

QUADREAL PROPERTY GROUP LIMITED PARTNERSHIP &  
TRIBAL PARTNERS CANADA INC.

# FUNCTIONAL SERVICING REPORT

## 12668 & 12862 DIXIE ROAD

FEBRUARY 26, 2024





# FUNCTIONAL SERVICING REPORT

## 12668 & 12862 DIXIE ROAD

QUADREAL PROPERTY GROUP LIMITED  
PARTNERSHIP & TRIBAL PARTNERS CANADA  
INC.

PROJECT NO.: 201-11545  
DATE: FEBRUARY 2024

WSP CANADA INC.  
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# 1 INTRODUCTION

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## 1.1 SCOPE

WSP Canada Inc. (WSP) has been retained by QuadReal Property Group Limited Partnership & Tribal Partners Canada Inc. to prepare a Functional Servicing Report (FSR) to support an Official Plan Amendment and Zoning By-law Amendment application for the proposed development of 12668 & 12862 Dixie Road in Caledon, Ontario. The purpose of this report is to provide a conceptual framework for servicing the proposed development with respect to water supply, sanitary sewage and storm drainage. A Stormwater Management (SWM) Report outlining the proposed quality and quantity controls for stormwater on this site has been prepared under separate cover, also by WSP.

In preparing this report, WSP staff secured and analyzed available Region of Peel Record Drawings, architectural drawings prepared by Ware Malcomb dated December 13, 2023, as well as a topographic survey prepared by R. Avis Surveying Inc received February 12, 2021.

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## 1.2 SITE DESCRIPTION

The development is a 79.0 ha parcel of land bounded by Old School Road to the North, Dixie Road to the East, and undeveloped lands to the West and South. The site is currently used for agricultural purposes, and is primarily vacant with the exception of a farmhouse and some associated structures. The development consists of two (2) properties – 12668 Dixie Road and 12862 Dixie Road. The 12668 Dixie Road property is a 38.1ha land parcel and the 12862 Dixie Road property is a 40.9ha land parcel. There is an existing woodlot within the 12862 Dixie Road property which is excluded from the proposed development, resulting in a total developable area of 37.4ha for the 12862 Dixie Road property.

The proposed development will consist of three (3) industrial warehouse buildings – Building '1', Building '2' and Building '3' with Gross Floor Areas (GFA) of 55,541 m<sup>2</sup>, 27,497 m<sup>2</sup> and 60,355 m<sup>2</sup> respectively. Buildings '1' and '2' will be located within the 12668 Dixie Road property and Building '3' will be located within the 12862 Dixie Road property. The development will also include loading dock areas, associated trailer and car parking spaces. A stormwater management pond is proposed within each property to meet quantity and quality control targets.

The sites will be serviced by the future municipal sewers and watermain in the adjacent Dixie Road right-of-way. Any existing service connections to the site within the municipal road allowance will be decommissioned by the municipality at the owner's cost. Refer to **Figure 1** for the Location Map, **Figure 2** for the Pre-Development Plan, and **Figure 3** for an illustration of the Proposed Development Plan.

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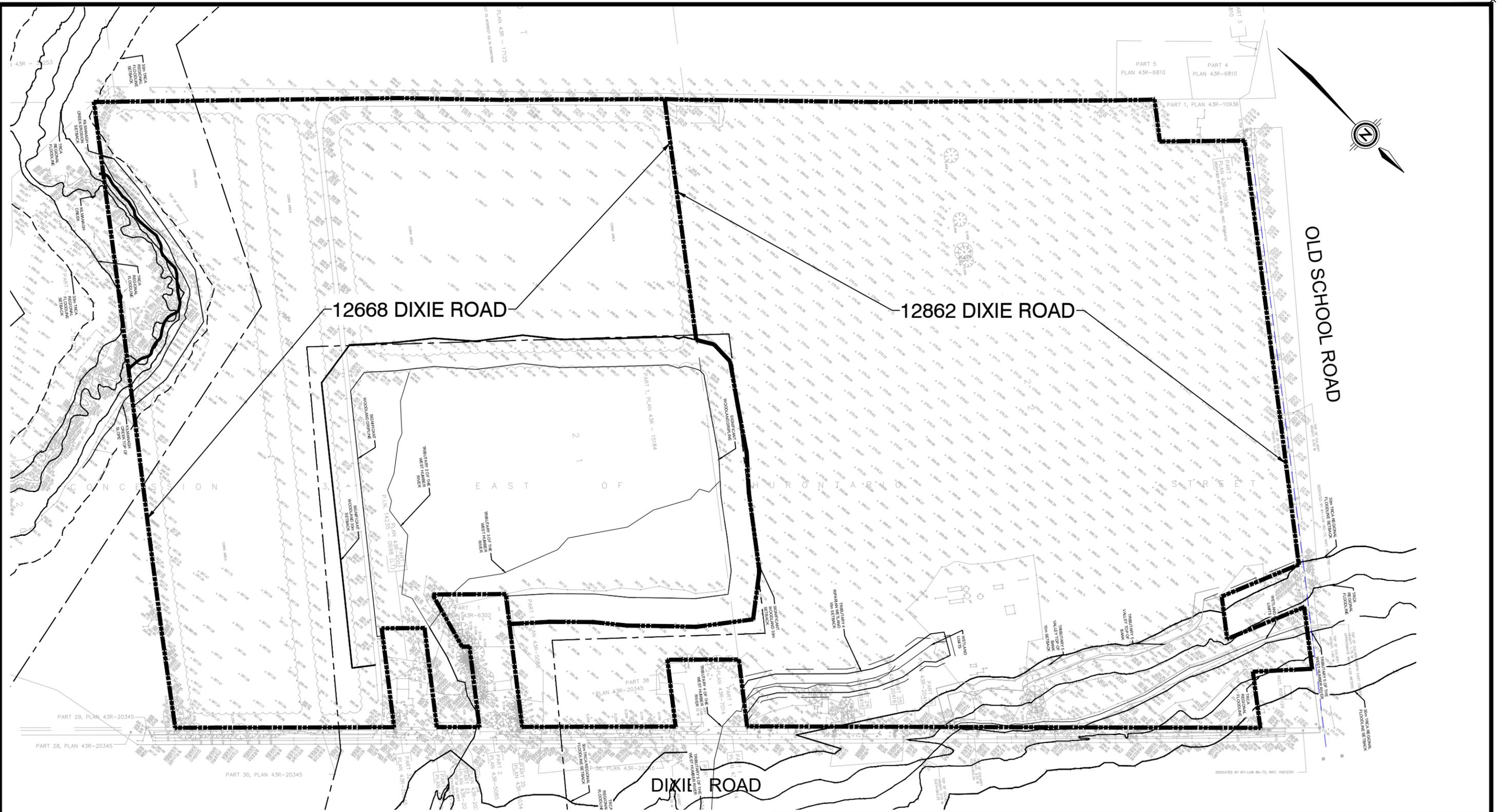
TITLE  
**12668 & 12862 DIXIE ROAD**

**LOCATION PLAN**



100 Commerce Valley Dr. West, Thornhill, ON Canada L3T 0A1  
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**LEGEND**

-  LIMIT OF PROPERTY
-  GREENBELT BOUNDARY

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TITLE **12668 & 12862 DIXIE ROAD**

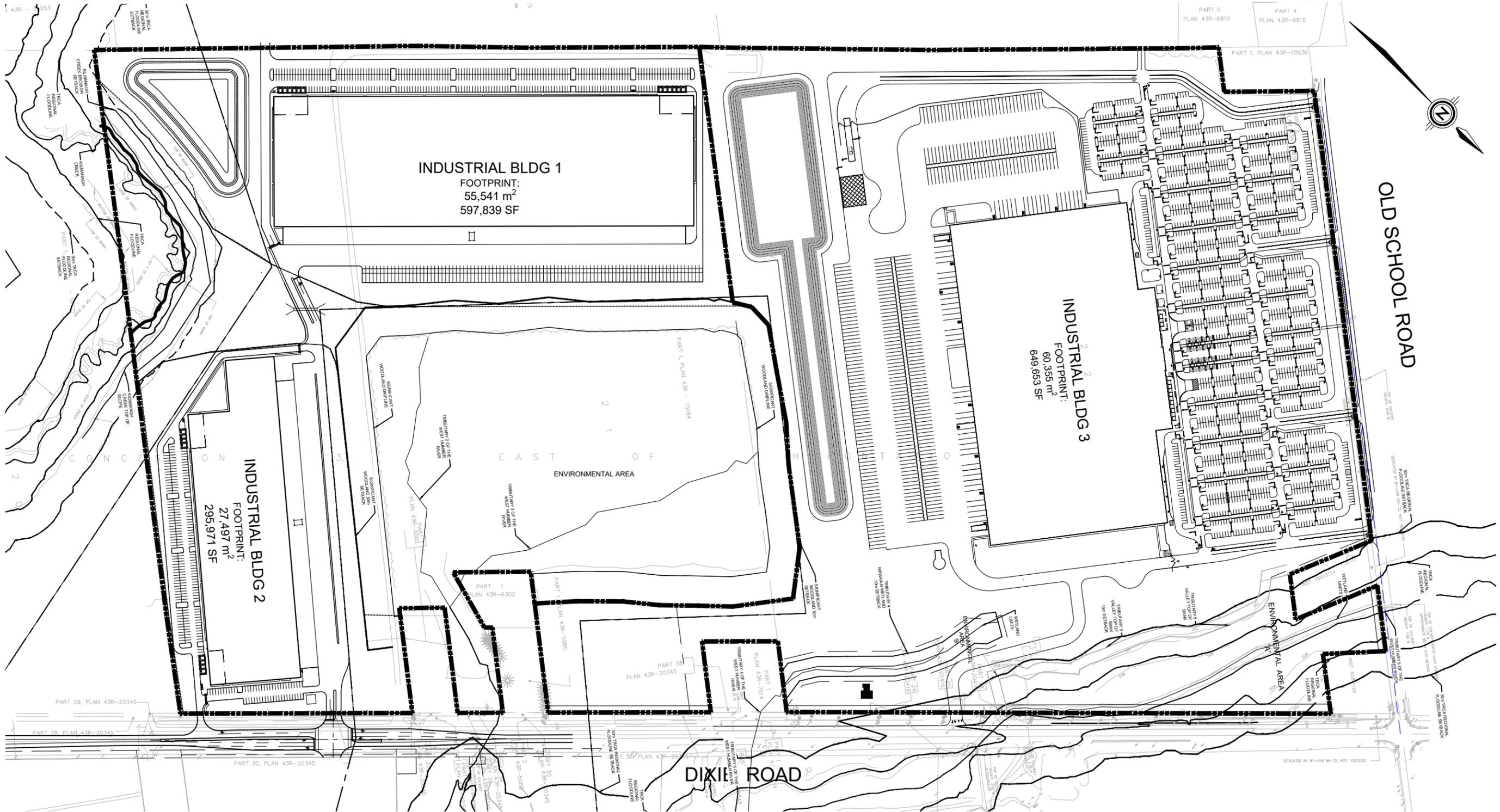
**PRE- DEVELOPMENT PLAN**



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**LEGEND**

- LIMIT OF PROPERTY
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**PROPOSED DEVELOPMENT PLAN**



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# 2 WATER SUPPLY AND APPURTENANCES

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## 2.1 EXISTING CONDITIONS

WSP has obtained record drawings from the Region of Peel for the area surrounding the site. Existing watermains in the vicinity of the site include a 150mm diameter PVC Zone 7 watermain along Old School Road, and a 150mm diameter PVC Zone 7 watermain along Dixie Road. Further south on Dixie Road, there is a 400mm diameter PVC Zone 7 watermain which is terminates at a valve chamber approximately 400m south of the southern limit of the development.

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## 2.2 PROPOSED MUNICIPAL WATERMAIN UPGRADES

The Region of Peel 2020 Water & Wastewater Master Plan for the Lake-Based System identifies capital project D-268 (Region of Peel project number 10-1210) which will extend the existing 400mm diameter Zone 7 watermain along Dixie Road to Old School Road in front of the site to service proposed developments in the area. In a meeting held with the Region on January 18, 2024, the Region confirmed that the watermain will be extended north along Dixie Road (Contract 5, Project 19-1189). The location and depth of the proposed watermain as well as the estimated domestic and fire flow demands from the proposed development will be coordinated with the Region to ensure that the proposed watermain network will have sufficient capacity to accommodate the demands from the development. The construction timing will be coordinated with the Region, ensuring completion of the watermain extension prior to occupancy of the buildings.

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## 2.3 DOMESTIC AND FIRE WATER DEMANDS

The peak domestic water demand for the development was calculated using the Region of Peel's design criteria for industrial development. A population density of 70 persons per hectare, average consumption of 300L/employee/day, a maximum day factor of 1.4 and peak hour factor of 3.0 were used to estimate the demands from each building. The estimated average day, maximum day and peak hour demands for each building are summarized in Table 2.1 below. The 12668 Dixie Road property will generate a total average day demand of 2.0L/s, maximum day demand of 2.8 L/s and a peak hour demand of 6.1 L/s. The 12862 Dixie Road property will generate a total average day demand of 1.5 L/s, maximum day demand of 2.1 L/s and a peak hour demand of 4.4 L/s. For detailed calculations, see **Appendix B**.

The estimated fire flows have been calculated using the recommendations of the 1999 Fire Underwriter's Survey. Table 2.1 lists the fire demands for Buildings 1, 2 and 3. Based on the calculations, the maximum fire flow demand from the 12668 Dixie Road property is 483 L/s while the maximum fire flow demand from the 12862 Dixie Road property is 500 L/s. For detailed calculations, see **Appendix B**.

**Table 2.1 Domestic Water Demand and Fire Flow Requirements**

			Domestic Demands (L/s)			Fire Flow (FUS)		
	Building	Area (m <sup>2</sup> )	Avg. Day	Max. Day	Peak Hour	USGPM	L/min	L/s
12668 Dixie Road	1	55,541	1.4	1.9	4.1	7,652	29,000	483
	2	27,497	0.7	0.9	2.0	5,277	20,000	333
12862 Dixie Road	3	60,355	1.5	2.1	4.4	7,916	30,000	500

## 2.4 HYDRANT FLOW TEST

The total maximum day demand for the 12668 Dixie Road and 12862 Dixie Road properties are 2.8 L/s and 2.1 L/s respectively. The required fire flow demand for the 12668 Dixie Road and 12862 Dixie Road properties are 483 L/s and 500 L/s respectively. Therefore, the maximum day plus fire flow demand for the 12668 Dixie Road property is 485.8 L/s and the maximum day plus fire flow demand for the 12862 Dixie Road property is 502.1 L/s.

It is expected that the water supply from the existing 150mm diameter watermain on Dixie Road and Old School Road will be insufficient to provide fire flow for the proposed developments. To ensure that adequate water supply is available, the domestic & fire water demands as well as the construction timing will be coordinated with the Region to ensure the completion of the proposed 400mm Zone 7 watermain extension prior to occupancy of the buildings. It is our understanding that the Region of Peel will use the multi-use demand tables appended to this report to confirm using their water model that proposed supply will be available to meet the estimated demand from the proposed developments. The multi-use demand tables for the 12668 Dixie Road and 12862 Dixie Road properties are included in **Appendix C**.

## 2.5 PROPOSED WATER SERVICING

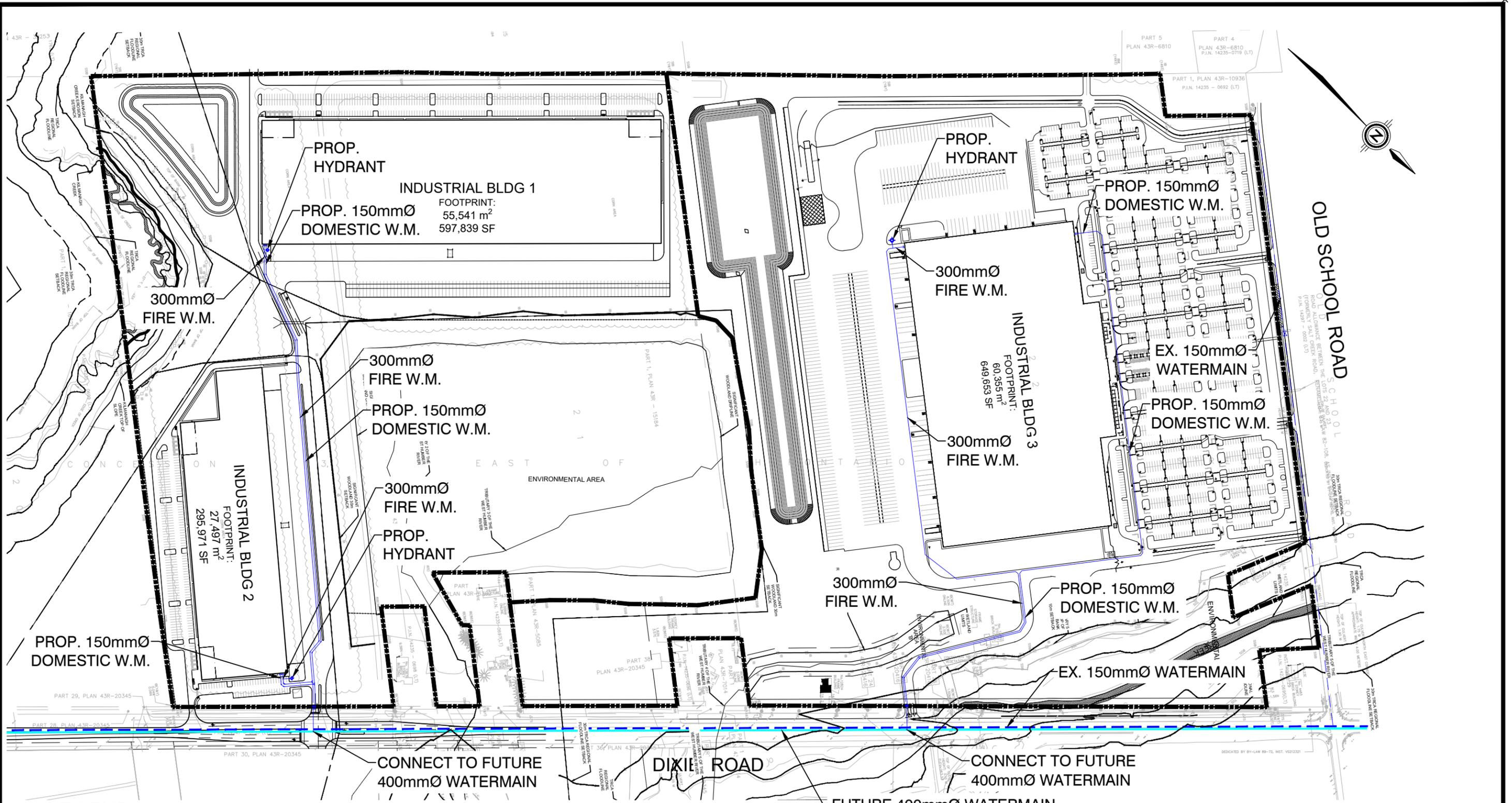
One (1) domestic and one (1) fire service connection is proposed for each building per Region of Peel requirements. The domestic services shall be 150mm in diameter. Buildings '1' and '2' will be connected to the proposed 400mm Zone 7 watermain on Dixie Road via an internal 150mm diameter watermain network. Building '3' will connect separately to the proposed 400mm Zone 7 watermain on Dixie Road. The fire service connections to the buildings shall be 300mm diameter. Buildings '1' and '2' will be connected to the proposed 400mm Zone 7 watermain on Dixie Road via an internal 300mm diameter watermain network. Building '3' will connect separately to the proposed 400mm Zone 7 watermain on Dixie Road.

All service connections to municipal watermain are proposed to include valve and boxes and the property line. A water meter and backflow preventor will be installed on each domestic line within the buildings. Double detector check valves will be installed on the fire lines inside

the property line. The on-site watermains and service connections within the municipal right of way will be designed to Region of Peel standards and the water services within the proposed buildings will be designed by the site mechanical consultant to meet Ontario Plumbing Code standards.

There are currently three (3) existing hydrants located in the vicinity of the site in the east side of Dixie Road. Additional hydrants will also be proposed along Dixie Road as part of the Region's proposed municipal watermain upgrade works. Hydrants will be provided in front of each proposed building. The Siamese connection to the buildings will be located so that it is a maximum of 45m away from a hydrant.

Refer to **Figure 4** for proposed water servicing layout.



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TITLE **12668 & 12862 DIXIE ROAD**

# WATER SERVICING PLAN



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# 3 SANITARY SEWAGE SYSTEM

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## 3.1 EXISTING SEWER SYSTEM

WSP has obtained record drawings from the Region of Peel for the area surrounding the site. There are currently no sanitary sewers available along the frontage of the site on either Dixie Road or Old School Road. A 75mm diameter leachate line runs along Dixie Road in front of the site. Further south on Dixie Road, there is an existing 600mm diameter sanitary sewer which is capped at an existing manhole approximately 350m south of the southern limit of the development.

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### 3.1.1 EXISTING SEWAGE FLOWS

The existing development is primarily vacant with the exception of a few existing structures for agricultural use. As such, the site does not contribute to the downstream sanitary system under existing conditions.

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## 3.2 PROPOSED MUNICIPAL SANITARY SEWER UPGRADES

The existing 600mm diameter sanitary sewer downstream of the site on Dixie Road was constructed at a cover depth of approximately 9m below ground surface per record drawings obtained from the Region. In a meeting held with the Region on January 18, 2024, the Region confirmed that the sanitary sewer will be extended north along Dixie Road to service proposed developments in the area (Contract 5, Project 19-1190). The location and depth of the proposed sanitary sewer as well as the estimated sanitary flow generation from the proposed development will be coordinated with the Region to ensure that the proposed sanitary sewer extension will have sufficient capacity to accommodate the flows from the development. Although there is currently no exact timeline to indicate when the sewer extensions will occur, the construction timing will be coordinated with the Region, ensuring completion of the sanitary sewer extension prior to occupancy of the buildings.

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## 3.3 PROPOSED DEVELOPMENT SEWAGE FLOW

To calculate the theoretical peak sanitary flows, the following design criteria have been utilized:

- 70 persons/ha for industrial land use
- 270L/cap/day average flow generation rate
- Harmon Peaking Factor
- Infiltration = 0.26 L/s/ha

The demand and peaking factors are based on Region of Peel Sanitary Sewer Design Criteria. An estimate for the post-development demand sanitary sewage flows has been calculated and is shown in **Appendix C**.

**Table 3.1 - Proposed Sanitary Flow**

Building	GFA (m <sup>2</sup> )	Estimated Industrial Population	Average Sanitary Demand (L/s)	Peak Sanitary Demand (L/s)	Infiltration @ 0.26L/s/ha (L/s)	Total Sanitary Flow (L/s)
<b>12668 Dixie Road</b>						
1	55,541	389	1.2	4.9	4.9	9.8
2	27,497	193	0.6	2.4	5.0	7.4
<b>Total</b>	<b>83,038</b>	<b>582</b>	<b>1.8</b>	<b>7.2</b>	<b>9.9</b>	<b>17.1</b>
<b>12862 Dixie Road</b>						
3	60,355	423	1.3	5.3	9.7	15.0
<b>Total</b>	<b>60,355</b>	<b>423</b>	<b>1.3</b>	<b>5.3</b>	<b>9.7</b>	<b>15.0</b>

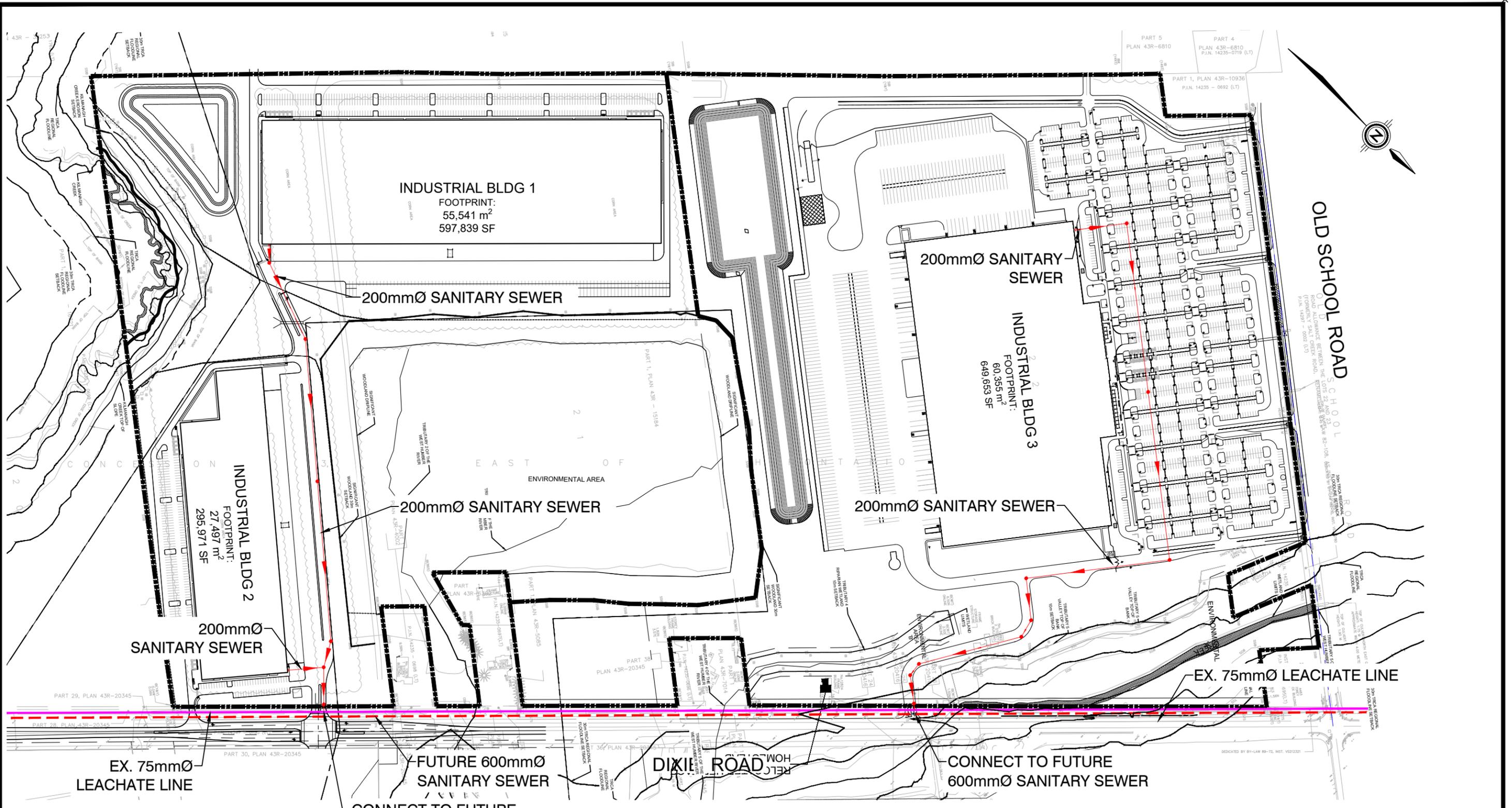
Based on the Region of Peel standards, the total peak sanitary flow including infiltration is 17.1L/s for the 12668 Dixie Road property and 15.0 L/s for the 12868 Dixie Road property. See **Appendix C** for the detailed post-development flow calculations and multi-use demand tables.

### 3.4 PROPOSED SERVICING

Separate internal sanitary sewer networks with pipes ranging from 200mm to 250mm in diameter are proposed within the 12668 Dixie Road and 12862 Dixie Road properties to service the development. The proposed sanitary sewer networks will each connect separately to the proposed 600mm diameter sanitary sewer along Dixie Road. The location and depth of the proposed 600mm sanitary sewer will be coordinated with the Region.

Buildings '1' and '2' are each proposed to have one (1) sanitary service connection. Each connection is proposed to be 200mm diameter and will connect to the 12668 Dixie Road internal sanitary network. Building '3' is proposed to have one (1) 200mm diameter sanitary service connection which will connect to the 12862 Dixie internal sanitary network. Each internal sanitary network will discharge to the proposed 600mm sanitary sewer on Dixie Road.

As per the Region's requirements, the proposed on-site sanitary sewers will include control manholes immediately inside the property line. The proposed sanitary connections to the site within the municipal right of way as well as the internal sanitary sewers will be designed to Region of Peel standards. The proposed sanitary plumbing within the building will be designed by the site mechanical consultant to meet the Ontario Plumbing Code Standards. The proposed sanitary servicing configuration is shown in **Figure 5**.



**INDUSTRIAL BLDG 1**  
 FOOTPRINT:  
 55,541 m<sup>2</sup>  
 597,839 SF

**INDUSTRIAL BLDG 3**  
 FOOTPRINT:  
 60,355 m<sup>2</sup>  
 649,653 SF

**INDUSTRIAL BLDG 2**  
 FOOTPRINT:  
 27,497 m<sup>2</sup>  
 295,971 SF

EAST OF ENVIRONMENTAL AREA

**OLD SCHOOL ROAD**

**DIXIE ROAD**

**LEGEND**

- LIMIT OF PROPERTY
- GREENBELT BOUNDARY
- EX. SANITARY SEWER
- PROP. SAN CONNECTION
- FUTURE MUNICIPAL SEWER
- EX. 600mmØ SANITARY SEWER
- FUTURE 600mmØ SANITARY SEWER

CLIENT **QUADREAL PROPERTY GROUP LIMITED PARTNERSHIP & TRIBAL PARTNERS CANADA INC**

TITLE **12668 & 12862 DIXIE ROAD**

**SANITARY SERVICING PLAN**



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## 4 STORM DRAINAGE

A Stormwater Management (SWM) Report for this development has been prepared under a separate cover by WSP Canada Inc. which details the stormwater quantity and quality controls under which the development will operate. The report is in compliance with MECP Stormwater Management Planning and Design Manual (2003), TRCA Stormwater Management Criteria (August 2012) and the Region of Peel Public Works Stormwater Design Criteria and Procedural Manual (June 2019).

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### 4.1 EXISTING STORM SEWERS

There are currently no existing storm sewers in the vicinity of the site. Under existing conditions, majority of the site drains southeast overland towards the existing ditch and culvert system along the west side of the Dixie Road right-of-way and is conveyed to tributaries of the Humber River. The remainder of the site drains southwest overland towards Kilmanagh Creek located in the southwest portion of the site.

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### 4.2 MINOR STORM DRAINAGE SYSTEM

For the purposes of Stormwater Management, the 12668 Dixie Road property will have two (2) stormwater management systems (“West” and “East”) and the 12862 Dixie Road property will have one (1) stormwater management system. All storm flows within the development will be captured and directed to the respective stormwater management systems which will capture, treat and discharge flows such that for all storm flows up to the 100-year storm event, the storm outflow will be reduced to the corresponding pre-development levels using TRCA’s unit flows for the West Humber River watershed and WSP Humber River SWM Water Quantity Control Criteria Updates (November 2020).

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#### 4.2.1 12668 DIXIE ROAD “WEST” SYSTEM

All storm flows within the 12668 Dixie Road property west of the environmental crossing i.e. loading dock areas, trailer and car parking spaces and internal driveways associated with Building ‘1’, will be captured and conveyed through an on-site storm sewer system which will be sized for the 5-year storm event. The on-site storm sewers will direct flows to a stormwater management (SWM) pond located at the southwest portion of the property. For areas where the overland flow can not be directed to the SWM pond, the minor storm drainage system will be designed to capture and convey the runoff for the 100-year storm event. The proposed SWM pond shall provide quantity, quality and erosion control for the proposed drainage. The stormwater from the SWM pond will then be discharged to Kilmanagh Creek at the southwest corner of the property.

The SWM pond will be designed to hold a minimum volume of 6,575 m<sup>3</sup> to provide quantity control for all storm flows up to the 100-year storm event and to convey storm flows in the regional storm event. The allowable discharge rate is such that for all storm flows up to the 100-year storm event, the storm outflow will be reduced to the corresponding pre-development levels using TRCA’s unit flows for the West Humber River watershed and WSP Humber River SWM Water Quantity Control Criteria Updates.

To meet water quality criteria, the proposed SWM pond is designed to treat storm flows to achieve an 80% TSS removal rate in accordance with TRCA Stormwater Management Criteria. Runoff from the roof of Building '1' will be directed to an infiltration chamber system with a minimum volume of 616 m<sup>3</sup> to be retained, infiltrated and/or re-used on-site for the water balance requirement. Flows from the infiltration chamber will then be released and conveyed to the proposed SWM pond. The proposed storm servicing configuration is shown in **Figure 6**.

Since all storm flows, up to the 100-year storm event, will be reduced to the pre-development levels using TRCA's unit flows for the West Humber River watershed and WSP Humber River SWM Water Quantity Control Criteria Updates, the existing storm drainage system will not be adversely affected under the post-development condition and will have adequate capacity to support flows from the development. For further information on the stormwater management system being used for the development, please see the Stormwater Management Report prepared by WSP under separate cover.

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#### **4.2.2 12668 DIXIE ROAD "EAST" SYSTEM**

All storm flows within the 12668 Dixie Road property east of the environmental crossing i.e. roof flows from Building '2' and the associated loading dock areas, trailer and car parking spaces and internal driveways, will be captured and conveyed through an on-site storm sewer system which will be sized for the 100-year storm event. The on-site storm sewers will direct flows to a stormwater management chamber which will be designed to hold a minimum volume of 3,327 m<sup>3</sup> to provide quantity control. The tank will discharge flows to Kilmanagh Creek at the southwest portion of the property. The allowable release rate is such that for all storm flows up to the 100-year storm event, the storm outflow will be reduced to the corresponding pre-development levels using TRCA's unit flows for the West Humber River watershed and WSP Humber River SWM Water Quantity Control Criteria Updates.

To meet water quality criteria, isolator rows within the stormwater tank are proposed to treat storm flows to achieve an 80% TSS removal rate in accordance with TRCA Stormwater Management Criteria. A minimum volume of 317 m<sup>3</sup> will be provided within the tank for stormwater to be retained, infiltrated and/or re-used on-site for the water balance requirement. The proposed storm servicing configuration is shown in **Figure 6**.

Since all storm flows, up to the 100-year storm event, will be reduced to the pre-development levels using TRCA's unit flows for the West Humber River watershed and WSP Humber River SWM Water Quantity Control Criteria Updates, the existing storm drainage system will not be adversely affected under the post-development condition and will have adequate capacity to support flows from the development. For further information on the stormwater management system being used for the development, please see the Stormwater Management Report prepared by WSP under separate cover.

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#### **4.2.3 12862 DIXIE ROAD SYSTEM**

All storm flows within the 12862 Dixie Road property will be captured and conveyed through an on-site storm sewer system which will be sized for the 5-year storm event. The on-site storm sewers will direct flows to a stormwater management (SWM) pond located at the southern boundary of the property. For areas where the overland flow can not be directed to the SWM pond, the minor storm drainage system will be designed to capture and convey the runoff for the 100-year storm event. The proposed SWM pond shall provide quantity, quality and erosion control for the proposed drainage. The stormwater from the SWM pond will then be discharged to the existing creek at the northeast corner of the property.

The SWM pond will be designed to hold a minimum volume of 23,833 m<sup>3</sup> to provide quantity control for all storm flows up to the 100-year storm event and to convey storm flows in the regional storm event. The allowable discharge rate is such that for all storm flows up to the 100-year storm event, the storm outflow will be reduced to the corresponding pre-development levels using TRCA's unit flows for the West Humber River watershed and WSP Humber River SWM Water Quantity Control Criteria Updates.

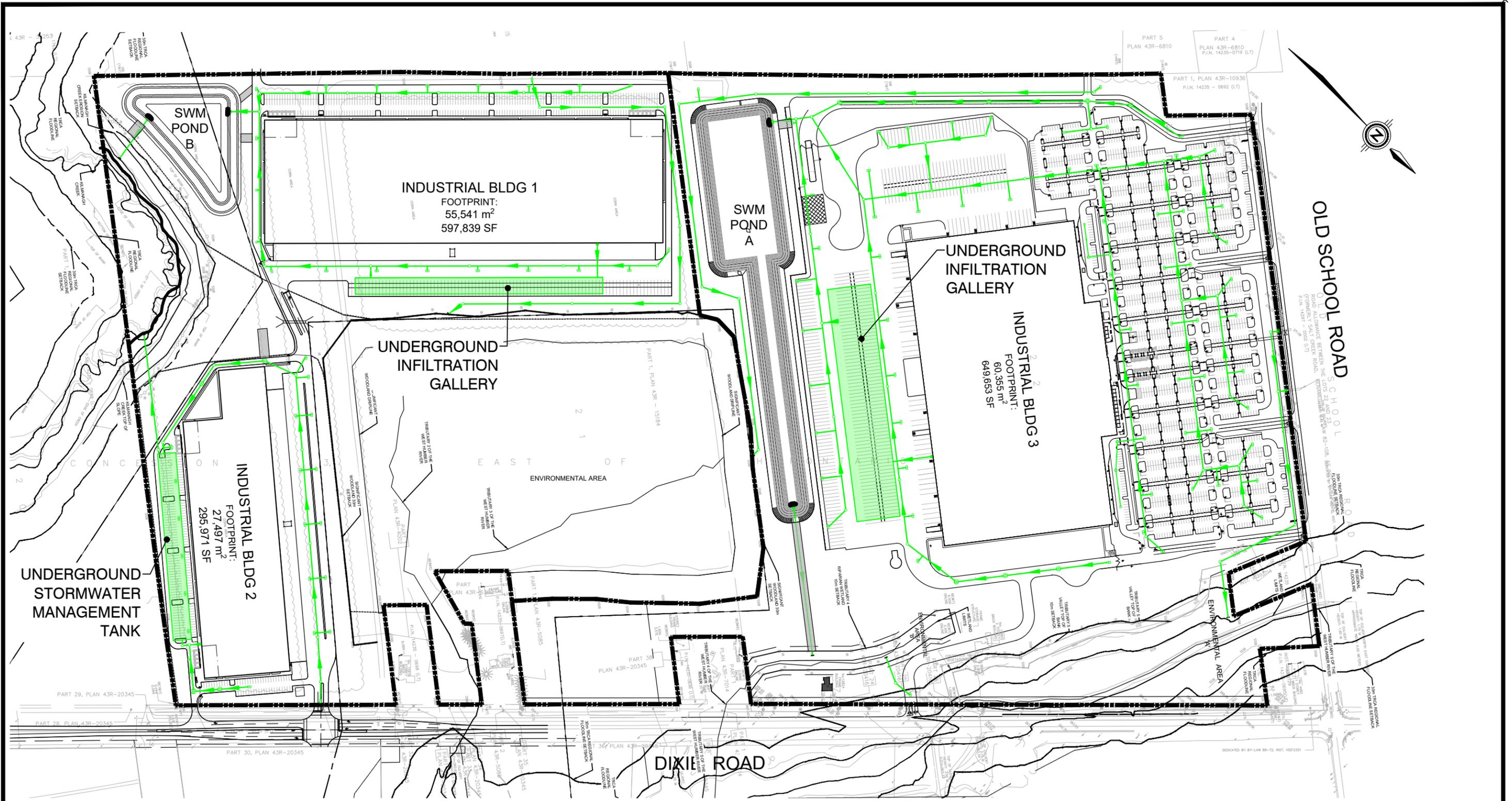
To meet water quality criteria, the proposed SWM pond is designed to treat storm flows to achieve an 80% TSS removal rate in accordance with TRCA Stormwater Management Criteria. Runoff from the roof of Building '3' will be directed to an infiltration chamber system with a minimum volume of 1543 m<sup>3</sup> to be retained, infiltrated and/or re-used on-site for the water balance requirement. Flows from the infiltration chamber will then be released and conveyed to the proposed SWM pond. The proposed storm servicing configuration is shown in **Figure 6**.

Since all storm flows, up to the 100-year storm event, will be reduced to the pre-development levels using TRCA's unit flows for the West Humber River watershed and WSP Humber River SWM Water Quantity Control Criteria Updates, the existing storm drainage system will not be adversely affected under the post-development condition and will have adequate capacity to support flows from the development. For further information on the stormwater management system being used for the development, please see the Stormwater Management Report prepared by WSP under separate cover.

---

### 4.3 MAJOR STORM DRAINAGE SYSTEM

The major storm system is a conveyance system for flows in excess of the minor system flows. Stormwater run-off from events up-to and including the 100-year storm event will be contained on-site and released at a controlled rate within the allowable post-development limits to approved outlet locations. For major storm events exceeding the 100-year storm event and the capacity of the stormwater management systems, overland flow routes will be designed to direct excess flows to the approved discharge locations. For the development of the site, the grading design is such that the surface (i.e. parking lots, drive aisles, walkways and landscaped areas) grades will direct surface drainage away from the buildings to the approved outlet points such as the stormwater management pond through overland flow routes. The proposed grading of the subject site will ensure that existing grade elevations will be met along the property limits.



**LEGEND**

- LIMIT OF PROPERTY
- GREENBELT BOUNDARY
- EX. STORM SEWER
- PROP. STORM CONNECTION

CLIENT **QUADREAL PROPERTY GROUP LIMITED PARTNERSHIP & TRIBAL PARTNERS CANADA INC**

TITLE **12668 & 12862 DIXIE ROAD**

**STORM SERVICING PLAN**



100 Commerce Valley Dr. West, Thornhill, ON Canada L3T 0A1  
 t: 905.882.1100 f: 905.882.0055 www.wsp.com

Checked	D.A.	Drawn	E.K.
Date	FEB 2024	Proj. No.	201-11545
Scale	1: 4000	Figure No.	6

PLOTDATE: Mar 05, 2024 - 11:49am, CAD:A069760

# 5 ROADS AND SITE GRADING

---

## 5.1 ROAD LAYOUT

As shown in the Proposed Development Plan (**Figure 3**), the proposed development is serviced by municipal roads. Access to the properties will be provided from Dixie Road. The proposed intersections at the site entrances will be designed in accordance with Region of Peel standards.

---

## 5.2 GRADING

The grading design of the proposed development will direct storm runoff to the on-site collection points so that the drainage is self-contained. The grading design will comply with the Town of Caledon Standards and will be designed to achieve the following:

- Maintain existing perimeter grades so that there is no impact to adjacent properties;
- Optimize earthworks i.e. minimize the quantity of deficit materials to be imported;
- Promote drainage into the minor storm sewer systems and accommodate stormwater management requirements;
- Minimize disruption to existing municipal rights-of-way containing existing utilities and services;
- Provide adequate cover for underground services;
- Provide safe overland conveyance of flows exceeding the capacity of the storm sewer system through ponding;
- Satisfy the Town's requirement for maximum of 0.30m of stormwater ponding; and
- Building floor levels will be set to avoid building / property damage during all design storms.

The proposed grading for the development will, where possible, generally follow the existing grades to maintain drainage patterns and match boundary grades. Minor storm drainage is to be conveyed towards catchbasins that convey flows to the internal storm sewer networks which discharge to the respective stormwater management system. Overland flow routes are provided to direct major storm drainage (greater than the 100-year storm event) away from proposed and existing structures to the approved outlet point.

Maximum 3:1 sloping will be proposed along the development limits where feasible. Retaining walls / toe walls are proposed where required within the site to ensure that the site is self contained. Retaining walls above 1.0m in height will be designed by a Structural Engineer in accordance with Town standards.

The grading design for the private roads and parking areas will be saw-toothed to maintain constant finished floor elevations for the warehouse buildings. The maximum ponding of the saw-tooth design will be limited to 0.30m. Private roads will be designed with a minimum grade of 1.0%. Road grades that front the

building will be kept as flat as possible in order to avoid varying finished floor elevations.

A 2.4m(W) x 1.2m(H) x 23.5m(L) box culvert with wing walls is proposed beneath the access road which connects the Building '1' and Building '2' parking areas in the 12668 Dixie Road property. This box culvert will form part of the environmental corridor which will connect the existing woodlot and to the Kilmanagh Creek environmental area. Coordination with the ecological consultant will be necessary to ensure that the grading and culvert sizing in the environmental corridor support the environmental objectives.

Coordination with the stormwater management consultant, landscape consultant and mechanical consultant will be necessary to ensure grading initiatives support stormwater management and landscape objectives and provide sufficient cover above the sewers within the private roads.

# 6 UTILITIES

---

## 6.1 EXISTING CONDITIONS

The servicing utilities companies in the geographical area including: Bell, Rogers, Hydro One, and Enbridge Gas have been contacted to determine the location of existing facilities at or near the site. The location of all utilities must be confirmed in the field prior to construction.

---

## 6.2 RELOCATION OF EXISTING UTILITIES AND PROVISION FOR NEW SERVICES

New building construction and any roadworks will require field locates by each utility company and relocation as needed. As the current site is undeveloped and used primarily for agricultural uses, no on-site utility relocations are anticipated.

Each utility provider must confirm the capacity of their existing infrastructure to support the demands of the proposed development and upgrade infrastructure as necessary.

# 7 CONCLUSIONS

---

## 7.1 WATER SERVICING

Each building will have one (1) 150mm domestic water service connection and one (1) 300mm fire service connection. Buildings '1' and '2' within the 12668 Dixie Road property will be serviced by internal domestic and fire watermain networks which will connect separately to the 400mm Zone 7 watermain extension proposed by the Region along Dixie Road. Building '3' within the 12862 Dixie Road property will also be serviced by internal domestic and fire watermain networks which will connect separately to the proposed 400mm watermain on Dixie Road. To ensure that adequate water supply is available, the domestic & fire water demands as well as the construction timing will be coordinated with the Region to ensure the completion of the proposed 400mm Zone 7 watermain extension prior to occupancy of the buildings.

Water service design within the municipal right-of-way and the internal watermain network will be designed to meet the standards and specifications of the Region of Peel, while services within the buildings will be designed by the mechanical consultant per OBC, and coordinated with WSP.

---

## 7.2 SANITARY SERVICING

Each building is proposed to have one (1) 200mm sanitary service connection. The proposed sanitary flows from Buildings '1' and '2' will be conveyed to a proposed internal sanitary sewer network within the 12668 Dixie Road property while the sanitary flows from Building '3' will be conveyed to a proposed internal sanitary sewer network within the 12862 Dixie Road property. The internal sanitary sewer networks will connect separately to the 600mm diameter sanitary sewer extension proposed by the Region along Dixie Road. To ensure that there is sufficient capacity in the proposed municipal sewer system to accommodate the proposed development flows, the estimated sanitary generation rate, sewer location & depth as well as construction timing will be coordinated with the Region to ensure the completion of the proposed sewer extension prior to occupancy of the buildings.

Sanitary service design within the municipal right-of-way and the on-site sanitary sewers will be designed to meet the standards and specifications of the Region of Peel, while services within the buildings will be designed by the mechanical consultant per OBC, and coordinated with WSP.

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## 7.3 STORM SERVICING

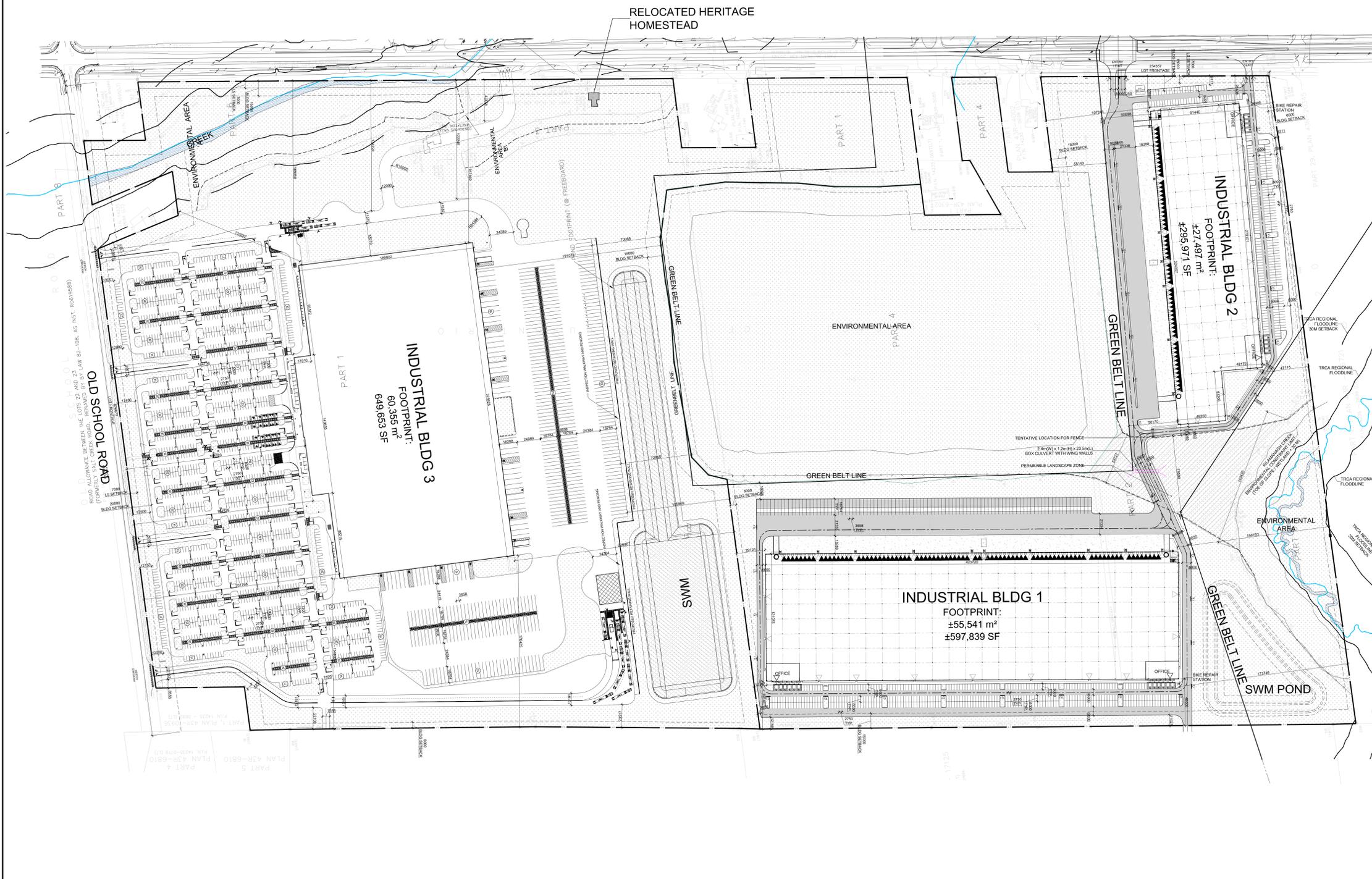
The proposed development storm flows, up to the 100-year storm event will be directed to the respective stormwater management facilities and controlled to the allowable levels. An assortment of stormwater management ponds and underground stormwater management facilities are proposed to provide quantity and quality control of storm runoff and to meet water balance requirements. In compliance with TRCA Stormwater Management Criteria, the storm flow rates of discharge from the proposed development under post-development conditions (100-year storm event) will be controlled to the corresponding pre-development

levels using TRCA's unit flows for the West Humber River Watershed and WSP Humber River SWM Water Quantity Control Criteria Updates. For major storm events exceeding the 100-year storm event, the site will be graded to direct surface runoff away from the proposed buildings and towards the approved outlet points. A separate Stormwater Management Report has been prepared by WSP under a separate cover to address requirements concerning stormwater management.

# APPENDIX

# A

## SITE PLAN AND SITE STATS



**SITE STATISTICS - 12668 DIXIE RD**

Existing Zoning Category	AT	
Proposed Zoning Category	MS	
Building Classification	Group F2 (O.B.C. A-3.1.2.1(f))	
<b>GROSS SITE AREA</b>	4,104,005 SF	381,274.00m <sup>2</sup>
Zone Permitted Use (Town of Caledon Zoning By-law 2006-50)	Industrial	
Proposed Use	Industrial	
Section 8.3 - Zoning Standards - MS-XX Zone		
<b>BUILDING AREA:</b>		
<b>BUILDING 1</b>	602,071 SF	55,934.27 m <sup>2</sup>
Warehouse Area	588,923 SF	54,636.69 m <sup>2</sup>
Office Area	13,448 SF	1,249.38 m <sup>2</sup>
<b>BUILDING 2</b>	295,970 SF	27,496.57 m <sup>2</sup>
Warehouse Area	284,770 SF	26,556.67 m <sup>2</sup>
Office Area	11,200 SF	1,040.51 m <sup>2</sup>
<b>TOTAL BUILDING AREA</b>	<b>898,041 SF</b>	<b>83,430.84 m<sup>2</sup></b>
<b>NET FLOOR AREA:</b>		
<b>BUILDING 1</b>	601,091 SF	55,843.32 m <sup>2</sup>
Floor Area	602,071 SF	55,934.27 m <sup>2</sup>
Building Area under services, M&E rooms etc.	980 SF	91.04 m <sup>2</sup>
<b>BUILDING 2</b>	294,902 SF	27,397.38 m <sup>2</sup>
Floor Area	295,970 SF	27,496.57 m <sup>2</sup>
Building Area under services, M&E rooms etc.	1,068 SF	99.27 m <sup>2</sup>
<b>TOTAL NET AREA</b>	<b>895,993 SF</b>	<b>83,240.63 m<sup>2</sup></b>
<b>Requirements</b>	<b>Proposed</b>	<b>Required</b>
Min. Lot Area	311,714.00m <sup>2</sup>	925.00m <sup>2</sup>
Net Floor Area	83,240.53m <sup>2</sup>	-
Gross Floor Area	83,430.84m <sup>2</sup>	-
Lot Coverage	23.41%	50.00%
Min. Lot Frontage (m)	234.36	30.00
Min. Front Yard Building Setback (m) (Towards Dike)	15.00	15.00
Min. Ht Side (N) Yard Building Set back (m)	107.24	6.00
Min. Ht Side (S) Yard Building Set back (m)	34.49	6.00
Min. Ht Side (E) Yard Building Set back (m) - Abutting Residential	107.24	6.00
Min. Rear Yard Building Setback (m)	48.01	15.00
Maximum Building Height (m) - Building 1	14.50	20.00
Maximum Building Height (m) - Building 2	14.50	20.00
Min. Landscape Area (% of Lot Area)	59.94%	10.00%
Min. Landscape Area (SM)	295,970.67m <sup>2</sup>	63,846.67m <sup>2</sup>
Min. Front Landscape Buffer (m)	9.12	7.00
Min. Ht. Side (N) Landscape Buffer (m)	3.02	0.00
Min. Ht. Side (S) Landscape Buffer (m)	3.21	0.00
Min. Rear Landscape Buffer (m)	11.03	0.00
Min. Landscape Buffer (m) - Abutting EPA > 6m width	-	-

**Parking Calculations**

<b>BUILDING 1</b>	Proposed	Required
② 139 + 1/170m <sup>2</sup> of Net Floor Area over 10,000 m <sup>2</sup>	411	409
<b>BUILDING 2</b>	Proposed	Required
② 139 + 1/170m <sup>2</sup> of Net Floor Area over 10,000 m <sup>2</sup>	382	241
<b>Total no. of Parking Spaces (Including Accessible Parking Spaces)</b>	<b>673</b>	<b>650</b>
Accessible Parking Spaces	MS	MS
② 201 to 1000 parking spaces is 2 plus 2% of total spaces	12	11
② More than 1000 parking spaces is 11 plus 1% of total spaces	8	7
<b>Total no. of Accessible Parking Spaces</b>	<b>20</b>	<b>18</b>
10 Type - A	10	9
10 Type - B	9	9
<b>EV Parking Spaces</b>	12	-

**Trailer Parking**

<b>BUILDING 1</b>	Proposed	Required
② 139 + 1/170m <sup>2</sup> of Net Floor Area over 10,000 m <sup>2</sup>	94	-
<b>BUILDING 2</b>	Proposed	Required
② 139 + 1/170m <sup>2</sup> of Net Floor Area over 10,000 m <sup>2</sup>	94	-
<b>Total no. of Trailer Parking Spaces</b>	<b>94</b>	<b>-</b>

**Loading Space Calculations**

<b>BUILDING 1</b>	Proposed	Required
② 3 + 1 per 9300 m <sup>2</sup> in excess of 7441 m <sup>2</sup> of Net Floor Area	85	8
<b>BUILDING 2</b>	Proposed	Required
② 3 + 1 per 9300 m <sup>2</sup> in excess of 7441 m <sup>2</sup> of Net Floor Area	146	13
<b>Total no. of Loading Spaces</b>	<b>146</b>	<b>33</b>
Min. Loading Space Dimensions	3.5m(W) X 14.0m(L) X 2.35m(H)	

**SITE STATISTICS - 12662 DIXIE RD**

Existing Zoning Category	AT	
Proposed Zoning Category	MS	
Building Classification	Group F2 (O.B.C. A-3.1.2.1(f))	
<b>GROSS SITE AREA</b>	4,401,799 SF	408,939.99m <sup>2</sup>
<b>NET DEVELOPABLE SITE AREA</b>	4,023,570 SF	373,802.23m <sup>2</sup>
Proposed Use	Industrial	
Section 8.3 - Zoning Standards - MS-XX Zone		
<b>BUILDING AREA:</b>		
<b>BUILDING 1</b>	649,652 SF	60,354.74 m <sup>2</sup>
<b>TOTAL BUILDING AREA</b>	<b>649,652 SF</b>	<b>60,354.74 m<sup>2</sup></b>
<b>NET FLOOR AREA:</b>		
<b>BUILDING 1</b>	649,652 SF	60,354.74 m <sup>2</sup>
1st FLOOR AREA	606,573 SF	56,352.57 m <sup>2</sup>
2nd FLOOR AREA	606,573 SF	56,352.57 m <sup>2</sup>
3rd FLOOR AREA	606,573 SF	56,352.57 m <sup>2</sup>
4th FLOOR AREA	606,573 SF	56,352.57 m <sup>2</sup>
5th FLOOR AREA	606,573 SF	56,352.57 m <sup>2</sup>
Primary Gate House	278 SF	25.83 m <sup>2</sup>
Secondary Gate House	148 SF	13.75 m <sup>2</sup>
<b>TOTAL NET AREA</b>	<b>3,076,372 SF</b>	<b>285,804.80 m<sup>2</sup></b>
<b>Requirements</b>	<b>Proposed</b>	<b>Required</b>
Min. Lot Area	408,939.99m <sup>2</sup>	925.00m <sup>2</sup>
Net Floor Area	285,804.80m <sup>2</sup>	-
Gross Floor Area	285,804.80m <sup>2</sup>	-
Lot Coverage	14.76%	50.00%
Min. Lot Frontage (m)	674.68	30.00
Min. Front Yard Building Setback (m) (Towards Dike)	15.00	20.00
Min. Ht. Side (N) Yard Building Set back (m)	167.44	6.00
Min. Ht. Side (S) Yard Building Set back (m)	134.81	6.00
Min. Rear Yard Building Setback (m)	191.07	15.00
Maximum Building Height (m) - BUILDING 3	31.55	35.00
Min. Landscape Area (% of Lot Area)	42.00%	10.00%
Min. Landscape Area (SM)	1,711,981.27m <sup>2</sup>	28,580.46m <sup>2</sup>
Min. Front Landscape Buffer (m)	42.00	7.00
Min. Ext. Side (N) Landscape Buffer (m)	42.28	0.00
Min. Ht. Side (S) Landscape Buffer (m)	6.29	0.00
Min. Rear Landscape Buffer (m)	70.07	0.00
Min. Landscape Buffer (m) - Abutting EPA > 6m width	70.07	-

**Parking Calculations**

<b>BUILDING 3</b>	Proposed	Required
② 168 + 1/170m <sup>2</sup> of Net Floor Area over 20,000 m <sup>2</sup>	1688	1732
<b>Total no. of Parking Spaces (Including Accessible Parking Spaces)</b>	<b>1688</b>	<b>1732</b>
Accessible Parking Spaces	MS	MS
② More than 1000 parking spaces is 11 plus 1% of total spaces	28	28
② More than 1000 parking spaces is 11 plus 1% of total spaces	28	28
<b>Total no. of Accessible Parking Spaces</b>	<b>28</b>	<b>28</b>
8 Type - A	14	14
20 Type - B	14	14

**Trailer Parking**

<b>BUILDING 3</b>	Proposed	Required
② 168 + 1/170m <sup>2</sup> of Net Floor Area over 20,000 m <sup>2</sup>	394	-
<b>Total no. of Trailer Parking Spaces</b>	<b>394</b>	<b>-</b>

**Loading Space Calculations**

<b>BUILDING 3</b>	Proposed	Required
② 3 + 1 per 9300 m <sup>2</sup> in excess of 7441 m <sup>2</sup> of Net Floor Area	58	33
<b>Total no. of Loading Spaces</b>	<b>58</b>	<b>33</b>
Min. Loading Space Dimensions	3.5m(W) X 14.0m(L) X 2.35m(H)	

**SITE PLAN**  
SCALE: 1:1500

**SITE LEGEND**

- NEW HEAVY DUTY PAVEMENT (HATCHES)
- LANDSCAPE AREA
- DETECTABLE TACTILE WARNING SURFACE, CONFORMING TO 2012 O.B.C.
- FIRE ACCESS ROUTE WITH 12.5M TURNING RADIUS
- TRUCK LANDING DOOR DOOR
- WALKOUT PANEL
- MAN DOOR ENTRY
- EXIT DOOR LOCATION
- FIRE DOOR CONNECTION (VERIFY LOCATION WITH CIVIL DRAWINGS)
- FH PROPOSED FIRE HYDRANT (VERIFY LOCATION WITH CIVIL DRAWINGS)
- FH EXISTING FIRE HYDRANT (VERIFY LOCATION WITH CIVIL DRAWINGS)
- D.C. 1500mm M&E DEPRESSED CURB FOR ACCESSIBLE PARKING AND PEDESTRIAN ACCESS - REFER TO DETAIL K/41.2
- PROPOSED CATCHBASIN
- MH DENOTES MANHOLE
- OH/HP EXISTING HYDRO POLE
- CP PAINTED CARPOOL PARKING SPACE SYMBOL
- BFFPS BARRIER FREE PARKING SIGN
- BFFSV BARRIER FREE PARKING SIGN WITH VAN TAB
- DRIVE-IN DOOR
- NEW STOP SIGN
- NEW FIRE ROUTE SIGN
- GAS METER & PRESSURE REGULATING STATION BY GAS COMPANY
- LIGHT FIXTURES, REFER ELECTRICAL DWG FOR DETAILS
- LIGHT POLES, REFER ELECTRICAL DWG FOR DETAILS



**WARE MALCOLM**  
 ARCHITECTURE  
 CIVIL ENGINEERING  
 BUILDING MEASUREMENT  
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ONTARIO ASSOCIATION  
 OF ARCHITECTS  
**awlan**  
 AMANDA LAROCHE  
 LICENCE  
 7715

**QUADREAL PROPERTY GROUP & TRIBAL PARTNERS CANADA INC.**  
 12668 & 12662 DIXIE ROAD  
 CALEDON, ONTARIO CANADA

**SITE PLAN**

DATE	ISSUED FOR COORDINATION
11/2023-12-12	
REVISIONS	
NO.	DESCRIPTION

PA/PM:	AS
DRAWN BY:	JS
JOB NO.:	TOR23-0063-00

# APPENDIX

**B**

WATER DEMAND  
CALCULATIONS

## APPENDIX B

### FIRE FLOW CALCULATIONS - BUILDING 1

Project: 12668 & 12862 Dixie Road  
Job No.: 201-11545

Fire Flow Calculation Procedure per Water Supply for Public Fire Protection, 1999 by Fire Underwriter Survey, p 20.

$$F = 220 C \sqrt{A}$$

where

F = Fire flow in Litres per minute (Lpm)  
C = coefficient related to the type of construction  
A = total floor area in square metres

- A. Determine Type of Construction**  
=> Non-combustible Construction  
Therefore C = 0.8
- B. Determine Ground Floor Area**  
=> Fire-resistive building with vertical openings and exterior vertical communications properly protected  
Therefore A = Total GFA of Largest Floor - one floor only  
  
A = 55,541 m<sup>2</sup>
- C. Determined the Fire Flow**  
F = 220 x 0.8 x  $\sqrt{55541}$   
F = 41,478 Lpm
- D. Determine Increase or Decrease for Occupancy**  
=> No Reduction for Combustible Occupancies  
Therefore 0% reduction  
0% reduction of 41478 Lpm = - Lpm  
41478 - 0 = 41,478 Lpm
- E. Determine Decrease for Automatic Sprinkler Protection**  
=> Has Automatic Sprinkler Protection (Per NFPA 13 Standards)  
Therefore 30% reduction  
30% reduction of 41478 Lpm = 12,443 Lpm  
41478 - 12443 = 29,035 Lpm
- F. Determine the Total Increase For Exposures**
- |            |     |                   |
|------------|-----|-------------------|
| West Side  | >45 | 0%                |
| East Side  | >45 | 0%                |
| North Side | >45 | 0%                |
| South Side | >45 | 0%                |
| Total      | 0%  | of 41,478 = 0 Lpm |
- G. Req'd Fire Flow = C - E + F**  
F = 29,035 Lpm  
F = 29,000 Lpm (2,000 Lpm < F < 45,000 Lpm; OK)  
F = 7,652 US GPM

Note

## APPENDIX B

### FIRE FLOW CALCULATIONS - BUILDING 2

Project: 12668 & 12862 Dixie Road  
Job No.: 201-11545

Fire Flow Calculation Procedure per Water Supply for Public Fire Protection, 1999 by Fire Underwriter Survey, p 20.

$$F = 220 C \sqrt{A}$$

where

F = Fire flow in Litres per minute (Lpm)  
C = coefficient related to the type of construction  
A = total floor area in square metres

- A. Determine Type of Construction**  
=> Non-combustible Construction  
Therefore C = 0.8
- B. Determine Ground Floor Area**  
=> Fire-resistive building with vertical openings and exterior vertical communications properly protected  
Therefore A = Total GFA of Largest Floor - one floor only  
  
A = 27,497 m<sup>2</sup>
- C. Determined the Fire Flow**  
F = 220 x 0.8 x  $\sqrt{27497}$   
F = 29,185 Lpm
- D. Determine Increase or Decrease for Occupancy**  
=> No Reduction for Combustible Occupancies  
Therefore 0% reduction  
0% reduction of 29185 Lpm = - Lpm  
29185 - 0 = 29,185 Lpm
- E. Determine Decrease for Automatic Sprinkler Protection**  
=> Has Automatic Sprinkler Protection (Per NFPA 13 Standards)  
Therefore 30% reduction  
30% reduction of 29185 Lpm = 8,756 Lpm  
29185 - 8756 = 20,429 Lpm
- F. Determine the Total Increase For Exposures**
- |            |     |                   |
|------------|-----|-------------------|
| West Side  | >45 | 0%                |
| East Side  | >45 | 0%                |
| North Side | >45 | 0%                |
| South Side | >45 | 0%                |
| Total      | 0%  | of 29,185 = 0 Lpm |
- G. Req'd Fire Flow = C - E + F**  
F = 20,429 Lpm  
F = 20,000 Lpm (2,000 Lpm < F < 45,000 Lpm; OK)  
F = 5,277 US GPM

Note

## APPENDIX B

### FIRE FLOW CALCULATIONS - BUILDING 3

Project: 12668 & 12862 Dixie Road  
Job No.: 201-11545

Fire Flow Calculation Procedure per Water Supply for Public Fire Protection, 1999 by Fire Underwriter Survey, p 20.

$$F = 220 C \sqrt{A}$$

where

F = Fire flow in Litres per minute (Lpm)  
C = coefficient related to the type of construction  
A = total floor area in square metres

- A. Determine Type of Construction**  
=> Non-combustible Construction  
Therefore C = 0.8
- B. Determine Ground Floor Area**  
=> Fire-resistive building with vertical openings and exterior vertical communications properly protected  
Therefore A = Total GFA of Largest Floor - one floor only  
  
A = 60,355 m<sup>2</sup>
- C. Determined the Fire Flow**  
F = 220 x 0.8 x  $\sqrt{60355}$   
F = 43,238 Lpm
- D. Determine Increase or Decrease for Occupancy**  
=> No Reduction for Combustible Occupancies  
Therefore 0% reduction  
0% reduction of 43238 Lpm = - Lpm  
43238 - 0 = 43,238 Lpm
- E. Determine Decrease for Automatic Sprinkler Protection**  
=> Has Automatic Sprinkler Protection (Per NFPA 13 Standards)  
Therefore 30% reduction  
30% reduction of 43238 Lpm = 12,971 Lpm  
43238 - 12971 = 30,267 Lpm
- F. Determine the Total Increase For Exposures**
- |            |     |                   |
|------------|-----|-------------------|
| West Side  | >45 | 0%                |
| East Side  | >45 | 0%                |
| North Side | >45 | 0%                |
| South Side | >45 | 0%                |
| Total      | 0%  | of 43,238 = 0 Lpm |
- G. Req'd Fire Flow = C - E + F**  
F = 30,267 Lpm  
F = 30,000 Lpm (2,000 Lpm < F < 45,000 Lpm; OK)  
F = 7,916 US GPM

Note

## APPENDIX B

### PROPOSED DOMESTIC WATER DEMAND - 12668 DIXIE ROAD

Project: 12668 & 12862 Dixie Road  
 Job No.: 201-11545

#### Proposed Development

Building	Building Area (sq.m)	Population Density (person/ha)	Total Population
Building 1	55,541	70	389
Building 2	27,497	70	193
<b>TOTAL</b>	<b>190,824</b>	<b>70</b>	<b>582</b>

Design Population = 582 people

#### Proposed Water Demands

Building	Population (see above)	Per Capita Flow (L/employee/day)	Average Daily Demand (L/s)	Peak Hour		Max Day	
				Peaking Factor	Demand (L/s)	Peaking Factor	Demand (L/s)
Building 1	389	300	1.35	3.00	4.05	1.40	1.89
Building 2	193	300	0.67	3.00	2.01	1.40	0.94
<b>TOTAL</b>	<b>582</b>	<b>300</b>	<b>2.02</b>		<b>6.06</b>		<b>2.83</b>

Note:

- 1) Building area per site plan prepared by Ware Malcomb dated December 12, 2023.
- 2) Population Equivalents based on area and Region of Peel Public Linear Wastewater Standards, 2023 (Section 2.1.2).
- 3) Average Consumption Rate and peaking factors per Region of Peel Public Works Design, Specifications & Procedures Manual Watermain Design Criteria, 2010 (Section 2.3 - Water Demands)

## APPENDIX B

### PROPOSED DOMESTIC WATER DEMAND - 12862 DIXIE ROAD

Project: 12668 & 12862 Dixie Road  
 Job No.: 201-11545

**Proposed Development**

Building	Building Area (sq.m)	Population Density (person/ha)	Total Population
Building 3	60,355	70	423
<b>TOTAL</b>	<b>190,824</b>	<b>70</b>	<b>423</b>

Design Population = 423 people

**Proposed Water Demands**

Building	Population (see above)	Per Capita Flow (L/employee/day)	Average Daily Demand (L/s)	Peak Hour		Max Day	
				Peaking Factor	Demand (L/s)	Peaking Factor	Demand (L/s)
Building 3	423	300	1.47	3.00	4.41	1.40	2.06
<b>TOTAL</b>	<b>423</b>	<b>300</b>	<b>1.47</b>		<b>4.41</b>		<b>2.06</b>

Note:

- 1) Building area per site plan prepared by Ware Malcomb dated December 12, 2023.
- 2) Population Equivalents based on area and Region of Peel Public Linear Wastewater Standards, 2023 (Section 2.1.2).
- 3) Average Consumption Rate and peaking factors per Region of Peel Public Works Design, Specifications & Procedures Manual Watermain Design Criteria, 2010 (Section 2.3 - Water Demands)

# APPENDIX

## C

### SANITARY FLOW CALCUALTIONS AND MULTI-USE DEMAND TABLE

## APPENDIX C

### PROPOSED SANITARY FLOW GENERATION - 12668 DIXIE ROAD

Project: 12668 & 12862 Dixie Road  
 Job No.: 201-11545

#### Proposed Development

Building	Building Area (sq.m)	Population Density (person/ha)	Total Population
Building 1	55,541	70	389
Building 2	27,497	70	193
<b>TOTAL</b>	<b>83,038</b>	<b>70</b>	<b>582</b>

Design Population = 582 people

#### Design Flows

Building	Population (see above)	Average Flow (L/cap/day)	Average Flow (L/s)	Peaking Factor <sup>3</sup>	Peak Flow (L/s)
Building 1	389	270	1.22	4.00	4.86
Building 2	193	270	0.60	4.00	2.41
<b>TOTAL</b>	<b>582</b>	<b>270</b>	<b>1.82</b>	<b>3.94</b>	<b>7.16</b>

Note: Using the average flow demand of 302.8 L/s, the peak flows for Building 1 and Building 2 are 5.45 L/s and 2.71 L/s respectively. However, based on the the Peel Region Std. Dwg 2-9-2, the domestic sewage flow for populations less than 1000 people shall be 0.013 m<sup>3</sup>/sec (13 L/s). As such, the design peak flow considered for each building is 13 L/s.

Site Area = 38.13 ha  
 Infiltration Flow<sup>4</sup> = 0.26 L/s/ha  
 Infiltration = 9.91 L/s  
 Design Peak Flow = 7.16 L/s  
**Total Design Flow = 17.08 L/s**

#### Note:

- 1) Building and gross site area per site plan prepared by Ware Malcomb dated December 12, 2023.
- 2) Population Equivalents based on area and Region of Peel Public Linear Wastewater Standards, 2023 (Section 2.1.2).
- 3) Peaking Factor Calculated per Harmon Equation as per Section 2.4 of the Region of Peel Public Linear Wastewater Standards, 2023.  
 $Peaking\ Factor = 1 + (14/(4+(P/1000)^{1/2}))$
- 4) The infiltration rate is per Section 2.5.1 of the Region of Peel Public Linear Wastewater Standards, 2023.

## APPENDIX C PROPOSED SANITARY FLOW GENERATION - 12862 DIXIE ROAD

Project: 12668 & 12862 Dixie Road  
Job No.: 201-11545

### Proposed Development

Building	Building Area (sq.m)	Population Density (person/ha)	Total Population
Building 3	60,355	70	423
<b>TOTAL</b>	<b>60,355</b>	<b>70</b>	<b>423</b>

Design Population = 423 people

### Design Flows

Building	Population (see above)	Average Flow (L/cap/day)	Average Flow (L/s)	Peaking Factor <sup>3</sup>	Peak Flow (L/s)
Building 3	423	270	1.32	4.00	5.29
<b>TOTAL</b>	<b>423</b>	<b>270</b>	<b>1.32</b>	<b>4.00</b>	<b>5.29</b>

Site Area = 37.38 ha  
Infiltration Flow<sup>4</sup> = 0.26 L/s/ha  
Infiltration = 9.72 L/s  
Design Peak Flow = 5.29 L/s  
**Total Design Flow = 15.01 L/s**

#### Note:

- 1) Building and gross site area per site plan prepared by Ware Malcomb dated December 12, 2023.
- 2) Population Equivalents based on area and Region of Peel Public Linear Wastewater Standards, 2023 (Section 2.1.2).
- 3) Peaking Factor Calculated per Harmon Equation as per Section 2.4 of the Region of Peel Public Linear Wastewater Standards, 2023.  
Peaking Factor =  $1 + (14/(4+(P/1000)^{1/2}))$
- 4) The infiltration rate is per Section 2.5.1 of the Region of Peel Public Linear Wastewater Standards, 2023.

**REGION OF PEEL MULTI-USE DEMAND TABLE - 12668 DIXIE ROAD  
WATER CONNECTION FOR BUILDINGS 1 AND 2**

<b>Connection Point</b>	
1. Fire - Future 400mm watermain on Dixie Road. 2. Domestic - Future 400mm watermain on Dixie Road	
<b>Pressure zone of connection point</b>	
Pressure Zone 7	Industrial
<b>Total equivalent population to be serviced</b>	582
<b>Total lands to be serviced (ha)</b>	8.3

<b>Hydrant Flow Test</b>			
Hydrant Flow Test Location 1			
N/A - Hydrant Flow test will be completed on future 400mm watermain once installed			
	Pressure (kPa)	Flow (L/s)	Time
Minimum water pressure			
Maximum water pressure			

No.	Water demands			
	Demand type	Bldg 1	Bldg 2	Total
		Industrial	Industrial	
1	Average day flow (L/s)	1.35	0.67	2.02
2	Maximum day flow (L/s)	1.89	0.94	2.83
3	Peak hour flow (L/s)	4.05	2.01	6.06
4	Fire flow (L/s) <sup>2)</sup>	483.33	333.33	483.33
<b>Analysis</b>				
5	Maximum day plus fire flow (L/s)	485.22	334.27	486.16
6	Peak hour flow (L/s)	4.05	2.01	6.06
7	<b>Maximum demand flow (L/s)</b>	<b>485.22</b>	<b>334.27</b>	<b>486.16</b>

**WASTEWATER CONNECTION FOR BUILDINGS 1 AND 2**

<b>Connection points<sup>3)</sup>:</b>		Future 600mm sanitary sewer on Dixie Road
<b>Total Lands to be serviced (ha):</b>		8.30
<b>Total equivalent population to be serviced<sup>1)</sup>:</b>	Industrial	582
8	<b>Wastewater Sewer Effluent (m<sup>3</sup>/s):</b>	0.01708

<sup>1)</sup> Please refer to design criteria for population equivalencies

<sup>2)</sup> Please reference the Fire Underwriters Survey Document

<sup>3)</sup> Please specify the connection point (wastewater line or manhole ID)

<sup>4)</sup> Please complete as many uses as necessary for the development.

**REGION OF PEEL MULTI-USE DEMAND TABLE - 12862 Dixie Road  
WATER CONNECTION FOR BUILDING 3**

<b>Connection Point</b>	
1. Fire - Future 400mm watermain on Dixie Road. 2. Domestic - Future 400mm watermain on Dixie Road	
<b>Pressure zone of connection point</b>	
Pressure Zone 7	<b>Industrial</b>
<b>Total equivalent population to be serviced</b>	423
<b>Total lands to be serviced (ha)</b>	6.04

<b>Hydrant Flow Test</b>			
Hydrant Flow Test Location 1			
N/A - Hydrant Flow test will be completed on future 400mm watermain once installed			
	Pressure (kPa)	Flow (L/s)	Time
Minimum water pressure			
Maximum water pressure			

No.	Water demands Demand type	Bldg 3	
		Industrial	Total
1	Average day flow (L/s)	1.47	1.47
2	Maximum day flow (L/s)	2.06	2.06
3	Peak hour flow (L/s)	4.41	4.41
4	Fire flow (L/s) <sup>4)</sup>	500.00	500.00
<b>Analysis</b>			
5	Maximum day plus fire flow (L/s)	502.06	502.06
6	Peak hour flow (L/s)	4.41	4.41
7	<b>Maximum demand flow (L/s)</b>	<b>502.06</b>	<b>502.06</b>

**WASTEWATER CONNECTION FOR BUILDING 3**

<b>Connection points<sup>3)</sup>:</b>		Future 600mm sanitary sewer on Dixie Road
<b>Total Lands to be serviced (ha):</b>		6.04
<b>Total equivalent population to be serviced<sup>1)</sup>:</b>	<b>Industrial</b>	423
8	<b>Wastewater Sewer Effluent (m<sup>3</sup>/s):</b>	0.01501

- <sup>1)</sup> Please refer to design criteria for population equivalencies
- <sup>2)</sup> Please reference the Fire Underwriters Survey Document
- <sup>3)</sup> Please specify the connection point (wastewater line or manhole ID)
- <sup>4)</sup> Please complete as many uses are necessary for the development.

# APPENDIX

**D**

REGION OF PEEL  
PROPOSED  
MUNICIPAL  
SERVICING  
WORKS

January 30, 2024

ATTN: Carmine Curoso  
Acting Director of Planning  
Development Review Services, Planning Department  
Town of Caledon  
6311 Old Church Road  
Caledon ON L7C 1J6

RE: Front End Financing - Region of Peel Dixie Road Water/Wastewater Update

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On January 18, 2024, a meeting was held between Tribal Partners, their consultants (Armstrong Planning and Project Management and WSP), and the Region of Peel to discuss Front End Financing of Water/Wastewater along Dixie Road from 12424 Dixie Road (UPS Facility) to approximately Old School Road.

The Region's team provided an update on their planned Sewer and Watermains project on Old School and Dixie Road (Contract 5, Town of Caledon (Projects 19-1189 and 19-1190)). Design work has been awarded to Stantec with completion targeted for fall 2024. To date, surveying and base plans are complete. Subsurface work has been awarded, and a geotechnical Request for Proposals was closed on January 19<sup>th</sup>, 2024, to be awarded soon. The project is planned to be tendered in October/November 2024, with the project being awarded in January 2025 subject to financing. Region staff confirmed there is an opportunity to prioritize servicing along Dixie Road in the tender document.

Although at this point in time, there does not appear to be a need to front-end servicing as the project is advancing well, Tribal Partners offered to assist in other ways such as backstopping materials in order to ensure the project advances in a timely manner. There is also an opportunity to work with the Region of Peel to advance the urbanization of Dixie Road to provide an urban cross section with sidewalks. It was confirmed that urbanization is planned to 12424 Dixie Road (UPS Facility), but there are no plans beyond this property. A meeting will be held with transportation staff to advance this work.

Should you have any questions or require further information, please do not hesitate to contact the undersigned.

Regards,



Scott Borden, RPP  
Senior Planner, Project Manager