

FUNCTIONAL SERVICING AND STORMWATER MANAGEMENT REPORT

OAKBANK ESTATES

SUBDIVISION

OAKBANK ESTATES INC. C/O ROYAL PINE HOMES.

TOWN OF CALEDON

Project: 2026-5635

August 2026

Revision	Description	Prepared		Checked	
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- Appendix C: SANITARY SERVICING
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- Appendix E: ENGINEERING DRAWINGS

1.0 INTRODUCTION

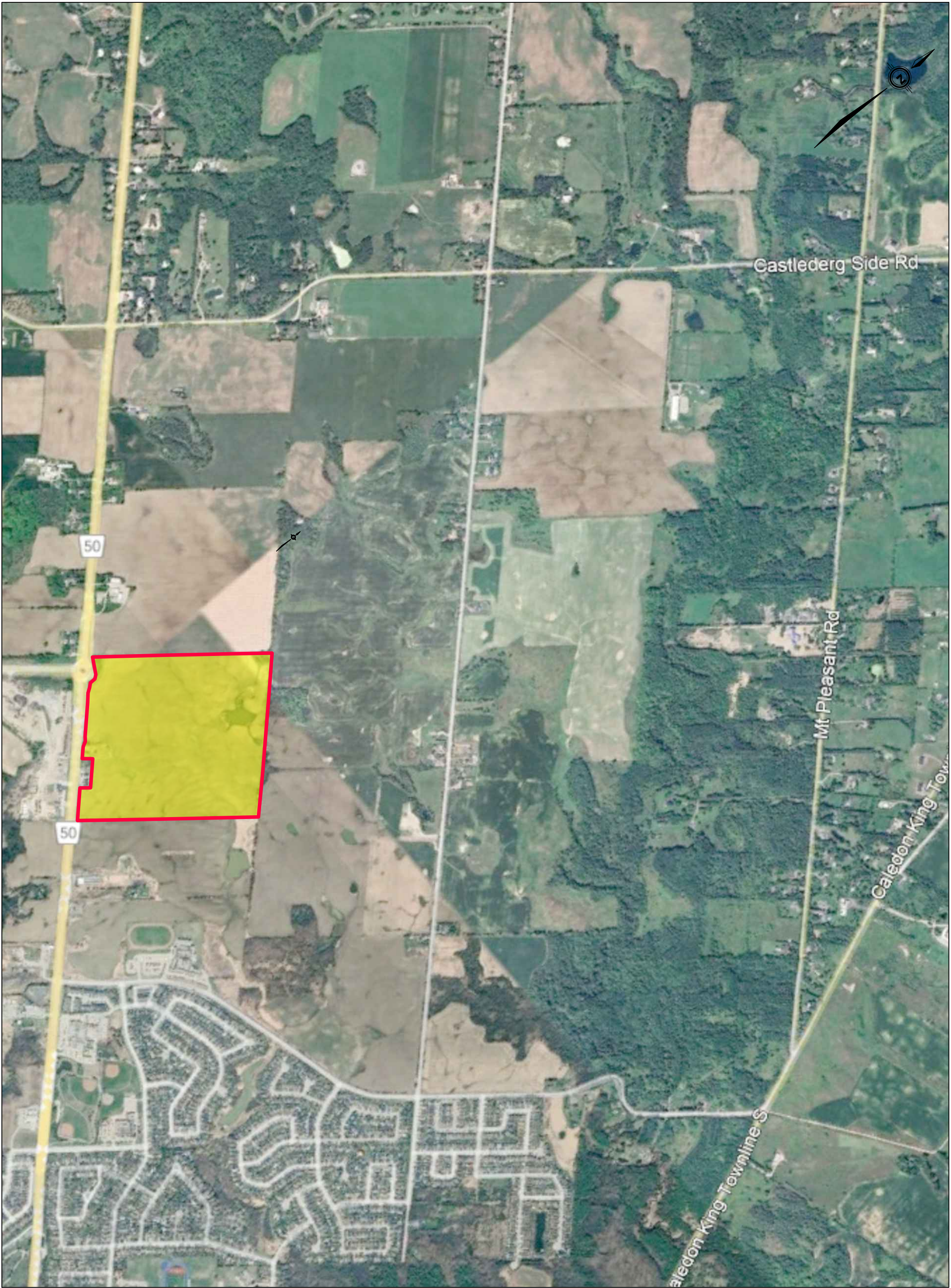
This functional servicing and stormwater management Report has been prepared in support of a proposed development located in the Town of Caledon. The 40.68 ha subject land is identified as Part of lot 13, concession 7, in the Bolton community and is located east of Highway 50, north of Columbia Way and west of Mount Hope Road, as shown in **Figure 1.1**.

This report summarizes and assesses the municipal servicing requirements for potable water, sanitary servicing, and stormwater management. The following sections outline the proposed services for the development and their capabilities with existing infrastructure within the Bolton North Hill area.

1.1 Reference Reports and Studies

The following studies were utilized in the preparation of this report.

- *“Development Standards Manual Ver 5.0”*, by the Town of Caledon, 2019
- *“Stormwater Planning and Design Manual (SWMP)”*, by Ministry of the Environment (MOE), March 2003.
- *“Stormwater Management Criteria”*, by Toronto and Region Conservation Authority, August 2012.
- *“Low Impact Development Stormwater Management Planning and Design Guide”*, Version 1.0, Prepared by Toronto Region and Conservation Authority (TRCA) and Credit Valley Conservation, 2010.
- *“Public Works Stormwater Design Criteria and Procedural Manual”*, June 2019, by the Region of Peel.
- *“Public Works Design, Specifications & Procedures Manual, Linear Infrastructure, Watermain Design Criteria”*, June 2010, by the Region of Peel.
- *“Linear Wastewater Standards”*, March 2023, by the Region of Peel.
- *“Water Supply for Public Fire Protection”*, 2020, by the Fire Underwriters Survey.
- *“Source Protection Information Atlas”*, 2023, by the Ontario Ministry of the Environment, Conservation and Parks (MECP)
- *“Erosion and Sediment Control Guideline”*, By Sustainable Technologies for TRCA, 2019
- *“Functional Servicing and Stormwater Management Report Bolton North Hill Option 1 Lands”*, By Crozier for Bolton North Hill Landowners Group, March 2026
- *“Secondary Plan Natural Heritage Study Report Option 1/2 Lands”*, By Dillon Consulting for Bolton North Hills Landowners Group, March 2026
- *“Hydrogeological Investigation Bolton North Hill Option 1 & Option 2 Lands”*, By Crozier for Bolton North Hill Landowners Group, December 2024



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LEGEND

 SUBJECT AREA

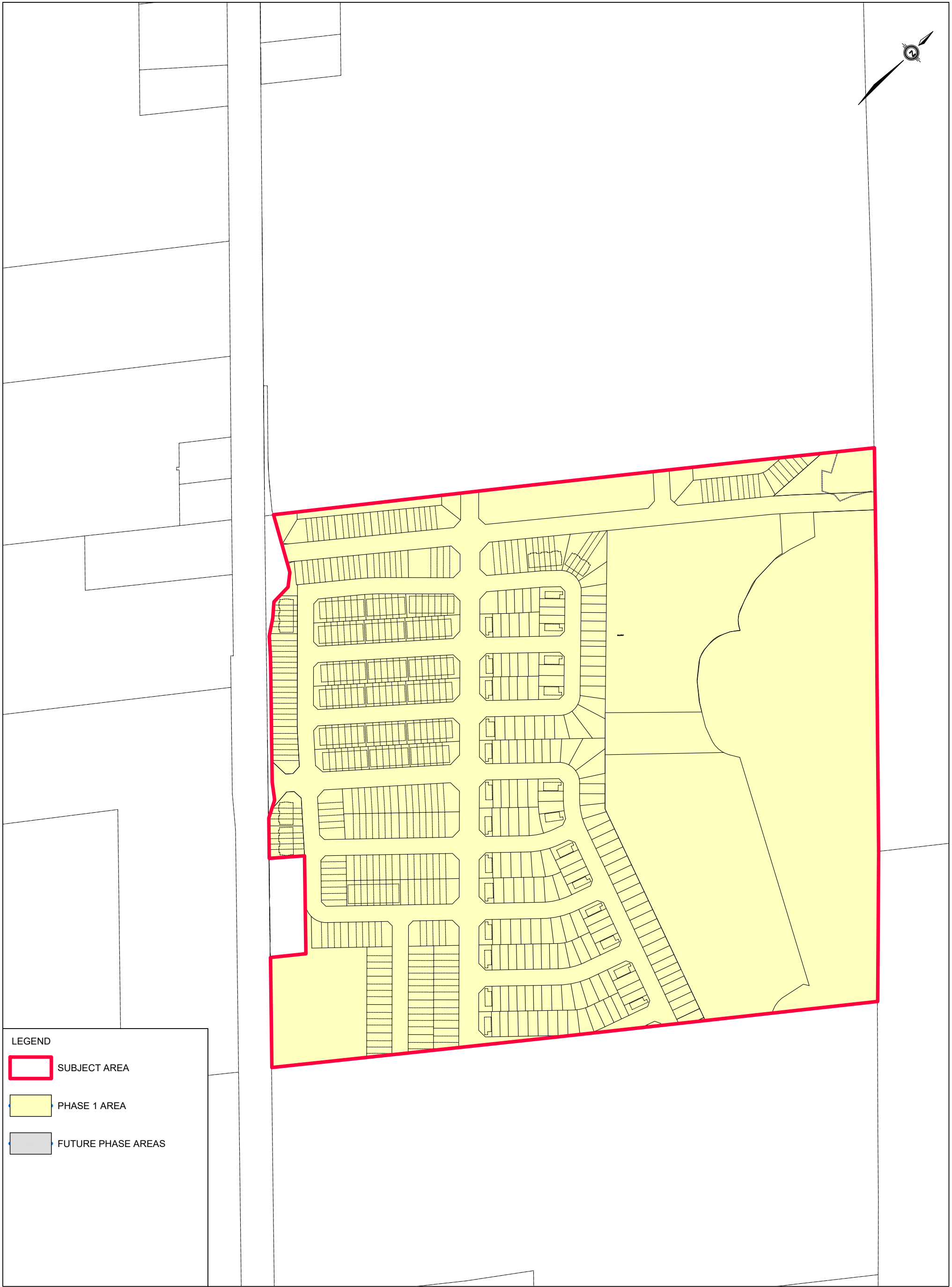
FIGURE 1.1
LOCATION PLAN

2.0 DEVELOPMENT PLAN

The ultimate proposed development covers 40.68 ha and will consist of a mix of residential uses, including 192 single detached units (110 on 11.0 m lots and 82 on 9.15 m lots) and 375.5 townhouse units (261.5 standard 7.0 m units, 103 dual frontage 6.0 m units and 11 dual frontage 7.0 m units), for a total of 567.5 units, together with a 0.752 ha elementary school block. The draft plan of subdivision, prepared by KLM Planning Partners Inc. and dated July 27, 2026, is provided in **Appendix A** for reference. **Figure 2.1** illustrates the proposed development plan.

Table 2-1: Ultimate Population Estimate

Dwelling Type	Population Density	Units	Estimated Population
Single Family/Semi-detached	4.2	192	807
Townhouses	3.4	375.5	1,277
Elementary School	70 (pp/ha)	0.752	53
Total	-	-	2,137



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FIGURE 2.1
PROPOSED
DEVELOPMENT PLAN

2026-5635

AUGUST 2026

SCALE: N.T.S.

3.0 WATER SUPPLY SERVICING

This section describes the proposed potable water distribution system for the subject site. The site will be serviced by the Town of Caledon's planned municipal water system. Detailed analysis, including hydraulic modelling and hydrant flow testing, will be completed at the design stage.

3.1 Existing Water Supply Servicing

The subject site is currently not serviced by the municipal water distribution system. Existing watermain infrastructure within the surrounding road network consists of the following:

- 300 mm PVC distribution watermain on Columbia Way (Pressure Zone 6)
- 300 mm PVC distribution watermain on Regional Road 50 (Pressure Zone 6)

These watermains form part of the existing Pressure Zone 6 (PZ6) system. Due to the site's elevation exceeding the serviceable range of PZ6 (214.5 m – 259.1 m), servicing from the existing system is not feasible. Water servicing for the proposed development will be provided through the planned Pressure Zone 7 (PZ7) system, as described in **Section 3.3**.

Future water servicing infrastructure is planned along Regional Road 50 and Columbia Way to support the development of the Bolton North Hill area. The existing and proposed water servicing framework is illustrated on **Figure 3.1**.

3.2 Water Supply Servicing Design Criteria

The water servicing system will be designed in accordance with the Region of Peel Public Works Watermain Design Criteria (June 2010). The applicable design criteria are summarized below.

Table 3-1: Water Demand Criteria

Population Type	Unit	Avg. Consumption Rate	Max Day Factor	Peak Hour Factor
Residential	L/capita/day	280	2.0	3.0
ICI*	L/employee/day	300	1.4	3.0

*ICI = Industrial, Commercial or Institutional

System pressure criteria:

- Minimum pressure under Maximum Day and Fire Flow conditions: 140 kPa (20 psi)
- Minimum pressure under Peak Hour Demand conditions: 275 kPa (40 psi)
- Maximum pressure under Maximum Day and Fire Flow conditions: 690 kPa (100 psi)

Fire Flow

- Minimum fire flow: 250 L/s sustained for a minimum of three hours, while maintaining a minimum residual system pressure of 140 kPa (20 psi). The minimum fire flow was increased from 220 L/s, as originally established in the Bolton Residential Expansion Study Infrastructure Report (GM BluePlan Engineering, June 16, 2014), to 250 L/s at the direction of the Region of Peel.

3.3 Proposed Water Supply Servicing Plan

The proposed development will be serviced through the planned municipal PZ7 water distribution system. Internal watermains will connect to the future municipal water infrastructure along Regional Road 50 and Columbia Way. As described in **Section 3.2**, the subject site is above the serviceable elevation range of the existing PZ6 system; therefore, all water servicing will be provided through PZ7.

Interim Servicing

In the interim period, the subject site will be serviced through the proposed Macville Booster Pump Station (BPS), which will operate as a closed pressure system with a supply Hydraulic Grade Line (HGL) of 327.7 m. The Macville BPS has been demonstrated to support an interim population of approximately 2,960 persons within the Option 1 Lands. The proposed development, with an estimated population of 2,137 persons, falls within this interim servicing capacity.

Ultimate Servicing

Under the ultimate build-out scenario, the regional servicing strategy includes the following trunk infrastructure:

- 600 mm diameter feedermain along Emil Kolb Parkway to Regional Road 50
- 400 mm diameter watermain along Regional Road 50 and Columbia Way
- Sub-trunk watermain provide internal looped distribution through the subdivision

This infrastructure forms part of the broader PZ7 system, which will ultimately be supported by two Elevated Tanks (ETs) providing flow equalization, fire protection, and emergency storage. One ET is proposed within the Option 1 Lands (northeast corner, adjacent to Regional Road 50), with final location and sizing to be confirmed through the ongoing Environmental Assessment. A looped watermain configuration will be maintained throughout the development to ensure system redundancy and operational reliability. All watermain design will conform to Region of Peel standards for watermain and appurtenances.

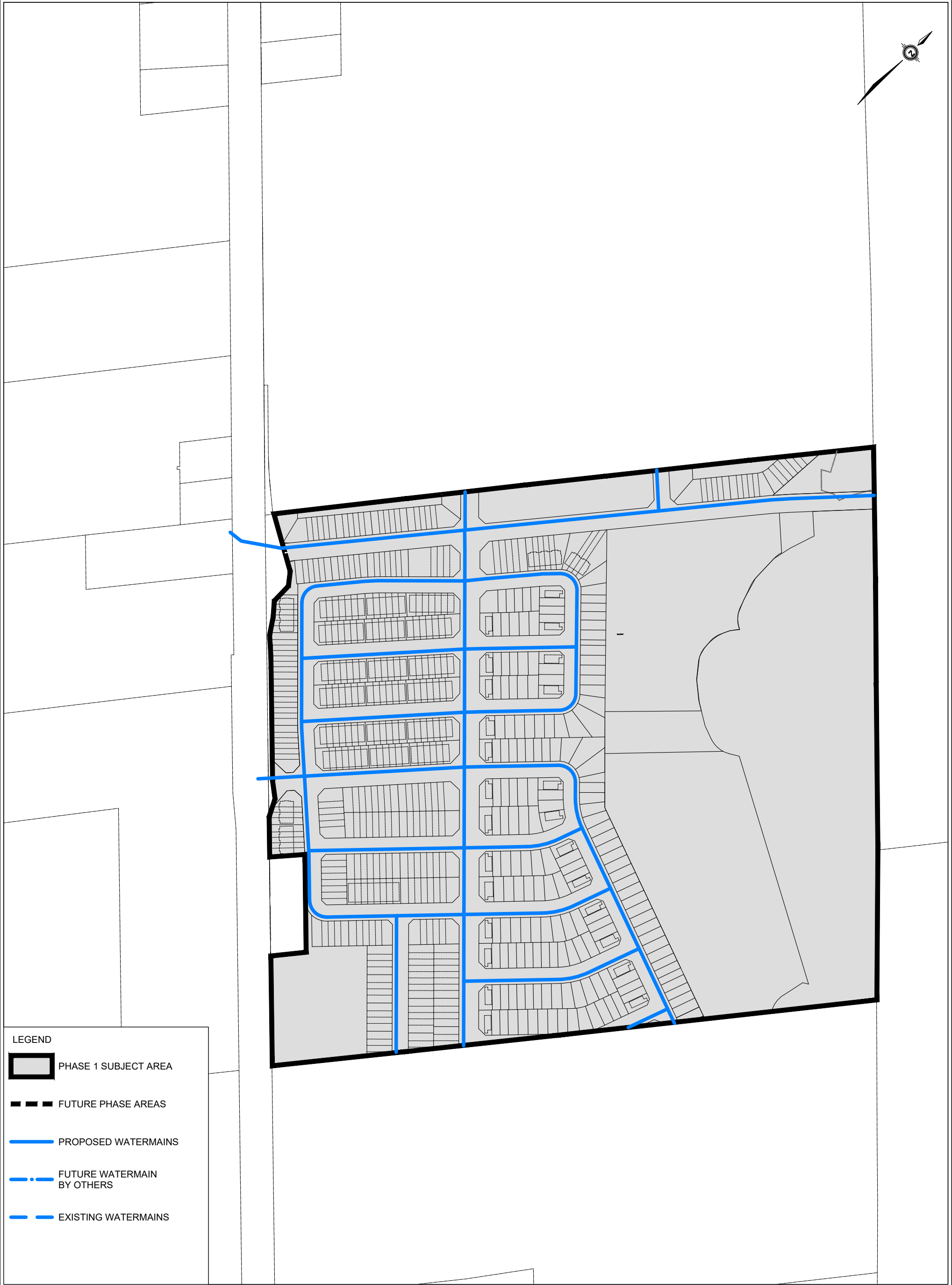
The existing water servicing is illustrated on **Figure 3.1** with the proposed water servicing framework shown on **Figure 3.2**.

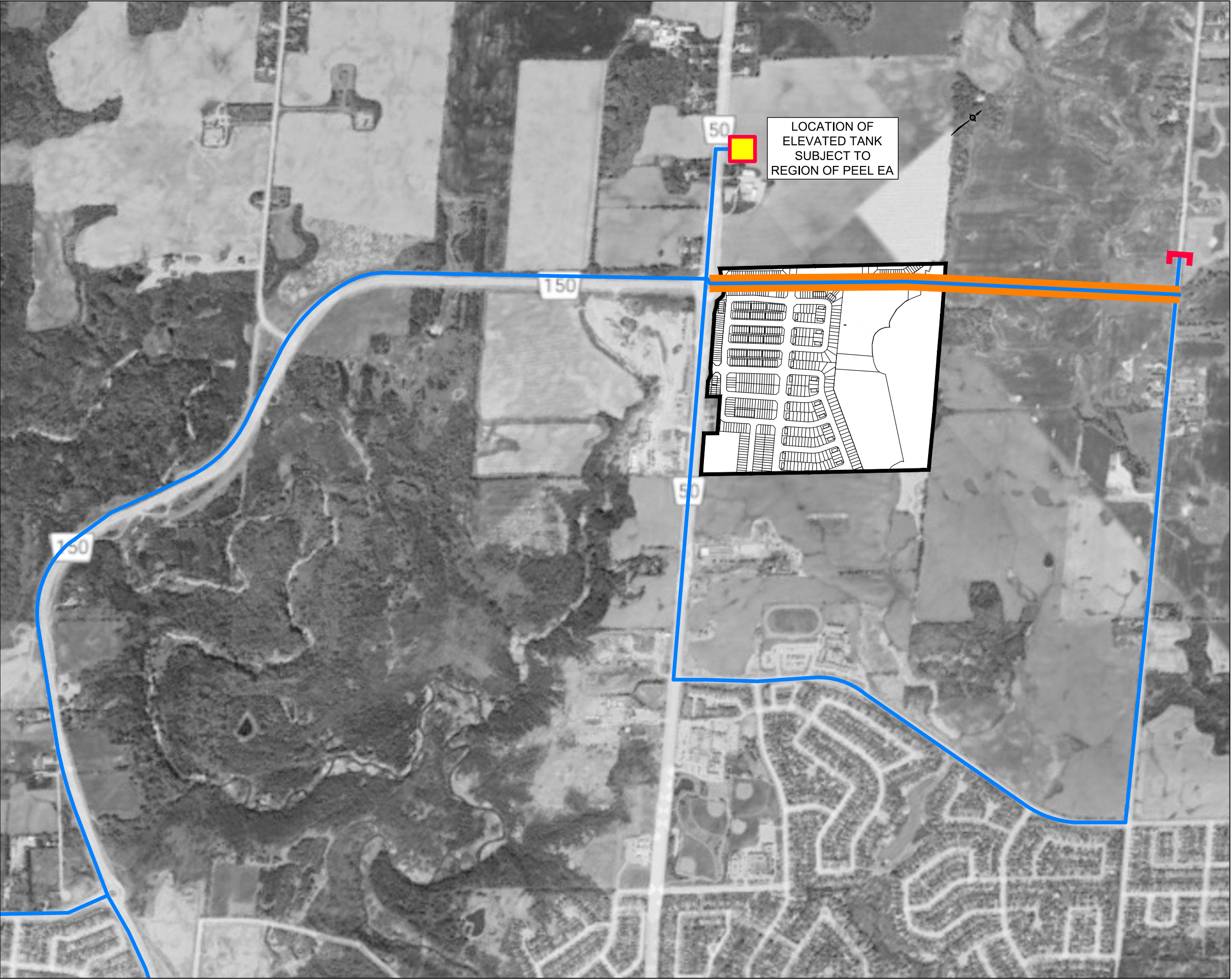
Table 3-2: Ultimate Water Supply Servicing Demands

Expected Population	Average Demand (L/s)	Peak Hour Demand (L/s)	Maximum Day Demand (L/s)	Fire Flow (L/s)	Max Demand + Fire Flow (L/s)
2,137	6.94	20.81	13.87	267	280.87

Fire Flow

The fire flow demand was determined using the Fire Underwriters Survey (FUS) 2020 guidelines and has been incorporated into the overall demand calculations. The FUS analysis was based on a representative townhouse block with a preliminary ground floor area of approximately 1,080 m² and a two-storey dwelling. The dwellings were assumed to be of limited combustible construction, without sprinklers, and without firewalls. Applicable exposure conditions were considered in the analysis. A fire flow of 267 L/s was calculated, which exceeds the Region of Peel minimum requirement of 250 L/s established for the Bolton PZ7 area. The FUS-derived value of 267 L/s therefore governs.





LOCATION OF
ELEVATED TANK
SUBJECT TO
REGION OF PEEL EA

RESIDENTIAL SUBDIVISION
UNITED HOLDINGS INC.
C/O SOLMAR DEVELOPMENT CORP.
TOWN OF CALEDON

LEGEND



SUBJECT SITE



WATER SERVICING SOLUTION



ELEVATED WATER TANK



SERVICES CORRIDOR



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FIGURE 3.2
WATER SUPPLY SERVICING
NEW GROWTH

4.0 SANITARY SERVICING

The proposed development will be serviced through the planned municipal sanitary sewer system. Detailed analysis, including hydraulic modelling and sewer sizing, will be completed at the design stage.

4.1 Existing Sanitary Servicing

Bolton is serviced by two trunk sewers: 900 mm on Albion-Vaughan Road (east) and 525/600/375 mm on Coleraine Drive (west), merging at Coleraine Drive and Regional Road 50, then flowing south on Regional Road 50 to McVean SPS, and ultimately to G.E. Booth WWTP.

The following sanitary infrastructure are in the vicinity of the project site:

- Existing sewers on Regional Road 50 and Columbia Way are present but will not be used by this development

4.2 Sanitary Design Criteria

The proposed sanitary servicing of the subject site will be designed in accordance with Region of Peel design criteria (Region of Peel Water and Wastewater Master Plan, Volume 4 2020) for sanitary sewers. These criteria, where applicable to the proposed development, are summarized below.

- Residential: 290 L/cap/day
- Employment 270 L/cap/day
- School: 53 equivalent persons (70pp/ha)
- Infiltration seepage: 0.26 L/s/ha
- Peaking Factor: Harmon Formula – $M = 1 + 14 / (4 + P^{0.5})$

4.3 Proposed Sanitary Servicing Plan

The proposed development will be serviced by PVC gravity sanitary sewers internal to the site, discharging to the proposed 1200 mm diameter trunk sanitary sewer on Regional Road 50. The 1200 mm trunk sewer on Regional Road 50 connects to the Emil Kolb Parkway sanitary system, where flows are conveyed via twin 450 mm diameter forcemains to a 525 mm diameter gravity trunk sewer on King Street, and ultimately to a 1200 mm diameter trunk sewer on Humber Station Road. Flows are then directed to the McVean Sewage Pumping Station and treated at the G.E. Booth Wastewater Treatment Plant. No sewage

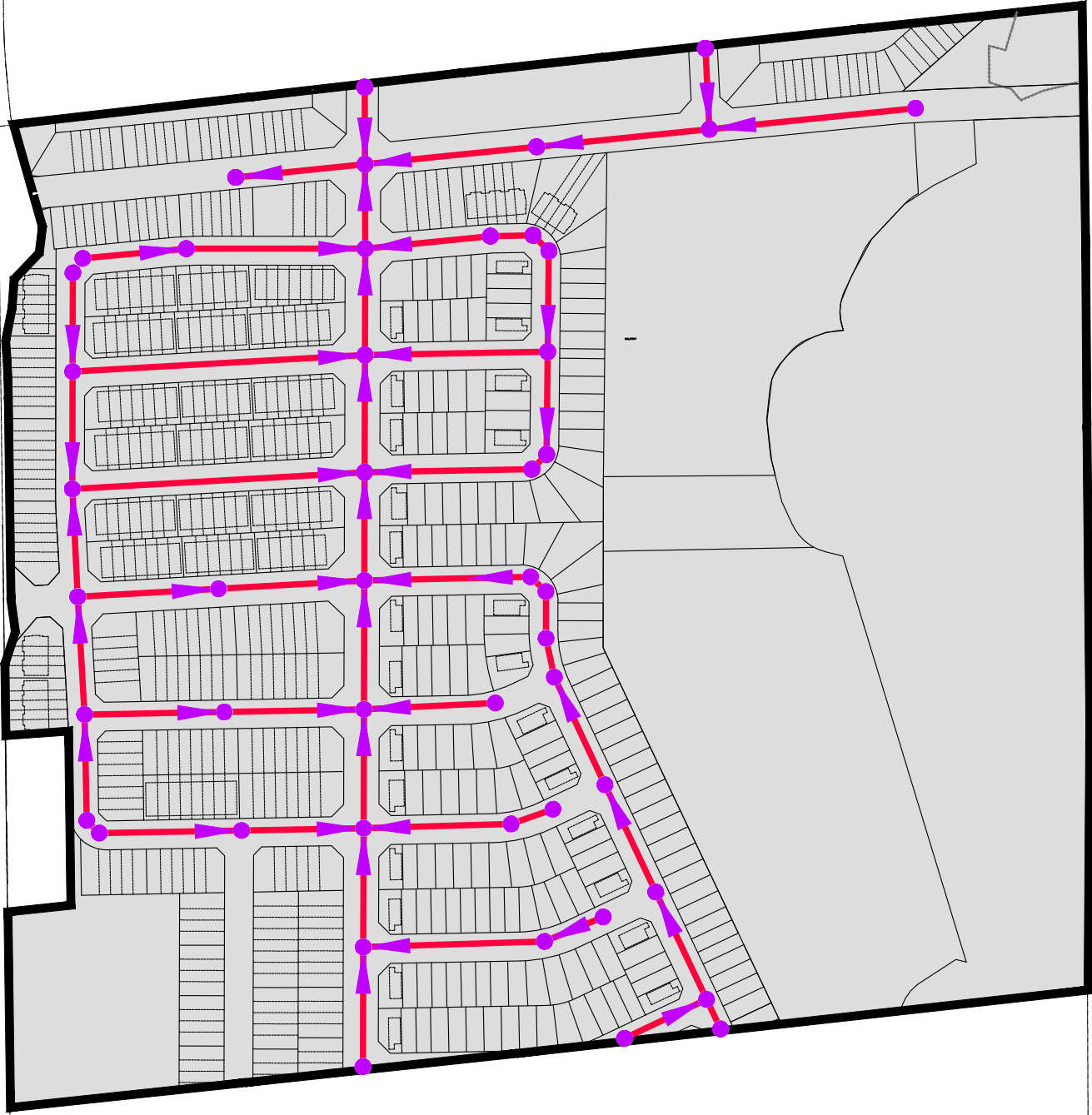
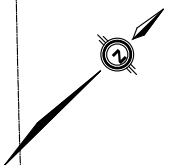
pumping station is anticipated within the subject lands.

The estimated sanitary servicing demands for the proposed development are summarized in **Table 4-1**. Supporting calculations are provided in **Appendix C**.

Table 4-1: Ultimate Sanitary Servicing Demands

Area (ha)	Expected Population	Average Flow (L/s)	Harmon's Peaking Factor	Peak Flow (L/s)	Infiltration (L/s)	Total Flow (L/s)
40.68	2,137	7.17	3.56	25.56	10.58	36.14

Final sewer sizing and system configuration will be confirmed at the detailed design stage in accordance with Region of Peel requirements.



LEGEND

-  PHASE 1 SUBJECT AREA
-  FUTURE PHASE AREAS
-  PROPOSED SANITARY SEWER
-  PROPOSED SANITARY FORCEMAIN

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FIGURE 4.1
PROPOSED
SANITARY SERVICING

2026-5635

AUGUST 2026

SCALE: N.T.S.



RESIDENTIAL SUBDIVISION
UNITED HOLDINGS INC.
C/O SOLMAR DEVELOPMENT CORP.
TOWN OF CALEDON

LEGEND

-  SUBJECT SITE
-  GRAVITY SERVICING SOLUTION
-  FORCEMAIN SERVICING SOLUTION
-  SANITARY PUMPING STATION
-  SERVICES CORRIDOR



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FIGURE 4.2
SANITARY SERVICING
NEW GROWTH

5.0 STORMWATER MANAGEMENT

This section describes the stormwater management strategy for the proposed development area, including existing drainage conditions, applicable design criteria, and the proposed stormwater management facilities.

5.1 Existing Site Conditions

The subject site is located east of Regional Road 50 (Highway 50), north of Columbia Way, and west of Mount Hope Road, within the Humber River watershed and subject to the regulatory jurisdiction of the Toronto and Region Conservation Authority (TRCA). Under existing pre-development conditions, the site consists primarily of agricultural land with limited formal drainage infrastructure. Surface runoff is conveyed via natural drainage channels and sheet flow to tributaries of the Main Humber River.

The site drains to two distinct tributary systems:

- Tributary E (sub-basin 10): The southern and eastern portion of the site drains to Tributary E, located within sub-basin 10 of the Humber River watershed.
- Tributary D (Main Humber River): The northern and central portion of the site drains to Tributary D of the Main Humber River.

Soils within the site are predominantly clay-based (including King Clay Loam), which limits infiltration potential. Groundwater levels are relatively shallow and may influence stormwater management design. No formal storm sewer infrastructure currently exists within the subject area. The pre-development drainage catchment layout is depicted in **Figure 5.1**.

5.2 Stormwater Management Criteria

The stormwater management design for the subject site has been developed in accordance with the following governing documents and criteria:

- "Development Standards Manual Ver 5.0", by the Town of Caledon, 2019.
- "Stormwater Management Planning and Design Manual (SWMPD)", by Ministry of the Environment (MOE), March 2003.
- "Stormwater Management Criteria", by Toronto and Region Conservation Authority, August 2012.
- "Low Impact Development Stormwater Management Planning and Design Guide", Version 1.0, Prepared by TRCA and Credit Valley Conservation, 2010.
- "Public Works Stormwater Design Criteria and Procedural Manual", June 2019, by the Region of

Peel.

- "Erosion and Sediment Control Guideline for Urban Construction", by Sustainable Technologies for TRCA, 2019.
- "Functional Servicing and Stormwater Management Report Bolton North Hill Option 1 Lands", By C.F. Crozier & Associates Inc. for Bolton North Hill Landowners Group, February 2026.

Major and Minor System

- The minor system will be designed to convey the 10-year storm event without surcharge, using the Rational Method and Town of Caledon intensity-duration-frequency (IDF) data.
- The major system will be designed to convey the 100-year storm event through overland flow routes to stormwater management facilities.
- The minimum sewer diameter will be 300 mm.
- Runoff coefficients shall be determined based on land use as follows:

○ Parks & Open Space	0.30
○ Single Family Residential	0.65
○ Semi-detached Residential	0.70
○ Townhouse or Rowhouse	0.75
○ Apartments or Hi-Rise Residential	0.90

Quantity Control

Stormwater flow control requirements are governed by the Humber River watershed criteria. The site drains to two systems with different quantity control requirements:

- SWM Pond 6 (Sub-basin 10, Tributary E): Flow control is required to the TRCA prescribed unitary flow rates for Sub-basin 10, for the 2-year through 100-year return period storms. Additional flood control storage is required for the Regional (Hurricane Hazel) storm event. Target release rates are determined using the Humber River Sub-basin 10 unit flow equations summarized in **Table 5-1**.
- SWM Pond 7 (Main Humber River, Tributary D): Post-development peak flows shall not exceed pre-development peak flows for the 2-year, 5-year, and 100-year return period storms. Additional flood control storage is required for the regional storm event.
- Stormwater analysis for the subject site considers the following storm events:
 - TRCA AES Storm Distributions

- Regional storm event

Table 5-1 Humber River Unit Flow Equations

Return Period	Sub-Basin 10 Equations
2 Year	$Q=3.142-0.233*\ln(A)$
5 Year	$Q=5.557-0.427*\ln(A)$
10 Year	$Q=7.443-0.578*\ln(A)$
25 Year	$Q=9.838-0.757*\ln(A)$
50 Year	$Q=11.920-0.921*\ln(A)$
100 Year	$Q=14.140-1.096*\ln(A)$

Quality Control

Stormwater quality control will provide Enhanced Level 1 treatment, achieving a minimum of 80% removal of total suspended solids (TSS), in accordance with TRCA and Town of Caledon guidelines.

Erosion Control

Erosion control will be provided through extended detention to detain the 25 mm/4-hour Chicago design storm for a minimum of 48 hours, in accordance with TRCA requirements.

Water Balance

Water balance objectives will be considered during design to maintain pre-development hydrologic conditions where feasible. Refer to **Section 5.7** for water balance discussion.

5.3 Downstream Assessment

A downstream assessment has been undertaken to evaluate potential impacts of post-development runoff on the receiving watercourse systems. The subject lands discharge to Tributary D and Tributary E within the Main Humber River watershed. Downstream flows are governed by natural channel systems and hydraulic constraints identified within the Bolton North Hill servicing framework.

Hydrologic and hydraulic modelling using Visual OTTHYMO v.6.2 and HEC-RAS v.6.4.1 has confirmed that the proposed stormwater management strategy does not result in a material increase in peak flows or flood risk at downstream locations. The downstream analysis is consistent with the findings of the Bolton

North Hill Master Functional Servicing and Stormwater Management Report (C.F. Crozier & Associates Inc., February 2026).

5.4 Proposed SWM Plan

The proposed stormwater management strategy for the subject lands has been developed in accordance with the criteria outlined in **Section 5.2** and the recommendations of the Bolton North Hill Functional Servicing and Stormwater Management Studies.

Stormwater runoff will be managed using a dual drainage system. The minor system will consist of storm sewers sized for the 10-year return period storm, while the major system will convey flows exceeding minor system capacity through overland flow routes to the stormwater management facilities.

Runoff from the development will be directed to SWM Ponds 6 and 7. The proposed grading plan will maintain the overall drainage pattern identified within the Bolton North Hill studies and direct runoff towards the proposed stormwater management facilities and receiving tributaries.

The proposed stormwater management facilities consist of dry pond facilities with associated sediment forebays and sediment drying areas to facilitate long-term operation and maintenance. Water quality, erosion control, quantity control, and regional stormwater management requirements will be provided in accordance with applicable MECP, Town of Caledon, and TRCA criteria.

The proposed grading design will maintain safe overland flow routes and minimize potential impacts to adjacent lands. The final pond configurations, outlet structures, storage volumes, and associated drainage channels will be confirmed during detailed design.

For a visual representation of the proposed stormwater servicing and drainage plan, refer to **Figures 5.2** and **5.3**. Detailed stormwater management calculations are provided in **Appendix D**.

5.5 SWM Pond 6

SWM Pond 6 is proposed to service a contributing drainage area of approximately 28.27 ha. The area that drains to SWM Pond 6 from within the subject site is 11.18 ha. Based on the current drainage plan, the contributing catchment has an estimated imperviousness of 63%, resulting in a weighted runoff coefficient of approximately 0.64. The facility is proposed as a dry pond with associated sediment forebays and sediment drying areas. Runoff will be conveyed to SWM Pond 6 and discharged to the receiving

tributary system in accordance with the quantity, quality, and erosion control criteria established in the Bolton North Hill Option 1 Lands FSWM (Crozier, 2026).

5.5.1 SWM Pond 6 Quantity Control

SWM Pond 6 has been designed to provide quantity control for the contributing drainage area in accordance with the criteria outlined in **Section 5.2**. Allowable release rates have been established based on the Humber River Sub-basin 10 unit flow relationships (TRCA, 2012) and applied to size the pond discharge for the 2-year through 100-year design storm events. Regional (Hurricane Hazel) quantity control has also been provided following the target release rate established in the Bolton North Hill Option 1 Lands FSWM (Crozier, 2026), in table 14.

5.5.1.1 SWM Pond 6 Allowable Release Rates

Table 5-2 summarizes the allowable release rates used for the SWM Pond 6 quantity control assessment. Refer to **Figure 5.1** for the contributing drainage area.

Table 5-2: SWM Pond 6 Allowable Release Rates Summary

Return Period	Unit Flow (L/s/ha)	Release Rate (m ³ /s)
2 Year	2.36	0.067
5 Year	4.13	0.117
10 Year	5.51	0.156
25 Year	7.31	0.207
50 Year	8.84	0.250
100 Year	10.48	0.296
Regional*	2.125 m ³ /s	

* The regional control release rate is based on the target release rate established in the Bolton North Hill Option 1 Lands FSWM (Crozier, 2026), in table 14

5.5.1.2 SWM Pond 6 SWM Storage Requirements

VO Modelling was completed for the SWM Pond 6 quantity control assessment using the 6/12/24 hour AES storm distributions in accordance with TRCA criteria. The discharge curve was configured to attenuate post development flows to the allowable release rates summarized in **Table 5-3**. A total provided storage of 36,000 m³ is available for SWM Pond 6.

Table 5-3: SWM Pond 6 Active Storage Requirements Summary

Return Period	Release Rate (m ³ /s)	Required Storage (m ³) [6 Hour AES]	Required Storage (m ³) [12 Hour AES]	Required Storage (m ³) [24 Hour AES]
2 Year	0.067	6,743	7,669	8,004
5 Year	0.117	9,294	10,168	10,301
10 Year	0.156	11,003	11,804	11,738
25 Year	0.207	13,160	13,832	13,486
50 Year	0.250	14,772	15,307	14,787
100 Year	0.296	16,361	16,786	16,097
Regional	2.125	34,450		

5.5.2 SWM Pond 6 Quality Control

The SWM pond 6 quality storage standards were established in accordance with the MECP SWMPD Manual's Basic Protection (60% long-term S.S. removal) criteria published in March 2003. **Table 5-4** summarizes the preliminary water quality control parameters for the SWM pond 6. Refer to **Appendix D** for detailed calculations.

Table 5-4: SWM Pond 6 Water Quality Summary

SWM Pond 6 Quality Control Parameter	Value
Type of Facility	Dry Pond
Level of Protection	Basic
Drainage Area	28.27 ha
Weighted Imperviousness	63%
Min. Extended Detention Storage Volume Requirement	4,994 m ³
Provided Extended Detention Storage Volume	5,450 m ³

Water quality treatment for SWM Pond 6 is provided through a treatment train. Pre-treatment is provided by CB shields and deep-sump catch basins (900 mm sumps) within the tributary to the facility, which

together provide 50% TSS removal. Runoff is then conveyed to the dry SWM pond, where extended detention of the water quality storage volume provides a further 60% TSS removal. The two treatment stages in series compound to 80% TSS removal overall, i.e. $50\% + 60\% \times (100-50)\% = 80\%$, which meets the enhanced treatment policy as indicated in **Section 5.2**. The perforated-pipe exfiltration system described in **Section 5.7** is provided to satisfy the water balance and infiltration objectives for the site; no TSS removal credit is claimed for it within the SWM Pond 6 treatment train.

5.5.3 SWM Pond 6 Erosion Control

Erosion control for SWM Pond 6 is achieved through extended detention of the 25 mm rainfall event over a minimum 48-hour period, in accordance with TRCA (2012) criteria. Based on the contributing drainage area of approximately 28.27 ha, the required erosion control storage volume has been estimated at 4,523 m³, as summarized in **Table 5-5**. As the water quality storage requirement of 4,994 m³ (Table 5-5) exceeds the erosion control requirement, the water quality volume governs the extended detention design for SWM Pond 6.

Table 5-5: SWM Pond 6 Erosion Control Summary

Erosion Control Parameter	Value
Drainage Area	28.27 ha
Required Storage Volume	4,523 m ³
Average Detention Time	48 hours
Average Release Rate	0.026 m ³ /s
Peak Release Rate (1.5 x Average)	0.039 m ³ /s
Provided Extended Detention Storage Volume	5,450 m ³

5.5.4 SWM Pond 6 Emergency Spillway

SWM Pond 6 will include an emergency spillway to safely convey flows in the event that the outlet control structure becomes blocked or storm events exceed the design capacity of the facility.

The emergency spillway is designed as a weir with a trapezoidal cross-section, graded into the pond berm at an invert crest elevation of 264.50 m. The spillway has a crest width of 18.0 m, and 10:1 (H:V) side

slopes.

The spillway has been sized to convey the unattenuated 100-year, 6-hour AES design storm event. Based on the weir equation ($Q = C_d \times b \times H^{3/2}$), the spillway achieves a maximum discharge capacity of 5.00 m³/s at an elevation of 264.80 m, corresponding to 0.30 m of head over the invert. This exceeds the 100-year peak inflow of 4.76 m³/s, confirming adequate spillway capacity with a maximum water surface elevation below the top of pond berm. Detailed emergency spillway calculations are provided in **Appendix D**.

5.5.5 SWM Pond 6 Sediment Forebay

Two sediment forebays are proposed within SWM Pond 6 to promote the settling of coarse sediment and facilitate long-term maintenance of the facility. The forebays will provide preliminary treatment of stormwater runoff prior to entering the main storage and treatment areas, reducing sediment accumulation within the facility and improving overall operational performance. The sediment forebays have been sized in accordance with the MECP Stormwater Management Planning and Design Manual (2003). Yielding a required length of 27 m. A combined forebay length of 180 m has been provided, substantially exceeding the 27 m minimum requirement. Final forebay geometry, including individual cell dimensions and inlet/outlet configuration, will be confirmed during detailed design. Detailed forebay calculations are provided in **Appendix D**.

5.5.6 SWM Pond 6 Sediment Drying Area

SWM Pond 6 includes a dedicated sediment drying area to provide a designated location for sediment removal, dewatering, and maintenance activities. The sediment drying area has been sized in accordance with the MECP Stormwater Management Planning and Design Manual (2003), based on the contributing drainage area and estimated sediment loading characteristics of the catchment.

The contributing drainage area to SWM Pond 6 is approximately 28.27 ha with an estimated imperviousness of 63%, corresponding to an annual sediment loading rate of 2.38 m³/ha. Based on a 10-year maintenance interval, the estimated total sediment accumulation volume is approximately 673 m³. A sediment drying area with a minimum surface area of 798 m² is required to accommodate this volume, as summarized in **Table 5-6**.

The sediment drying area has been designed as a trapezoidal graded pad, 38 m in length with a bottom width of 15.0 m and a top width of 21.0 m, providing a maximum surface area of 798 m² and a storage

volume of 684 m³, which exceeds the estimated 10-year sediment accumulation volume. A minimum depth of 1.0 m has been adopted to provide adequate dewatering and drying capacity. Detailed calculations are provided in **Appendix D**.

Table 5-6: SWM pond 6 Sediment Drying Area Summary

Sediment Drying Area Parameter	Value
Drainage Area	28.27 ha
Imperviousness	63%
Annual Sediment Loading	2.38 m ³ /ha
Sediment Drying Area Requirement	798 m ²
Provided Sediment Drying Area	916 m ²

5.6 SWM Pond 7

SWM Pond 7 is proposed to provide stormwater management for the western portion of the development area. The contributing drainage area to SWM Pond 7 is approximately 34.27 ha with an estimated imperviousness of approximately 71%, resulting in a weighted runoff coefficient of approximately 0.69. The area that drains to SWM Pond 7 from within the subject site is 15.98 ha. The facility is proposed as a dry pond with associated sediment forebays and sediment drying areas. Runoff from the contributing drainage area will be conveyed to SWM Pond 7 and discharged to Tributary D within the Main Humber River Watershed. The facility is proposed to provide quantity control, quality treatment, erosion control, and volume control in accordance with applicable Town of Caledon, Region of Peel, MECP, and TRCA criteria. The design of Pond 7 will be completed by DSEL.

5.6.1 SWM Pond 7 Quantity Control

SWM Pond 7 is located within the Main Humber River Watershed. In accordance with TRCA criteria and the findings of the downstream analysis presented in the Bolton North Hill Option 1 Lands FSWM (Crozier, 2026), post-development peak flows from SWM Pond 7 are required to be controlled to pre-development levels for the 2-year, 5-year, and 100-year storm events. Regional (Hurricane Hazel) flood control is also required, consistent with the downstream assessment confirming increases in peak flows to Tributary D under uncontrolled post-development conditions. The allowable release rates for SWM Pond 7 have been

established based on a contributing drainage area of 34.27 ha and are summarized in **Table 5-7**.

5.6.1.1 SWM Pond 7 Allowable Release Rates

Table 5-7: SWM Pond 7 Allowable Release Rates Summary

Return Period	Release Rate (m ³ /s)*
2 Year	0.038
5 Year	0.080
10 Year	-
25 Year	-
50 Year	-
100 Year	0.979
Regional	2.567

*The allowable release rates are based on findings of the downstream analysis presented in the Bolton North Hill Option 1 Lands FSWM (Crozier, 2026), Table 22.

5.6.1.2 SWM pond 7 Storage Requirements

In order to meet the allowable release rates, the required storage volumes for the design storm events will be confirmed through hydrologic modelling through VO. The preliminary required storage volumes are present in **Table 5-8** below. A total provided storage of 37,000 m³ is available for SWM Pond 7.

Table 5-8: SWM pond 7 Active Storage Requirements Summary

Return Period	Release Rate (m ³ /s)	Required Storage (m ³) [6 Hour AES]	Required Storage (m ³) [12 Hour AES]	Required Storage (m ³) [24 Hour AES]
2 Year	0.038	8,790	9,987	10,485
5 Year	0.080	12,333	13,633	14,165
10 Year	-	13,830	14,735	14,869
25 Year	-	15,537	15,924	15,574
50 Year	-	16,850	16,901	16,312
100 Year	0.979	18,154	17,879	17,201

Return Period	Release Rate (m ³ /s)	Required Storage (m ³) [6 Hour AES]	Required Storage (m ³) [12 Hour AES]	Required Storage (m ³) [24 Hour AES]
Regional	2.567	36,259		

5.6.2 SWM Pond 7 Quality Control

The SWM pond 7 quality storage standards were established in accordance with the MECP SWMPD Manual's Basic Protection (60% long-term S.S. removal) criteria published in March 2003. **Table 5-9** summarizes the preliminary water quality control parameters for the SWM pond 7. Refer to **Appendix D** for detailed calculations.

Table 5-9: SWM Pond 7 Water Quality Summary

SWM Pond 7 Quality Control Parameter	Value
Type of Facility	Dry Pond
Level of Protection	Basic
Drainage Area	34.27 ha
Weighted Imperviousness	71%
Min. Extended Detention Storage Volume Requirement	6,945 m ³
Provided Extended Detention Storage Volume	7,500 m ³

Water quality treatment for SWM Pond 7 is provided through a treatment train. Pre-treatment is provided by CB shields and deep-sump catch basins (900 mm sumps) within the tributary to the facility, which together provide 50% TSS removal. Runoff is then conveyed to the dry SWM pond, where extended detention of the water quality storage volume provides a further 60% TSS removal. The two treatment stages in series compound to 80% TSS removal overall, i.e. $50\% + 60\% \times (100-50)\% = 80\%$, which meets the enhanced treatment policy as indicated in **Section 5.2**. The perforated-pipe exfiltration system described in **Section 5.7** is provided to satisfy the water balance and infiltration objectives for the site; no TSS removal credit is claimed for it within the SWM Pond 7 treatment train.

5.7 Water Balance

The subject site is not located within a Wellhead Protection Area (WHPA). As the site lies within a

Significant Groundwater Recharge Area with tight native soils and a high groundwater table, best efforts should be made to match the pre-development annual infiltration volume under post-development conditions.

A site water balance analysis was completed and is provided in **Appendix D**. Under pre-development conditions, the site produces an average annual runoff of 70,539 m³/year, infiltration of 47,026 m³/year, and evapotranspiration of 232,283 m³/year.

Under post-development conditions (without mitigation), average annual runoff increases to 191,551 m³/year, infiltration decreases to 23,734 m³/year, and evapotranspiration is 134,563 m³/year. This results in an average annual infiltration deficit of 23,292 m³/year.

To mitigate the infiltration deficit, rear yard infiltration trenches are proposed. Because of the high groundwater table present across the site, subsurface LID measures within the municipal right-of-way (ROW) are not considered feasible. The exact locations, configuration, and detailed design of the rear yard infiltration trenches will be provided with subsequent submissions and will be coordinated with the project hydrogeologist.

Given the presence of clay in the underlying soils, an assumed native soil infiltration rate of 15 mm/hour was adopted and reduced by a factor of safety of 2.5 to a design infiltration rate of 6 mm/hour. Based on a target drawdown time of 72 hours, this yields a maximum storage depth of 1.08 m ($1.08 \text{ m} = 6 \text{ mm/hr} \times 72 \text{ hr} / 1000 / 0.4 \text{ porosity}$).

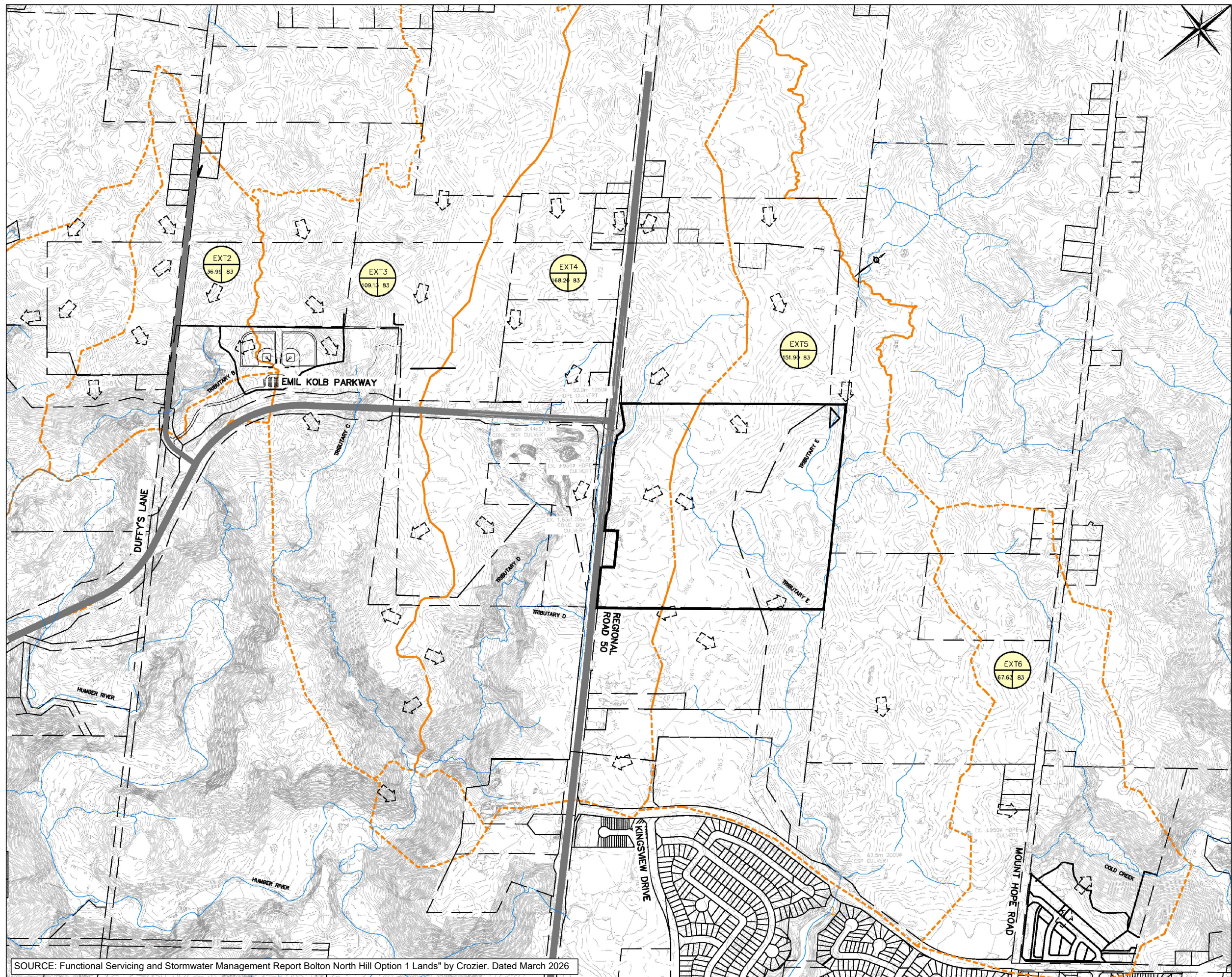
The rear yard infiltration trenches have been sized to capture the single-event runoff volume required to satisfy the post-to-pre annual infiltration deficit of 23,292 m³/year. The resulting retention requirement is approximately 665 m³ per storm event. This retention is provided by approximately 1,120 m of rear yard infiltration trench, comprising a clear stone trench 1.5 m wide and 1.0 m deep, giving a total trench volume of 1,680 m³. Assuming a clear stone void ratio of 40%, the retained volume is approximately 672 m³, which satisfies the 665 m³ retention requirement.

Under post-development conditions with the proposed mitigation, the site will produce an average annual surface runoff of 168,051 m³/year, infiltration of 47,234 m³/year, and evapotranspiration of 134,563 m³/year. The additional infiltration provided by the rear yard infiltration trenches satisfies the post-to-pre infiltration deficit. **Table 5-10** summarizes the water balance results. Refer to **Appendix D** for detailed

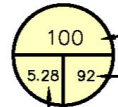
calculations.

Table 5-10: Water Balance Summary

Water Balance Parameter	Pre-Development	Post-Development	Change (Pre to Post)	Post-Development with Mitigation	Change (Pre to Post with Mitigation)
Inputs (m³/year)					
Precipitation	349,848	349,848	0	349,848	0
Total Inputs	349,848	349,848	0	349,848	0
Outputs (m³/year)					
Precipitation Surplus	117,565	215,285	97,720	215,285	97,720
Net Surplus	117,565	215,285	97,720	215,285	97,720
Total Evapotranspiration	232,283	134,563	-97,720	134,563	-97,720
Total Infiltration	47,026	23,734	-23,292	47,234	208
Total Runoff	70,539	191,551	121,012	168,051	97,512
Total Outputs	349,848	349,848	0	349,848	0



CATCHMENT AREA (ha)



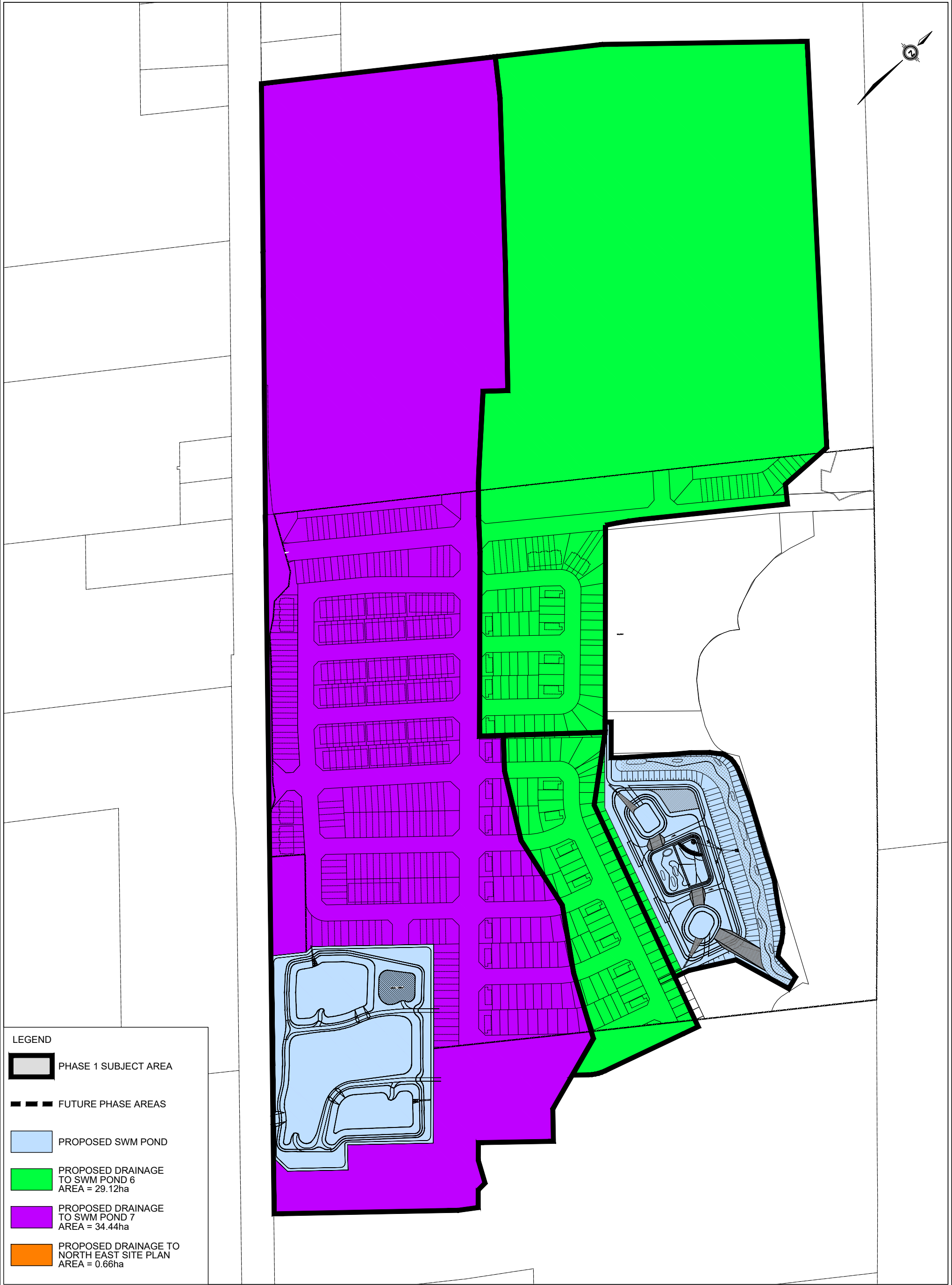
A pie chart divided into two segments. The left segment is labeled '5.28' and the right segment is labeled '92'.

10



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FIGURE 5.1
EXISTING
STORM DRAINAGE PLAN



FUNCTIONAL SERVICING REPORT AND DESIGN
FOR OAKBANK ESTATES SUBDIVISION



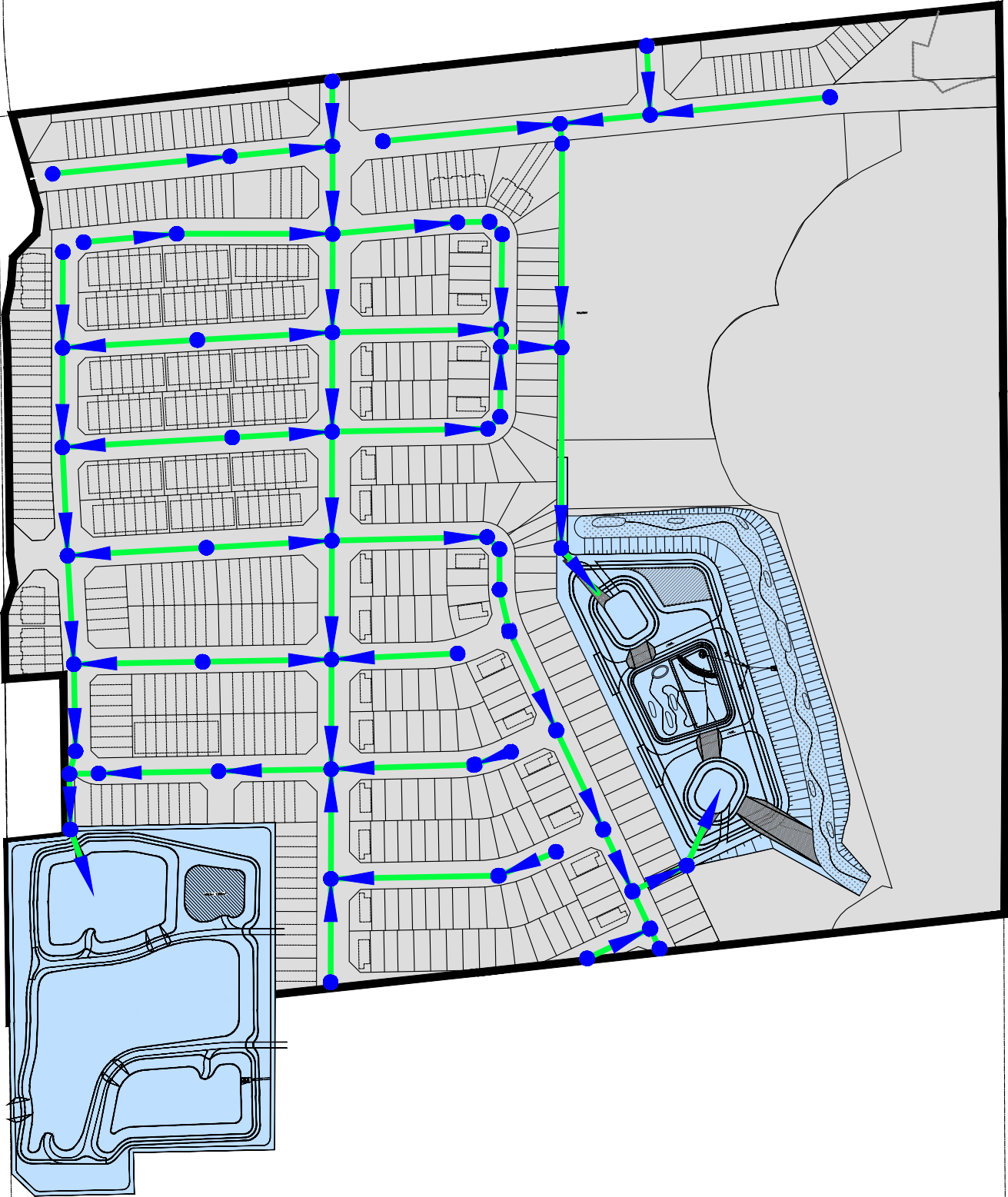
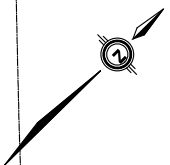
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LEGEND
(AS SHOWN ABOVE)

FIGURE 5.2
PROPOSED
STORM DRAINAGE PLAN

2026-5635	AUGUST 2026	SCALE: N.T.S.
-----------	-------------	---------------



- LEGEND
- PHASE 1 SUBJECT AREA
 - FUTURE PHASE AREAS
 - PROPOSED STORM SEWERS
 - PROPOSED SWM POND
 - EXISTING CULVERT
 - CONTROL MANHOLE
 - INFILTARTION TRENCHES

FUNCTIONAL SERVICING REPORT AND DESIGN
FOR OAKBANK ESTATES SUBDIVISION



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LEGEND
(AS SHOWN ABOVE)

FIGURE 5.3
PROPOSED
STORM SERVICING

6.0 Erosion and Sediment Control Plan

In order to mitigate the effects of construction on site, a comprehensive ESC strategy following the *Erosion and Sediment Control Guideline for Urban Construction* by Sustainable Technologies has been prepared for the project.

Erosion Control Measures

- **Phasing:** It is advantageous to reduce the limit of construction during the topsoil stripping phase in order to limit areas with soil exposure.
- **Stabilization:** Grading for construction generally requires the removal of topsoil immediately. If piled or stored on site, it must be stabilized immediately. It is also recommended that areas left unworked for longer than 30 days be stabilized. Possible measures are as follows:
 - Mechanical Seeding/Hydroseeding
 - Terra Seeding
 - Growth Media Blankets
- **Cut-off Swales:** To be designed as per ESC guidelines and stabilized accordingly.

Sediment Control Measures (refer to SC drawings in submission package)

- **Siltation control perimeter fencing**
 - Double Silt Fence with Straw Bales
 - Siltation Control Fence
- **Cut-off Swales:** To be designed as per ESC guidelines and stabilized accordingly.
- **Flow distributors:** Silt Socks have been proposed as they provide ponding opportunities and energy dissipation, helping to slow down flow velocity and promote sediment settling in swales.
- **Sediment Traps:** Have been sized in accordance with ESC guidelines.
- **Temporary Sediment Ponds:** Shall be sized as per MECP Quality control guidelines. A design

drawdown time of 48 hours is required.



7.0 CLOSING REMARKS

This Functional Servicing Report has been prepared to demonstrate the conformance of the proposed water supply, sanitary, and storm servicing concept for the subject residential development with the Region of Peel, Toronto and Region Conservation Authority (TRCA), and Town of Caledon design standards.

Water Supply Servicing

- The proposed development will be serviced by Pressure Zone 7 to ensure adequate water supply and pressure.
- Connect to the future municipal water infrastructure along Regional Road 50 and Columbia Way.

Sanitary Servicing

- Sanitary flows will be directed through internal sewers along the proposed road network.
- The ultimate servicing strategy will utilize the new proposed trunk sewer on Humber Station Road.

Storm Servicing

- Stormwater will be managed through a dual-drainage system, with minor flows conveyed via sewers and major flows through overland routes.
- Two dry stormwater management ponds, SWM Pond 6 and SWM Pond 7, will provide water quality, erosion, and quantity control, each with associated sediment forebays and sediment drying areas.

We trust that you will find this material satisfactory, and we are looking forward to receiving your comments soon. Should you have any questions or comments, please do not hesitate to contact us.

SCHAEFFER & ASSOCIATES LTD.



Samantha Iantorno

Water Resources Analyst



Howie Liu, P.Eng.

Water Resources Engineer



Sadh Katukurunde, P.Eng.

Junior Associate



PROJECT No.: 5635
PROJECT: Oakbank Estates
LOCATION: Caledon (Bolton North)



APPENDIX A

BACKGROUND INFORMATION

PROJECT No.: 5635
PROJECT: Oakbank Estates
LOCATION: Caledon (Bolton North)



APPENDIX B

WATER SUPPLY SERVICING

Water Supply Calculations

Project No.
August 2026

Oakbank Estates

Water Supply Demand:	Residential [†]	280	L/capita/day
	ICI [‡]	300	L/capita/day

Population Summary

Drainage Area	Land Use	Number of Units	Pop. Density (persons/unit) [†]	Population
1	Townhouses	375.5	3.4	1,277
2	Single Detatched	192	4.2	807
3	School	-	-	53

Water Demands

Land Use	Average Day Demand (L/s) [†]	Peak Hour Demand Peaking Factor [†]	Peak Hour Demand (L/s)	Max Day Demand Peaking Factor [‡]	Max Day Demand (L/s)	Fire Flow* (L/s)	Max Demand + Fire Flow (L/s)
Residential	6.94	3.0	20.81	2.0	13.87	267	280.87
Total	6.94	-	20.81	-	13.87	267	280.87

Notes
[†] As per Region of Peel Linear Wastewater Design Guidelines (2023)
[‡] Based on Region of Peel Public Works Watermain Design Criteria (2010)
*Fire demand calculated using the Fire Underwriters Survey (2020) guidelines

PROJECT No.: 5635
PROJECT: Oakbank Estates
LOCATION: Caledon (Bolton North)



APPENDIX C

SANITARY SERVICING

Population Estimate

Project No. 5635

Date:

Proposed Outlet to Highway 50:

Total Site Area: 40.68 ha

Item	Lot/Block #	Land Use Type	Number of Units	Population Density (pp/unit)	Population (Residential)	Area (ha)
1	1, 2, 4-6, 9-13, 34-62, 70-75, 78, 79, 85-93, 112-115, 119-126, 129-136, 140-146 AND 152-160 3, 15-24, 63-66, 76 AND 77	11.0m single Detached	110	4.2	462	3.787
2	7, 8, 26-33, 67-69, 80-84, 94-111, 116-118, 127, 128, 137-139, 147-151 AND 161-164 - 25-14	9.15m Single Detached	82	4.2	344	2.308
3	166-170 and 173-187 , 165, 171 and 172	7.0m Standard townhouse	261.5	3.4	889	5.75
4	188-196, 206-208 AND 210-216	6.0 dual frontage townhouse	103	3.4	350	2.23
5	209	7.0 Dual frontage townhouse	11	3.4	38	0.336
6	224	Elementery school	-	-	52.5	0.752
Total			567.5		2137	15.16

Area Taken from Draft Plan

Proposed Sanitary Flow Calculation

Project No. 5635

06-Aug-26

Infiltration Rate: 0.26 L/s/ha
Residential Generation Rate: 290 L/capita/day

Proposed Outlet to Columbia Way

Total Developable Land Area (ha): 40.68 ha

Summary of Sanitary Design Flow Calculation

Population Type	Total Population	Average Demand (L/s)	Harmon's Peaking Factor (M) *	Peak Flow (L/s)	Total Area (ha)	Infiltration (L/ha/s)	Infiltration (L/s)	Total Peak Flow (L/s)
Residential	2137	7.17	3.56	25.56	40.68	0.26	10.58	36.14

$$M = 1 + 14 / (4 + (P/1000)^{0.5})$$

Maximum M=4

*Population Estimate based on the Region of Peel's Linear Wastewater Standards (March 2023)

PROJECT No.: 5635
PROJECT: Oakbank Estates
LOCATION: Caledon (Bolton North)



APPENDIX D

STORMWATER MANAGEMENT CALCULATIONS

PROJECT No.: 5635

PROJECT: Oakbank Estates

LOCATION: Caledon (Bolton North)



POST-DEVELOPMENT RUNOFF COEFFICIENT

SWMP 6 - Option 1 Lands

Composite Runoff Coefficient

	Area (ha)*	Runoff Coeff.	Impervious	A*R	A*Imp	Ximp	A*Ximp
Subject Site - Oakbank Estates							
Single Detached	4.32	0.65	0.64	2.81	2.78	0.51	2.22
SWM Blocks	2.36	0.50	0.43	1.18	1.01	0.43	1.01
Townhouse	0.93	0.75	0.79	0.70	0.73	0.57	0.53
Elementary School	0.75	0.75	0.79	0.56	0.59	0.79	0.59
ROW	2.83	0.75	0.79	2.12	2.22	0.79	2.22
Total Area	11.18	0.66	0.66	7.37	7.33	0.59	6.57
External Option 1 Lands							
Total Area	17.09	0.64	0.62	10.85	10.62	0.50	8.50
Overall Area	28.27	0.64	0.63	18.22	17.95	0.53	15.07

*Areas Extracted from CAD base

PROJECT No.: 5635

PROJECT: Oakbank Estates

LOCATION: Caledon (Bolton North)



POST-DEVELOPMENT RUNOFF COEFFICIENT

SWMP 7 - Option 1 Lands

Composite Runoff Coefficient

	Area (ha)*	Runoff Coeff.	Impervious	A*R	A*Imp	Ximp	A*Ximp
Subject Site - Oakbank Estates							
Single Detached	1.83	0.65	0.64	1.19	1.18	0.51	0.94
Townhouse	7.42	0.75	0.79	5.56	5.83	0.57	4.25
SWM Blocks	1.34	0.50	0.43	0.67	0.57	0.43	0.57
ROW	5.40	0.75	0.79	4.05	4.25	0.79	4.25
Total Area	15.98	0.72	0.74	11.47	11.82	0.63	10.01
External Option 1 Lands							
Total Area	18.29	0.68	0.68	12.35	12.41	0.54	9.93
Overall Area	34.27	0.69	0.71	23.82	24.23	0.58	19.94

*Areas Extracted from CAD base

PROJECT No.: 5635

PROJECT: Oakbank Estates

LOCATION: Caledon (Bolton North)



POST-DEVELOPMENT RUNOFF COEFFICIENT

Total Site

Composite Runoff Coefficient

	Area (ha)*	Runoff Coeff	Impervious	A*R	A*Imp	Ximp	A*Ximp
Single Detached	6.10	0.65	0.64	3.96	3.92	0.51	3.13
Townhouse	8.34	0.75	0.79	6.26	6.55	0.57	4.78
SWM Blocks	5.61	0.50	0.43	2.81	2.41	0.43	2.41
Elementary School	0.75	0.75	0.79	0.56	0.59	0.79	0.59
Parks/Green Space/NHS	11.46	0.30	0.14	3.44	1.64	0.14	1.64
ROW	8.42	0.75	0.79	6.31	6.61	0.79	6.61
Total Area	40.68	0.57	0.53	23.34	21.72	0.47	19.17

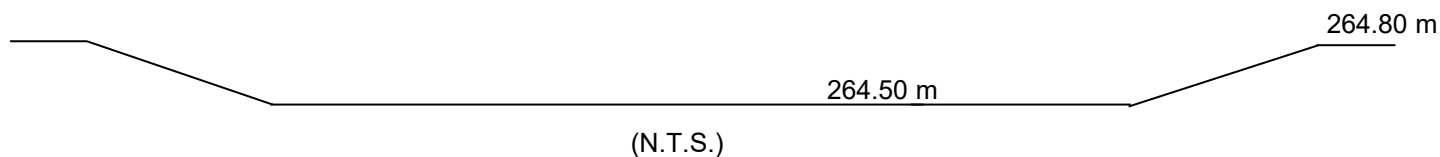
*Areas Extracted from Draft Plan

PROJECT No.: 5635
 PROJECT: Oakbank Estates
 LOCATION: Caledon (Bolton North)



EMERGENCY SPILLWAY

Pond 6



Weir Parameters

Weir Length (L)	(Parallel to flow)	10.0 m
Crest bottom Length (B)	(Perp. to flow)	18.0 m
Crest Elevation		264.50 m
Side Slope		10 :1 (h:v)

Weir Calculations ($Q = C_d * b * H^{3/2}$)

Water Elevation	Water Level (H)	H/L	C_d	Q
264.55	0.05	0.005	0.63	0.13
264.60	0.10	0.010	1.12	0.67
264.65	0.15	0.015	1.28	1.45
264.70	0.20	0.020	1.36	2.44
264.80	0.30	0.030	1.45	5.00

Maximum Flow at Elevation 264.80m is **5.00** m^3/s
 100-Year Storm Peak Inflow is **4.76** m^3/s (6HR AES)

PROJECT No.: 5635

PROJECT: Oakbank Estates

LOCATION: Caledon (Bolton North)



EROSION CONTROL

Pond 6

Erosion Control:

Input	Area =	28.27	ha
	R.V =	25	mm
	Runoff Coefficient =	0.64	
	Draw Down Time =	48	hrs

Calculations:

	Storage =	4,523	m ³
	Average Outflow =	0.026	m ³ /s
	Peak Outflow =	0.039	m ³ /s

Note: Estimated at 1.5 times Average Outflow

Provide 4523 m3 for erosion control.

PROJECT No.: 5635

PROJECT: Oakbank Estates

LOCATION: Caledon (Bolton North)



FOREBAY SIZING

Pond 6

FOREBAY SETTLING LENGTH

ref: SWM Planning & Design Manual (MOE, March 2003)

Dist = $(rQ_p / V_s)^{1/2}$, where

Dist = forebay length (m)

r = Length to width ratio of forebay (>2:1)

Q_p = peak flowrate from the pond during design quality storm (m^3/s)

V_s = settling velocity in the forebay (m/s)

r =	3.0		(2:1)
Q_p =	0.043	m^3/s	(required erosion outflow rate)
V_s =	0.0003	m	(based on 150mm particles)

Dist = 21 m

DISPERSION LENGTH

ref: SWM Planning & Design Manual (MOE, March 2003)

D = $8Q / dV_f$, where

D = length of dispersion (m)

Q = 5 year inlet flowrate (m^3/s)

d = depth of permanent pool in forebay (m)

V_f = desired velocity in the forebay (m/s)

Q =	2.49	m^3/s	(from hydrologic model)
d =	1.50	m	
V_f =	0.5	m/s	(MOEE empirical value)

D = 27 m

Forebay Length Required: 27 metres
Forebay Length Provided: 180 metres

PROJECT No.: 5635

PROJECT: Oakbank Estates

LOCATION: Caledon (Bolton North)



WATER QUALITY REQUIREMENT

Dry SWM Pond 6

Table: Water Quality Storage Requirements Based on Receiving Waters

Protection Level	SWMP Type	Storage Volume (m ³ /ha) for Impervious Level			
		35%	55%	70%	85%
Basic	Dry Pond	90	150	200	240

Input:

Estimated Imperviousness = 63%
Area = 28.27 ha
Level of Protection: 3
SWMP Type : Dry Pond

Calculation:

Total Storage Volume Required = 177 m³/ha → 4,994 m³
Average Outflow (48 hr Detention) = 0.029 m³/s
Peak Outflow = 0.043 m³/s

PROJECT No.: 5635
PROJECT: Oakbank Estates
LOCATION: Caledon (Bolton North)



QUANTITY CONTROL
Allowable Release & Required Storage - Pond 6

Pond 6 Drainage Area: 28.27 ha

Storm Event	Unit Flow (L/s/ha)	Target Release Rate (m ³ /s)	Required Storage (m ³) [6 hour AES]	Required Storage (m ³) [12 hour AES]	Required Storage (m ³) [24 Hour AES]
WQ/EC	0.043		4994		
2 Year	2.36	0.067	6743	7669	8004
5 Year	4.13	0.117	9294	10168	10301
10 Year	5.51	0.156	11003	11804	11738
25 Year	7.31	0.207	13160	13832	13486
50 Year	8.84	0.250	14772	15307	14787
100 Year	10.48	0.296	16361	16786	16097
Regional	2.125		34450		

SEDIMENT DRYING AREA
Pond 6

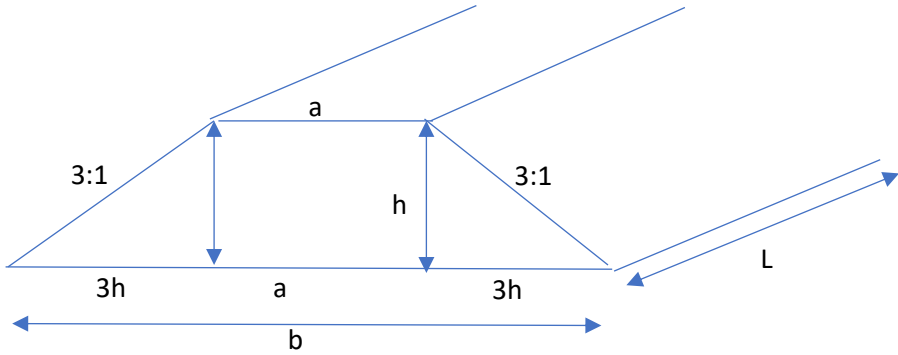
Annual Sediment Loading - Pond 6		
Catchment Imperviousness (%)	Annual Loading (m ³ /ha)	Area (ha)
63	2.38	28.27
Total Sediment Volume for 10 year period (m ³)		672.83

Table 6.3: Annual Sediment Loadings

Catchment Imperviousness	Annual Loading (kg/ha)	Wet Density (kg/m ³)	Annual Loading (m ³ /ha)
35%	770	1,230	0.6
55%	2,300	1,230	1.9
70%	3,495	1,230	2.8
85%	4,680	1,230	3.8

Sediment Drying Area Req'd

Area Req'd (m ²)	798.00
------------------------------	--------



Volume, V = (a+b)/2*h*L	
Top width, a (m)	15.0
Bottom width, b (m)	21.0
Height, h (m)	1 <--- Minimum depth
Length, L (m)	38
Volume Provided	684.00

PROJECT No.: 5635
 PROJECT: Oakbank Estates
 LOCATION: Caledon, Peel
 DATE: 2026-07-10



Water Quality Storage Calculations - Pond 7

MECP Stormwater Management Planning & Design Manual (2003) - Table 3.2

Reference: Table 3.2 - Water Quality Storage Requirements

Protection Level	SWMP Type	Storage Volume (m3/ha) by Impervious Level			
		35%	55%	70%	85%
Enhanced (80% LT S.S. removal)	Infiltration	25	30	35	40
	Wetlands	80	105	120	140
	Hybrid Wet Pond/Wetland	110	150	175	195
	Wet Pond	140	190	225	250
Normal (70% LT S.S. removal)	Infiltration	20	20	25	30
	Wetlands	60	70	80	90
	Hybrid Wet Pond/Wetland	75	90	105	120
	Wet Pond	90	110	130	150
Basic (60% LT S.S. removal)	Infiltration	20	20	20	20
	Wetlands	60	60	60	60
	Hybrid Wet Pond/Wetland	60	70	75	80
	Wet Pond	60	75	85	95
	Dry Pond (Continuous Flow)	90	150	200	240

* Wet facilities: 40 m3/ha of the total is extended detention; remainder is permanent pool. Dry Pond (Continuous Flow) is Basic protection only.

* Imperviousness outside 35-85% is extrapolated linearly from the nearest table segment.

Design Inputs

Pond:	Pond 7		
Drainage Area (A):	34.27	ha	
Imperviousness (TIMP):	71%	-	from Post-Dev Runoff calc
Protection Level:	Enhanced		select from dropdown
SWMP Type:	Wet Pond		Dry Pond is Basic only

Water Quality Storage

Unit Storage Volume (interpolated):	226.7	m3/ha	interpolated from Table 3.2
Total Water Quality Storage:	7,768	m3	
Extended Detention (Active) Storage:	1,371	m3	wet: 40 m3/ha; dry: all active
Permanent Pool Volume:	6,397	m3	0 for dry facilities

Erosion Control

Runoff Volume (RV):	25	mm	
Runoff Coefficient (C):	0.70	-	from Post-Dev Runoff calc
Drawdown Time:	48	hrs	
Erosion Control Storage:	5,997	m3	Storage = 10 x C x RV x A

EC/WQ Release Rate

Average Outflow (governing storage):	0.0347	m3/s	governing active storage over drawdown
Peak Outflow (1.5 x Average):	0.052	m3/s	erosion control release rate

Summary

Parameter	Volume (m3)
Permanent Pool Volume	6,397
Extended Detention (Active WQ) Volume	1,371
Erosion Control Storage	5,997
Governing Active Storage (max of ED, EC)	5,997

Provide 6397 m3 permanent pool and 5997 m3 active storage (max release 52 L/s).

PROJECT No.: 5635
PROJECT: Oakbank Estates
LOCATION: Caledon (Bolton North)



QUANTITY CONTROL
Allowable Release & Required Storage - Pond 7

Pond 6 Drainage Area: 34.44 ha

Storm Event	Target Release Rate (m ³ /s)	Required Storage (m ³) [6 hour AES]	Required Storage (m ³) [12 hour AES]	Required Storage (m ³) [24 Hour AES]
WQ/EC	0.061	7003		
2 Year	0.038	8646	9913	10409
5 Year	0.080	12172	13542	14072
10 Year	-	14538	14695	14869
25 Year	-	15641	15875	15658
50 Year	-	16789	16848	16361
100 Year	0.979	17924	17822	17272
Regional	2.546	36111		

Year	Rainfall Depth					
	<= 5mm	<= 10mm	<= 15mm	<=20mm	<=25mm	<=50mm
1977	165	414	579	697	762	1044
1978	155	358	466	639	682	745
1979	203	347	581	704	817	970
1980	183	368	496	674	746	832
1981	197	362	528	670	715	885
1982	174	374	600	697	769	988
1983	164	364	559	662	860	920
1984	174	342	465	641	801	915
1985	188	427	608	743	813	987
1986	162	317	536	722	794	893
1987	175	427	564	657	723	808
1988	196	396	509	598	619	660
1989	190	318	489	589	655	784
1990	188	505	632	741	852	949
1991	196	318	590	692	755	810
1992	200	377	558	661	753	925
1993	184	363	513	600	738	780
1994	172	375	609	640	685	759
1995	181	387	476	541	676	917
1996	225	423	621	723	855	1049
1997	178	406	523	630	721	749
1998	144	285	431	517	581	753
1999	121	322	395	518	540	667
2000	196	381	499	519	608	896
2001	149	366	489	581	691	789
2002	155	336	494	593	642	735
2003	184	383	555	676	761	943
2004	234	441	622	672	764	791
2005	203	336	493	612	660	808
2006	171	416	604	712	803	982
	180	374	536	644	728	858

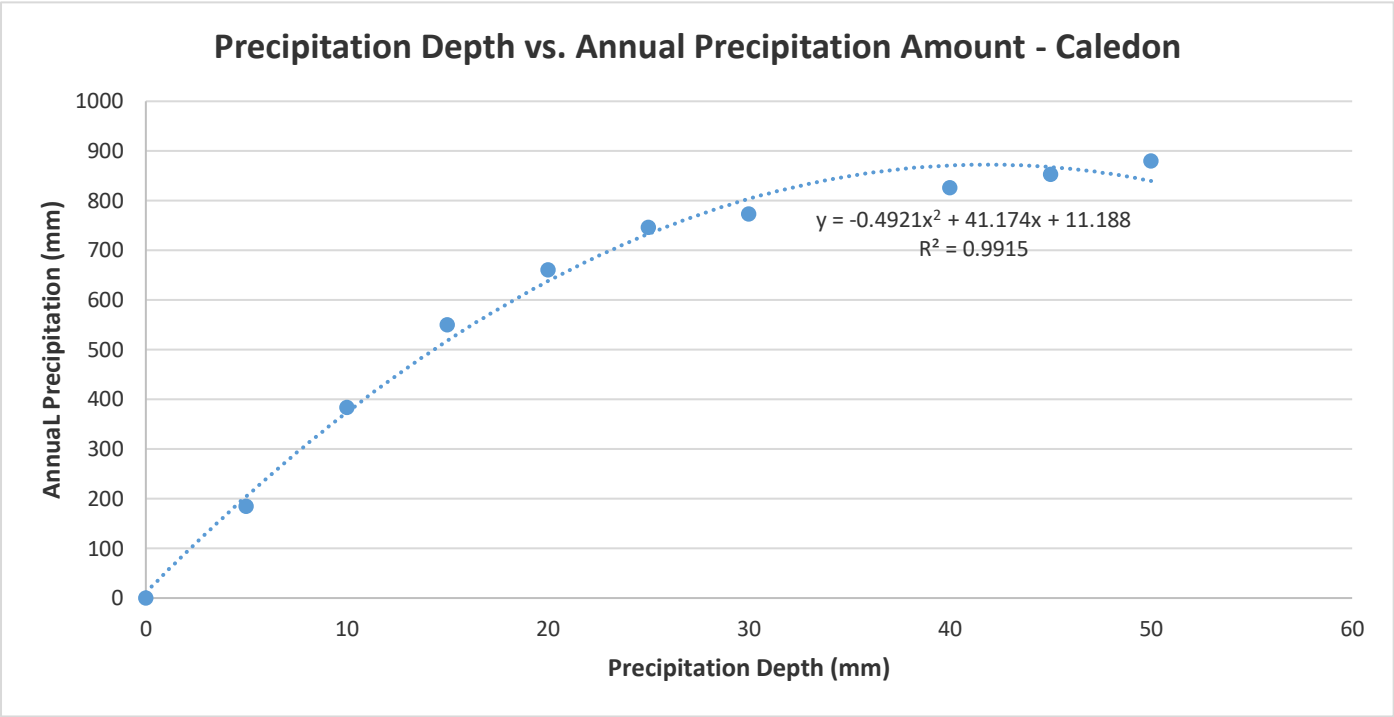
0	0
5	185
10	384
15	550
20	661
25	747
30	774
40	827
45	853
50	880

$y = -0.4921x^2 + 41.174x + 11.188$

rainfall depth

3.18	5.47	20.72	16.6	28.7	17.94
137	222	653	559	788	591

USED ABOVE TABLE FOR RAIN (FEB 2023)



**TABLE 1: WATER BUDGET - PRE DEVELOPMENT
WATER BALANCE/WATER BUDGET ASSESSMENT**

Catchment Designation	Site	
	Landscape	Total
Area (m ²)	406800	406800
Pervious Area (m ²)	406800	406800
Impervious Area (m ²)	0	0
Infiltration Factors		
Topography Infiltration Factor (Slight Slopes)	0.20	
Soil Infiltration Factor (Clay)	0.10	
Land Cover Infiltration Factor (Cultivated Land)	0.10	
MOE Infiltration Factor	0.4	
Inputs (per unit area)		
Precipitation (mm/year)*	860	860
Total Inputs (mm/year)	860	860
Outputs (per unit area)		
Precipitation Surplus (mm/year)	289	289
Net Surplus (mm/year)	289	289
Downspout Disconnection Retention	0	0
Evapotranpiration (mm/year)*	571	571
Roof Evapotranspiration (mm/year)	0	0
Rooftop Runoff Lawn Evaporation (mm/year)	0	0
Total Evapotranspiration (mm/yr)	571	571
Infiltration (mm/year)	116	116
Rooftop Infiltration (mm/year)	0	0
Total Infiltration (mm/year)	116	116
Runoff Pervious Area (mm/year)	173	173
Runoff Impervious Area (mm/year)	0	0
Total Runoff (mm/year)	173	173
Total Outputs (mm/year)	860	860
Difference (Inputs - Outputs)	0	0
Input Volumes		
Precipitation (m ³ /year)	349848	349848
Total Inputs (m ³ /year)	349848	349848
Outputs (Volumes)		
Precipitation Surplus (m ³ /year)	117565	117565
Net Surplus (m ³ /year)	117565	117565
Downspout Disconnection Retention* (m ³ /year)	0	0
Evapotranpiration (m ³ /year)	232283	232283
Roof Evapotranspiration (m ³ /year)	0	0
Rooftop Runoff Lawn Evaporation (m ³ /year)	0	0
Total Evapotranspiration (m ³ /year)	232283	232283
Infiltration (m ³ /year)	47026	47026
Rooftop Infiltration (m ³ /year)	0	0
Total Infiltration (m ³ /year)	47026	47026
Runoff Pervious Area (m ³ /year)	70539	70539
Runoff Impervious Area (m ³ /year)	0	0
Total Runoff (m ³ /year)	70539	70539
Total Outputs (m ³ /year)	349848	349848
Difference (Inputs - Outputs)	0	0

TABLE 2: WATER BUDGET - POST-DEVELOPMENT WITHOUT MITIGATION
WATER BALANCE/WATER BUDGET ASSESSMENT

Catchment Designation	Site											Total
	SD Units Pervious (36%)	SD Units Impervious (64%)	TH Pervious (21%)	TH Impervious (79%)	ROW Pervious (21%)	ROW Impervious (79%)	Elementary School Pervious (21%)	Elementary School Impervious (79%)	SWM Block Pervious (57%)	SWM Block Impervious (43%)	Parks/NHS/Open Space Pervious (100%)	
Area (m²)	21942	39008	17516	65894	17680	66510	1579	5941	31988	24132	114610	406800
Pervious Area (m²)	21942	0	17516	0	17680	0	1579	0	31988	0	114610	205316
Impervious Area (m²)	0	39008	0	65894	0	66510	0	5941	0	24132	0	201484
Infiltration Factors												
Topography Infiltration Factor	0.20	N/A	0.20	N/A	0.20	N/A	0.2	N/A	0.20	N/A	0.20	
Soil Infiltration Factor	0.10	N/A	0.10	N/A	0.10	N/A	0.1	N/A	0.10	N/A	0.10	
Land Cover Infiltration Factor	0.10	N/A	0.10	N/A	0.10	N/A	0.1	N/A	0.10	N/A	0.10	
MOE Infiltration Factor	0.4	N/A	0.4	N/A	0.4	N/A	0.4	N/A	0.4	N/A	0.4	
Inputs (per unit area)												
Precipitation (mm/year)	860	860	860	860	860	860	860	860	860	860	860	860
Total Inputs (m³/year)	860	860	860	860	860	860	860	860	860	860	860	860
Outputs (per unit area)												
Precipitation Surplus (mm/year) ¹	289	774	289	774	289	774	289	774	289	774	289	529
Net Surplus (mm/year)	289	774	289	774	289	774	289	774	289	774	289	529
Downspout Disconnection Retention ²	0	0	0	0	0	0	0	0	0	0	0	0
Evapotranpiration (mm/year)	571	86	571	86	571	86	571	86	571	86	571	331
Roof Evapotranspiration (mm/year) ²	0	0	0	0	0	0	0	0	0	0	0	0
Rooftop Runoff Lawn Evaporation (mm/year)	0	0	0	0	0	0	0	0	0	0	0	0
Total Evapotranspiration (mm/yr)	571	86	571	86	571	86	571	86	571	86	571	331
Infiltration (mm/year)	116	0	116	0	116	0	116	0	116	0	116	58
Rooftop Infiltration (mm/year) ²	0	0	0	0	0	0	0	0	0	0	0	0
Total Infiltration (mm/year)	116	0	116	0	116	0	116	0	116	0	116	58
Runoff Pervious Area (mm/year)	173	0	173	0	173	0	173	0	173	0	173	88
Runoff Impervious Area (mm/year)	0	774	0	774	0	774	0	774	0	774	0	383
Total Runoff (mm/year)	173	774	173	774	173	774	173	774	173	774	173	471
Total Outputs (mm/year)	860	860	860	860	860	860	860	860	860	860	860	860
Difference (Inputs - Outputs)	0	0	0	0	0	0	0	0	0	0	0	0
Input Volumes												
Precipitation (m³/year)	18870	33547	15064	56669	15205	57199	1358	5109	27510	20753	98565	349848
Total Inputs (m³/year)	18870	33547	15064	56669	15205	57199	1358	5109	27510	20753	98565	349848
Outputs (Volumes)												
Precipitation Surplus (m³/year)	6341	30192	5062	51002	5109	51479	456	4598	9245	18678	33122	215285
Net Surplus (m³/year)	6341	30192	5062	51002	5109	51479	456	4598	9245	18678	33122	215285
Downspout Disconnection Retention ² (m³/year)	0	0	0	0	0	0	0	0	0	0	0	0
Evapotranspiration (m³/year)	12529	3355	10002	5667	10095	5720	902	511	18265	2075	65442	134563
Roof Evapotranspiration (m³/year)	0	0	0	0	0	0	0	0	0	0	0	0
Rooftop Runoff Lawn Evaporation (m³/year)	0	0	0	0	0	0	0	0	0	0	0	0
Total Evapotranspiration (m³/year)	12529	3355	10002	5667	10095	5720	902	511	18265	2075	65442	134563
Infiltration (m³/year)	2536	0	2025	0	2044	0	183	0	3698	0	13249	23734
Rooftop Infiltration (m³/year)	0	0	0	0	0	0	0	0	0	0	0	0
Total Infiltration (m³/year)	2536	0	2025	0	2044	0	183	0	3698	0	13249	23734
Runoff Pervious Area (m³/year)	3805	0	3037	0	3066	0	274	0	5547	0	19873	35602
Runoff Impervious Area (m³/year)	0	30192	0	51002	0	51479	0	4598	0	18678	0	155949
Total Runoff (m³/year)	3805	30192	3037	51002	3066	51479	274	4598	5547	18678	19873	191551
Total Outputs (m³/year)	18870	33547	15064	56669	15205	57199	1358	5109	27510	20753	98565	349848
Difference (Inputs - Outputs)	0	0	0	0	0	0	0	0	0	0	0	0

1 - Assumes 10% Evaporation from Impervious Surfaces

TABLE 3: WATER BUDGET - POST-DEVELOPMENT WITH MITIGATION
WATER BALANCE/WATER BUDGET ASSESSMENT

Catchment Designation	Site											Total
	SD Units Pervious (36%)	SD Units Impervious (64%)	TH Pervious (21%)	TH Impervious (79%)	ROW Pervious (21%)	ROW Impervious (79%)	Elementary School Pervious (21%)	Elementary School Impervious (79%)	SWM Block Pervious (57%)	SWM Block Impervious (43%)	Parks/NHS/Open Space Pervious (100%)	
Area (m²)	21942	39008	17516	65894	17680	66510	1579	5941	31988	24132	114610	406800
Pervious Area (m²)	21942	0	17516	0	17680	0	1579	0	31988	0	114610	205316
Impervious Area (m²)	0	39008	0	65894	0	66510	0	5941	0	24132	0	201484
Infiltration Factors												
Topography Infiltration Factor	0.20	N/A	0.20	N/A	0.20	N/A	0.2	N/A	0.20	N/A	0.20	
Soil Infiltration Factor	0.10	N/A	0.10	N/A	0.10	N/A	0.1	N/A	0.10	N/A	0.10	
Land Cover Infiltration Factor	0.10	N/A	0.10	N/A	0.10	N/A	0.1	N/A	0.10	N/A	0.10	
MOE Infiltration Factor	0.4	N/A	0.4	N/A	0.4	N/A	0.4	N/A	0.4	N/A	0.4	
Inputs (per unit area)												
Precipitation (mm/year)	860	860	860	860	860	860	860	860	860	860	860	860
Total Inputs (m³/year)	860	860	860	860	860	860	860	860	860	860	860	860
Outputs (per unit area)												
Precipitation Surplus (mm/year) ¹	289	774	289	774	289	774	289	774	289	774	289	529
Net Surplus (mm/year)	289	774	289	774	289	774	289	774	289	774	289	529
Downspout Disconnection Retention ²	0	0	0	0	0	0	0	0	0	0	0	0
Evapotranpiration (mm/year)	571	86	571	86	571	86	571	86	571	86	571	331
Roof Evapotranspiration (mm/year) ²	0	0	0	0	0	0	0	0	0	0	0	0
Rooftop Runoff Lawn Evaporation (mm/year)	0	0	0	0	0	0	0	0	0	0	0	0
Total Evapotranspiration (mm/yr)	571	86	571	86	571	86	571	86	571	86	571	331
Infiltration (mm/year)	116	0	116	0	116	0	116	0	116	0	116	58
Rooftop Infiltration (mm/year) ²	0	0	0	0	0	0	0	0	0	0	0	0
LID Infiltration (mm/year)	80	100	80	107	96	150	0	0	0	0	0	63
Total Infiltration (mm/year)	196	100	196	107	212	150	116	0	116	0	116	122
Runoff Pervious Area (mm/year)	93	0	93	0	78	0	173	0	173	0	173	76
Runoff Impervious Area (mm/year)	0	674	0	667	0	624	0	774	0	774	0	332
Total Runoff (mm/year)	93	674	93	667	78	624	173	774	173	774	173	407
Total Outputs (mm/year)	860	860	860	860	860	860	860	860	860	860	860	860
Difference (Inputs - Outputs)	0	0	0	0	0	0	0	0	0	0	0	0
Input Volumes												
Precipitation (m³/year)	18870	33547	15064	56669	15205	57199	1358	5109	27510	20753	98565	349848
Total Inputs (m³/year)	18870	33547	15064	56669	15205	57199	1358	5109	27510	20753	98565	349848
Outputs (Volumes)												
Precipitation Surplus (m³/year)	6341	30192	5062	51002	5109	51479	456	4598	9245	18678	33122	215285
Net Surplus (m³/year)	6341	30192	5062	51002	5109	51479	456	4598	9245	18678	33122	215285
Downspout Disconnection Retention ² (m³/year)	0	0	0	0	0	0	0	0	0	0	0	0
Evapotranspiration (m³/year)	12529	3355	10002	5667	10095	5720	902	511	18265	2075	65442	134563
Roof Evapotranspiration (m³/year)	0	0	0	0	0	0	0	0	0	0	0	0
Rooftop Runoff Lawn Evaporation (m³/year)	0	0	0	0	0	0	0	0	0	0	0	0
Total Evapotranspiration (m³/year)	12529	3355	10002	5667	10095	5720	902	511	18265	2075	65442	134563
Infiltration (m³/year)	2536	0	2025	0	2044	0	183	0	3698	0	13249	23734
Rooftop Infiltration (m³/year)	0	0	0	0	0	0	0	0	0	0	0	0
LID Infiltration (m³/year)	1755	3901	1401	7070	1696	9977	0	0	0	0	0	25799
Total Infiltration (m³/year)	4292	3901	3426	7070	3739	9977	183	0	3698	0	13249	49534
Runoff Pervious Area (m³/year)	2049	0	1636	0	1370	0	274	0	5547	0	19873	30750
Runoff Impervious Area (m³/year)	0	26291	0	43932	0	41502	0	4598	0	18678	0	135002
Total Runoff (m³/year)	2049	26291	1636	43932	1370	41502	274	4598	5547	18678	19873	165751
Total Outputs (m³/year)	18870	33547	15064	56669	15205	57199	1358	5109	27510	20753	98565	349848
Difference (Inputs - Outputs)	0	0	0	0	0	0	0	0	0	0	0	0

1 - Assumes 10% Evaporation from Impervious Surfaces

Water Balance Mitigation Calculations

Pre Development Infiltration =	47,026 m ³ /y
Post Development Infiltration without Mitigation =	23,734 m ³ /y
Post to Pre Deficit =	23,292 m ³ /y
Mitigation Measures	
Exfiltration System =	23,300 m ³ /y
Mitigation Volume Provided =	23,300 m ³ /y

In order to meet the annual pre-development infiltration deficit, the runoff from the site directed to the infiltration trenches shall be equal to the annual deficit volume. Therefore,

Impervious Area to Exfiltration System =				
12.00 ha x Annual Precipitation Depth =	19,000	m ³ /year		
Required Annual Precipitation Depth to meet deficit =	158	mm/yr		
Based on this analysis, it is concluded that precipitation events of depth less than or equal to			4.3 mm	519.6 m ³ /event
will produce an annual amount of precipitation equal to	158	mm/yr		
Pervious Area to Exfiltration System =				
3.00 ha x Annual Precipitation Depth =	4,300	m ³ /year		
Required Annual Precipitation Depth to meet deficit =	143	mm/yr		
Based on this analysis, it is concluded that precipitation events of depth less than or equal to			3.9 mm	117.6 m ³ /event
will produce an annual amount of precipitation equal to	143	mm/yr		
				637.2

The analysis was performed on daily precipitation data collected from Pearson rain gauge from 1990 to 2012 by Environment Canada. The data was then arranged into four categories for each year: Total Annual Depth of Precipitation from events less than or equal to 5mm, 10mm, 15mm and 20mm. This yearly data was then used to determine an average annual precipitation depth.

Exfiltration - Perforated Pipes

Proposed Exfiltration Trench Details

Length=	1075	m
Width=	1.50	m
Trench Depth	1.00	m
Porosity=	0.40	
Volume of Trench =	1612.50	m ³
Volume of Clear Stone =	1612.50	m ³
Water in Clear Stone =	645.00	m ³

Proposed Trench Drawdown Time

Soil Infiltration Rate=	15.00	mm/hr
Safety Factor=	2.50	
Design Infiltration Rate=	6.00	mm/hr
Target Drawdown time=	72	hr
Maximum Storage Depth=	1.08	m
Total =	645.00	m ³

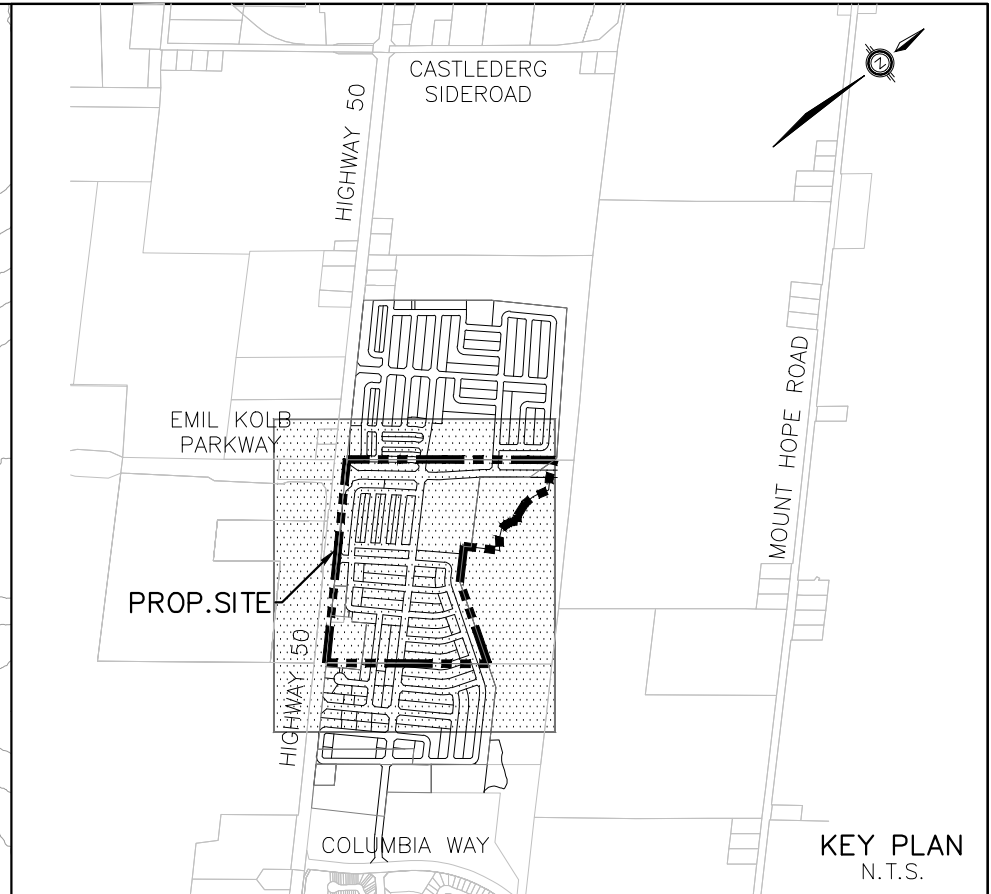
* Soils with Saturated Hydraulic Conductivity = $1(10^{-6})$ cm/s correlates to an infiltration rate of 15mm/h
 Low Impact Development Design Manual (TRCA and CVC, 2010)

PROJECT No.: 5635
PROJECT: Oakbank Estates
LOCATION: Caledon (Bolton North)



APPENDIX E

ENGINEERING DRAWINGS

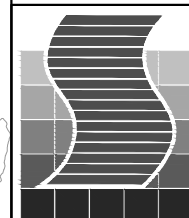


- LEGEND**
- DENOTES PROPOSED STORM MANHOLE
 - DENOTES PROPOSED SANITARY MANHOLE
 - DENOTES PROPOSED FOUNDATION DRAIN COLLECTOR MANHOLE
 - DENOTES PROPOSED STORM SEWER
 - DENOTES PROPOSED SANITARY SEWER
 - DENOTES PROPOSED FOUNDATION DRAIN COLLECTOR SEWER
 - DENOTES PROPOSED WATERMAIN
 - DENOTES PROPOSED INFILTRATION TRENCH
 - 246 DENOTES EXISTING CONTOUR AND ELEVATION
 - 240 DENOTES GROUNDWATER
 - DENOTES WETLAND SETBACK
 - DENOTES PROPERTY LIMIT
 - DENOTES OVERLAND FLOW ROUTE
 - DENOTES EMERGENCY OVERLAND FLOW ROUTE
 - x 269.09 DENOTES EXISTING ELEVATION
 - x 278.60 DENOTES PROPOSED ELEVATION
 - 3.00% DENOTES PROPOSED SLOPE
 - ▲ DENOTES PROPOSED HIGH POINT
 - ▼ DENOTES PROPOSED LOW POINT
 - DENOTES SANITARY SEWER OBVERT
 - DENOTES STORM SEWER OBVERT
 - DENOTES FOUNDATION DRAIN COLLECTOR OBVERT
 - 0.21HA DENOTES DRAINAGE AREA TO WETLAND (INCLUDES ROOF AREA AND BACKYARD)
 - 3:1 DENOTES 3:1 SLOPE

NO.	DATE	ISSUED FOR

BENCH MARK:
ELEVATIONS ARE GEODETIC AND ARE REFERRED TO ONTARIO
MINISTRY OF NATURAL RESOURCES AND FORESTRY CONTROL
No. 00819758060 HAVING A PUBLISHED ELEVATION OF
269.667 METRES (CGVD28:78).

FUNCTIONAL SERVICING REPORT AND DESIGN FOR
OAKBANK ESTATES SUBDIVISION



SCHAEFFERS
CONSULTING ENGINEERS

SCHAEFFER & ASSOCIATES LTD.

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Ontario L4K 4R3
Tel: (905) 738-6100
Fax: (905) 738-6875
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design@schaeffers.com



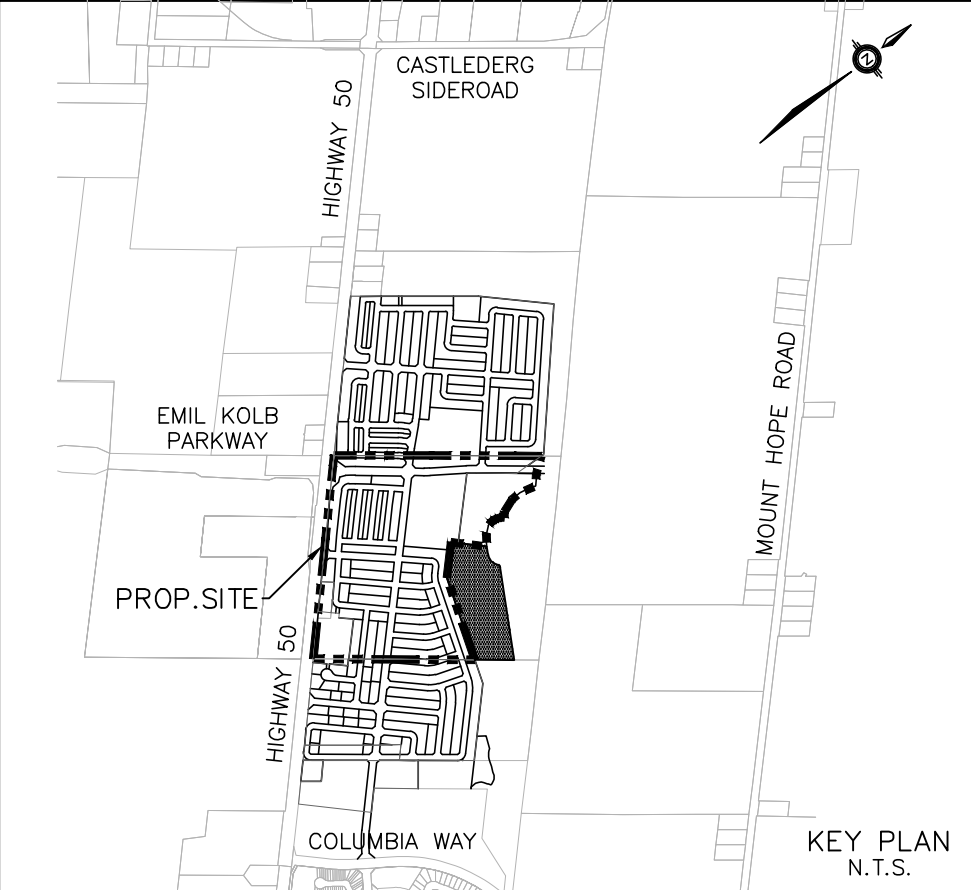
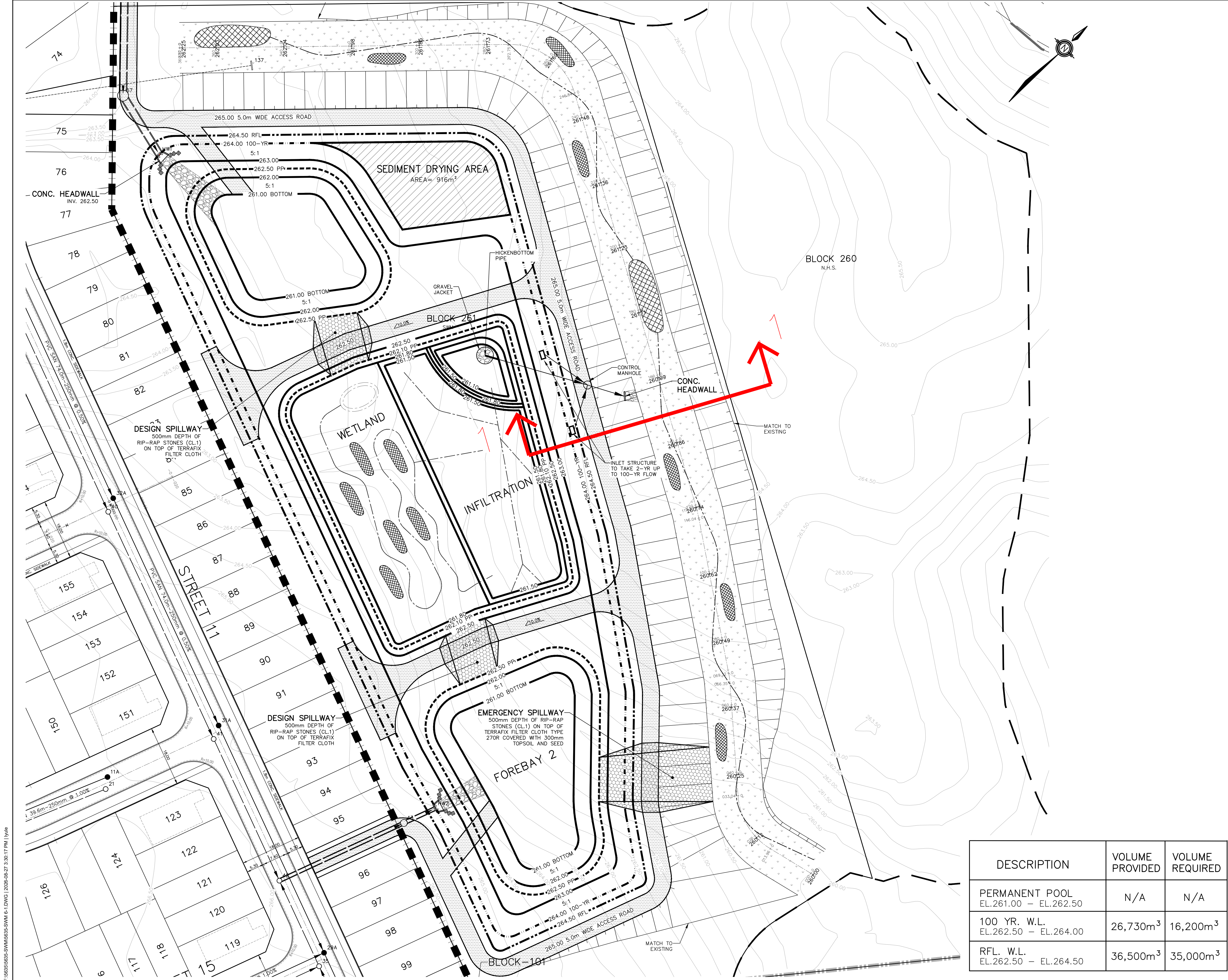
Region of Peel
Working for you



TOWN OF CALEDON

PRELIMINARY GRADING
AND SERVICING PLAN

SCALE: 1:1500	PROJECT No. 2026-5635
DESIGNED BY: L.D.Y.	DRAWN BY: M.P.
CHECKED BY: C.Z.	DATE: MAY 2026
	DRAWING No. GR-SS-1



- NOTES**
1. THE LOCATION OF ALL UNDERGROUND AND ABOVE GROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON CONTRACT DRAWINGS, AND WHERE SHOWN THE ACCURACY OF THE LOCATION AND ELEVATION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. PRIOR TO COMMENCING CONSTRUCTION, THE CONTRACTOR SHALL VERIFY EXACT LOCATION AND ELEVATION OF SUCH UTILITIES AND STRUCTURES AND SHALL ASSUME ALL LIABILITIES OF DAMAGE.
 2. ALL AREAS DISTURBED DURING CONSTRUCTION OF SEWERS AND WATERMAINS TO BE RESTORED TO ORIGINAL CONDITION OR BETTER, TO THE SATISFACTION OF THE TOWN OF CALEDON.
 3. SUMP PUMP TO BE PROVIDED FOR FOUNDATION DRAIN.
- LEGEND**
- 5.0m WIDE MAINTENANCE ACCESS ROAD
 - 300mm DEPTH OF 50mm CRUSHER-RUN LIMESTONE
 - RIP-RAP STONE WASHED IN WITH TOPSOIL AND SEEDED, PLACED ON TOP OF 270R TERRAFIX FILTER CLOTH OR APPROVED EQUAL
 - RIP-RAP STONE (150mm MIN.) ON TOP OF 270R TERRAFIX FILTER CLOTH OR APPROVED EQUAL
 - FILTER BED AREA
 - SEDIMENT DRYING AREA
 - FILTER BED AREA
 - 150mm DEPTH OF LEAN CONCRETE (5-10MPa) ON TOP OF 200mm OF 20mm LEVELING COURSE RUN LIMESTONE
 - EL. 252.92 DENOTES PROPOSED GRADE
 - x260.50 DENOTES PROPOSED ROAD GRADE
 - 210.0 DENOTES EXISTING GROUND CONTOUR LINE
 - 1.1 DENOTES PROP. SWM POND BOTTOM
 - 1.1 DENOTES NORMAL WATER LEVEL (PERMANENT POOL)
 - 1.1 DENOTES 100 YR. W.L. CONTOUR LINE

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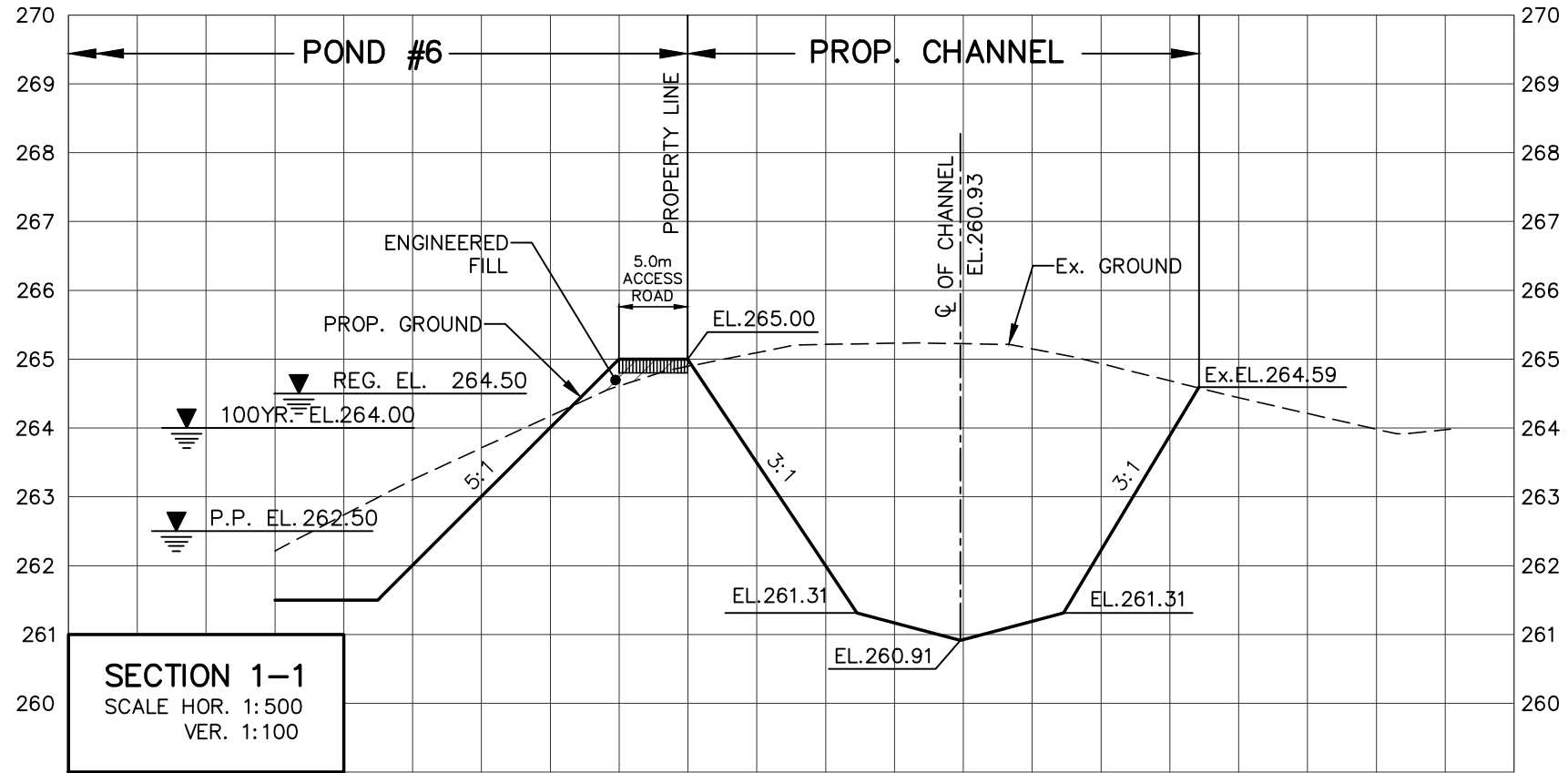


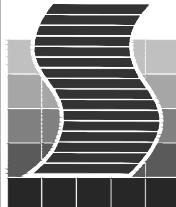
TOWN OF CALEDON

STORMWATER
MANAGEMENT POND 6

SCALE: 1:500	PROJECT No. 2026-5635
DESIGNED BY: A.C.	DRAWN BY: V.B.
CHECKED BY: N.L.	DATE: MAY 2026
DRAWING No. SWM-1	

DESCRIPTION	VOLUME PROVIDED	VOLUME REQUIRED
PERMANENT POOL EL.261.00 - EL.262.50	N/A	N/A
100 YR. W.L. EL.262.50 - EL.264.00	26,730m ³	16,200m ³
RFL. W.L. EL.262.50 - EL.264.50	36,500m ³	35,000m ³



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FUNCTIONAL SERVICING REPORT AND DESIGN FOR OAKBANK ESTATES SUBDIVISION		
 SCHAEFFERS CONSULTING ENGINEERS SCHAEFFER & ASSOCIATES LTD. 6 Ronrose Drive, Concord, Ontario L4K 4R3 Tel: (905) 738-6100 Fax: (905) 738-6875 E-mail: design@schaeffers.com		
 Region of Peel <i>Working for you</i>		
 TOWN OF CALEDON		
STORMWATER MANAGEMENT SECTIONS		
SCALE: HOR. 1:500 VER. 1:100		PROJECT No. 2026-5635
DESIGNED BY: A.C.	DRAWN BY: V.B.	DRAWING No. SEC-1
CHECKED BY: N.L.	DATE: MAY 2026	