

STORMWATER MANAGEMENT REPORT

Milton Link, Town of Milton

Project #: 24-0647

Prepared for: Tribal Development Management Services Inc.

Date: June 17, 2026

Report Version: 01



June 17, 2026

Tribal Development Management Services Inc.
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Toronto, Ontario L4K 3C8

Attention: Michelle Lamothe, Director of Construction

SUBJECT: STORMWATER MANAGEMENT REPORT, MILTON LINK, TOWN OF MILTON

EnVision Consultants Ltd. is pleased to present the enclosed Stormwater Management Report for the above-noted development. This report provides the conceptual framework for a stormwater management strategy to achieve the applicable quality control, extended detention, peak flow control and water balance requirements for all phases of the development.

We thank you for utilizing EnVision for this assignment. If there are any questions regarding the enclosed report, please do not hesitate to contact us.

Yours sincerely,

Steve Hollingworth, P.Eng.
Principal Water Resources Engineer
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QUALITY MANAGEMENT

ISSUE	FIRST ISSUE	REVISION 1	REVISION 2
PROJECT NUMBER	24-0647		
PROJECT REFERENCE	Stormwater Management Report, Milton Link, Town of Milton		
VERSION NO.	01		
REMARKS	DRAFT		
PREPARED BY	Steve Hollingworth, P.Eng.		
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REVIEWED BY	Alex Williams, P.Eng.		
SIGNATURE			
DATE	June 17, 2026		

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1. EXECUTIVE SUMMARY

EnVision Consultants Ltd. (EnVision) was retained by Tribal Development Management Services Inc. (the 'Client') to conduct a functional servicing assessment in support of an Official Plan Amendment (OPA) and Zoning By-Law Amendment (ZBA) application for the Milton Link, Town of Milton (the 'Site').

The Site is located south of Britannia Road West, east of Tremaine Road, west of Bronte Road (Regional Road 25) and north of Burnhamthorpe Road in the Town of Milton. The Site has a gross area of approximately 240 ha and primarily consists of vacant agricultural land and a few agricultural and single family residential buildings. The project proposes four (4) development phases consisting of 11 industrial warehouse buildings with associated driveways, parking and landscape areas.

Based on the stormwater management investigation, EnVision presents the following findings.

- The majority of the site lies within the Indian Creek watershed, with the eastern portion of the Phase 1 development area draining to Sixteen Mile Creek and insignificant portions of the Phase 3 and Phase 4 development areas within the Fourteen Mile Creek watershed.
- Unitary release rates and storage volumes for extended detention and peak flow control were established for Indian Creek and Sixteen Mile Creek through previous watershed modelling for development of the Boyne Survey neighbourhood on the north side of Britannia Road. Analyses have been completed to demonstrate that the unit rate approach results in much lower release rates relative a traditional approach of providing extended detention of the runoff from a 25 mm storm event and controlling post-development peak flow rates to pre-development levels for the 2 year through 100 year and Regional storm events. The more conservative unit rate approach has been adopted for the design of the stormwater management facilities for the Site.
- Wet detention ponds are proposed to treat the runoff from the majority of the Site. The facilities have been sized to achieve Enhanced water quality protection and meet or exceed the storage requirements established through the unit rate approach. Additional analyses will be completed during future stages of design to validate or refine this approach with the aid of the Town of Milton's watershed hydrology models.
- Low impact development practices, including but not limited to bioretention facilities and infiltration galleries, are proposed to provide water quality and quantity treatment for small, isolated areas not tributary to the stormwater management ponds, and to maintain pre-development recharge volumes across the Site. These practices are needed for areas draining to the retained woodlots and wetlands to preserve their hydrologic function, and for areas draining to smaller outlets from the Site to maintain drainage to the downstream watercourses.
- Improvements are required for the drainage systems south of the Phase 2 lands and west of the Phase 3 lands to adequately and safely convey treated runoff from the Site to the defined reaches of Indian Creek. Additional consultation with CN and Halton Region will be required to establish the preferred form and alignment of the downstream systems.
- Guidance has been provided for Erosion and Sediment Control Plan, which will be prepared for each phase of development during future stages of design.



2. INTRODUCTION

EnVision Consultants Ltd. (EnVision) was retained by Tribal Development Management Services Inc. (the 'Client') to develop a stormwater management plan for the Milton Link, Town of Milton (the 'Site') located in the Town of Milton, Ontario. It is our understanding that this assessment has been requested in support of an Official Plan Amendment (OPA) application and Zoning By-law Amendment (ZBA) application for the property.

2.1. SITE DESCRIPTION

The CN Rail Intermodal Lands - Milton project is located south of Britannia Road West, east of Tremaine Road, west of Bronte Road (Regional Road 25) and north of Burnhamthorpe Road in the Town of Milton. The project is comprised of four (4) phases with a gross area of approximately 239 ha. Under existing conditions, the development primarily consists of undeveloped agricultural lands with associated farmhouses and agricultural buildings as well as a few residential buildings. Tributaries of Sixteen Mile Creek and Indian Creek (Bronte Creek watershed) also run through portions of the development. Refer to **Figure 1** for the Site Location Plan, and refer to **Figure 2** for the proposed development concept. A more detailed version of the Concept Plan is included in **Appendix A**.

2.2. OBJECTIVES, SCOPE AND BACKGROUND MATERIALS

2.2.1. OBJECTIVES

The objectives of the Stormwater Management Report are to:

- Establish the applicable criteria for stormwater management quality control, extended detention, quantity control and water balance.
- Develop a stormwater management strategy for the development
- Establish the preliminary sizes and configurations for the SWM facilities needed to achieve the applicable criteria

2.2.2. BACKGROUND MATERIALS

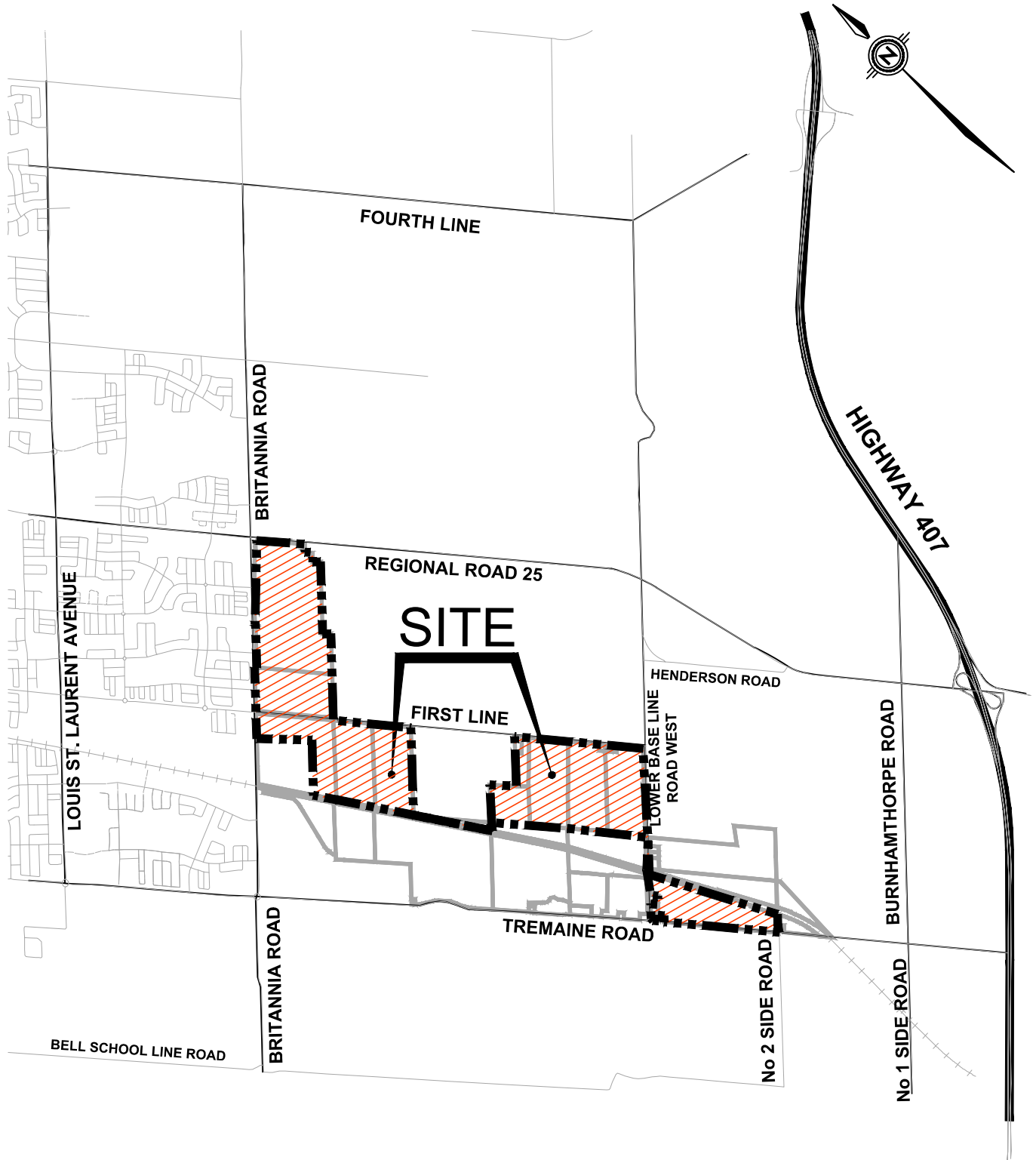
In preparing this report, EnVision used the following information to evaluate the servicing and grading for the Site:

- Topographic and legal survey prepared by JD Barnes received on April 22, 2024;
- Conceptual Plan provided by Tribal Development Management Services Inc. received March 27, 2026;
- Town of Milton Engineering and Parks Standards Manual dated September 2024;
- Conservation Halton Guidelines for Stormwater Management Submissions dated June 2024;
- Final Stormwater Management Design Report, CN Milton Logistics Hub prepared by AECOM dated November 2021;



-
- Boyne Neighbourhood Functional Stormwater and Environmental Management Strategy prepared by AMEC Environment & Infrastructure dated November 2015;
 - Subwatershed Impact Study – Block 1, Town of Milton, Boyne Survey, Milton Phase 3 (The Municipal Infrastructure Group, June 2019 Addendum);
 - Subwatershed Impact Study – Block 2, Boyne Survey Secondary Plan (MTE, August 2016).

FILENAME: C:\Users\AndreRocha\Documents\Envision - LD\Project Files\24-0647 CN Rail Milton\Mun\ZBA\Figures\24-0647_Fig-1.dwg
PLOTDATE: Jun 05, 2026 - 11:40am, AndreRocha



CLIENT

TRIBAL DEVELOPMENT MANAGEMENT SERVICES INC.

TITLE

MILTON LINK

LOCATION PLAN



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Scale	NTS	Figure No.	1



LEGEND



LIMIT OF PROPERTY

CLIENT
TRIBAL DEVELOPMENT MANAGEMENT SERVICES INC.

TITLE
MILTON LINK

PROPOSED DEVELOPMENT PLAN



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3. EXISTING CONDITIONS

3.1. LAND USE

Land use through the Site is predominantly agricultural, typically used for crops with some pasture lands. The Site also includes hedgerows and isolated woodlots.

Surrounding land uses include residential on the north side of Britannia Road, some of which is occupied and the remainder is in the construction or planning stages of development. The Halton Waste Management Site is located on the east side of First Line, south of Britannia Road, and the remaining lands to the east, west and south are predominantly used for agriculture.

3.2. TOPOGRAPHY AND DRAINAGE

Overall, grades through the Site are relatively flat. The lands in the north-eastern portions of the site (generally east of First Line) generally drain towards two tributaries of 16 Mile Creek that continue south and west beyond the Site's southern boundary.

The remainder of the Site east of the CN rail corridor generally drains south and west towards one of several culverts under the recently realigned CN tracks. Drainage continues generally west from the CN corridor towards Indian Creek. The portion of the Site south of Lower Base Line, west of the CN rail corridor generally drains northward to a tributary of Indian Creek, which crosses under Tremaine Road via a culvert immediately south of Lower Base Line.

Figure 3 through **Figure 6** illustrate the existing drainage conditions for each Phase, and more information on the existing drainage conditions for each of the phases is provided in **Section 5**.

3.3. SOILS AND GROUNDWATER

Information on soils and groundwater conditions through the Site was taken from a set of hydrogeological reports by EXP Services Inc dated December 2025. One report was prepared for each of the four phased development areas, and they are included with this submission under separate cover.

Throughout the Site, there is a layer of reworked till below the topsoil, extending to a depth of approximately 0.7 m or less. The reworked till lies above a clayey silt to silty clay till that extends to the bottom of all boreholes (5 m to 8 m deep) across the Site, with occasional seams of silty sand to sandy soil. The clayey till is brown, changing to grey at depths, and the consistency is very stiff to hard.

A number of monitoring wells and piezometers were installed across the site and groundwater levels were monitored from the summer of 2024 through to the fall of 2025. Groundwater levels are highly variable across the site, ranging from 0.15 m below ground to nearly 6 m below ground. However, groundwater levels are 1 m or less across the majority of the Site.

The direction of groundwater flow is generally towards the larger watercourses in the area. In the north-east portions of the site east of First Line, groundwater flow is generally eastward toward Sixteen Mile



Creek. For the remaining lands west of First Line, groundwater flow is generally to the south, with areas near and west of the rail corridor flowing westward towards Indian Creek.

A number of Single Well Response Tests (SWRT's) were carried out to estimate the saturated hydraulic conductivity (K-values) of the soils across the site. Higher K-values of up to 2.7×10^{-7} m/s were found in the north-eastern portions of the Site. Through the remainder of the Site, K-values ranged between 1×10^{-7} m/s and 1×10^{-8} m/s.

Finally, infiltration testing was carried out across the Site. The testing was carried at depths of roughly 0.7 below ground to reach the clayey soil below the reworked till. The measured field saturated hydraulic conductivity ranged from 1.6×10^{-8} m/s to 5.2×10^{-8} m/s, corresponding to infiltration rates of 15 mm/hr to 21 mm/hr.

3.4. WATER BALANCE

A Thornthwaite water balance was prepared for each of the four phased development areas. Of the total average annual precipitation depth of 877 mm, approximately 62% is expected to be lost to evapotranspiration, 26% to 35% is expected to leave the Site as surface runoff, and 4% to 12% is expected to be infiltrated. The water balance analyses for the four phased development areas can be found in the hydrogeological reports by EXP Services Inc dated December 2025 and under separate cover.

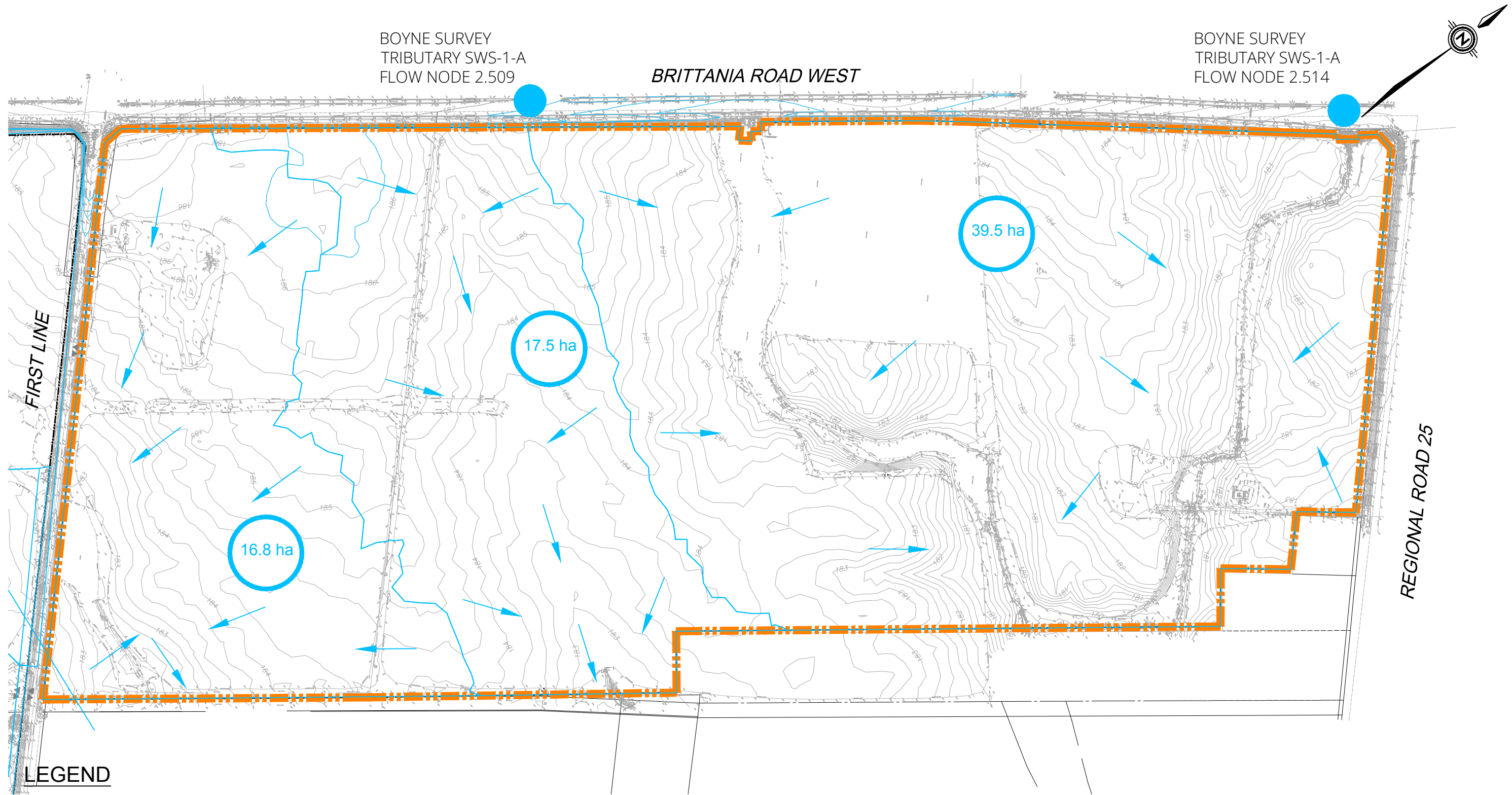
3.5. HYDROLOGY

As noted in Section 3.2, the majority of the Site is located within the Indian Creek sub-watershed of Bronte Creek, with the north-east portion of the Site (east of First Line) located within the Sixteen Mile Creek watershed.

The Town of Milton maintains hydrologic models of these watersheds. The modeling was initially prepared for the Sixteen Mile Creek Subwatershed Study – Areas 2 and 7 (Philips Planning & Engineering Ltd, 2000), and has undergone numerous refinements since as part of the planning process for the Boyne, Derry Green and other communities in the Town of Milton. The models have been created using the HSP-F modelling platform, and simulate a long climate record. Statistical analysis of the model output yields the peak flow estimates for different return periods.

Traditionally, the Town has played a key role in the initial planning stages for new residential communities and employment areas. In this role, the Town has managed the hydrologic modelling of pre-development and post-development conditions and established criteria for peak flow control, streambank erosion mitigation, water quality and groundwater recharge.

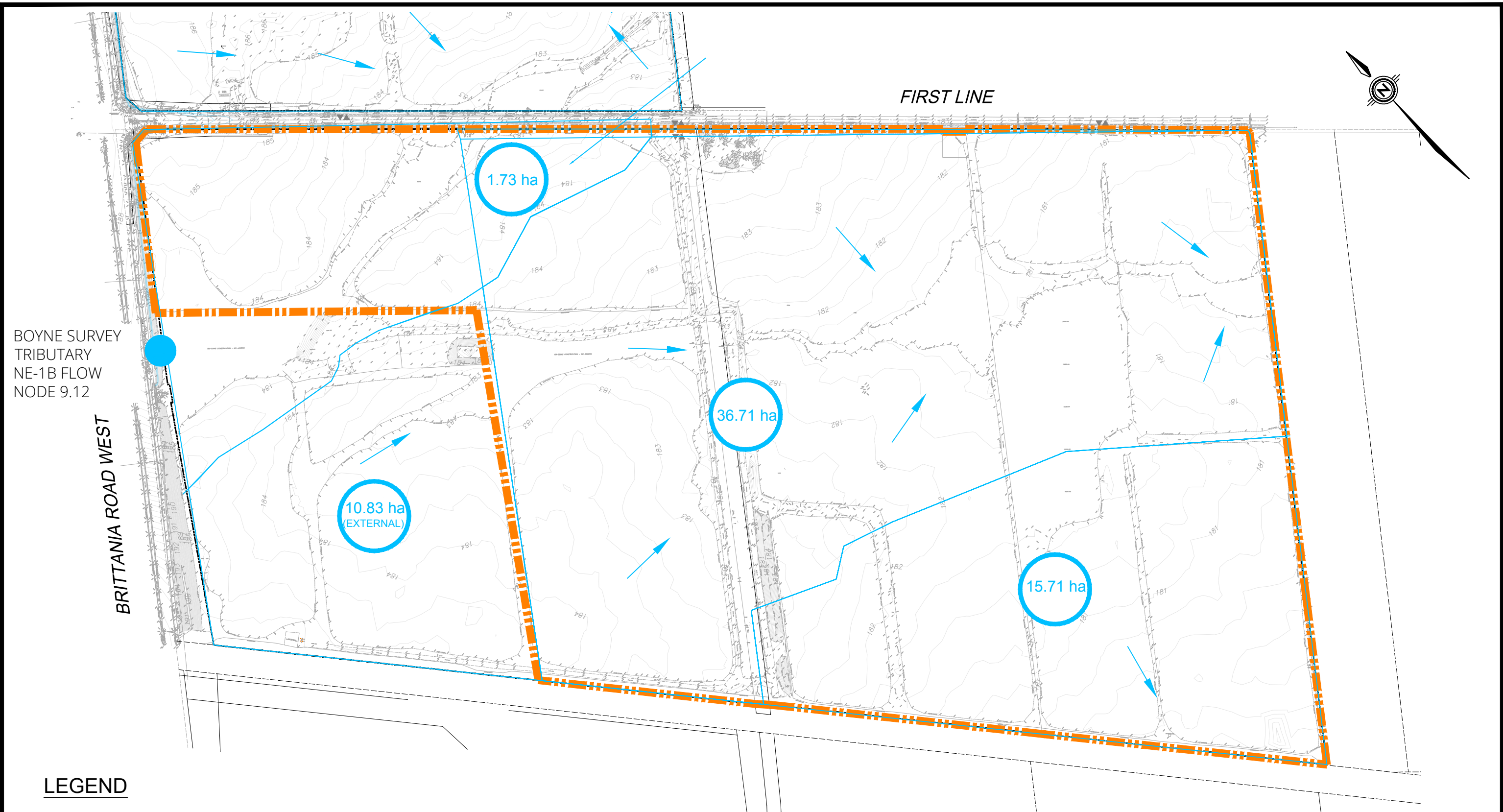
To date, the Town has not been approached to lead the hydrologic modelling for the Site, nor has the Town provided the hydrologic models to allow EnVision to establish pre-development peak flow rates through the Site. An alternative strategy has been developed to determine the storage volumes and release rates needed to mitigate potential downstream impacts on flooding and erosion. This strategy is documented in Section 4.2.



LEGEND

-  LIMIT OF PHASE
-  DRAINAGE AREA (ha)
-  FLOW DIRECTION

CLIENT		TRIBAL DEVELOPMENT MANAGEMENT SERVICES INC.		ENVISION 6415 Northwest Dr. Mississauga, ON Canada L4V 1X1 Office (905) 677-0202 E-mail admin@envisionconsultants.ca	
TITLE		MILTON LINK EXISTING CONDITIONS PHASE 1			
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Date		24-0647		Proj. No. APRIL 2026	
Scale		1: 4000		Figure No. 3	



LEGEND



LIMIT OF PHASE



DRAINAGE AREA (ha)



FLOW DIRECTION

CLIENT

TRIBAL DEVELOPMENT
MANAGEMENT SERVICES INC.

TITLE

MILTON LINK
**EXISTING CONDITIONS
PHASE 2**

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LEGEND



LIMIT OF PHASE



16.8 ha

DRAINAGE AREA (ha)



FLOW DIRECTION

CLIENT

TRIBAL DEVELOPMENT
MANAGEMENT SERVICES INC.

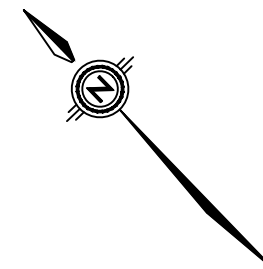
TITLE

MILTON LINK
**EXISTING CONDITIONS
PHASE 3**

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Date	24-0647	Proj. No.	APRIL 2026
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LEGEND



LIMIT OF PHASE



DRAINAGE AREA (ha)



FLOW DIRECTION

CLIENT

TRIBAL DEVELOPMENT
MANAGEMENT SERVICES INC.

TITLE

MILTON LINK
**EXISTING CONDITIONS
PHASE 4**

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4. PROPOSED DEVELOPMENT

Based on the conceptual plans provided by Tribal Development Management Services Inc. dated March 27, 2026, the proposed potential project will consist of four (4) phased developments. The project is proposed to consist of 11 industrial warehouse buildings with associated driveways, parking and landscape areas. Refer to **Table 1** for a summary of the project statistics. Refer to **Figure 2** for an illustration of the Proposed Development Plan.

Table 1 Project Breakdown

PHASE	GROSS AREA (HA)	BUILDING NAME	BUILDING FOOTPRINT (M ²)
PHASE 1	73.9	Building 'A1'	55,164
		Building 'A2'	94,804
		Building 'A3'	94,804
PHASE 2	62.8	Building 'B1'	68,646
		Building 'B2'	67,420
		Building 'B3'	45,764
PHASE 3	77.0	Building 'C1'	71,711
		Building 'C2'	50,667
		Building 'C3'	111,590
		Building 'C4'	78,452
PHASE 4	25.0	Building 'D'	73,090
TOTAL	238.7		812,181

At least one stormwater management facility is proposed for each of the development phases to achieve the applicable stormwater management criteria.

4.1. STORMWATER MANAGEMENT CRITERIA

Stormwater management criteria for the Site are established through by the Town of Milton and Conservation Halton. The relevant criteria applicable to the Site are as follows.

4.1.1. PEAK FLOW CONTROL:

Where a higher level of study such as a Subwatershed Study is not available, post-development peak flow rates are to be controlled to pre-development levels for the 2 year through 100 year return period events. Additional storage may be needed to over-control peak flow rates to mitigate known downstream capacity constraints, but we are not aware of any such constraints downstream of the Site.

The need for Regulatory Storm control is typically determined at a watershed or subwatershed-level of study based on a flood risk assessment. Analyses completed for the Boyne Functional Stormwater and Environmental Management Strategy (FSEMS) concluded that Regional storm controls were warranted



for the developments north of Britannia Road in both the Indian Creek and Sixteen Mile Creek watersheds. It is reasonable to expect that they are also required for the Site south of Britannia Road.

4.1.2. EROSION CONTROL

Where a higher level of study such as a Subwatershed Study is not available and a site-specific study is not warranted, the runoff from a 25 mm storm event is to be detained and released over a period of at least 24 hours. Where warranted, a site-specific study should be undertaken to assess the potential for downstream erosion and establish the critical velocity / flow rate for erosion in the most sensitive downstream reach, and continuous simulation modelling should be used to determine the most appropriate combination of runoff retention and extended detention storage volumes and release rates to prevent a worsening of downstream erosion. Traditionally in the Town of Milton, the continuous hydrologic modelling would be carried out using the Town's HSP-F models (refer to Section 3.5).

4.1.3. WATER QUALITY

Water quality control is required to achieve Enhanced water quality protection (80% TSS removal). Where a higher level of study such as a Subwatershed Study is not available, water quality control is to be achieved through infiltrating or filtering the runoff from the 90th percentile storm event (approx. 27 mm rainfall depth) subject to site specific constraints.

4.1.4. SITE WATER BALANCE

Where a higher level of study such as a Subwatershed Study is not available, pre-development groundwater recharge volumes are to be maintained under post-development conditions.

4.1.5. FEATURE-BASED WATER BALANCE

Where development has the potential to impact a wetland regulated by Conservation Halton, site specific studies are needed to replicate the pre-development hydroperiod of the wetland as closely as possible over a monthly, seasonal, and annual basis. The assessment must consider the pre-development surface drainage and groundwater inputs as well as the ecological form and function of the wetland. More information can be found in the Conservation Halton Guidelines for Wetland Water Balance Assessments (June 2024).

Feature based water balance assessments for the woodlots and wetlands to be retained will be undertaken at future stages of design.

4.2. FLOODING AND EROSION ASSESSMENT

The peak flow and erosion control criteria set out in Section 4.1 generally apply to smaller, isolated sites where a Subwatershed Study or similar high level evaluation of downstream flooding and erosion hazards has not been undertaken and is not warranted.

The FSEMS and subsequent Subwatershed Impact Study (SIS) reports for the Boyne lands on the north side of Britannia carried out the subwatershed scale analyses to establish peak flow and erosion control

criteria for those lands, but did not consider the future development of the lands through the subject Site south of Britannia Road.

Time constraints do not allow for a comprehensive study to update the watershed-scale analyses carried out for the Boyne lands to establish existing and proposed hydrologic conditions through the Site. Instead, site-specific analyses have been carried out to compare the storage and release rates from the standard approach set out in **Section 4.1** against the storage and release rates established in the FSEMS and SIS reports.

Two test catchments were evaluated as part of this exercise, with one in the Sixteen Mile Creek watershed (generally representing the Building A1 site in Phase 1) and the other in the Indian Creek watershed (generally representing the Phase 2 development area). To establish the storage and release rates for the standard approach, a Visual OTTHYMO (VO) hydrologic model was created to represent both existing and proposed conditions. Input parameters for the existing conditions scenario are presented in **Table 2**, and **Table 3** summarizes the input parameters for the proposed conditions scenario.

Based on guidance from Conservation Halton's SWM Guidelines, the models were simulated for the 2 year through 100 year return period events using a 24-hour Chicago Storm Events. For the Regional storm simulation, the Curve Number values were adjusted to reflect saturated soil conditions (AMC III), and only the last 12 hours of the Hurricane Hazel storm were modelled.

Table 2 VO Model Input Parameters – Pre-Development Conditions

MODEL PARAMETER	INDIAN CREEK CATCHMENT	SIXTEEN MILE CREEK CATCHMENT
AREA (HA)	53.6	12.9
CURVE NUMBER (AMC II)	85	85
CURVE NUMBER (AMC III) ¹	94	94
RUNOFF COEFFICIENT	0.25	0.25
INITIAL ABSTRACTION (MM) ²	7.0	7.0
FLOW PATH LENGTH (M)	1071	477
FLOW PATH SLOPE	0.36%	0.98%
TIME OF CONCENTRATION (HR) ³	2.12	1.02
TIME TO PEAK (HR) ⁴	1.42	0.68

¹ CN was adjusted to AMC III (saturated) number for the Regional simulation

² Initial Abstraction derived from Conservation Halton SWM Guidelines Table B-2

³ Calculated using the Airport Method

⁴ $T_p = 0.67T_c$



Table 3 VO Model Input Parameters – Post-Development Conditions

MODEL PARAMETER	INDIAN CREEK CATCHMENT	SIXTEEN MILE CREEK CATCHMENT
AREA (HA)	53.6	12.9
IMPERVIOUS FRACTION	0.90	0.95
PERVIOUS AREA CURVE NUMBER (AMC II)	85	85
PERVIOUS AREA CURVE NUMBER (AMC III)	94	94
PERVIOUS AREA INITIAL ABSTRACTION (MM)	5.0	5.0
PERVIOUS AREA FLOW PATH LENGTH (M) ¹	40	40
PERVIOUS AREA FLOW PATH SLOPE	2.0%	2.0%
IMPERVIOUS AREA INITIAL ABSTRACTION (MM)	1.0	1.0
IMPERVIOUS AREA FLOW PATH LENGTH (M) ¹	598	293
IMPERVIOUS AREA FLOW PATH SLOPE	1.0%	1.0%

¹ Default values based on VO User Manual

Table 4 VO Model Output – Indian Creek Catchment (Uncontrolled)

STORM EVENT	PRE-DEVELOPMENT PEAK FLOW RATE (M ³ /S)	POST-DEVELOPMENT PEAK FLOW RATE (M ³ /S)
2 YEAR	0.595	7.471
5 YEAR	1.073	11.487
10 YEAR	1.424	13.840
25 YEAR	1.893	16.712
50 YEAR	2.251	18.802
100 YEAR	2.612	21.006
REGIONAL	5.068	7.859



Table 5 VO Model Output – Sixteen Mile Creek Catchment (Uncontrolled)

STORM EVENT	PRE-DEVELOPMENT PEAK FLOW RATE (M ³ /S)	POST-DEVELOPMENT PEAK FLOW RATE (M ³ /S)
2 YEAR	0.247	2.423
5 YEAR	0.447	3.293
10 YEAR	0.593	3.874
25 YEAR	0.787	4.621
50 YEAR	0.932	5.160
100 YEAR	1.080	5.726
REGIONAL	1.522	1.895

Table 6 SWM Facility Sizing – Indian Creek Catchment

STORM EVENT	CONTROLLED RELEASE RATE (M ³ /S)	REQUIRED STORAGE VOLUME (M ³)	TARGET RELEASE RATE (M ³ /S)
25 MM – 4 HOUR	0.178	11,911	0.207
2 YEARS	0.594	14,700	0.595
5 YEAR	1.074	19,300	1.073
10 YEAR	1.423	22,500	1.424
25 YEAR	1.893	26,500	1.893
50 YEAR	2.247	29,500	2.251
100 YEAR	2.600	32,500	2.612
REGIONAL	5.058	46,000	5.068



Table 7 SWM Facility Sizing – Sixteen Mile Creek Catchment

STORM EVENT	CONTROLLED RELEASE RATE (M ³ /S)	REQUIRED STORAGE VOLUME (M ³)	TARGET RELEASE RATE (M ³ /S)
25 MM – 4 HOUR	0.046	2,976	0.054
2 YEARS	0.244	3,450	0.247
5 YEAR	0.448	4,400	0.447
10 YEAR	0.596	5,050	0.593
25 YEAR	0.783	5,950	0.787
50 YEAR	0.929	6,550	0.932
100 YEAR	1.080	7,150	1.080
REGIONAL	1.521	7,760	1.522

The above storage volumes and release rates established using the event-based VO models have been compared against the unitary storage volumes and release rates established for the Boyne lands north of Britannia Road. Criteria were established for both the Indian Creek and Sixteen Mile Creek receivers through the FSEMS. These criteria were refined through the more detailed analyses carried out for the SIS for Boyne Block 1 (between Tremaine Road and First Line, draining to Indian Creek) and for the SIS for Boyne Block 2 (between First Line and Regional Road 25, draining to Sixteen Mile Creek). Each of Boyne Blocks 1 and 2 contain two tributaries, and separate erosion and peak flow criteria were established for each tributary. There was a drainage diversion from Indian Creek to Sixteen Mile Creek to align the drainage boundaries along First Line, effectively relaxing the requirements for the eastern Indian Creek tributary (I-NE-1B) and further restricting the release rates for the western Sixteen Mile Creek tributary (SWS-1-A). Therefore, for the purposes of this exercise, the criteria from the western tributary of Indian Creek (I-NE-2A) has been applied to all proposed development areas tributary to Indian Creek, and the criteria from the eastern tributary of Sixteen Mile Creek (SWS-2-A). The unit storage volumes and release rates from the SIS and total storage volumes and release rates for the test catchments are summarized in **Table 8** and **Table 9**.



Table 8 Boyne Criteria – Indian Creek Catchment

STORM EVENT	UNIT RELEASE RATE (M ³ /S/HA)	UNIT STORAGE VOLUME (M ³ /IMP. HA)	TARGET RELEASE RATE (M ³ /S) ¹	REQUIRED STORAGE VOLUME (M ³) ¹
EXTENDED DETENTION	0.00084	375	0.045	18,095
25 YEAR	0.012	550	0.643	26,539
100 YEAR	0.024	800	1.287	38,602
REGIONAL	0.066	1550	3.539	74,792

¹ Based on a proposed development area of 53.6 ha at 90% impervious.

Table 9 Boyne Criteria – Sixteen Mile Creek Catchment (SWS-2-A)

STORM EVENT	UNIT RELEASE RATE (M ³ /S/HA)	UNIT STORAGE VOLUME (M ³ /IMP. HA)	TARGET RELEASE RATE (M ³ /S) ¹	REQUIRED STORAGE VOLUME (M ³) ¹
EXTENDED DETENTION	0.0006	400	0.008	4,894
25 YEAR	0.020	600	0.258	7,341
100 YEAR	0.050	825	0.644	10,094
REGIONAL	0.070	1450	0.902	17,741

¹ Based on a proposed development area of 12.9 ha at 95% impervious.



The required storage volumes and release rates from the traditional VO modelling approach have been compared the unit storage and release rates for the Boyne lands in **Table 10** (Indian Creek) and **Table 11** (Sixteen Mile Creek). The exercise demonstrates that the application of the unit rates from the Boyne lands result in significantly lower peak flow rates relative to the traditional approach, especially for the extended detention criterion. The unit rate approach correspondingly results in much larger storage volumes relative to the traditional approach.

It is therefore concluded that adoption of the unit rates from the Boyne lands to size the SWM facilities for the Site will more effectively mitigate potential downstream flooding and erosion impacts relative to a traditional, event-based approach of controlling post-development peak flow rates to pre-development levels, and that the unit rates should be used to size the SWM facilities for the proposed development.

Table 10 SWM Criteria Comparison – Indian Creek Catchment

STORM EVENT	CONTROLLED RELEASE RATE – STANDARD APPROACH (M³/S)	REQUIRED STORAGE VOLUME – STANDARD APPROACH (M³)	CONTROLLED RELEASE RATE – BOYNE SURVEY (M³/S)	REQUIRED STORAGE VOLUME – BOYNE SURVEY (M³)
EXTENDED DETENTION	0.207	11,911	0.045	18,095
25 YEAR	1.893	26,500	0.643	26,539
100 YEAR	2.612	32,500	1.287	38,602
REGIONAL	5.058	46,000	3.539	74,792

Table 11 SWM Criteria Comparison – Sixteen Mile Creek Catchment

STORM EVENT	CONTROLLED RELEASE RATE – STANDARD APPROACH (M³/S)	REQUIRED STORAGE VOLUME – STANDARD APPROACH (M³)	CONTROLLED RELEASE RATE – BOYNE SURVEY (M³/S)	REQUIRED STORAGE VOLUME – BOYNE SURVEY (M³)
EXTENDED DETENTION	0.034	2,976	0.008	4,894
25 YEAR	0.787	5,950	0.258	7,341
100 YEAR	1.080	7,150	0.644	10,094
REGIONAL	1.521	7,760	0.902	17,741

5. STORMWATER MANAGEMENT PLAN

5.1. PHASE 1 LANDS

Phase 1 of the development area is located on the south side of Britannia Road, between First Line and Regional Road (RR) 25. The proposed development includes 3 buildings (A1, A2 and A3) and associated parking, laneways and landscaped areas, as shown on **Figure 7**. Several natural heritage features, including three open watercourses and a woodlot, will be retained and protected as part of the development.

The Phase 1 area straddles the Sixteen Mile and Indian Creek watersheds. Under existing conditions, the majority of site (approx. 57 ha) drains to one of the two tributaries of Sixteen Mile Creek that join at the southern boundary of the site, while a small portion of the site (approx. 17 ha) drains to the tributary of Indian Creek that traverses the south-west corner of the site.

5.1.1. STORMWATER MANAGEMENT APPROACH

Two wet detention ponds are proposed to provide water quality, extended detention and peak flow control for the lands draining to Sixteen Mile Creek. The smaller, eastern pond will treat runoff from Building A1 and associated hardscaping, while the larger, western pond will treat runoff from the majority of the proposed development west of the preserved woodlot.

Low Impact Development (LID) practices are proposed to treat runoff from a roughly 1.1 ha area comprised of the entrance from First Line and the staff parking areas west of Building A3.

5.1.2. WATER QUALITY

The two SWM ponds have been sized to provide Enhanced water quality protection. The required and provided permanent pool volumes to achieve Enhanced control are summarized in **Table 12**, and calculations are provided in **Appendix B**. Both ponds provide significantly more permanent pool than required to achieve Enhanced quality control.

Runoff from the parking and entrance areas on the west side of Phase 1 will be treated by LIDs and/or Manufactured Treatment Devices (MTD) prior to discharging to Indian Creek.

Table 12 Water Quality Storage Requirements – Phase 1

FACILITY	DRAINAGE AREA (HA)	IMPERVIOUS FRACTION	UNIT STORAGE REQUIRED (M ³ /HA) ²	TOTAL STORAGE REQUIRED (M ³)	STORAGE PROVIDED (M ³)
SWM Pond A1	11.7	94%	225	2,622	5,190
SWM Pond A2	35.5	93%	223	7,921	33,439



5.1.3. EXTENDED DETENTION AND QUANTITY CONTROL

The two SWM ponds have been sized to meet or exceed the extended detention and peak flow control criteria established for the Boyne lands, as described in Section 4.2. The resulting required release rates and storage volumes are presented in Table 13, and calculations are provided in **Appendix B**.

As noted in Section 5.1.2, runoff from the parking and entrance areas on the west side of Phase 1 will be treated by LIDs and/or MTDs and will not drain to either of the wet detention ponds.

Table 13 Water Quantity Storage Requirements – Phase 1

STORM EVENT	UNIT RELEASE RATE (M ³ /S/HA)	UNIT STORAGE VOLUME (M ³ /IMP. HA)	POND A1 RELEASE RATE (M ³ /S) ¹	POND A1 STORAGE VOLUME (M ³) ¹	POND A2 RELEASE RATE (M ³ /S) ²	POND A2 STORAGE VOLUME (M ³) ²
EXTENDED DETENTION	0.0006	400	0.007	4,378	0.021	13,184
25 YEAR	0.020	600	0.234	6,567	0.710	19,776
100 YEAR	0.050	825	0.584	9,030	1.776	27,192
REGIONAL	0.070	1450	0.818	15,870	2.486	47,792

¹ Based on a proposed development area of 11.7 ha at 94% impervious.

² Based on a proposed development area of 35.5 ha at 93% impervious.

SWM Pond A1 provides a total active storage volume of more than 16,600 m³, and SWM Pond A2 provides a total active storage volume of more than 72,000³. The additional storage volume provided in SWM Pond A2 will be more than adequate to provide any over-control of peak flow rates to compensate for the slight diversion of drainage area from Indian Creek to Sixteen Mile Creek.

Note that preliminary outlet structures have not yet been configured for the SWM facilities. Outlet control structures will be designed following verification of the proposed SWM strategy using the Town's watershed hydrologic models.

5.1.4. WATER BALANCE

The Hydrogeological Investigation and Water Balance Assessment (EXP, December 2025) predicts that with no mitigation, the proposed development of the Phase 1 lands will result in a reduction in infiltration from the existing 24,078 m³ per year to 15,128 m³ per year, resulting in a deficit of roughly 9,000 m³ per year.

All reasonable efforts will be made to mitigate the deficit and maintain pre-development groundwater recharge across the Site. Potential mitigation measures may include:

- **Bioretention facilities:** Bioretention facilities can include swales, isolated 'cells' and rain gardens. There is considerable land available for bioretention facilities to treat the runoff from the



proposed parking areas adjacent First Line, and there may be opportunities for passive bioretention of parking lot runoff to the west and south of the woodlot west of Building A1. The area south of the woodlot may also be suitable for a rain garden to treat the runoff from a portion of the Building A1 roof area.

- **Infiltration galleries:** There may be limited opportunities to construct underground storage facilities below staff parking and laneway areas to hold storm runoff for infiltration. However, it is expected that soil and groundwater conditions will render below-ground infiltration facilities infeasible across much of the site. In addition, infiltration galleries are not recommended under areas subject to heavy vehicle loadings, such as loading docks and trailer storage areas. Pre-treatment will be provided upstream of any infiltration galleries.
- **Stormwater tree trenches:** Where appropriate, tree trenches could be installed along site entrances and laneways to treat surface runoff while also improving tree health.
- **Vegetated swales:** Where feasible, vegetated swales may be implemented to convey runoff from perimeter drainage areas to the SWM facilities and/or receiving watercourses. The swales will function to both infiltrate and filter storm runoff, and may replicate the function of headwater drainage features.
- **Permeable paving:** Permeable pavement in staff and visitor parking areas is considered a last resort when there are no other feasible options to maintain infiltration volumes. Relative to other infiltration practices, permeable pavement tends to have increased maintenance requirements and a shorter effective lifespan.

5.1.5. SWM FACILITY CHARACTERISTICS

Preliminary designs have been prepared for SWM Ponds A1 and A2, and are included in **Appendix C**. The ponds have been designed based on the following criteria:

- An allowance for a 5 m wide maintenance access road around each facility.
- Maximum side slopes of 5:1 below the permanent pool level.
- A 6m wide safety shelf at a slope of 6:1, centered on the normal water level.
- Maximum 3:1 side slopes above the safety shelf.
- A maximum active storage depth of 2.0 m for the 100 year storm.
- A maximum active storage depth of 3.0 m for the Regional storm
- A minimum freeboard depth of 0.3 m above the Regional storm water level.
- Bottom-draw outlets to mitigate temperature impacts in the receiving tributary of Sixteen Mile Creek.
- A 3 m deep permanent pool at the bottom draw outlet location, sized to be equivalent to the runoff volume from a 5 mm storm event, if feasible.

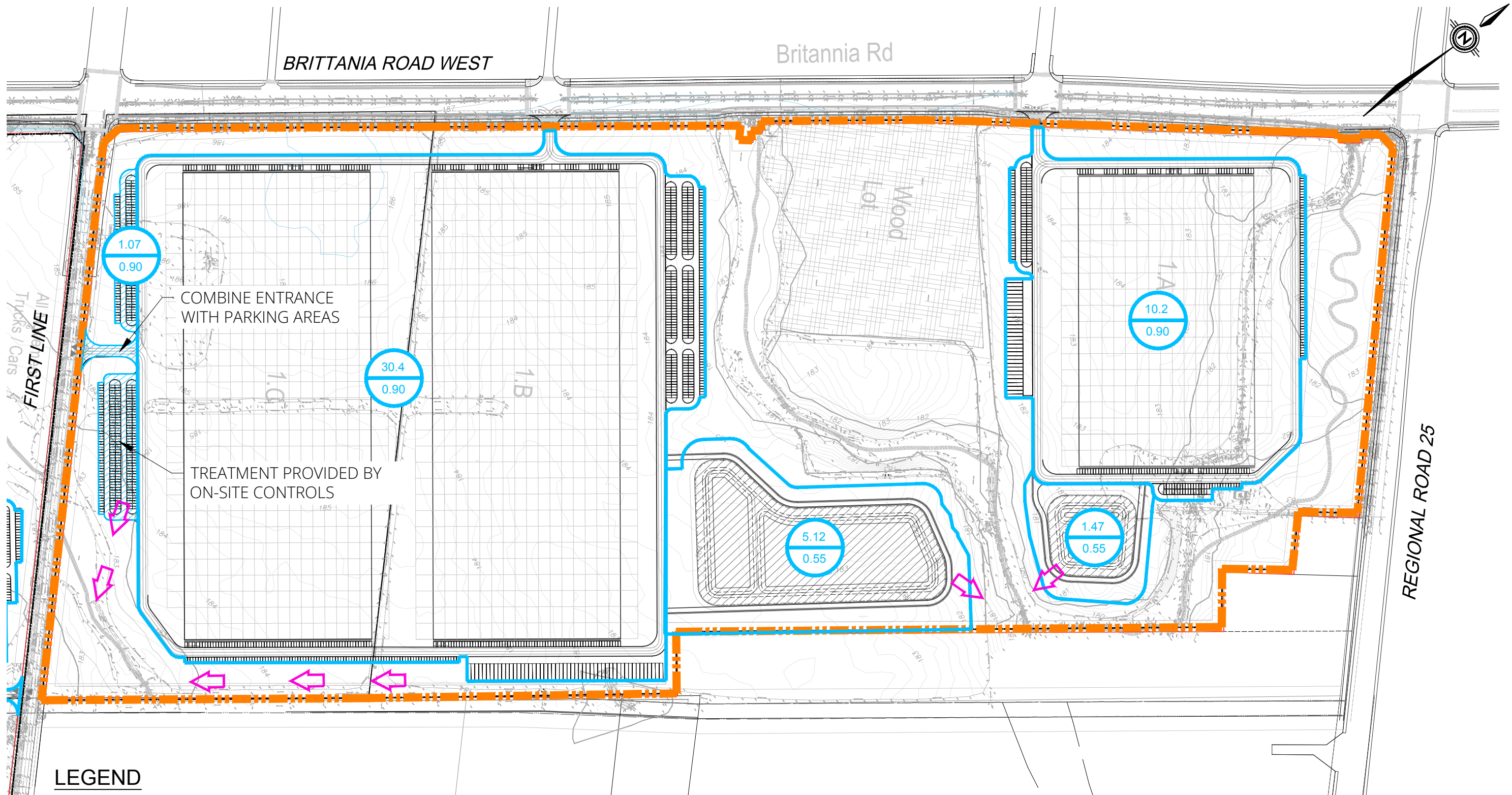
These criteria are generally consistent with the Town of Milton and MECP criteria for wet detention ponds. As the ponds will be privately owned and maintained, some of the above criteria can be relaxed, if warranted, at detailed design.

As noted in **Section 3.3**, soils across the Site are generally lower permeability clayey silt to silty clay till, but groundwater levels are relatively shallow across much of the Site. Further investigations will be



undertaken during detailed design to confirm the need for and specifications for clay or geosynthetic liners for the SWM facilities to prevent groundwater interaction.

The type, location and configuration of LIDs to treat the runoff from the entrance and parking areas draining to the tributary of Indian Creek, and any additional LIDs required to maintain groundwater recharge, will be prepared during detailed design.



LEGEND

-  LIMIT OF PHASE
-  OVERLAND FLOW ROUTE
-  CATCHMENT AREA (ha)
RUNOFF COEFFICIENT
-  CATCHMENT BOUNDARY

CLIENT

TRIBAL DEVELOPMENT
MANAGEMENT SERVICES INC.

TITLE

MILTON LINK
**PROPOSED CONDITIONS
PHASE 1**

ENVISION

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5.2. PHASE 2 LANDS

The Phase 2 development area is located south of Britannia Road, between the CN tracks and First Line. The proposed development includes 3 buildings (B1, B2 and B3) and associated parking, laneways and landscaped areas, as shown in **Figure 8**. An existing woodlot and wetland vegetation community in the southern portion of the site will be retained and protected as part of the development. An oil pipeline easement bisects the northern portion of the property, located between proposed buildings B1 and B2.

The Phase 2 area lies entirely within the Indian Creek subwatershed. A small external drainage area of approximately 11 ha enters the site from the north. The external drainage and runoff from approximately 37 ha of the site flows southerly in a poorly defined (and potentially partially tiled) drainage feature. This feature flows along the east side of the existing woodlot, and continues past the south property limit where it is picked up in an agricultural swale and conveyed westward, adjacent the south property line to a ditch adjacent the CN tracks. A small area of less than 2 ha at the north-east corner of the site drains to the tributary of Indian Creek, just upstream of the culvert under First Line which discharges through the south-west corner of the Phase 1 development area. The remainder of the site, approximately 16 ha, drains in a generally south-westerly direction towards the south-west corner of the site. Some of the runoff is picked up in the westward flowing swale immediately south of the property boundary, and some flows overland directly into the ditch adjacent the CN tracks.

5.2.1. *STORMWATER MANAGEMENT APPROACH*

A wet detention pond is proposed to provide water quality, extended detention and peak flow control for the majority of the Phase 2 lands.

Relatively clean runoff from the proposed Building B2 roof and/or proposed parking area east of the woodlot will be directed to the retained woodlot and wetland, if required, to maintain their hydrologic function. Clean runoff from the Building B3 rooftop will be directed to the natural receiving drainage system to the south, if required, to maintain the hydrologic function of downstream systems. For both systems, roof runoff will be managed through bioretention facilities and/or flow spreaders to deliver runoff in a diffused manner to better replicate the natural inflows to these facilities.

It is expected that the existing pipeline in the northern portion of the site will prevent construction of a traditional storm sewer to convey runoff from the Building B1 site to the proposed SWM pond in the south-west corner of the site. Instead, a swale is proposed to convey storm runoff from the Building B1 site over top of the pipelines to the SWM pond. Storage may be required for the Building B1 site to reduce the size of swale needed to convey the post-development flow rate to the pond.

5.2.2. *WATER QUALITY*

The proposed SWM pond has been sized to provide Enhanced water quality protection. The required and provided permanent pool volume to achieve Enhanced control is summarized in **Table 14**, and calculations are provided in **Appendix B**. The proposed SWM pond provides significant more permanent pool than required to achieve Enhanced quality control.



Table 14 Water Quality Storage Requirements – Phase 2

FACILITY	DRAINAGE AREA (HA)	IMPERVIOUS FRACTION	UNIT STORAGE REQUIRED (M ³ /HA) ²	TOTAL STORAGE REQUIRED (M ³)	STORAGE PROVIDED (M ³)
SWM Pond B	53.5	71%	187	9,989	32,900

5.2.3. EXTENDED DETENTION AND QUANTITY CONTROL

The Phase 2 SWM pond has been sized to meet or exceed the extended detention and peak flow control criteria established for Indian Creek for the Boyne lands, as described in **Section 4.2**. The resulting required release rates and storage volumes are presented in **Table 15**, and calculations are provided in **Appendix B**.

Table 15 Water Quantity Storage Requirements – Phase 2

STORM EVENT	UNIT RELEASE RATE (M ³ /S/HA)	UNIT STORAGE VOLUME (M ³ /IMP. HA)	POND B RELEASE RATE (M ³ /S) ¹	POND B STORAGE VOLUME (M ³) ¹
EXTENDED DETENTION	0.00084	375	0.045	14,214
25 YEAR	0.012	550	0.642	20,848
100 YEAR	0.024	800	1.284	30,324
REGIONAL	0.066	1550	3.532	58,753

¹ Based on a proposed development area of 53.5 ha at 71% impervious.

SWM Pond B provides a total active storage volume of more than 72,000 m³, which significantly exceeds the storage required. As noted for the Phase 1 lands, the outlet control structures needed to achieve the target release rates will be configured following a future hydrologic verification.

5.2.4. WATER BALANCE

The Hydrogeological Investigation and Water Balance Assessment (EXP, December 2025) predicts that with no mitigation, the proposed development of the Phase 2 lands will result in a reduction in infiltration from the existing 41,777 m³ per year to 30,854 m³ per year, resulting in a deficit of roughly 11,000 m³ per year.

All reasonable efforts will be made to mitigate the deficit and maintain pre-development groundwater recharge across the Site. Potential mitigation measures may include:

- **Bioretention facilities:** There is land available for bioretention facilities to treat the runoff from the proposed building and parking areas surrounding the woodlot. Such bioretention facilities



could serve a dual role of preserving groundwater recharge and delivering water to the woodlot and wetland in a controlled manner. There may also be the potential for bioretention facilities to the west of Buildings B1 and B2, and south of the proposed SWM pond.

- **Infiltration galleries:** There may be limited opportunities to construct underground storage facilities below staff parking and laneway areas to hold storm runoff for infiltration. However, it is expected that soil and groundwater conditions will render below-ground infiltration facilities infeasible across much of the site. In addition, infiltration galleries are not recommended under areas subject to heavy vehicle loadings, such as loading docks and trailer storage areas. Pre-treatment will be provided upstream of any infiltration galleries.
- **Stormwater tree trenches:** Where appropriate, tree trenches could be installed along site entrances and laneways to treat surface runoff while also improving tree health.
- **Vegetated swales:** The vegetated swale proposed to convey runoff from the Building B1 site across the pipeline corridor to the SWM pond can be configured to slow and spread the flow over the width of a flat base of the swale to maximize its function for water quality treatment and groundwater recharge. Where feasible, vegetated swales may be implemented in other areas of the site to convey runoff from perimeter drainage areas to the SWM facilities and/or woodlot.
- **Permeable paving:** Permeable pavement in staff and visitor parking areas is considered a last resort when there are no other feasible options to maintain infiltration volumes.

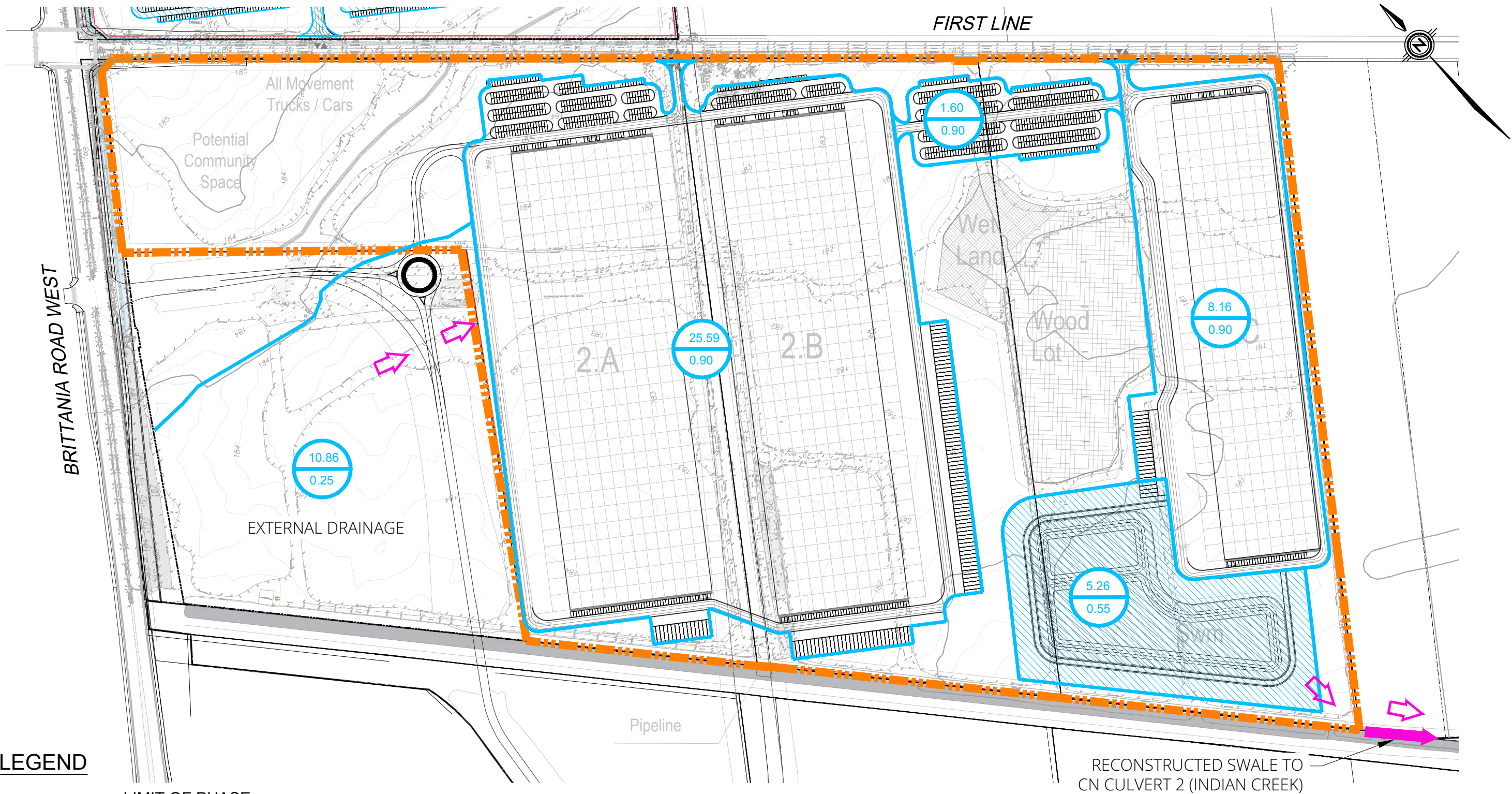
5.2.5. SWM FACILITY CHARACTERISTICS

A preliminary design has been prepared for SWM Pond B, and is included in **Appendix C**. The pond has been designed based on the criteria presented in **Section 5.1.5** for the Phase 1 ponds.

As described in **Section 5.2**, runoff from the entirety of the Phase 2 lands currently drains to a swale south of and parallel to the southern property boundary which flows westerly to the CN tracks, or by overland flow directly to the CN tracks. As peak flow rates from the site will be controlled significantly below existing levels, the proposed development will not worsen flooding or erosion downstream of the site.

The drainage system along the east side of the CN tracks was recently upgraded as part of the CN intermodal terminal works. A new swale has been constructed adjacent the west boundary of the Phase 2 lands, and it is our understanding that it was only been designed to accommodate drainage from the CN corridor. The CN swale is intercepted in a pipe near the south limit of the Phase 2 lands, with the pipe discharging to Indian Creek just upstream of the culvert under the CN tracks (referred to as 'Culvert 2' in CN documentation).

It is recommended that an upgraded drainage system be constructed to convey treated runoff from the Phase 2 lands to Indian Creek to the south. At this time, it is not clear if the swale could be constructed entirely on CN lands adjacent or above the recently installed drainage pipe, or if additional land will be required east of the CN property limit to implement a swale. It is our understanding that the lands south of Phase 1 and east of the CN tracks are owned by Halton Region.



LEGEND

- LIMIT OF PHASE
- OVERLAND FLOW ROUTE
- CATCHMENT AREA (ha)
RUNOFF COEFFICIENT
- CATCHMENT BOUNDARY

CLIENT
TRIBAL DEVELOPMENT
MANAGEMENT SERVICES INC.

TITLE
MILTON LINK
**PROPOSED CONDITIONS
PHASE 2**

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Date	24-0647	Proj. No.	APRIL 2026
Scale	1: 4000	Figure No.	8



5.3. PHASE 3 LANDS

The Phase 3 development area is located north of Lower Base Line, between the CN tracks and First Line. The proposed development includes 4 buildings (C1, C2, C3 and C4) and associated parking, laneways and landscaped areas, as shown in **Figure 9**. An existing woodlot located near the north-east corner of the site will be retained and protected as part of the development.

The majority of the Phase 3 development area is within the Indian Creek subwatershed, but there are a number of different outlets from the site. The largest portion of the site (approximately 34 ha) drains westward and enters the reconstructed swale on the east side of the CN tracks via a number of poorly defined drainage swales. The reconstructed drainage swale in the CN corridor continues southerly to a new culvert crossing under the tracks, referred to as 'Culvert 3' in CN documentation. Downstream of the culvert, water flows through drainage channel that joins Indian Creek near the downstream end of a reconstructed reach, just upstream of the crossing under Tremaine Road.

A small area of approximately 9 ha drains northward by overland sheet flow, eventually entering the tributary of Indian Creek upstream of the Culvert 2 crossing under the CN tracks. A roughly 17 ha area in the south-east corner of the site drains southward to a culvert under Lower Base Line approximately 150 m west of First Line, and a roughly 6 ha area at the south-east corner of the site drains southerly to a culvert under Lower Base Line approximately 680 m west of First Line, close to the beginning of the embankment for the Lower Base Line overpass of the CN tracks. Both of these systems converge as part of a drainage system that eventually crosses under the CN tracks immediately south of Lower Base Line via a culvert that was recently installed as part of the Lower Base Line grade separation. The remaining roughly 9 ha of the site drains eastward to a culvert under First Line approximately 400 m north of Lower Base Line. This system continues in a south-easterly direction and eventually drains to Fourteen Mile Creek.

5.3.1. STORMWATER MANAGEMENT APPROACH

Two wet detention ponds are proposed to provide water quality, extended detention and peak flow control for the majority of the Phase 3 lands. At this time, the split of post-development drainage areas between the two ponds has not yet been confirmed, and as such the combined storage in the two ponds has been considered in the SWM assessment. Perimeter parking areas along the east and south sides of the site will be treated with LIDs and directed to the natural receiving outlets in order to minimize the diversion of drainage areas to the western outlet from the site.

Both SWM ponds will discharge to the recently improved drainage system on the east side of the CN tracks, with the northerly pond (C1) discharging to the CN rail ditch in the northern portion of the site, and the southern pond (C2) discharging to a new drainage system on the CN lands to the west. Both outlets converge upstream of Culvert 3 under the CN tracks, which in turn outlets to Indian Creek upstream of its crossing of Tremaine Road. A significant degree of over-control will be required in the ponds, as there remains a considerable diversion of drainage area away from the existing outlets to the east and south of the site.

Relatively clean runoff from the proposed Building C1 or C2 roof and/or treated runoff from the proposed parking areas east and west of the retained woodlot will be directed to the woodlot, if required, to maintain its hydrologic function. The woodlot will retain its natural outlet to the tributary of Indian Creek to the north.

5.3.2. WATER QUALITY

The proposed SWM ponds have been sized to provide Enhanced water quality protection. The required and provided permanent pool volume to achieve Enhanced control is summarized in **Table 16**, and calculations are provided in **Appendix B**. The combined permanent pool volume of the two proposed SWM ponds provides significantly more permanent pool than required to achieve Enhanced quality control.

Table 16 Water Quality Storage Requirements – Phase 3

FACILITY	DRAINAGE AREA (HA)	IMPERVIOUS FRACTION	UNIT STORAGE REQUIRED (M ³ /HA) ²	TOTAL STORAGE REQUIRED (M ³)	STORAGE PROVIDED (M ³)
SWM Pond C1					18,658
SWM POND C2					38,293
TOTAL	58.7	92%	222	13,023	56,951

5.3.3. EXTENDED DETENTION AND QUANTITY CONTROL

The Phase 3 SWM ponds have been sized based on the extended detention and peak flow control criteria established for Indian Creek for the Boyne lands, as described in **Section 4.2**. The resulting required release rates and storage volumes are presented in **Table 17**, and calculations are provided in **Appendix B**.



Table 17 Water Quantity Storage Requirements – Phase 3

STORM EVENT	UNIT RELEASE RATE (M ³ /S/HA) ¹	UNIT STORAGE VOLUME (M ³ /IMP. HA) ¹	POND C1/C2 RELEASE RATE (M ³ /S) ²	POND C1/C2 STORAGE VOLUME (M ³) ²
EXTENDED DETENTION	0.00084	375	0.049	20,271
25 YEAR	0.012	550	0.705	29,730
100 YEAR	0.024	800	1.410	43,244
REGIONAL	0.066	1550	3.877	83,785

¹ Without considering the diversion of areas from the east and south outlets from the site

² Based on a combined proposed development area of 58.7 ha at 92% impervious. ².

SWM Pond C1 provides a total active storage volume of 43,400 and SWM Pond C2 provides a total active storage volume of 83,700 m³ for a total combined storage volume of 127,100 m³. The combined storage of the two ponds significantly exceeds the above calculated required storage and should be adequate to provide any over-control of peak flow rates to compensate for the diversion of drainage areas away from the eastern and southern outlets from the site.

5.3.4. WATER BALANCE

The Hydrogeological Investigation and Water Balance Assessment (EXP, December 2025) predicts that with no mitigation, the proposed development of the Phase 3 lands will result in a reduction in infiltration from the existing 39,208 m³ per year to 1,848 m³ per year, resulting in a deficit of roughly 37,360 m³ per year. A higher deficit is predicted for the Phase 3 lands relative to Phases 1 and 2 due to the significant site coverage with buildings and pavement, and because the infiltration over the remaining landscaped areas is expected to be severely limited by high groundwater levels.

All reasonable efforts will be made to mitigate the deficit and maintain pre-development groundwater recharge across the Site. Potential mitigation measures may include:

- **Bioretention facilities:** There is land available for bioretention facilities to treat the runoff from the proposed parking areas adjacent the woodlot in the north-east corner of the site, and there may also be space for bioretention facilities in the south-east corner of the site. These bioretention facilities would also serve to deliver water to the preserved woodlot in natural manner, and provide quality and quantity treatment for the smaller areas discharging to the existing site outlets to First Line and Lower Base Line.
- **Infiltration galleries:** There may be limited opportunities to construct underground storage facilities below staff parking and laneway areas to hold storm runoff for infiltration. However, it is expected that soil and groundwater conditions will render below-ground infiltration facilities infeasible across much of the site. In addition, infiltration galleries are not recommended under areas subject to heavy vehicle loadings, such as loading docks and trailer storage areas. Pre-treatment will be provided upstream of any infiltration galleries.



- **Stormwater tree trenches:** Where appropriate, tree trenches could be installed along site entrances and laneways to treat surface runoff while also improving tree health.
- **Vegetated swales:** Where feasible, vegetated swales may be implemented to convey runoff from perimeter drainage areas to the SWM facilities and/or receiving watercourses. There may be an opportunity for a vegetated swale adjacent the property line west of Building C3, leading to the SWM pond.
- **Permeable paving:** Permeable pavement in staff and visitor parking areas is considered a last resort when there are no other feasible options to maintain infiltration volumes.

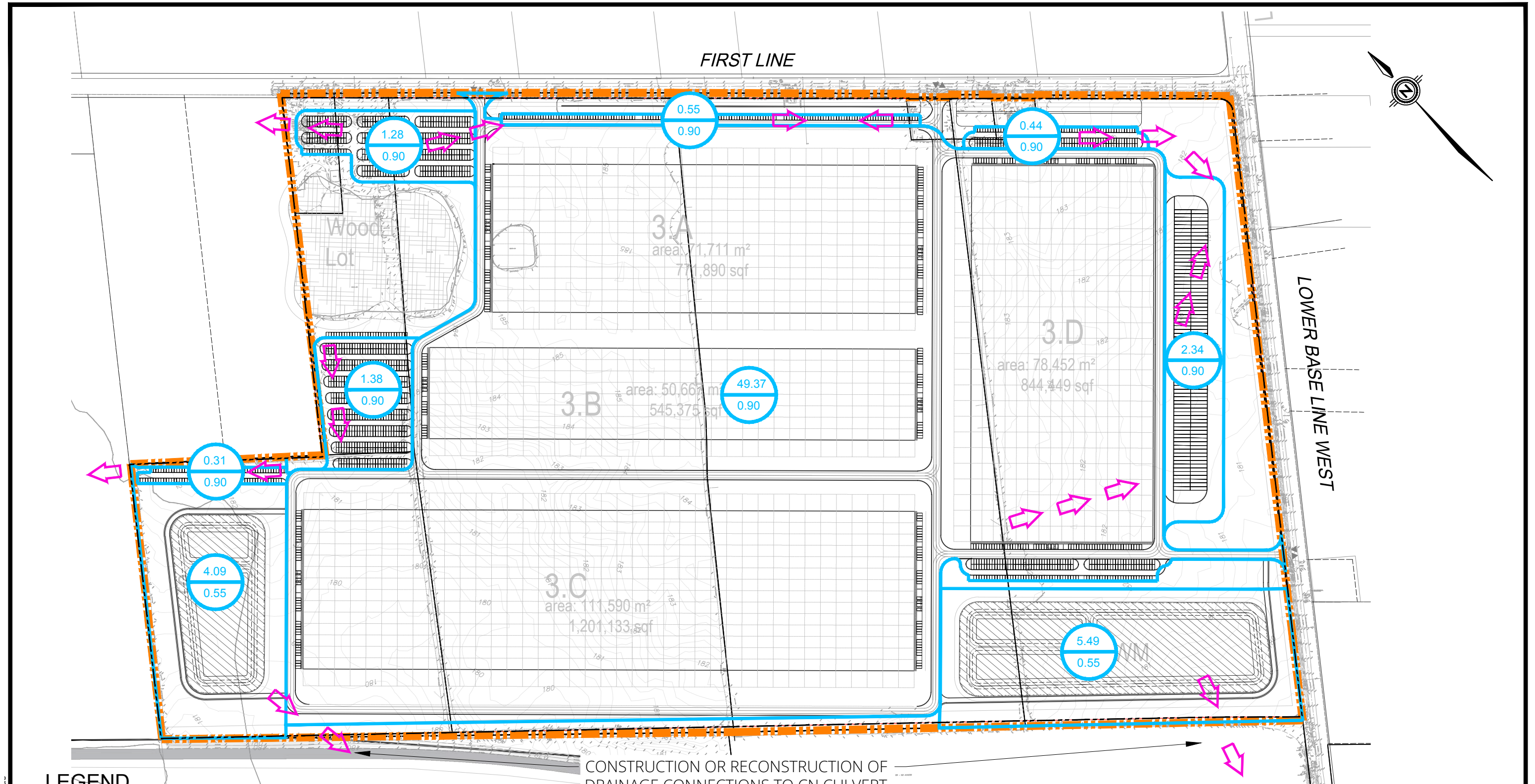
5.3.5. SWM FACILITY CHARACTERISTICS

Preliminary designs have been prepared for SWM Ponds C1 and C2, and are included in **Appendix C**. The ponds have been designed based on the criteria presented in **Section 5.1.5** for the Phase 1 ponds.

As described in **Section 5.3**, drainage from the south-west portion of the site is currently delivered to the ditches east of the CN tracks via a number of poorly defined drainage swales, and there isn't a single existing outlet leading from the west edge of the Phase 3 lands that would have a capacity for the controlled release rates from SWM Pond C2.

Consultation with CN and their engineering consultant are ongoing to determine the preferred form (piped vs open) and alignment of a system to convey treated flows from SWM Pond C2 to Culvert 3 and the connection to Indian Creek.

Culvert 3 is 2400 mm diameter concrete pipe, which is very large relative to the limited area currently tributary to the culvert. The large size of culvert is due to its function as a relief culvert in the event that the capacity of Culvert 2 to the north is overwhelmed in a Regional storm event. The system of ditches on the east side of the CN tracks has been designed to allow a spill of floodwater from Indian Creek at Culvert 2 southward to Culvert 3, from where it can rejoin Indian Creek upstream of the Tremaine Road crossing. It is therefore expected that Culvert 3 has more than sufficient capacity for the discharge from Pond C, especially considering that the timing of the peak discharge from Pond C should occur ahead of the timing of the peak flow rate in Indian Creek at Culvert 2.



LEGEND

- LIMIT OF PHASE
- OVERLAND FLOW ROUTE
- CATCHMENT AREA (ha)
- RUNOFF COEFFICIENT
- CATCHMENT BOUNDARY

CONSTRUCTION OR RECONSTRUCTION OF DRAINAGE CONNECTIONS TO CN CULVERT 3 TO BE COORDINATED WITH CN.

CLIENT		TRIBAL DEVELOPMENT MANAGEMENT SERVICES INC.		ENVISION 6415 Northwest Dr. Mississauga, ON Canada L4V 1X1 Office (905) 677-0202 E-mail admin@envisionconsultants.ca	
TITLE		MILTON LINK PROPOSED CONDITIONS PHASE 3			
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Date		24-0647		Proj. No. APRIL 2026	
Scale		1: 4000		Figure No. 9	



5.4. PHASE 4 LANDS

The Phase 4 development area is located south of Lower Base Line, between the CN tracks and Tremaine Road. The proposed development is comprised of a single building (D) and associated parking, laneways and landscaped areas, as shown in **Figure 10**. An oil pipeline crosses the site at the south limit of the proposed Building D, with an additional parking area proposed south of the pipeline easement.

Nearly all of the Phase 4 area lies within the Indian Creek subwatershed. A very small area near the south limit of the site drains in a south-westerly direction to the Tremaine Road ditch, and eventually makes its way to Fourteen Mile Creek. The remainder of the site drains in a northwesterly direction to a culvert under Tremaine Road immediately south of Lower Base Line. Most of this runoff is captured in the ditch on the east side of Tremaine Road and carried north to the culvert, but runoff from the north-east portion of the site drains northward to the ditch on the south side the Lower Base Line, which also leads to the culvert under Tremaine Road. A drainage channel connects the Tremaine Road culvert to the main branch of Indian Creek, located approximately 200 m west of Tremaine Road.

5.4.1. STORMWATER MANAGEMENT APPROACH

A wet detention pond is proposed to provide water quality, extended detention and peak flow control for the majority of the Phase 4 lands.

Low Impact Development (LID) practices are proposed to treat runoff from the roughly 1.8 ha parking area south of the pipeline easement, with excess runoff directed to the Tremaine Road ditch.

5.4.2. WATER QUALITY

The proposed SWM pond has been sized to provide Enhanced water quality protection. The required and provided permanent pool volume to achieve Enhanced control is summarized in **Table 18**, and calculations are provided in **Appendix B**. The proposed SWM pond provides significantly more permanent pool than required to achieve Enhanced quality control.

Table 18 Water Quality Storage Requirements – Phase 4

FACILITY	DRAINAGE AREA (HA)	IMPERVIOUS FRACTION	UNIT STORAGE REQUIRED (M ³ /HA) ²	TOTAL STORAGE REQUIRED (M ³)	STORAGE PROVIDED (M ³)
SWM Pond D	18.2	91%	221	4,007	8,649

5.4.3. EXTENDED DETENTION AND QUANTITY CONTROL

The Phase 4 SWM pond has been sized to meet or exceed the extended detention and peak flow control criteria established for Indian Creek for the Boyne lands, as described in **Section 4.2**. The resulting required release rates and storage volumes are presented in **Table 19**, and calculations are provided in **Appendix B**.



Table 19 Water Quantity Storage Requirements – Phase 4

STORM EVENT	UNIT RELEASE RATE (M ³ /S/HA)	UNIT STORAGE VOLUME (M ³ /IMP. HA)	POND D RELEASE RATE (M ³ /S) ¹	POND D STORAGE VOLUME (M ³) ¹
EXTENDED DETENTION	0.00084	375	0.015	6,225
25 YEAR	0.012	550	0.218	9,130
100 YEAR	0.024	800	0.436	13,280
REGIONAL	0.066	1550	1.198	25,730

¹ Based on a proposed development area of 18.2 ha at 91% impervious.

SWM Pond D provides a total active storage volume of approximately 30,000 m³, which exceeds the storage required. As noted for the Phase 1 lands, the outlet control structures needed to achieve the target release rates will be configured following a future hydrologic verification.

5.4.4. WATER BALANCE

The Hydrogeological Investigation and Water Balance Assessment (EXP, December 2025) predicts that with no mitigation, the proposed development of the Phase 4 lands will result in a reduction in infiltration from the existing 26,891 m³ per year to 3,390 m³ per year, resulting in a deficit of roughly 23,500 m³ per year.

A higher deficit is predicted for the Phase 4 lands relative to Phases 1 and 2 due to a higher fraction of surplus water infiltrating across the site under existing conditions. The water balance does not account for infiltration over areas where the groundwater table is close to the ground surface. The groundwater table is predicted to be at least 1 m below existing grades for all of Phase 4, whereas existing infiltration was discounted across much of Phases 1, 2 and 3 due to extensive areas of high groundwater.

All reasonable efforts will be made to mitigate the deficit and maintain pre-development groundwater recharge across the Site. Potential mitigation measures may include:

- **Bioretention facilities:** There are limited opportunities for bioretention north of the pipeline easement, but space is available south of the pipeline easement to implement bioretention facilities to manage and infiltrate runoff from the proposed parking and laneway areas.
- **Infiltration galleries:** There may be opportunities to construct underground storage facilities below staff parking and laneway areas to hold storm runoff for infiltration. While groundwater is found at greater depths below ground relative to the other phases, it is still expected that soil conditions and groundwater elevations will limit the application of infiltration galleries across the Phase 4 lands.
- **Stormwater tree trenches:** Where appropriate, tree trenches could be installed along site entrances and laneways to treat surface runoff while also improving tree health.

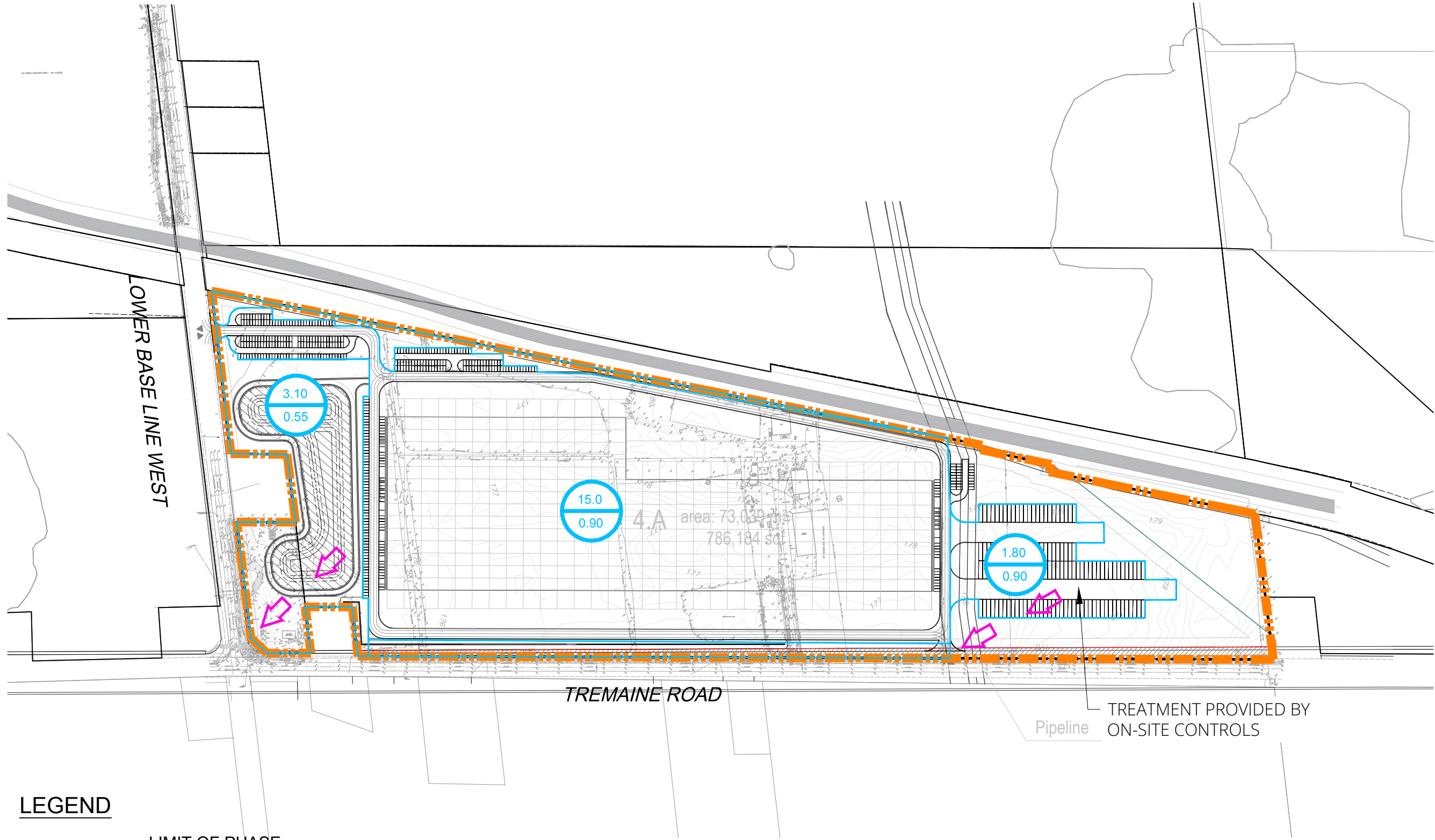


- **Vegetated swales:** Where feasible, vegetated swales may be implemented to convey runoff from perimeter drainage areas to the SWM facilities and/or receiving watercourses. An opportunity may exist for a swale along the eastern boundary of the site to convey a small amount of internal and external runoff northward to the SWM pond or Lower Base Line. The swales will function to both infiltrate and filter storm runoff, and may replicate the function of headwater drainage features.
- **Permeable paving:** Permeable pavement in staff and visitor parking areas is considered a last resort when there are no other feasible options to maintain infiltration volumes.

5.4.5. *SWM FACILITY CHARACTERISTICS*

A preliminary design has been prepared for SWM Pond D, and is included in **Appendix C**. The pond has been designed based on the criteria presented in **Section 5.1.5** for the Phase 1 ponds.

The SWM pond will discharge to the Lower Base Line ditch upstream of the culvert under Tremaine Road. While the total peak flow rates in the Lower Base Line ditch will be reduced relative to existing conditions, the ditch may need to be improved in order to safely convey and contain the proposed conditions peak flow rates to the Tremaine Road culvert.



LEGEND

- LIMIT OF PHASE
- OVERLAND FLOW ROUTE
- CATCHMENT AREA (ha)
RUNOFF COEFFICIENT
- CATCHMENT BOUNDARY

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6. SEDIMENT AND EROSION CONTROLS

The following erosion and sediment controls are proposed for implementation during construction to minimize erosion potential and soil migration from the site to adjacent lands and/or receiving waters.

- Install silt fence at the downslope side of disturbed areas and snow fence (if necessary) along the perimeter of the development site, prior to the start of construction.
- Install stone mud mats at all construction entrances.
- Stockpile topsoil at designated locations and at least 15 m away from the staked limit of all natural heritage features. Stockpiles will be contained by silt fences on the downslope side.
- Accumulated silt shall be removed from all sediment control devices as required during construction and disposed of in accordance with Town of Milton and MECP Guidelines.
- All exposed soils are to be stabilized and vegetated as soon as possible using seed and mulch application on 100 mm of topsoil, as directed by the Engineer.
- All catch basins are to be fitted with sediment control devices as directed by the Engineer and in accordance with Town of Milton standard requirements.
- Additional erosion / sediment controls may be required on-site as determined by the Engineer.
- No construction activity / machinery shall intrude beyond the silt / snow fence or property limit. All construction vehicles shall enter and leave the site via designated entrances.
- All regraded areas that are not occupied by buildings, roads, sidewalks, driveways and other services shall be covered by 100 mm topsoil and sodded / seeded immediately after completion of final grading operations, as directed by the Engineer.
- All temporary erosion and sediment controls must be installed prior to the commencement of site grading, must be inspected on a regular basis and after every rainfall event, and must be cleaned and maintained as required to prevent the migration of sediment from the site.
- All sediment and erosion control facilities are to remain in place until finalization of construction activity.
- All temporary erosion and sediment controls must be removed after construction and once the site has been stabilized to the Town of Milton's satisfaction. All areas disturbed by erosion / sediment control devices are to be restored with 100 mm topsoil and sodded / seeded after construction.
- The Contractor shall keep public roadways free of debris during construction. Any material tracked from the site shall be promptly removed from roadways at the contractor's expenses.
- The Contractor is responsible to locate and protect all existing utilities and municipal services, and to make arrangement with utility companies prior to construction.
- All excavations shall be in accordance with the Ontario "Occupational Health and Safety Act", and other federal and provincial regulations related to construction projects.

Detailed erosion and sediment control plans will be prepared for each development Phase during future design stages.



7. CLOSING

7.1. CONCLUSIONS AND RECOMMENDATIONS

Based on the information obtained through this stormwater management assessment, EnVision presents the following conclusions and recommendations.

Water Quality: Storm runoff from the majority of each development phase will be captured and conveyed to the respective wet detention ponds for water quality treatment. All ponds have been sized to meet or exceed the storage requirements for Enhanced water quality protection. For isolated development areas draining directly to site outlets, water quality treatment will be provided through low impact development practices and/or manufactured treatment devices.

Extended Detention and Peak Flow Control: The wet detention ponds for each development phase have been sized to meet or exceed the unit storage volumes and release rates established for the Boyne neighbourhood on the north side of Britannia Road. Analyses have been completed to demonstrate that the unit rate approach results in much lower release rates relative a tradition approach of providing extended detention of the runoff from a 25 mm storm event and controlling post-development peak flow rates to pre-development levels for the 2 year through 100 year and Regional storm events

Water Balance: A range of measures have been explored to maintain existing groundwater recharge volumes across the proposed development areas. Additional investigations and analyses will be carried out during future design stages to determine the most appropriate infiltration and low impact development practices.

SWM Facility Characteristics: Concept designs have been prepared for the SWM ponds in accordance with Town of Milton and MECP standards and guidance. All SWM ponds and LIDs within the development areas will be privately owned and maintained. Additional consultation with CN and Halton Region will be required to establish the preferred form and alignment of the downstream systems needed to convey the treated runoff from Phases 2 and 3 to CN Culverts 2 and 3, respectively.

7.2. CERTIFICATION AND SIGNATURES

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7.3. QUALIFIER

EnVision prepared this report solely for the use of the intended recipient in accordance with the professional services agreement. In the event a contract has not been executed, the parties agree that the EnVision General Terms and Conditions, which were provided prior to the preparation of this report, shall govern their business relationship.

The report is intended to be used in its entirety. No excerpts may be taken to be representative of the findings in the assessment. The conclusions presented in this report are based on work performed by trained, professional and technical staff, in accordance with their reasonable interpretation of current and accepted engineering and scientific practices at the time the work was performed.

The content and opinions contained in the report are based on the observations and/or information available to EnVision at the time of preparation, using investigation techniques and engineering analysis methods consistent with those ordinarily exercised by EnVision and other engineering/scientific practitioners working under similar conditions, and subject to the same time, financial and physical constraints applicable to this project.

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This limitations statement is considered an integral part of this report.



APPENDIX A:

Concept Plan



APPENDIX B:

Stormwater Management Calculations

Test catchment for Indian Creek

Phase 2 - Pre-development

Land Use	Area (ha)	CN	Runoff C	Imperv.	IA (mm)	Flow Path L	Flow Path %	Tc (min)	Tc (hr)	Tp (hr)
Argricultural Lands	53.614	85 (II)	0.25	0%	7.0	1071	0.36%	127.0	2.12	1.42

Phase 2 - Post-development

Land Use	Area (ha)	TIMP	XIMP	CN	IA (mm)	SLPP	LGP	MNP	SCP	SLPI	LGI	MNI	SCI
Phase 2	53.614	0.90	0.90	85 (II)	5.0	2.00	40.00	0.25	0	1.00	Auto	0.013	0

Storm Event	Pre-Dev Peak Q (m3/s)	Uncontr. Post-Dev Peak Q (m3/s)	Required Storage V (m3)
25 mm - 4-hour	-		11,911
2-year	0.595	7.471	14,700
5-year	1.073	11.487	19,300
10-year	1.424	13.840	22,500
25-year	1.893	16.712	26,500
50-year	2.251	18.802	29,500
100-year	2.612	21.006	32,500
Regional	5.068	7.859	46,000

Storm Event	Unit Flow Rate (m3/s/ha)	Unit Storage Volume (m3/im.ha)	Target Flow Rate (m3/s)	Required Storage V (m3)
Extended D.	0.00084	375	0.0450	18,095
25-year	0.012	550	0.6434	26,539
100-year	0.024	800	1.2867	38,602
Regional	0.066	1550	3.5385	74,792

Storm Event	Area (ha)	Runoff Depth (mm)	Runoff Volume (m3.)	Detention Time (hr)	Average Release Rate (m3/s)	Peak Release Rate (m3/s)
25 mm - 4-hour	53.614	22.216	11911	24	0.138	0.207

Storm Event	Target Flow Rate (m3/s)			Required Storage V (m3)		
	Traditional	Unit Rates	Difference	Traditional	Unit Rates	Difference
Extended D.	0.207	0.0450	22%	11911	18095	52%
25-year	1.893	0.6434	34%	26500	26539	0%
100-year	2.612	1.2867	49%	32500	38602	19%
Regional	5.068	3.5385	70%	46000	74792	63%

Test catchment for Sixteen Mile Creek

Phase 1A - Pre-development

Land Use	Area (ha)	CN	Runoff C	Imperv.	IA (mm)	Flow Path L	Flow Path %	Tc (min)	Tc (hr)	Tp (hr)
Argricultural Lands	12.879	85 (II)	0.25	0%	7.0	477	0.98%	60.9	1.02	0.68

Phase 1A - Post-development

Land Use	Area (ha)	TIMP	XIMP	CN	IA (mm)	SLPP	LGP	MNP	SCP	SLPI	LGI	MNI	SCI
Phase 1A	12.879	0.95	0.95	85 (II)	5.0	2.00	40.00	0.25	0	1.00	Auto	0.013	0

Storm Event	Pre-Dev Peak Q (m3/s)	Uncontr. Post-Dev Peak Q (m3/s)	Required Storage V (m3)
25 mm - 4-hour	-		2,976
2-year	0.247	2.423	3,450
5-year	0.447	3.293	4,400
10-year	0.593	3.874	5,050
25-year	0.787	4.621	5,950
50-year	0.932	5.160	6,550
100-year	1.080	5.726	7,150
Regional	1.522	1.895	7,760

Storm Event	Unit Flow Rate (m3/s/ha)	Unit Storage Volume (m3/im.ha)	Target Flow Rate (m3/s)	Required Storage V (m3)
Extended D.	0.0006	400	0.0077	4,894
25-year	0.020	600	0.2576	7,341
100-year	0.050	825	0.6440	10,094
Regional	0.070	1450	0.9015	17,741

Storm Event	Area (ha)	Runoff Depth (mm)	Runoff Volume (m3.)	Detention Time (hr)	Average Release Rate (m3/s)	Peak Release Rate (m3/s)
25 mm - 4-hour	12.879	23.107	2976	24	0.034	0.052

Storm Event	Target Flow Rate (m3/s)			Required Storage V (m3)		
	Traditional	Unit Rates	Difference	Traditional	Unit Rates	Difference
Extended D.	0.052	0.0077	15%	2976	4894	64%
25-year	0.787	0.2576	33%	5950	7341	23%
100-year	1.08	0.6440	60%	7150	10094	41%
Regional	1.522	0.9015	59%	7760	17741	129%

Stormwater Management Calculations

Catchment Area Characteristics - Phase 1

SWM Pond A1

Land Use	Area (ha)	% Imp
Building	5.52	100%
Hardscaping around building	4.69	100%
SWM Pond	1.47	50%
Total Area	11.68	94%

SWM Pond A2

Land Use	Area (ha)	% Imp
Building	18.96	100%
Hardscaping around building	11.44	100%
SWM Pond	5.12	50%
Total Area	35.52	93%

Indian Creek Catchment

Land Use	Area (ha)
Entrance, Parking	1.07
Landscaping, NHS	2.99
Total	4.06
Pre-development Area	16.83
Area Diverted to 16 Mile Ck	12.77

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Stormwater Management Calculations			Storage Requirements			
Required Permanent Pool Volume						
			Pond A1	Pond A2		
Internal Area (ha)			11.68	35.52		
% Impervious			94%	93%		
Unit Storage Required (m3/ha)			225	223	excluding extended detention storage	
Total Storage Required (m3)			2,622	7,921		
Required Active Storage Volume						
	16 Mile Creek Targets		Pond A1		Pond A2	
Storm Event	Unit Flow Rate (m3/s/ha)	Unit Storage Volume (m3/im.ha)	Target Release Rate (m3/s)	Storage Volume (m3)	Target Release Rate (m3/s)	Storage Volume (m3)
Extended D.	0.0006	400	0.007	4,378	0.021	13,184
25-year	0.020	600	0.234	6,567	0.710	19,776
100-year	0.050	825	0.584	9,030	1.776	27,192
Regional	0.070	1450	0.818	15,870	2.486	47,792

Stormwater Management Calculations

Stage-Storage Tables - Phase 1

SWM Pond A1

Elevation	Forebay Area (m2)	Main Cell Area (m2)	Total Area (m2)	Incremental Volume (m3)	Cumulative Volume (m3)	Cumulative Active Storage (m3)	Notes
-2.00	272	1,359	1,631				Bottom of Pond
-0.60	826	2,051	2,877	3,156	3,156		Base of safety shelf
0.00	1,290	2,613	3,903	2,034	5,190		Permanent Pool
0.60			4,835	2,621	7,811	2,621	Top of safety shelf
0.65			4,878	243	8,054	2,864	Extended Detention
1.40			5,516	3,898	11,952	6,762	25 Year
1.80			5,857	2,275	14,226	9,037	100 Year
2.90			6,794	6,958	21,184	15,995	Regional
3.00			6,879	684	21,868	16,678	Maximum Water Level

SWM Pond A2

Elevation	Forebay Area (m2)	Main Cell Area (m2)	Total Area (m2)	Incremental Volume (m3)	Cumulative Volume (m3)	Cumulative Active Storage (m3)	Notes
-2.00	3,898	10,341	14,239				Bottom of Pond
-0.60	5,157	12,331	17,488	22,209	22,209		Base of safety shelf
0.00	6,125	13,821	19,946	11,230	33,439		Permanent Pool
0.60			22,264	12,663	46,102	12,663	Top of safety shelf
0.65			22,370	1,116	47,218	13,779	Extended Detention
1.00			23,116	7,960	55,178	21,739	25 Year
1.30			23,755	7,031	62,209	28,770	100 Year
2.10			25,458	19,685	81,894	48,455	Regional
3.00			27,375	23,775	105,669	72,230	Maximum Water Level

Stormwater Management Calculations

Catchment Area Characteristics - Phase 2

SWM Pond B

Land Use	Area (ha)	% Imp
Building	18.18	100%
Hardscaping around building	17.17	100%
SWM Pond	5.26	50%
Open Space / Woodlot / Wetland	12.90	
Total Area	53.51	71%

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Stormwater Management Calculations		Storage Requirements - Phase 2			
Required Permanent Pool Volume					
		Pond B			
Internal Area (ha)		53.51			
% Impervious		71%			
Unit Storage Required (m3/ha)		187			
Total Storage Required (m3)		9,989			
Required Active Storage Volume					
	Indian Creek Targets		Pond B		
Storm Event	Unit Flow Rate (m3/s/ha)	Unit Storage Volume (m3/im.ha)	Target Release Rate (m3/s)	Storage Volume (m3)	
Extended D.	0.00084	375	0.045	14,243	
25-year	0.012	550	0.642	20,889	
100-year	0.024	800	1.284	30,384	
Regional	0.066	1550	3.532	58,869	

Stormwater Management Calculations

Stage-Storage Table - Phase 2

SWM Pond B

Elevation	Forebay Area (m2)	Main Cell Area (m2)	Total Area (m2)	Incremental Volume (m3)	Cumulative Volume (m3)	Cumulative Active Storage (m3)	Notes
-2.00	3,341	10,453	13,794				Bottom of Pond
-0.60	4,447	12,834	17,281	21,753	21,753		Base of safety shelf
0.00	5,306	14,603	19,909	11,157	32,910		Permanent Pool
0.60			22,276	12,656	45,565	12,656	Top of safety shelf
0.70			22,500	2,239	47,804	14,894	Extended Detention
1.00			23,171	6,851	54,654	21,745	25 Year
1.35			23,954	8,247	62,901	29,992	100 Year
2.50			26,528	29,027	91,929	59,019	Regional
3.00			27,647	13,544	105,473	72,563	Maximum Water Level

Stormwater Management Calculations

Catchment Area Characteristics - Phase 3

SWM Pond C1

Land Use	Area (ha)	% Imp
Building	31.24	100%
Hardscaping around building	18.13	100%
SWM Pond C1	4.09	50%
SWM Pond C2	5.28	50%
Total Area	58.74	92%

Areas to Woodlot, East and South Outlets

Land Use	Area (ha)	% Imp
Parking Lot West of Woodlot	1.38	100%
Parking strip east of SWM Pond	0.31	100%
Parking Lot East of Woodlot	1.28	100%
Parking Strip along First Line	0.55	100%
Parking S and E of Bldg C4	2.78	100%
Total Area	6.30	100%

bioretention, outlet north to Indian Creek

bioretention, split b/w woodlot and culvert under 1st Line

Stormwater Management Calculations

Storage Requirements - Phase 3

Required Permanent Pool Volume

	Pond C	
Internal Area (ha)	58.74	
% Impervious	92%	
Unit Storage Required (m3/ha)	222	excluding extended detention storage
Total Storage Required (m3)	13,023	

Required Active Storage Volume

	Indian Creek Targets		Pond C	
Storm Event	Unit Flow Rate (m3/s/ha)	Unit Storage Volume (m3/im.ha)	Target Release Rate (m3/s)	Storage Volume (m3)
Extended D.	0.00084	375	0.049	20,271
25-year	0.012	550	0.705	29,730
100-year	0.024	800	1.410	43,244
Regional	0.066	1550	3.877	83,785

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SWM Pond C1 (North)

Elevation	Forebay Area (m2)	Main Cell Area (m2)	Total Area (m2)	Incremental Volume (m3)	Cumulative Volume (m3)	Cumulative Active Storage (m3)	Notes
-2.00	1,755	5,868	7,623				Bottom of Pond
-0.60	2,562	7,287	9,849	12,230	12,230		Base of safety shelf
0.00	3,207	8,368	11,575	6,427	18,658		Permanent Pool
0.60			13,178	7,426	26,083	7,426	Top of safety shelf
0.90			13,632	4,021	30,105	11,447	
1.50			14,539	8,451	38,556	19,899	
2.00			15,296	7,459	46,015	27,357	
2.50			16,052	7,837	53,852	35,194	
3.00			16,808	8,215	62,067	43,409	Maximum Water Level

SWM Pond C2 (South)

Elevation	Forebay Area (m2)	Main Cell Area (m2)	Total Area (m2)	Incremental Volume (m3)	Cumulative Volume (m3)	Cumulative Active Storage (m3)	Notes
-2.00	2,488	13,475	15,963				Bottom of Pond
-0.60	3,664	16,477	20,141	25,273	25,273		Base of safety shelf
0.00	4,571	18,689	23,260	13,020	38,293		Permanent Pool
0.60			25,869	14,739	53,032	14,739	Top of safety shelf
0.90			26,586	7,868	60,900	22,607	
1.50			28,020	16,382	77,282	38,989	
2.00			29,216	14,309	91,591	53,298	
2.50			30,411	14,907	106,498	68,205	
3.00			31,606	15,504	122,002	83,709	Maximum Water Level

Combined Permanent Pool Volume (m3) 56,951
Combined Active Storage Volume (m3) 127,118

Stormwater Management Calculations

Catchment Area Characteristics - Phase 4

SWM Pond D

Land Use	Area (ha)	% Imp
Building	7.31	100%
Hardscaping around building	7.74	100%
SWM Pond	3.10	50%
Total Area	18.15	91%

Parking South of Pipeline Easement

Land Use	Area (ha)	% Imp
Trailer Parking and Laneways	1.80	100%
Landscape and Undeveloped	3.60	0%
Total Area	5.40	33%

ENVISION CONSULTANTS LTD		Project:	Milton Gateway	No.:	24-0647
		By:	S Hollingworth	Date:	2026-04-24
		Checked:		Page:	1
Stormwater Management Calculations		Storage Requirements - Phase 4			
Required Permanent Pool Volume					
		Pond D			
Internal Area (ha)		18.15			
% Impervious		91%			
Unit Storage Required (m3/ha)		221			
Total Storage Required (m3)		4,007			
Required Active Storage Volume					
	Indian Creek Targets		Pond D		
Storm Event	Unit Flow Rate (m3/s/ha)	Unit Storage Volume (m3/im.ha)	Target Release Rate (m3/s)	Storage Volume (m3)	
Extended D.	0.00084	375	0.015	6,225	
25-year	0.012	550	0.218	9,130	
100-year	0.024	800	0.436	13,280	
Regional	0.066	1550	1.198	25,730	

Stormwater Management Calculations

Stage-Storage Table - Phase 4

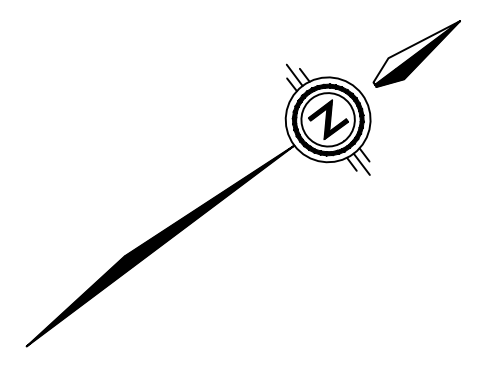
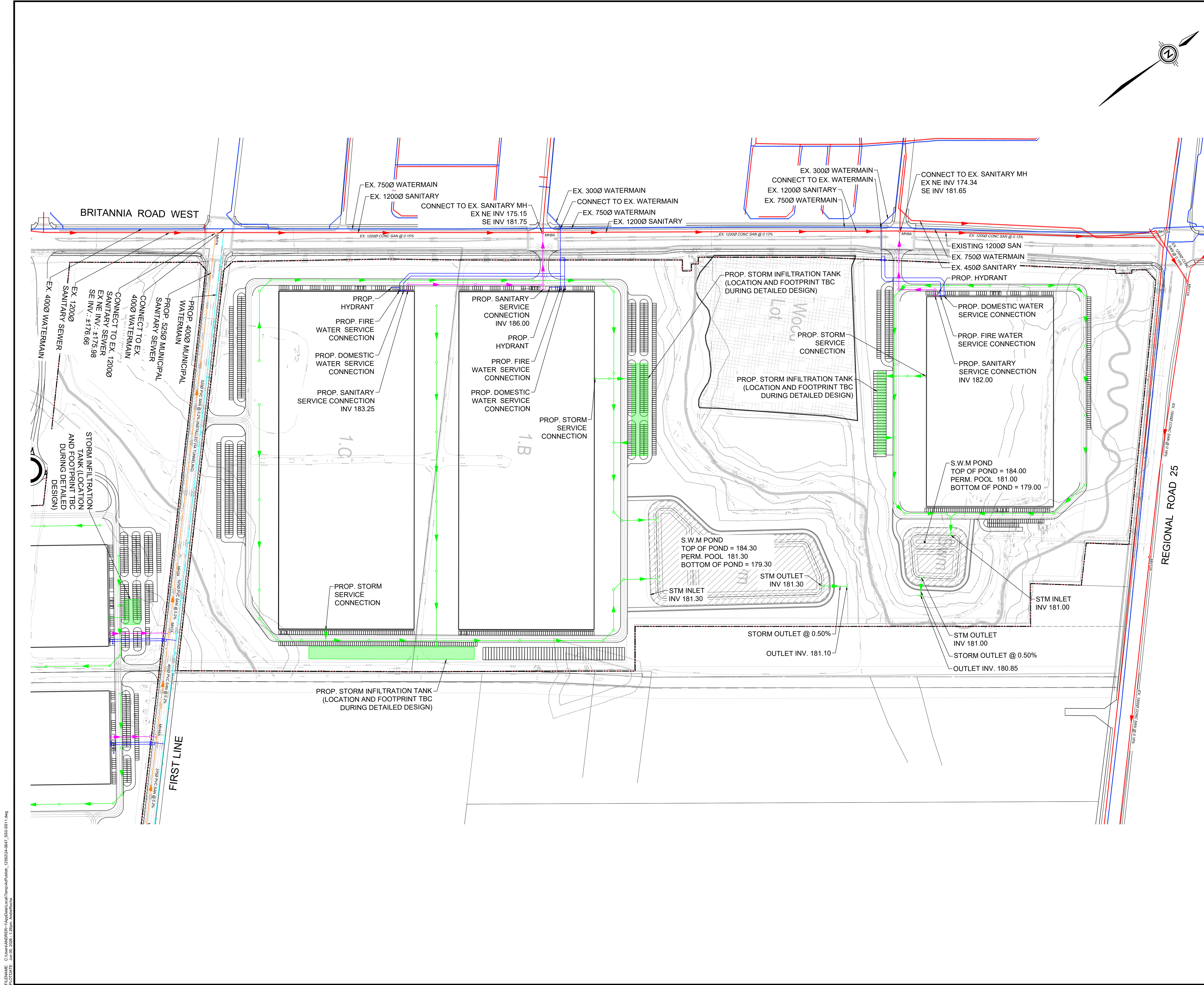
SWM Pond A1

Elevation	Forebay Area (m2)	Main Cell Area (m2)	Total Area (m2)	Incremental Volume (m3)	Cumulative Volume (m3)	Cumulative Active Storage (m3)	Notes
-2.00	756	1,824	2,580				Bottom of Pond
-0.60	1,486	3,371	4,857	5,206	5,206		Base of safety shelf
0.00	2,075	4,544	6,619	3,443	8,649		Permanent Pool
0.60			8,484	4,531	13,180	4,531	Top of safety shelf
0.80			8,839	1,732	14,912	6,263	Extended Detention
1.15			9,460	3,202	18,114	9,466	25 Year
1.60			10,259	4,437	22,551	13,902	100 Year
2.70			12,212	12,359	34,910	26,261	Regional
3.00			12,744	3,743	38,653	30,005	Maximum Water Level



APPENDIX C:

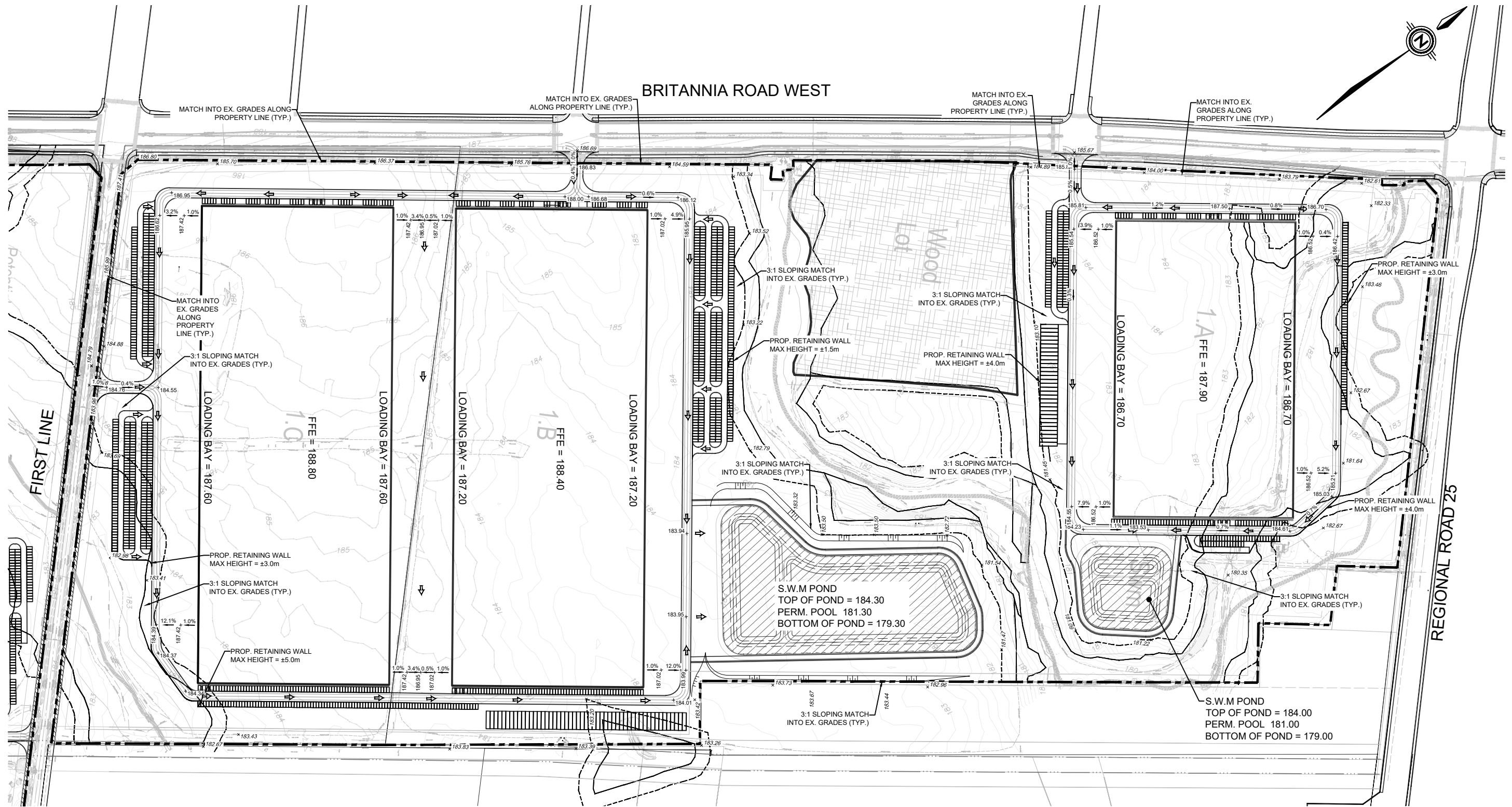
Conceptual Engineering Drawing



KEY PLAN NTS

- LEGEND**
- EX. WATERMAIN
 - EX. SANITARY SEWER
 - EX. STORM SEWER
 - PROP. WATERMAIN
 - PROP. SANITARY SEWER
 - PROP. STORM SEWER
 - PROP. MUNICIPAL WATERMAIN
 - PROP. MUNICIPAL SANITARY SEWER
 - PROP. MUNICIPAL FORCEMAIN
 - PROP. VALVE AND BOX
 - PROP. HYDRANT AND VALVE
 - LIMIT OF PROPERTY

1	ISSUED FOR 1ST ZBA SUBMISSION	D.A.	JUN 17/26	A.W.	
No.	REVISIONS TO DRAWING	BY	DATE	APPR.	
ALL PREVIOUS ISSUES OF THIS DRAWING ARE SUPERSEDED					
CLIENT TRIBAL DEVELOPMENT MANAGEMENT SERVICES INC					
MUNICIPALITY  TOWN OF MILTON					
PROJECT TITLE MILTON LINK					
SHEET TITLE PRELIMINARY SERVICING PLAN PHASE 1					
CONSULTANT  ENVISION CONSULTANTS LTD 6415 Northport Dr. Mississauga, ON Canada L4V 1X1 Office (905) 677-0202 E-mail: sales@envisionconsultants.ca					
STAMP 					
DESIGNED D.A.		DRAWN J.Z.		CHECKED A.W.	
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DWG. NUMBER 24-0647					



LEGEND

	LIMIT OF PROPERTY
	EX. ELEVATION
	PROP. ELEVATION
	PROP. GRADE
	EX. CONTOUR
	PROP. SLOPING

CLIENT
TRIBAL DEVELOPMENT MANAGEMENT SERVICES INC.

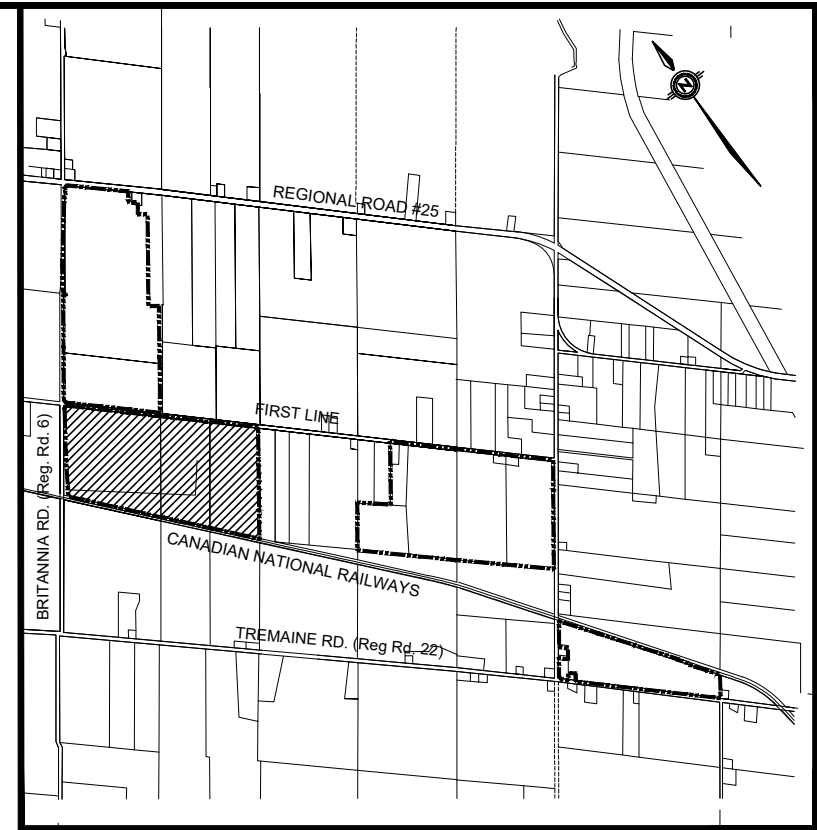
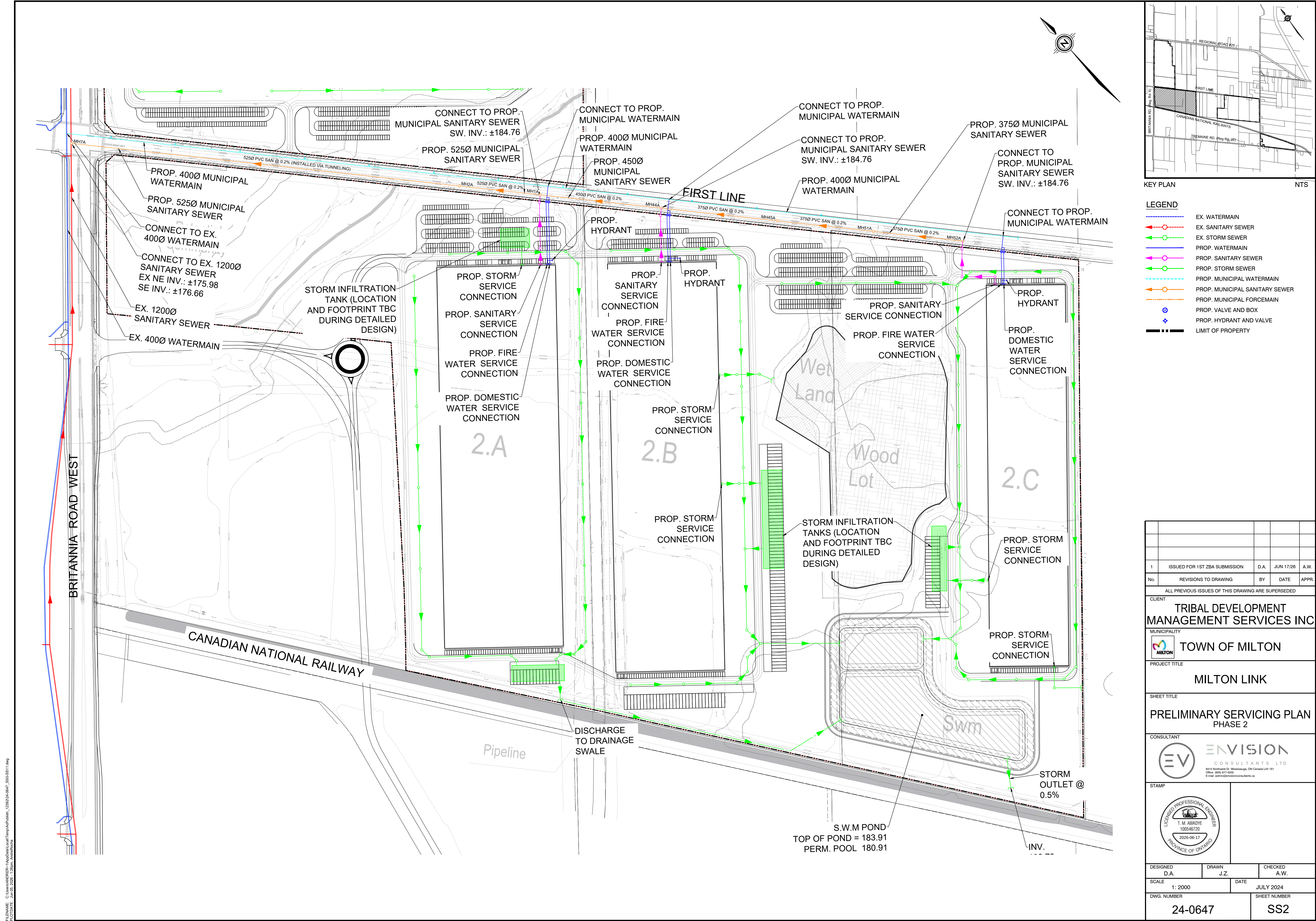
TITLE
MILTON LINK

CONCEPTUAL GRADING PLAN PHASE 1



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Scale	1: 4 000	Figure No.	11a

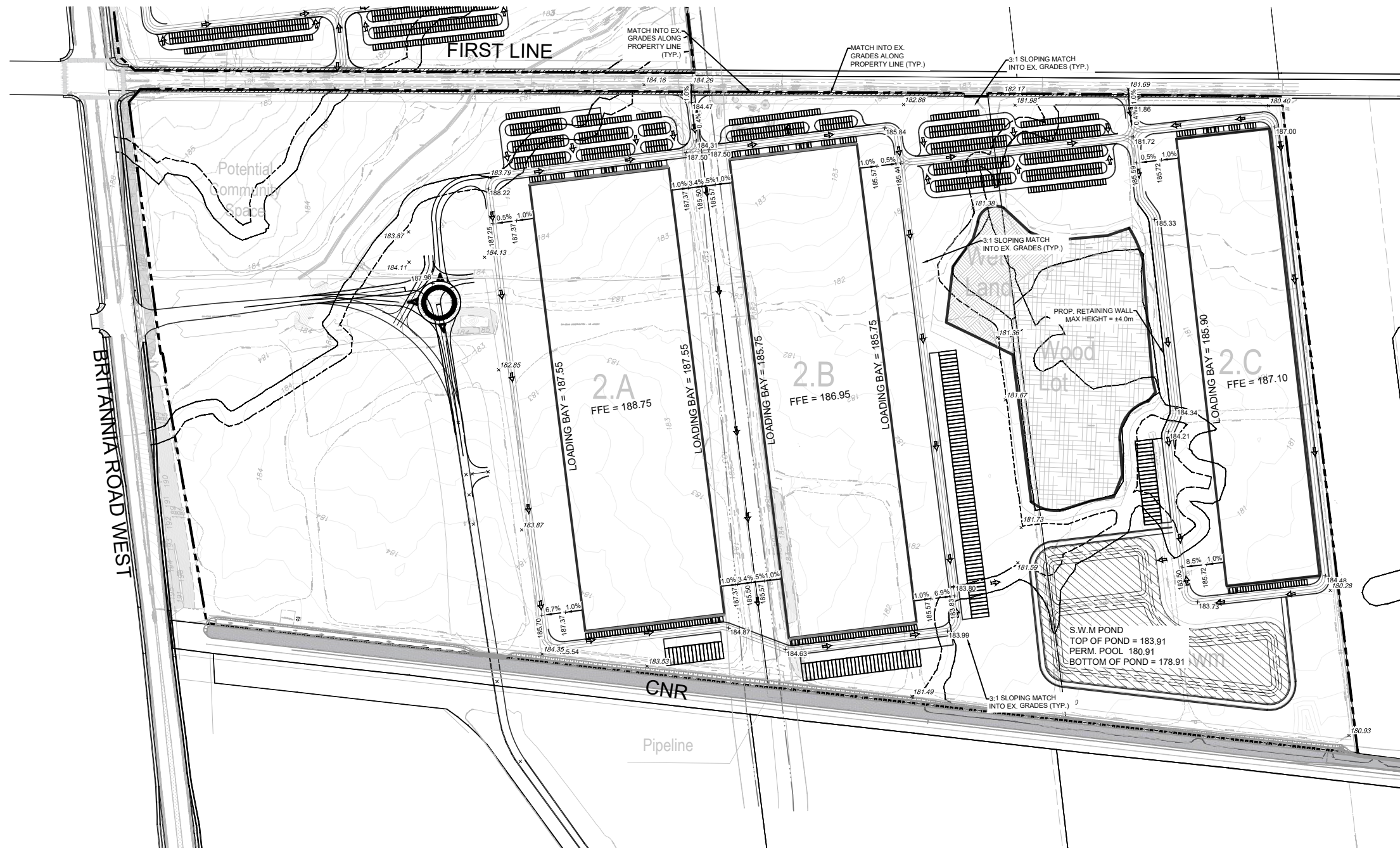
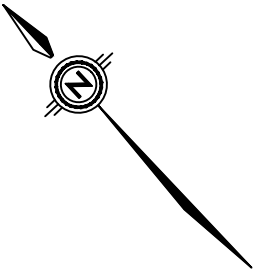


KEY PLAN NTS

LEGEND

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	EX. STORM SEWER
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	PROP. SANITARY SEWER
	PROP. STORM SEWER
	PROP. MUNICIPAL WATERMAIN
	PROP. MUNICIPAL SANITARY SEWER
	PROP. MUNICIPAL FORCEMAIN
	PROP. VALVE AND BOX
	PROP. HYDRANT AND VALVE
	LIMIT OF PROPERTY

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		TOWN OF MILTON							
PROJECT TITLE									
MILTON LINK									
SHEET TITLE									
PRELIMINARY SERVICING PLAN PHASE 2									
CONSULTANT									
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DWG. NUMBER 24-0647					SHEET NUMBER SS2				



LEGEND

	LIMIT OF PROPERTY
	EX. ELEVATION
	PROP. ELEVATION
	PROP. GRADE
	EX. CONTOUR
	PROP. SLOPING

CLIENT
TRIBAL DEVELOPMENT MANAGEMENT SERVICES INC.

TITLE
MILTON LINK

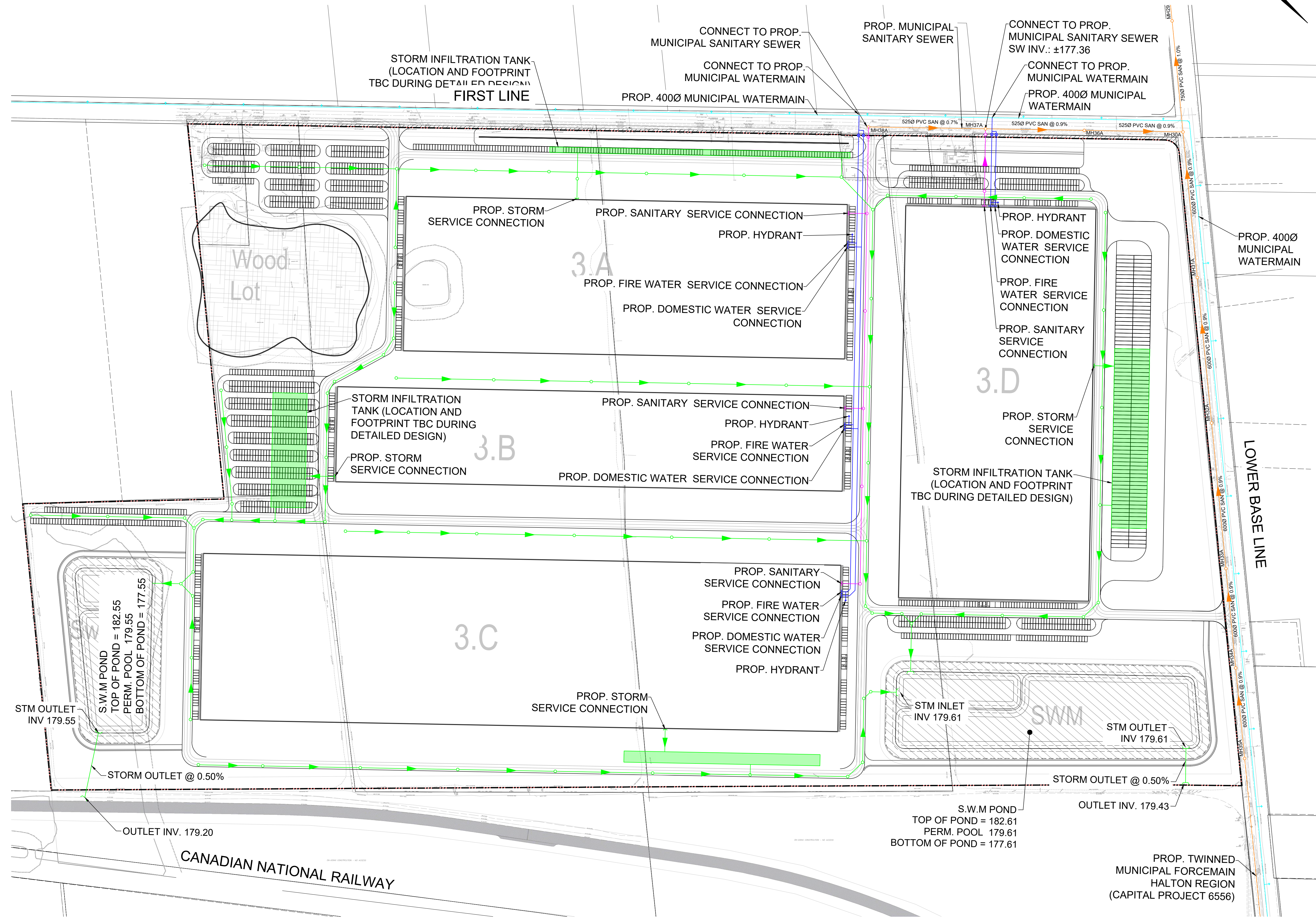
CONCEPTUAL GRADING PLAN PHASE 2



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Scale	1: 5 000	Figure No.	11b

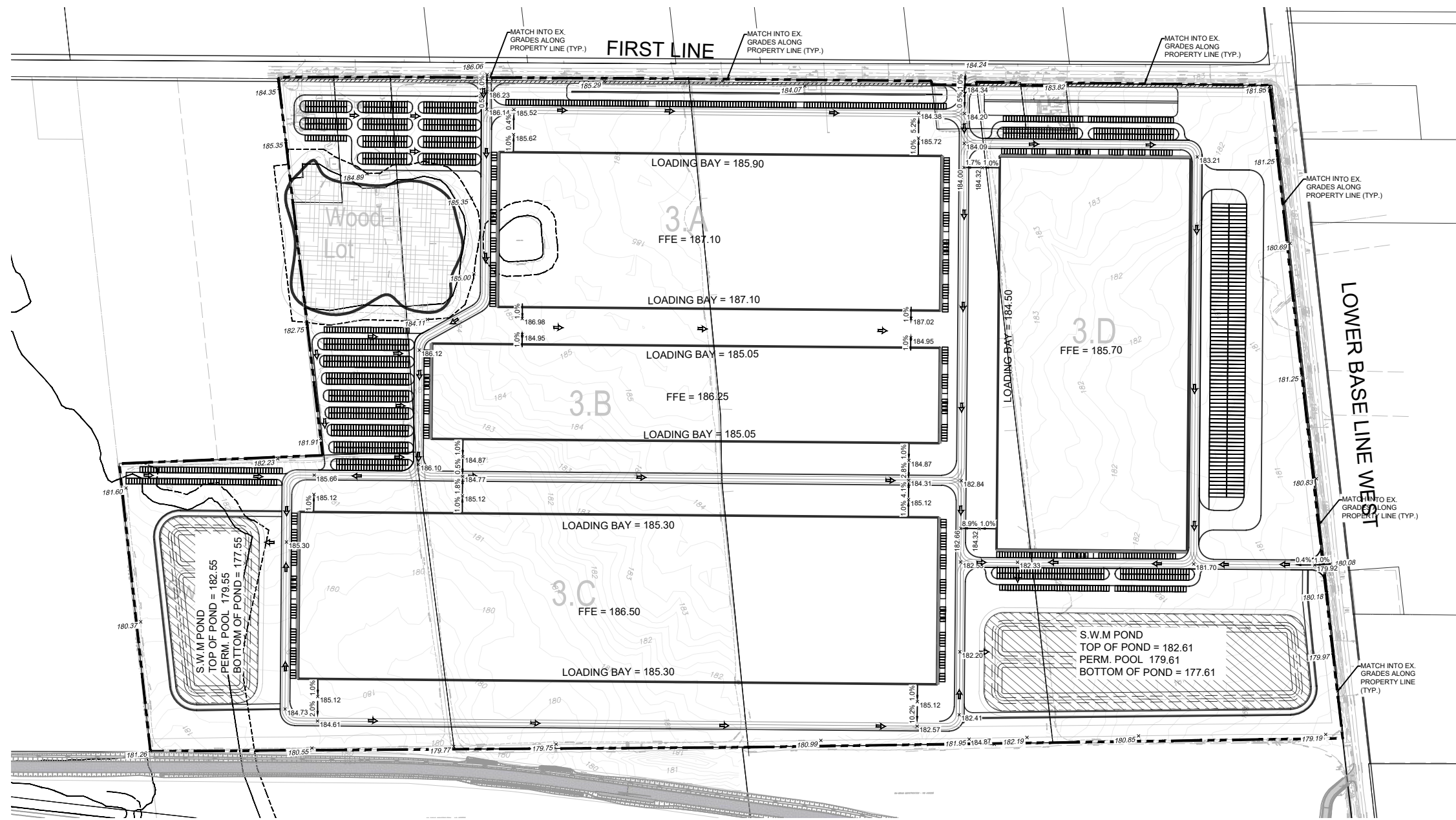
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KEY PLAN NTS

LEGEND	
	EX. WATERMAIN
	EX. SANITARY SEWER
	EX. STORM SEWER
	PROP. WATERMAIN
	PROP. SANITARY SEWER
	PROP. STORM SEWER
	PROP. MUNICIPAL WATERMAIN
	PROP. MUNICIPAL SANITARY SEWER
	PROP. MUNICIPAL FORCEMAIN
	PROP. VALVE AND BOX
	PROP. HYDRANT AND VALVE
	LIMIT OF PROPERTY

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 TOWN OF MILTON					
PROJECT TITLE					
MILTON LINK					
SHEET TITLE					
PRELIMINARY SERVICING PLAN PHASE 3					
CONSULTANT					
 ENVISION CONSULTANTS LTD 6415 Northport Dr. Mississauga, ON Canada L4V 1X1 Office: (905) 677-0202 E-mail: sales@envisionconsultants.com					
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DWG. NUMBER 24-0647			SHEET NUMBER SS3		



LEGEND

	LIMIT OF PROPERTY
	EX. ELEVATION
	PROP. ELEVATION
	PROP. GRADE
	EX. CONTOUR
	PROP. SLOPING

CLIENT
TRIBAL DEVELOPMENT MANAGEMENT SERVICES INC.

TITLE
MILTON LINK

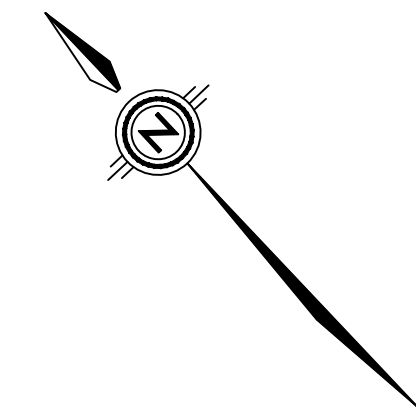
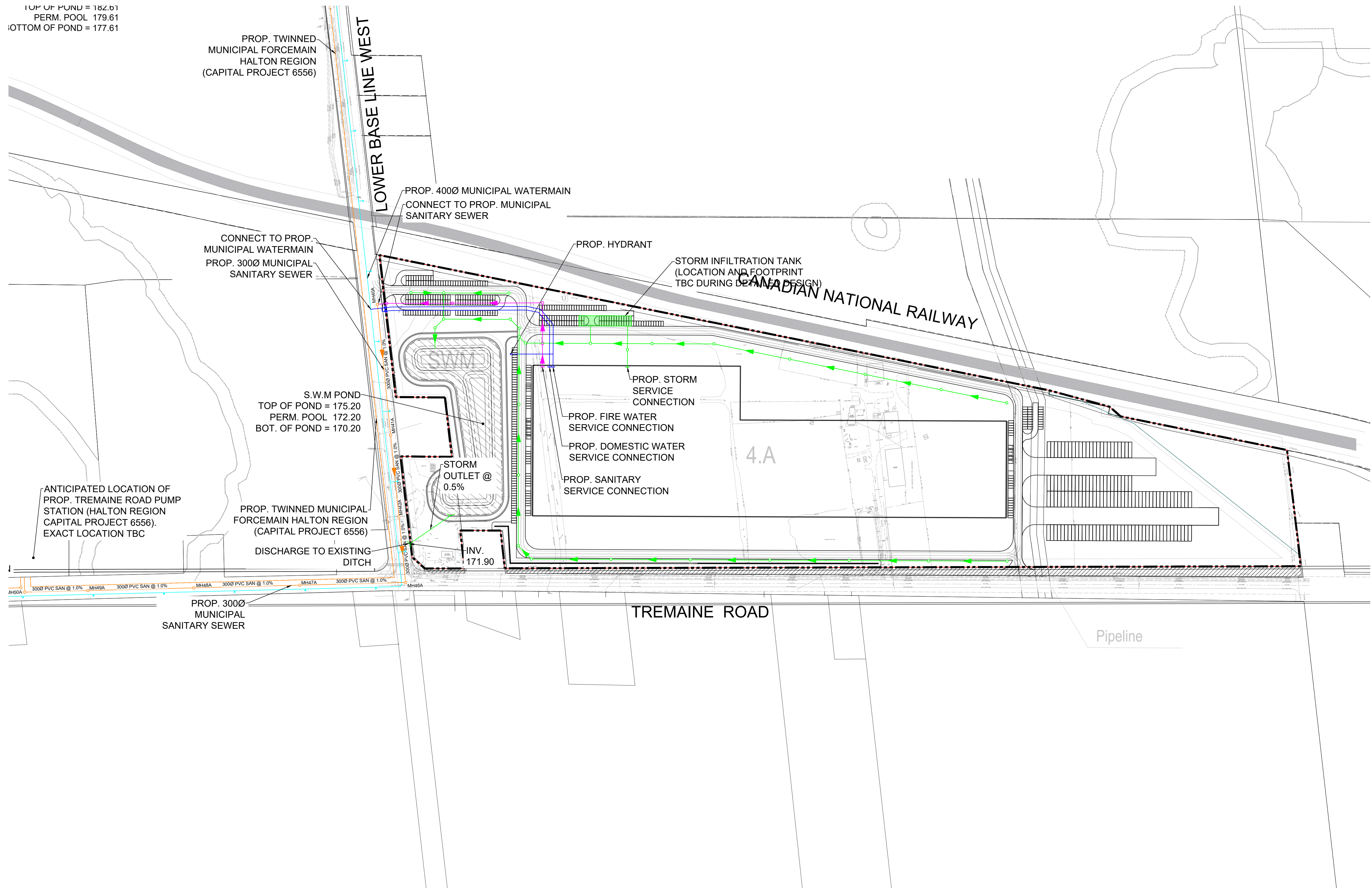
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Scale	1: 5 000	Figure No.	11c

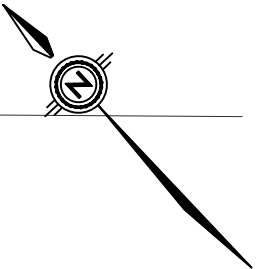
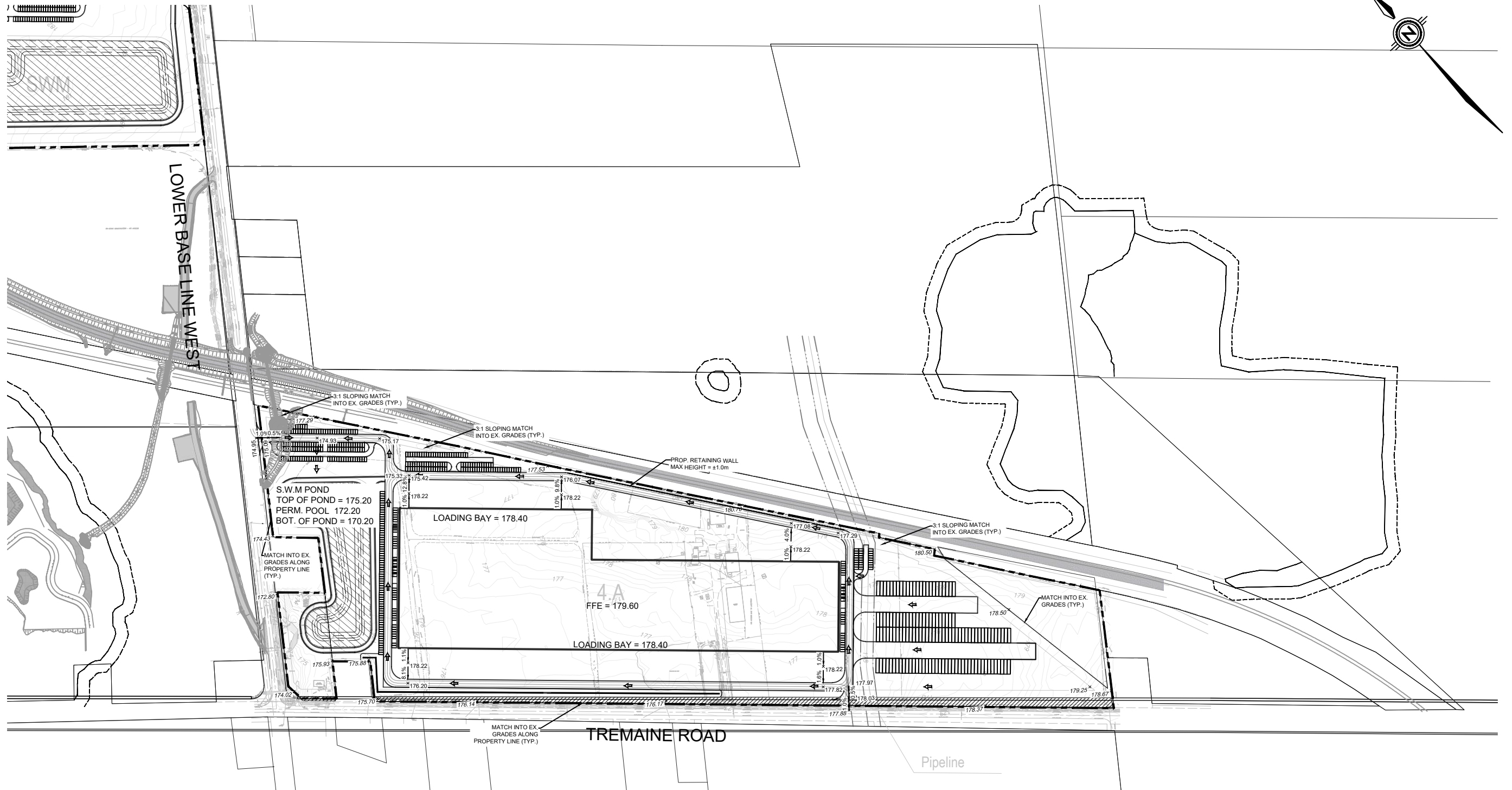
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PERM. POOL 179.61
BOTTOM OF POND = 177.61



KEY PLAN NTS

- LEGEND**
- EX. WATERMAIN
 - EX. SANITARY SEWER
 - EX. STORM SEWER
 - PROP. WATERMAIN
 - PROP. SANITARY SEWER
 - PROP. STORM SEWER
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1	ISSUED FOR 1ST ZBA SUBMISSION	D.A.	JUN 17/26	A.W.	
No.	REVISIONS TO DRAWING	BY	DATE	APPR.	
ALL PREVIOUS ISSUES OF THIS DRAWING ARE SUPERSEDED					
CLIENT					
TRIBAL DEVELOPMENT MANAGEMENT SERVICES INC					
MUNICIPALITY					
 TOWN OF MILTON					
PROJECT TITLE					
MILTON LINK					
SHEET TITLE					
PRELIMINARY SERVICING PLAN PHASE 4					
CONSULTANT					
 ENVISION CONSULTANTS LTD 6415 Northwest Dr. Mississauga, ON Canada L4V 1X1 Office (905) 677-0202 E-mail: info@envisionconsultants.com					
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DWG. NUMBER 24-0647				SHEET NUMBER SS4	



LEGEND

---	LIMIT OF PROPERTY
+ 161.86	EX. ELEVATION
+ 154.36	PROP. ELEVATION
2.0%	PROP. GRADE
200.00	EX. CONTOUR
	PROP. SLOPING

CLIENT
TRIBAL DEVELOPMENT MANAGEMENT SERVICES INC.

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