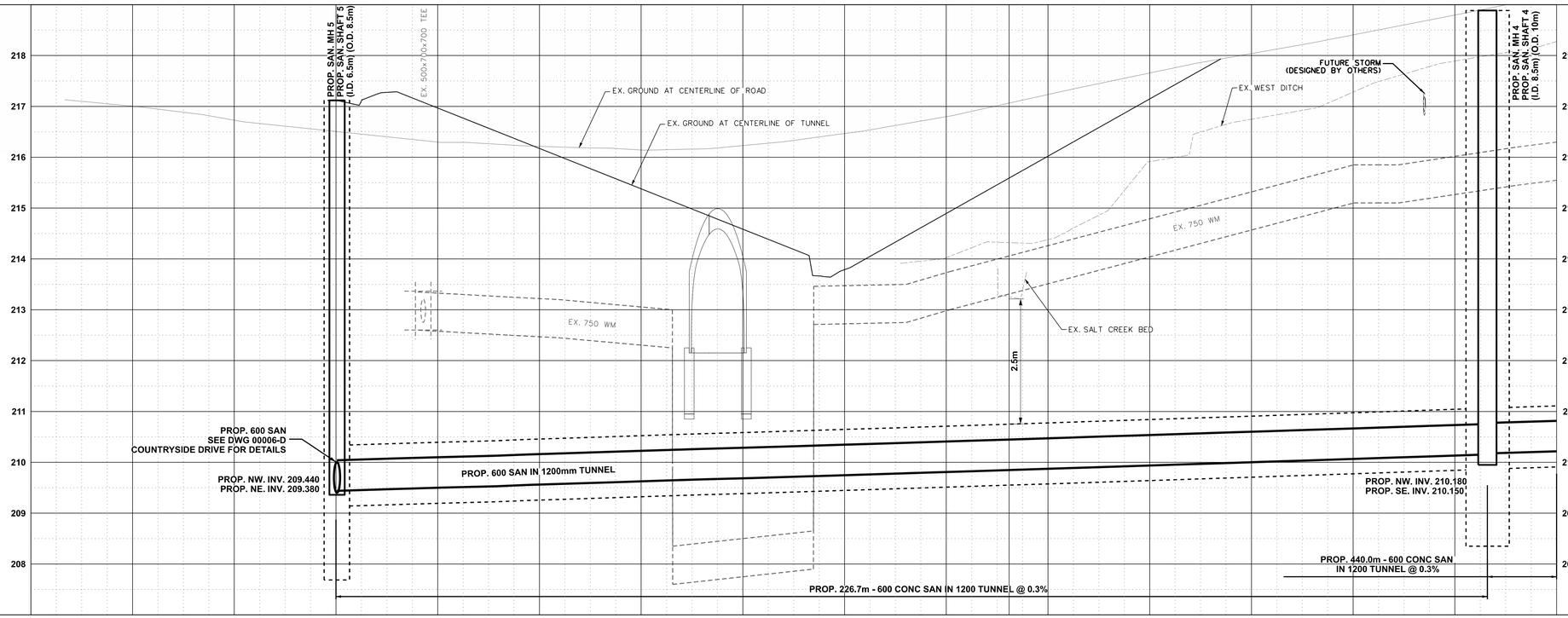
(COUNTRYSIDE DRIVE TO MAYFIELD ROAD)

PROP. 600mm SANITARY SEWER

STA. 1+000 TO STA. 1+200

CAD Area	X-XX	Area	X-XX	Project No.	24-2166
Checked by	K.A	Drawn by	R.B		
Date	MARCH 2026	Sheet	05 OF 11	Plan No.	00005-D

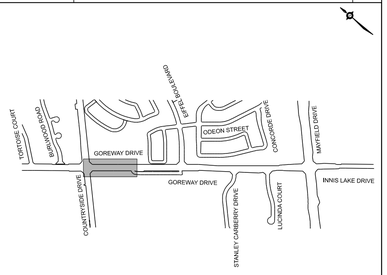




216.51	216.30	216.22	216.14	216.23	216.47	216.80	217.23	217.66	218.04	218.41	218.80	219.20	EX. ROAD ELEV.
0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+220	0+240	ROAD CHAINAGE

REVISIONS

DATE	DETAILS	INIT.
OCT 17, 2025	ISSUED FOR 30% PRELIMINARY DESIGN	K.A.
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KEY PLAN (N.T.S.)

NOTES:

1. FOR GENERAL NOTES, DETAILS AND LEGEND SEE DWG. 00003-D

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ONTARIO CLEAN WATER AGENCY
HYDRO ONE NETWORKS
ALECTRA UTILITIES
TRANS NORTHERN PIPELINE
PEARSON INTERNATIONAL FUEL FACILITIES CORP.
BELL CANADA
ENERSOURCE TELECOM
HYDRO ONE TELECOM
ROGERS CABLE
ALLSTREAM (ZAYO)
PSN (PUBLIC SECTOR NETWORK)
FUTUREWAY (FCI BROADBAND)
GT FIBER/360 NETWORK INC.
TELUS COMMUNICATION
UNION GAS

Designed by _____ Chkd. _____ Approved by _____

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GOREWAY DRIVE

(COUNTRYSIDE DRIVE TO MAYFIELD ROAD)

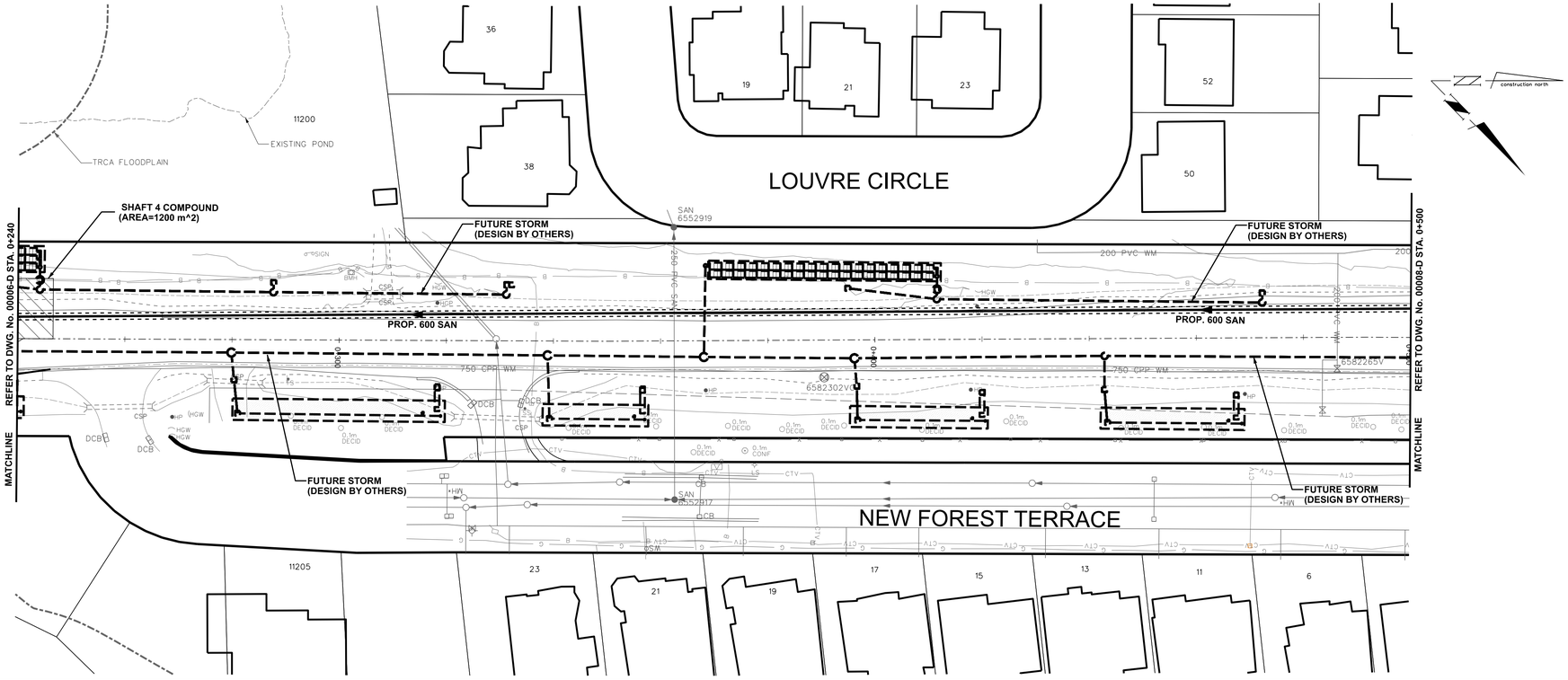
PROP. 600mm SANITARY SEWER

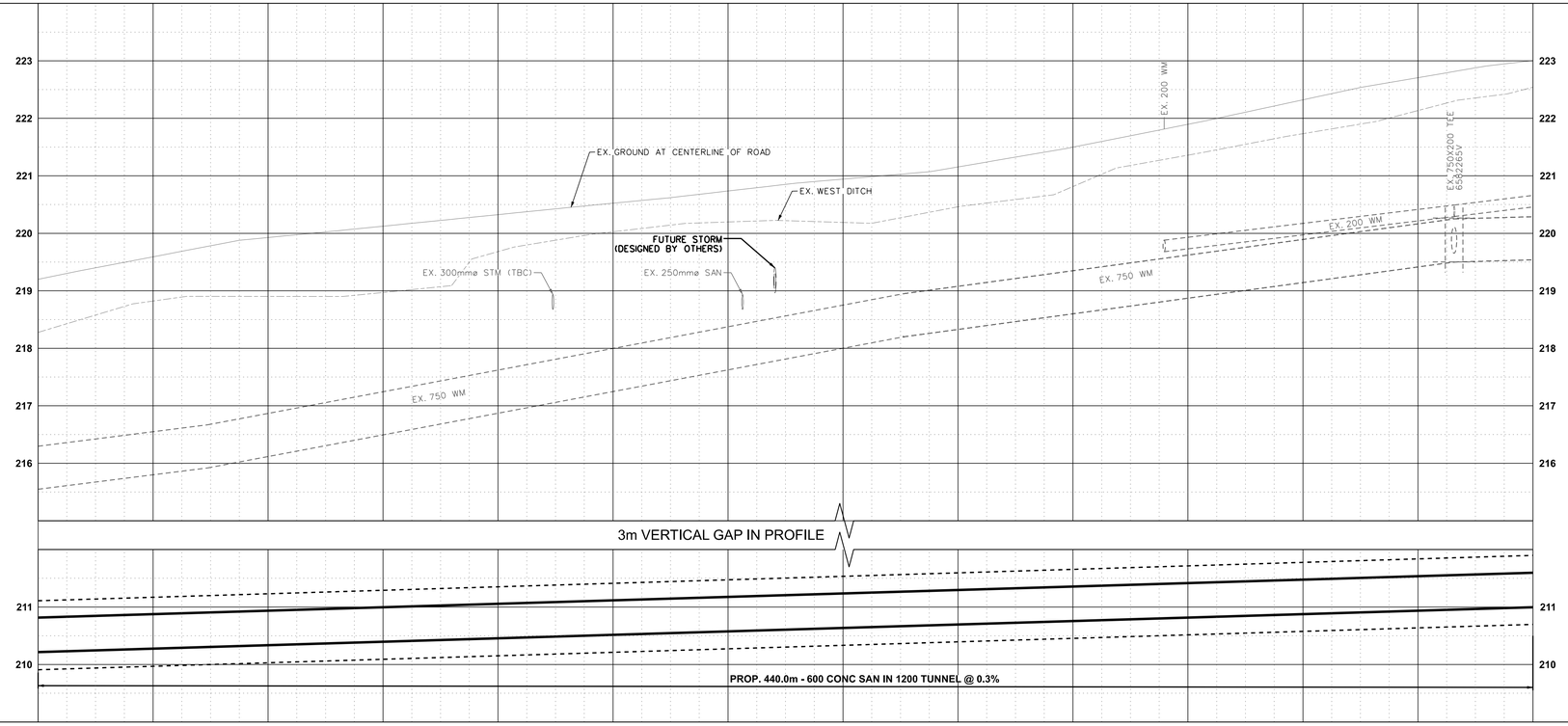
STA. 0+000 TO STA. 0+240

CAD Area	X.XX	Area	X-XX
Checked by	K.A	Drawn by	R.B
Date	MARCH 2026	Sheet	06 OF 11

Project No. 24-2166

Plan No. **00006-D**

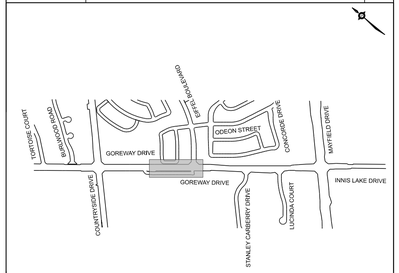




219.20	219.59	219.93	220.12	220.33	220.52	220.74	220.94	221.15	221.50	221.90	222.32	222.71	223.00	EX. ROAD ELEV.
0+240	0+260	0+280	0+300	0+320	0+340	0+360	0+380	0+400	0+420	0+440	0+460	0+480	0+500	ROAD CHAINAGE

REVISIONS

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KEY PLAN (N.T.S.)

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TELUS COMMUNICATION
UNION GAS

Designed by _____ Chkd. _____

Approved by _____

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GOREWAY DRIVE

(COUNTRYSIDE DRIVE TO MAYFIELD ROAD)

PROP. 600mm SANITARY SEWER

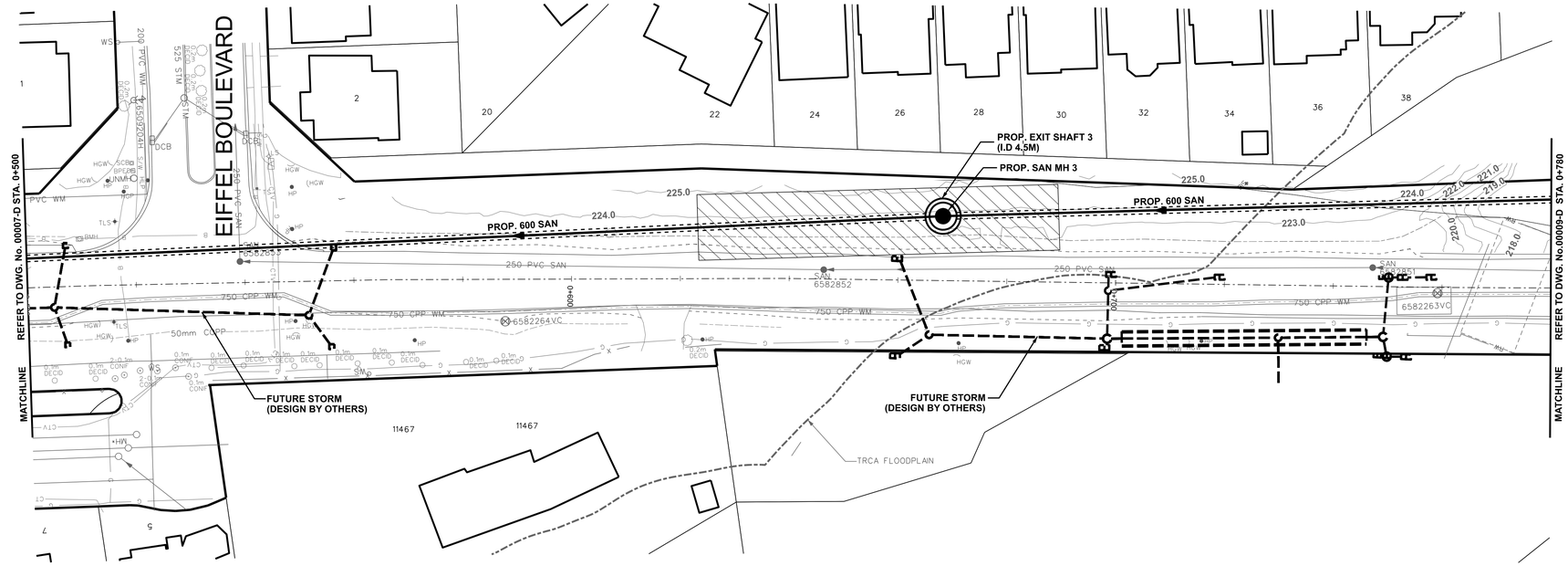
STA. 0+240 TO STA. 0+500

CAD Area	X-XX	Area	X-XX
Checked by	K.A	Drawn by	R.B
Date	MARCH 2026	Sheet	07 OF 11

Project No. 24-2166

Plan No. **00007-D**

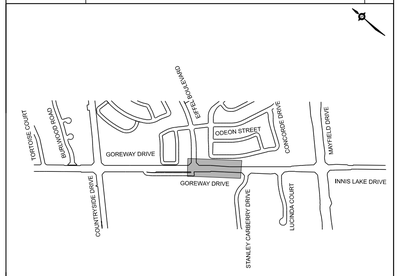
GOREWAY DRIVE



223.00	223.23	223.43	223.58	223.64	223.62	223.56	223.49	223.38	223.18	222.96	222.77	222.61	222.50	222.55	EX. ROAD ELEV.
0+500	0+520	0+540	0+560	0+580	0+600	0+620	0+640	0+660	0+680	0+700	0+720	0+740	0+760	0+780	ROAD CHAINAGE

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PSN (PUBLIC SECTOR NETWORK)
FUTUREWAY (FCI BROADBAND)
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GOREWAY DRIVE

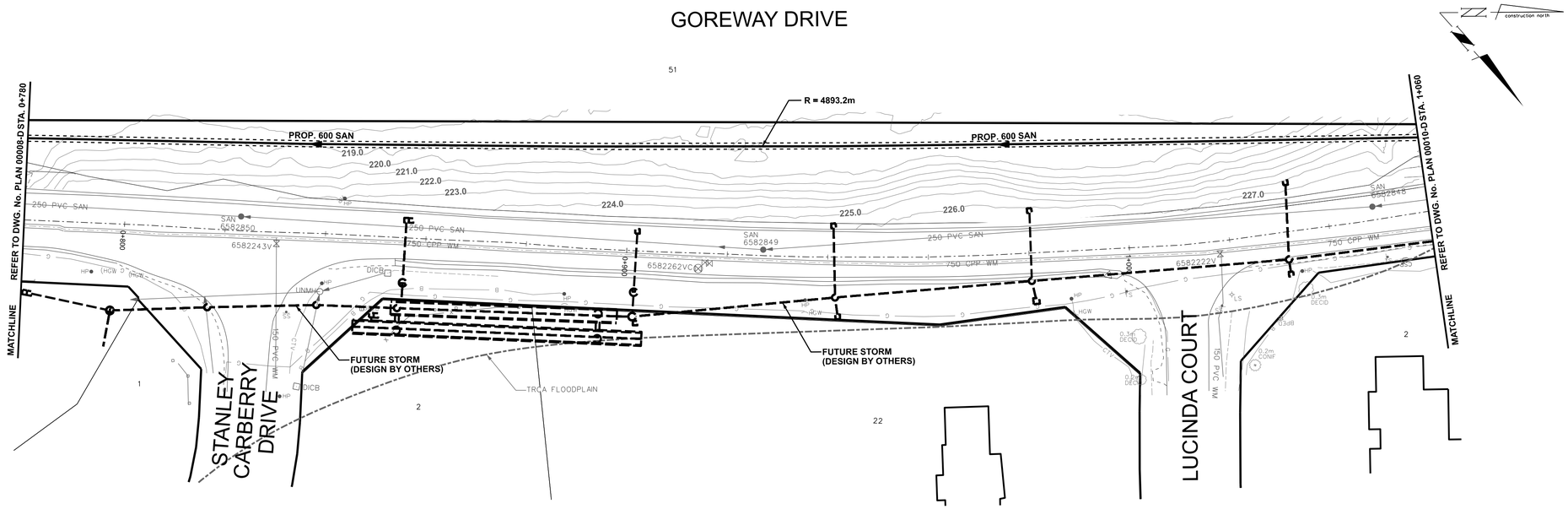
(COUNTRYSIDE DRIVE TO MAYFIELD ROAD)

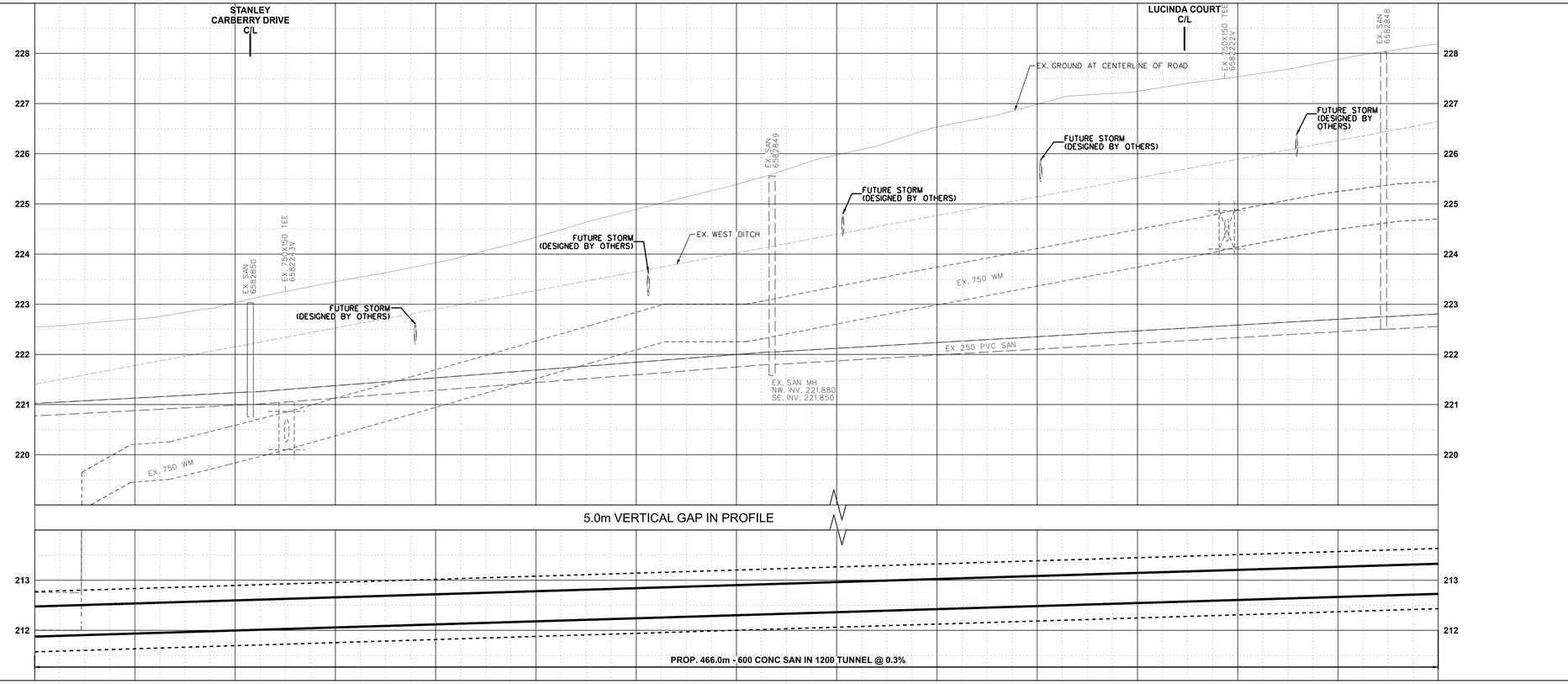
PROP. 600mm SANITARY SEWER

STA. 0+500 TO STA. 0+780

CAD Area	X-XX	Area	X-XX	Project No.	24-2166
Checked by	K.A	Drawn by	R.B		
Date	MARCH 2026	Sheet	08 OF 11	Plan No.	00008-D

GOREWAY DRIVE

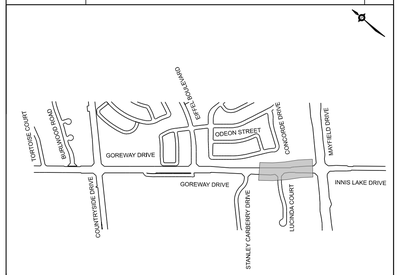




EX. ROAD ELEV.	222.70	223.03	223.45	223.83	224.34	224.89	225.39	225.98	226.53	226.99	227.24	227.53	227.88	228.19	EX. ROAD ELEV.
ROAD CHAINAGE	**0+800**	**0+820**	**0+840**	**0+860**	**0+880**	**0+900**	**0+920**	**0+940**	**0+960**	**0+980**	**1+000**	**1+020**	**1+040**	**1+060**	ROAD CHAINAGE

REVISIONS

DATE	DETAILS	INIT.
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GOREWAY DRIVE

(COUNTRYSIDE DRIVE TO MAYFIELD ROAD)

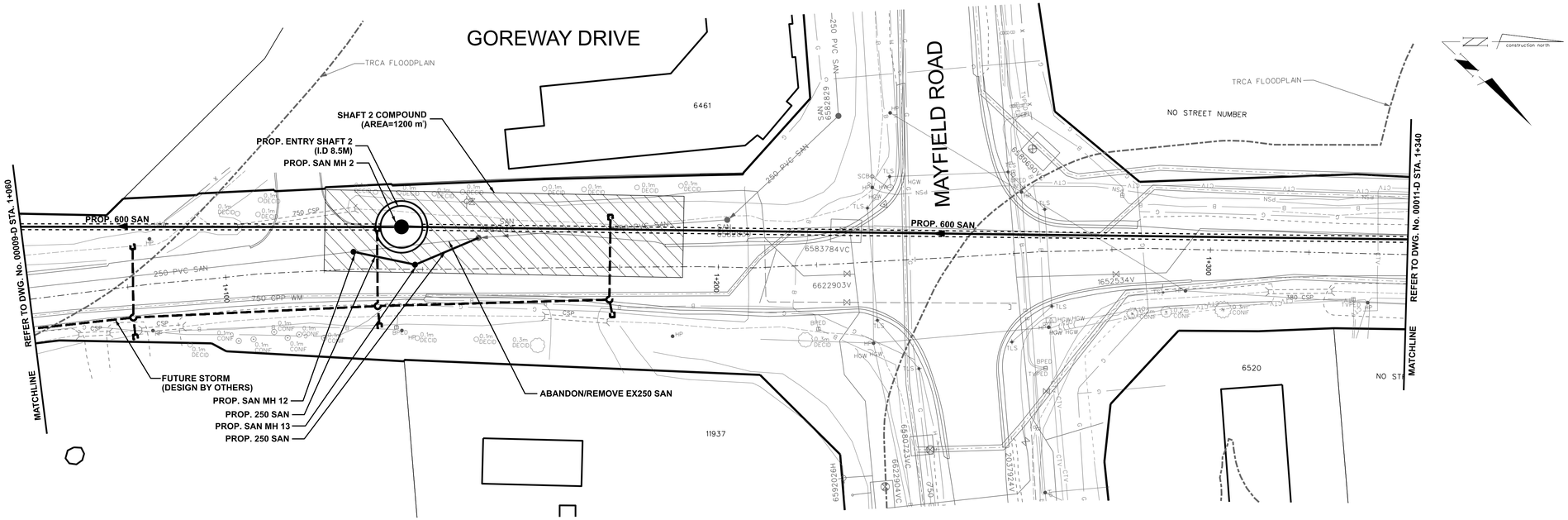
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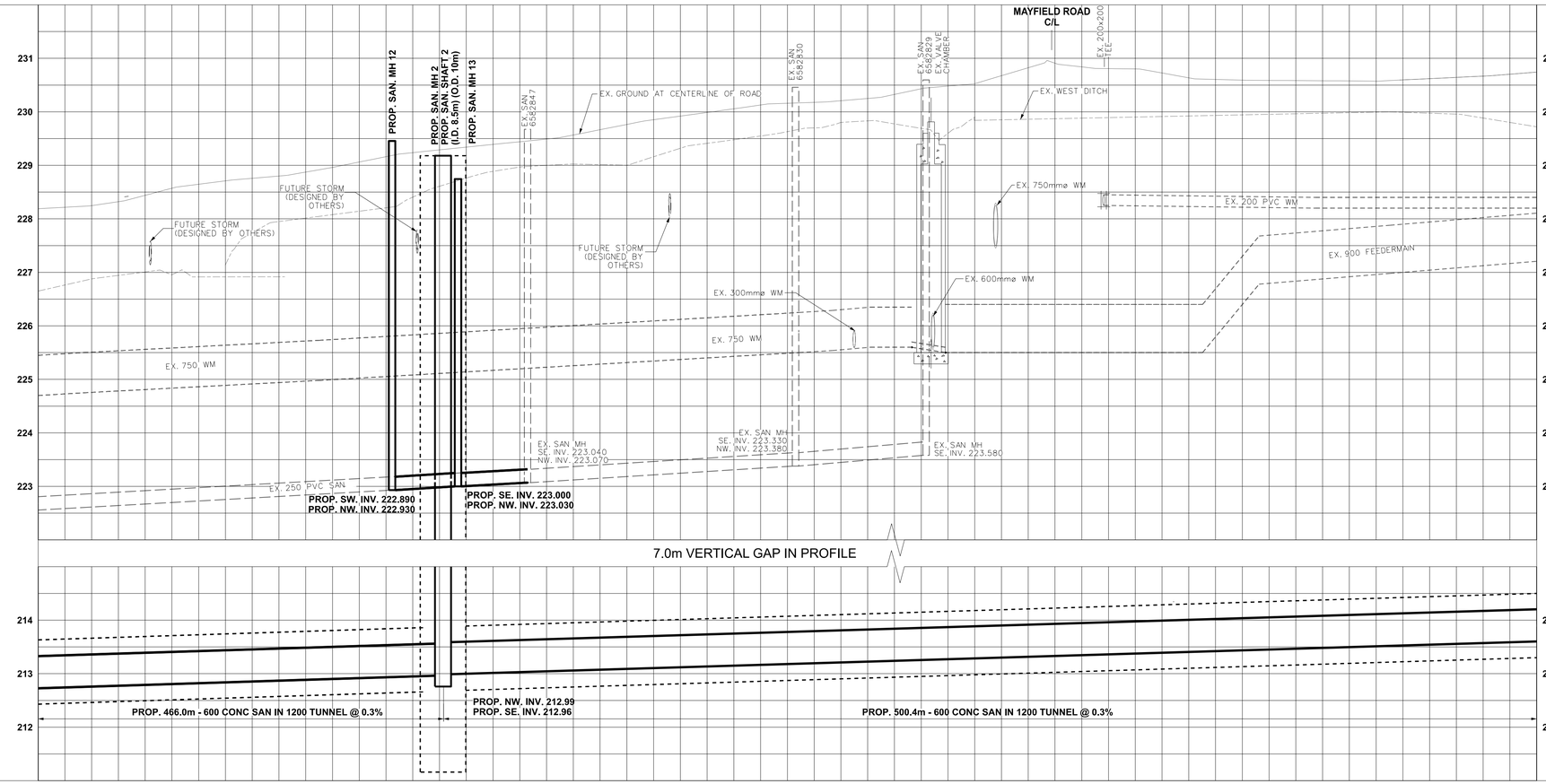
STA. 0+780 TO STA. 1+060

CAD Area	X-XX	Area	X-XX
Checked by	K.A	Drawn by	R.B
Date	MARCH 2026	Sheet	09 OF 11

Project No. 24-2166

Plan No. **00009-D**

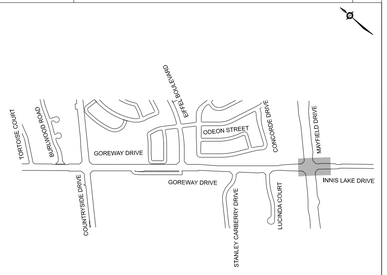




228.19	228.44	228.76	229.06	229.34	229.57	229.92	230.16	230.33	230.67	230.81	230.60	230.58	230.62	230.62	EX. ROAD ELEV.
1+060	1+080	1+100	1+120	1+140	1+160	1+180	1+200	1+220	1+240	1+260	1+280	1+300	1+320	1+340	ROAD CHAINAGE

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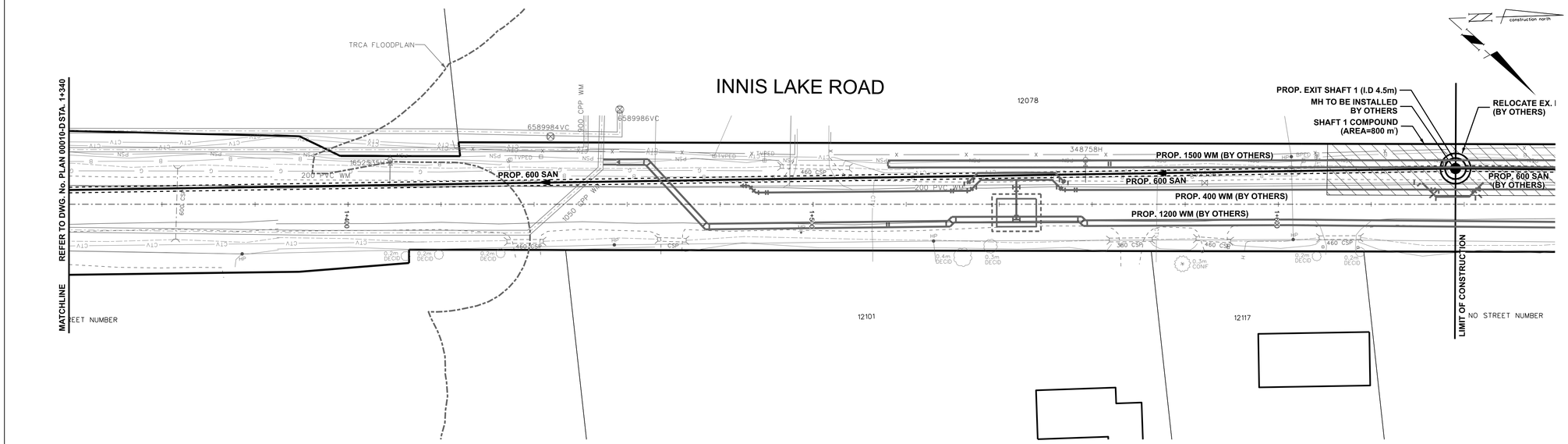
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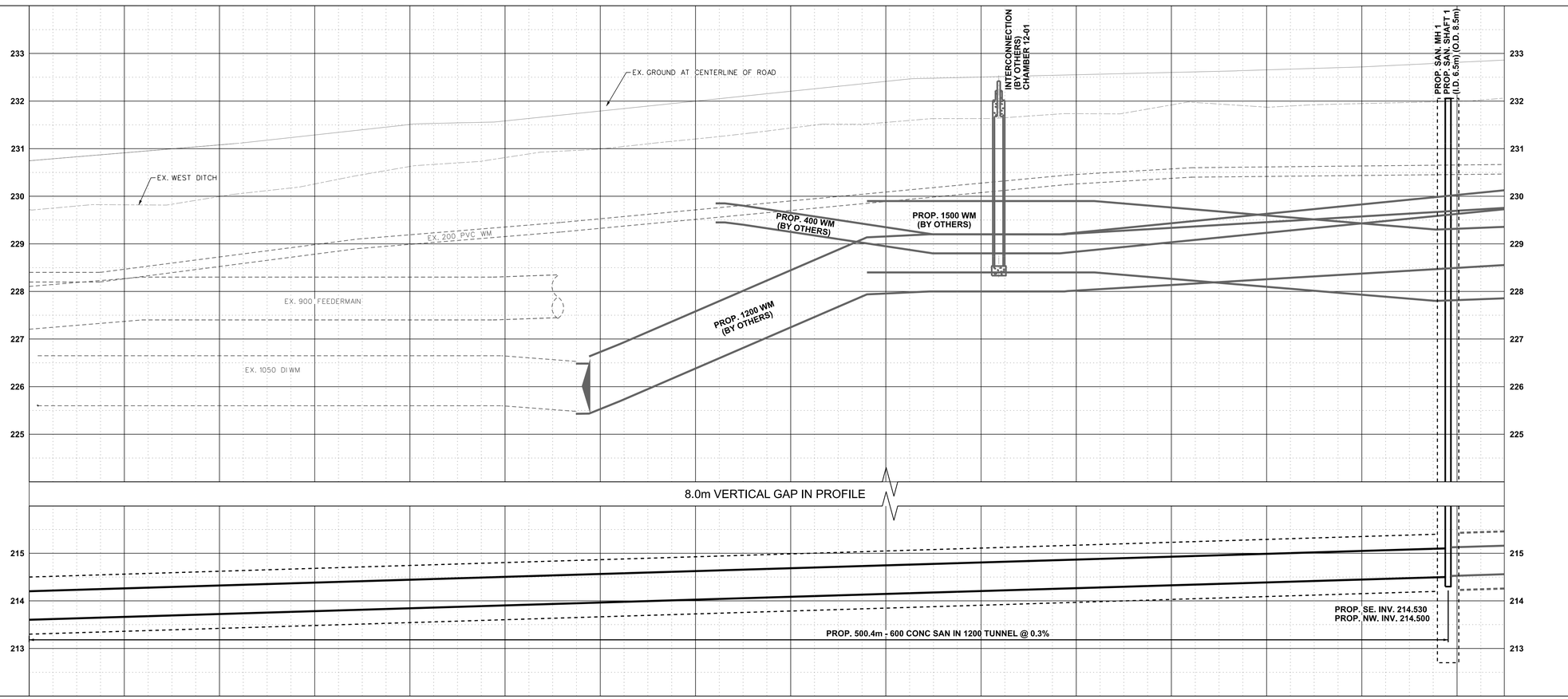
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PROP. 600mm SANITARY SEWER

STA. 1+060 TO STA. 1+340

CAD Area	X-XX	Area	X-XX	Project No.	24-2166
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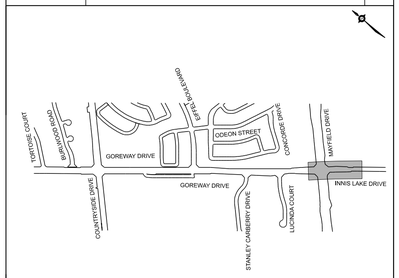




230.62	230.90	231.08	231.27	231.52	231.58	231.88	232.12	232.32	232.44	232.51	232.54	232.60	232.66	232.72	232.82	EX. ROAD ELEV.
1+340	1+360	1+380	1+400	1+420	1+440	1+460	1+480	1+500	1+520	1+540	1+560	1+580	1+600	1+620	1+640	ROAD CHAINAGE

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CAD Area	X-XX	Area	X-XX	Project No.	24-2166
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CLIMATE CHANGE AND ADAPTION PLAN

FOR

INNIS LAKE SECONDARY PLAN

TOWN OF CALEDON
REGION OF PEEL

PROJECT NO. 22-1297

MAY 2026

1.0 INTRODUCTION AND BACKGROUND

David Schaeffer Engineering Limited (DSEL) has prepared a summary to analyze the potential impacts of climate change on the proposed secondary plan design and to confirm the regulatory flow within the relevant sections of the West Humber Watershed.

Because future climate conditions can be influenced by uncertain greenhouse gas emission trends, socioeconomic development, technological advancement, and policy decisions, a range of future climate scenarios have been developed by the international climate science community to help analyze the impact of future climate change. Shared Socioeconomic Pathways (SSPs) are scenarios describing potential future societal and emissions trajectories ranging from sustainable development to fossil-fuel-intensive growth. These SSPs allow for the evaluation of a range of potential future climate change conditions in engineering design. Commonly the "SSP5-8.5" is used as the future climate change scenario, characterized by rapid economic growth, high energy demand, and continued reliance on fossil fuels; and a radiative forcing level of 8.5 W/m² by the year 2100. This scenario represents a very high greenhouse gas emissions future and can be considered conservative. This scenario has been adopted by other municipalities and conservation authorities such as the City of Burlington (Conservation Halton).

An *Independent Review of the 2019 Flood Events in Ontario* (McNeil, 2019) was prepared by Special Advisor Doug McNeil to provide recommendations for improving flood resilience and enhancing public safety. **Section 6.1.3.3** of the reports notes that floodplains "are expanding or are expected to expand" in "areas using a 1:100-year storm event to delineate regulatory flood lines" but that "Areas using a regional regulatory storm (i.e. Hurricane Hazel or the Timmins Storm) are less likely to see significant increases in the size of regulated floodplains as these events have higher return periods (lower chance of occurring).". As such, it may be appropriate to review use the SSP5-8.5 scenario for the 100yr design storm but not the Regional storm events (i.e. Hurricane Hazel).

The purpose of this analysis is to compare the impacts of the Regional Storm against adjusted 100yr flows, accounting for future climate change scenarios, to determine the appropriate regulatory event and impact on future development. The summary will review regulatory floodplain hazard mapping and pond block storage requirements.

2.0 REGULATORY FLOODPLAIN HAZARD MAPPING

Regulatory floodplain mapping is used to determine the floodplain hazard within the secondary plan and can also be used to help determine quantity control targets for the proposed Stormwater Management Facilities within the secondary plan. Typically, the greater of the 100yr and Regional storm is used for the purpose of floodplain mapping.

As discussed in the LSS, the Regional storm flows are greater than the 100yr design storm flows for both the catchments within the secondary plan (Table 1-3 and 1-4 of the Hydrology Report) and at the downstream Flood Vulnerable Area (Table 1-6 of the Hydrology Report) as summarized below.

Summary of Existing Conditions Peak Flows

Catchment/ Node	100yr Peak Flows (m^3/s)	Regional Peak Flow (m^3/s)	% Difference (Regional vs. 100yr)
36.07	5.656	15.200	169%
36.08	3.636	7.619	110%
36.09	2.959	6.627	124%
36.10	9.178	23.949	161%

36.11	3.884	9.953	156%
ADDHYD 0770 (Downstream FVA)	485.049	1763.366	264%

As shown in the table above, the existing conditions Regional storm flows are more than 100% greater than the existing conditions 100yr storm flows. The difference between the Regional and 100yr peak flows appears to increase as the catchments become larger. In other words, the % difference in flows between the Regional and 100yr storm increases downstream as the catchment areas increase. Generally climate adjusted SSP5-8.5 rainfall intensities are 10% to 30% greater than historical IDF curves (as evidenced by the City of Burlington who uses a 15% increase for the SSP5-8.5 scenario). Based on the information presented above it is not expected that the 100yr design storm (SSP5-8.5 adjusted) would be greater than the Regional storm flows. As such, it is appropriate to use the Regional storm event for floodplain mapping as shown in the LSS.

3.0 STORMWATER MANAGEMENT POND DESIGN

Stormwater Management Ponds (SWM Ponds) are designed to provided quantity control during storm events to mitigate potential increases in downstream flood risk. As discussed in the LSS, SWM ponds within the Innis Lake secondary plan have been designed to provide quantity control up to and including the 100yr and Regional storm events. The Regional storm event has more than 200% of the precipitation of the 100yr design storm as shown in the table below.

	Total Precipitation Depth	
Duration (hrs)	**100yr[1]**	**Regional**
12	98.1	213[2]
24	101.5	N/A
48	N/A	285

[1] Depth based on Town of Caledon IDF Curve Parameters
[2] Depth during last 12 hours of Regional Storm Event

The table above shows that the Regional storm event generates more than double the precipitation depth of the 100yr design storm event. The result is that the Regional storm event requirements for the SWM ponds would expect to govern the SWM pond volumes. This was confirmed in Table 5.3 of the FSR, recreated below.

Summary of Required Pond Storage Characteristics

Pond I.D.	Drainage Area (ha)	Imp. Coverage (%)	100 Year Flood Control Volume (m^3)	Regional Flood Control Volume (m^3)
Pond 1	4.80	0.76	2,872	6,902
Pond 2	22.53	0.67	10,895	18,147
Pond 3	9.32	0.69	4,783	7,950
Pond 4	12.33	0.70	6,380	11,025
Pond 5	8.54	0.68	4,984	14,114
Pond 6	34.61	0.72	22,486	61,596
Pond 7	6.33	0.74	3,844	10,673

As shown in the table above, the Regional flood control volumes are more than 200% greater than the 100yr flood control volumes. Based on the tables above, it is not expected that an increase in 100yr flows as a result of the SSP5-8.5 scenario would govern SWM pond sizing. This is consistent with SWM pond sizing seen in other municipalities within the GTA, which are generally controlled by Regional flood control volumes (assuming Regional flood controls are required)

4.0 CONCLUSIONS

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A review of the potential impacts of climate change on the proposed secondary plan design was completed using the SSP5-8.5 future climate change scenario, representing a conservative high-emissions future climate projection. The assessment reviewed the potential implications of increased 100yr design storm intensities on regulatory floodplain mapping and stormwater management pond sizing within the relevant sections of the West Humber Watershed.

The above analysis confirms that the Regional storm flows greatly exceed the 100yr design storm flows and that the Regional storm event remains the appropriate regulatory event for floodplain hazard mapping within the secondary plan area. The analysis also confirms that the proposed Stormwater Management Ponds are governed by Regional storm flood control requirements.

Prepared by,
David Schaeffer Engineering Ltd.

Brian Betts, P. Eng.

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