

**FUNCTIONAL SERVICING & PRELIMINARY
STORMWATER MANAGEMENT
REPORT**

MILTON MEADOWS – BLOCK 81 PHASE 2B

**TOWN OF MILTON
REGION OF HALTON**

**PREPARED FOR:
ROYALPARK HOMES**

**PREPARED BY:
C.F. CROZIER & ASSOCIATES INC.
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BURLINGTON, ON L7M 0K9**

SEPTEMBER 2026

CFCA FILE NO. 2490-7940

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Revision Number	Date	Comments
Rev.0	September 24, 2026	Issued for 1 st Submission (ZBA)

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1.0 INTRODUCTION

C.F. Crozier & Associates Inc. (Crozier) was retained by Royalpark Homes to prepare a Functional Servicing and Preliminary Stormwater Management Report in support of the Zoning By-Law Amendment (ZBA) Application for the proposed development of Milton Meadows – Block 81, located adjacent to Quarry Crescent and Smokey Hollow Boulevard, in the Town of Milton (Town), Halton Region (Region).

This report has been prepared to assess how the proposed development's servicing, grading, and stormwater management systems will integrate with the existing water, sanitary, and stormwater infrastructure and satisfy the applicable requirements of the Town and Region. While the analyses consider the overall development, particular emphasis has been placed on the increase in density associated with the introduction of the proposed back-to-back townhouse units. The servicing and stormwater management assessments presented herein are intended to demonstrate that the increased density can be accommodated without adversely affecting the existing servicing and stormwater management infrastructure downstream of the proposed development.

2.0 SITE DESCRIPTION

The proposed development covers an area of approximately 2.0 ha and currently consists of vacant land. The proposed development, located in a low-density residential neighborhood, is bounded by Highway 401 to the north, NW-2 G1 Watercourse and Highway 401 off ramp to the east, Quarry Crescent to the south, and Old Tremaine Road to the west. The elements envisioned for this development include:

- 62 back-to-back townhouses.
- 58 deck townhouses.
- A condominium road connecting to Quarry Crescent and the future road outlined in the Milton Meadows North – Sixth Engineering Submission Drawing Package, prepared by Urbantech Consulting, dated February 2025.

We have reviewed the Site Plan prepared by Romanov Romanov Architects Inc., dated September 24, 2026, and are prepared to develop an engineering solution to meet the relevant Town of Milton and Halton Region criteria.

The following documents below were referenced as part of the preparation of this report.

- Site Plan, prepared by Romanov Romanov Architects Inc., dated September 24, 2026
- Halton Region Water and Wastewater Linear Design Manual, dated December 2025
- Functional Water, Wastewater and Stormwater Drainage Report, SIS Areas 1 & 2 – North of Sixteen Mile Creek, prepared by Urbantech, dated November 2013
- Milton Meadows Properties Inc. – Stormwater Management Report, prepared by Urbantech Consulting, dated August 2023
- Milton Meadows North – Sixth Engineering Submission Drawing Package, prepared by Urbantech Consulting, dated February 2025.

Relevant excerpts from the aforementioned documents are provided in the appendices.

3.0 GRADING

The preliminary grading has been developed to generally conform to Town standards and the overall drainage intent of the Milton Meadows North – Sixth Engineering Submission Drawing Package, prepared by Urbantech Consulting and dated February 2025. The perimeter design grades illustrated on Drawing 201 of the Sixth Engineering Submission were used as the basis for the preliminary grading plan to ensure consistency with the approved subdivision design and to facilitate appropriate integration with the surrounding lands and municipal infrastructure.

The preliminary grading has been designed to maintain the overall drainage patterns established as part of the subdivision design, while refining internal grading to accommodate the current condominium townhouse layout.

Refer to the Preliminary Site Grading Plan (C400) for details on the the existing and proposed grading of the development lands.

4.0 WATER SERVICING

Halton Region is responsible for the operation and maintenance of the public water supply and treatment system in Halton Region, and all local water supply systems will connect to the Region's municipal water network. The existing and proposed water servicing is discussed in the following sections.

4.1 Existing Water Servicing

Based on the Milton Meadows North – Sixth Engineering Submission Drawing Package, prepared by Urbantech Consulting, dated February 2025 (which is understood to be constructed), the existing water servicing infrastructure surrounding the proposed development include:

- An existing 300mm diameter PVC watermain within Quarry Crescent stubbed at the Block 81 property line.
- An existing 300mm diameter PVC watermain within the future road off of Quarry Crescent, stubbed at the proposed development property line.

Refer to the Underground Servicing Plan (Part 1) – Drawing 104 from the Milton Meadows North – Sixth Engineering Submission Drawing Package, prepared by Urbantech Consulting, dated February 2025 and Site Servicing Plan (C300) for details on the location of the existing watermain to service the development.

4.2 Proposed Water Servicing

The proposed development will be serviced by the 300mm diameter watermain within the future condominium road. Two (2) fire hydrants are proposed to provide sufficient fire coverage. This proposed infrastructure will connect into the existing servicing stubs proposed in the Milton Meadows North – Sixth Engineering Submission Drawing Package, prepared by Urbantech Consulting, dated February 2025, referenced in Section 3.1

An additional 300mm diameter watermain is proposed to run through the blocks fronting Quarry Crescent to provide individual water services to each townhouse unit.

Refer to the Preliminary Site Servicing Plan (C300) for details on the location of the existing and proposed watermain to service the development.

4.3 Design Water Demand

The Halton Region Water and Wastewater Linear Design Manual, dated December 2025, was used to determine the equivalent population estimate and estimated domestic water demand for the proposed development. The results are provided in Table 1 and Table 2. Supporting calculations are provided in Appendix B.

Table 1: Equivalent Population Estimate

Land Use	Site Area (ha)	Conversion Factor	Population
Townhouses	2.00	260 person/ha	520

Table 2: Estimated Design Water Demand

Average Daily Demand (L/s)	Maximum Daily Demand (L/s)	Peak Hourly Demand (L/s)
1.38	2.63	4.15

4.4 Fire Flow Demand

The Fire Underwriters Survey (2020) method was used to estimate the fire flow demand for the proposed development. The required fire flow is presented in Table 2. Supporting calculations are provided in Appendix B. Please note this does not provide a recommendation for fire protection.

Table 3: Estimated Fire Flow Demand Per Block

Method	Demand Flow (L/s)	Duration (hour)
Water Supply for Public Fire Protection by Fire Underwriters Survey (2020)	233.3	3.00

To be conservative, fire flow demand calculation for Block 12 is used to represent the proposed development, due to its layout and minimum separation distances to the adjacent blocks. In this calculation, it is assumed that the proposed Townhouse Block is a two-storey building. The type of construction is assumed to be Type V Wood Frame Construction with a coefficient of 1.5 and 15% adjustment factor for limited combustible. The FUS building construction criteria have been verified by Romanov Romanov Architects Inc., in the email dated August 5, 2026, provided within Appendix B.

Based on the results from Table 2, the governing fire flow for the proposed development was calculated to be 233.3 L/s for a duration of 3.00 hours.

It should be noted that the fire flows determined using the FUS method are a conservative estimate for comparison purposes only. Based on the estimated domestic water demand (4.15 L/s) and fire flow demand (233.3 L/s) summarized in Table 1 and Table 2, the total design flow for the internal water distribution system is approximately 237.45 L/s.

Coordination with the Town and Region will be completed as part of the future Site Plan approval process to determine the existing available pressures and flows within the local watermain on Quarry Crescent. These results will be used to confirm the existing watermain network has sufficient capacity to service the proposed development. Excerpts from the Functional Water, Wastewater and Stormwater Drainage Report, SIS Areas 1 & 2 – North of Sixteen Mile Creek, prepared by Urbantech, dated November 2013 have been provided in Appendix D.

5.0 SANITARY SERVICING

Halton Region is responsible for wastewater treatment, sanitary sewers, and sewage pumping stations within Halton Region, and all local sanitary sewer systems will connect into the Region's municipal sanitary network. The wastewater from the proposed development is ultimately treated at Milton Wastewater Treatment Plant (WWTP) located at Main Street and Regional Road 25. The existing and proposed sanitary servicing is discussed in the following sections.

5.1 Existing Sanitary Servicing

Based on the Milton Meadows North – Sixth Engineering Submission Drawing Package, prepared by Urbantech Consulting, dated February 2025 (which is understood to be constructed), the existing sanitary servicing infrastructure surrounding the proposed development include:

- An existing 200mm diameter PVC sanitary sewer within Quarry Crescent.
- An existing 200mm diameter PVC sanitary sewer stubbed within the future road off of Quarry Crescent.

The design of the existing sanitary servicing has accounted for the proposed development, as per the Sanitary Sewer Design Sheet within the Milton Meadows North – Sixth Engineering Submission Drawing Package, prepared by Urbantech Consulting, dated February 2025. The design accounted for a population of 284, at a domestic flow rate of 275 L/cap/d, equaling a design demand capacity of 46.4 L/s. The Sanitary Sewer Design sheet is provided in Appendix D.

Refer to the Underground Servicing Plan (Part 1) – Drawing 104 from the Milton Meadows North – Sixth Engineering Submission Drawing Package, prepared by Urbantech Consulting, dated February 2025 and Preliminary Site Servicing Plan (C300) for further details on the location of the existing sanitary sewers.

5.2 Proposed Sanitary Servicing

The proposed development will be serviced by the 200mm diameter PVC sanitary sewer within the future condominium road. This proposed infrastructure will connect into the now existing servicing stub proposed in the Milton Meadows North – Sixth Engineering Submission Drawing Package, prepared by Urbantech Consulting, dated February 2025.

An additional 200mm diameter sanitary sewer is proposed to run through the blocks fronting Quarry Crescent to provide individual sanitary service laterals to each townhouse unit.

Refer to the Preliminary Site Servicing Plan (C300) for details on the location of the existing and proposed sanitary sewer to service the development.

5.3 Design Sanitary Flow

The Halton Region Water and Wastewater Linear Design Manual dated December 2025 was used to determine the estimated design sanitary flow for the proposed development. Estimated sanitary calculations for the proposed development are provided in Table 3 and separated based on the design flows required for each connection. Supporting calculations are provided in Appendix C.

Table 4: Estimated Design Sanitary Flows

Average Daily Flow (L/s)	Peaking Factor	Peak Flow (L/s)	Infiltration Flow (L/s)	Total Flow (L/s)
1.29	3.97	5.13	0.56	5.69

It is noted that the total estimated design sanitary flow (5.69 L/s) is less than the allocated capacity of 46.4 L/s, referenced in Section 4.1. Therefore, the existing sanitary servicing has sufficient capacity to convey the estimated design flow from the proposed development.

Excerpts from the Functional Water, Wastewater and Stormwater Drainage Report, SIS Areas 1 & 2 – North of Sixteen Mile Creek, prepared by Urbantech, dated November 2013 have been provided in Appendix D.

6.0 STORM DRAINAGE AND STORMWATER MANAGEMENT

6.1 Existing Conditions

Based on the Milton Meadows North – Sixth Engineering Submission Drawing Package, prepared by Urbantech Consulting, dated February 2025 (which is understood to be constructed), the existing storm servicing infrastructure surrounding the proposed development includes:

- An existing 300mm PVC storm sewer within Quarry Crescent.
- An existing 675mm diameter concrete storm sewer stubbed within the future condominium road off of Quarry Crescent.

The Storm Drainage Plan – Part 1 (Drawing 301) from the Milton Meadows North – Sixth Engineering Submission Drawing Package and proposed four (4) design catchments for the proposed development lands, as follows:

- Block 81 – Condominium Townhouses (A = 1.40 ha, RC = 0.90) Catchment 4 consists of drainage from the condominium townhouse block, with flows intended to be captured by CTRL. MH 3 and subsequently conveyed to Stormwater Management Pond S43. It should be noted that this catchment includes both the subject Block 81 lands and a portion of the adjacent Phase 2A lands. The area of the proposed development lands within this catchment is approximately 1.14 ha.
- Rear-Lot Condominium Townhouses (A = 0.62 ha, RC = 0.90) consists of drainage from the rear of the townhouse condominium units to sheet flow to the existing watercourse. Note: this flow does not enter the storm sewer system that outlets to the Stormwater Management Pond (S43).

- Condominium Sheet Drainage to Right-Of-Way ($A = 0.46$ ha, $RC = 0.90$) consists of sheet drainage to the Quarry Crescent right-of-way with flows to be ultimately directed overland to the Stormwater Management Pond (S43).
- Condominium Sheet Drainage to Right-Of-Way ($A = 0.32$ ha, $RC = 0.90$) consists of sheet drainage to the Quarry Crescent right-of-way with flows to be ultimately directed overland to the Stormwater Management Pond (S43).

It should be noted that the two (2) catchments above draining to Quarry Crescent consist of lands outside of our Block 81 Lands. The area within the Block 81 Phase 2B lands that drains to Quarry Crescent is 0.38 ha.

Drawing 301 from the Milton Meadows North – Sixth Engineering Submission Drawing Package is provided in Appendix D for reference.

6.2 Proposed Storm Infrastructure and Drainage Conditions

The proposed development is proposed to be serviced by a 450mm storm sewer connecting to the existing storm maintenance hole (Ex. STM MH1).

The back-to-back townhouse and Deck townhouse units are slab-on-grade and do not require storm service connections.

The Preliminary Site Servicing Plan (Drawing C300) illustrates the location of the existing and proposed storm sewers to service the proposed development. The proposed storm sewer infrastructure will be sized to convey the 5-year flows calculated based on Town of Milton IDF parameters at the detailed design stage.

The proposed development has been divided into four (4) post-development catchment areas as shown on the Post Development Drainage Plan (Figure 1). The delineation of the post-development catchments were completed based on the proposed grading, as shown on the Preliminary Site Grading Plan (C400). The proposed catchments are as follows:

- Catchment 201 ($A = 1.14$ ha; $RC = 0.73$) consists of drainage from the front of Blocks 5 through 13, the back-to-back townhouses fronting the proposed condominium road (Blocks 1-4) and the proposed condominium road itself. Minor drainage from this catchment will be collected by the proposed storm sewer system and conveyed to the existing storm sewer within the future condominium road at Ex. MH 1. Major flows will be directed overland to the future condominium road R.O.W. and subsequently to the SWM Facility S43.
- Catchment 202 ($A = 0.38$ ha; $RC = 0.67$) consists of drainage from the back-to-back townhouse blocks fronting Quarry Crescent. Minor drainage from this catchment will be collected by the storm sewer system within Quarry Crescent. Major flows will be directed overland to the Quarry Crescent R.O.W. and subsequently to the SWM Facility S43.
- Catchment 203 ($A = 0.08$ ha; $RC = 0.49$) consists of drainage from portions of the rooftops and rear yards of Blocks 5-6. Drainage will sheet flow from this catchment, overland, to the existing watercourse located adjacent to the proposed development lands.
- Catchment 204 ($A = 0.28$ ha; $RC = 0.55$) consists of drainage from portions of the rooftops and rear yards of Blocks 7-13. Drainage will sheet flow from this catchment, overland, to the existing watercourse located adjacent to the proposed development lands.

The preliminary grading plan refines the internal catchment delineation to reflect the current development layout, while remaining consistent with the original subdivision drainage design established on Drawing 301 of the Milton Meadows North – Sixth Engineering Submission Drawing Package, prepared by Urbantech Consulting and dated February 2025. To confirm consistency with the original design assumptions, an assessment of the product of the runoff coefficient and drainage area ($C \times A$) was completed for the Block 81 lands. Based on the original subdivision design catchments, which include 1.14 ha of Block 81 lands and 0.38 ha of lands draining to Quarry Crescent at an RC of 0.90, the calculated $C \times A$ value is 0.90. For the proposed development conditions, the corresponding $C \times A$ value is 0.72. As the proposed development calculations results in a lower $C \times A$ value than that assumed in the original subdivision design, the associated post-development runoff characteristics and flows are expected to be less than those accounted for in the original design. Therefore, the existing storm sewer system, overland flow routes, and adjacent watercourse can accommodate runoff from the proposed development as originally intended.

6.3 Stormwater Management Requirements

Water Quantity, Quality and Erosion Control:

Stormwater management requirements for the proposed development are based off the design of the downstream SWM Pond S43. SWM Pond S43 is located east of the intersection of 3 Side Road and New Tremaine Road, adjacent to Watercourse NW-2-G1. As per the Milton Meadows Properties Inc. – Stormwater Management Report, prepared by Urbantech Consulting, dated August 2023 and the Milton Meadows North – Sixth Engineering Submission Drawing Package, prepared by Urbantech Consulting, dated February 2025, SWM Pond S43 has been designed to provide Water Quantity, Quality, and Erosion Control for the proposed development.

As per the Stormwater Management Report, prepared by Urbantech, dated August 2023, the drainage area tributary to SWM Pond S43 included the proposed development at an imperviousness of 100%, (see Drawing 301 in Appendix D). As outlined in Section 6.2, the $C \times A$ product of the original subdivision design is less than the proposed development design.

Therefore, it is concluded that the Water Quantity, Quality, and Erosion Control design of SWM Pond S43 is sufficient for the proposed development.

Water Balance:

As per the Subwatershed Impact Study – Areas 1,2 & 4, prepared by RAND Engineering & Beacon Environmental, dated February 2014, the study recommends implementing Low Impact Development (LID) measures to maximize post-development infiltration. To achieve this, rooftops are proposed to be directed to landscaped areas within the proposed lots, where possible, and enhanced topsoil is proposed in combination with reduced lot grading (where possible) to promote infiltration.

7.0 EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION

The design of the erosion and sediment controls will be prepared during the detailed design phase. The erosion and sediment controls will be required to be installed prior to the start of any construction activities. Controls will be required to be inspected after each significant rainfall event and maintained in proper working condition until the proposed development is stabilized, or as directed by the Site Engineer and/or Town. Erosion and sediment controls that may be implemented during construction include:

Sediment Control Fencing

Sediment control fencing in accordance with Town standards will be installed on the perimeter of the site to intercept sheet flow. Adjacent to the Creek Lands, double silt fence with straw bales will be installed for additional protection.

Rock Mud Mat

A rock mud mat will be installed at the entrance to the construction zone to prevent mud tracking from the site onto the surrounding lands and perimeter roadway network. All construction traffic will be restricted to this access only.

Sediment Control for Catchbasins

Sediment control devices will be installed in the existing nearby storm sewer catchbasins. The sediment control devices will prevent silt and sediment from entering the storm sewer system.

Temporary Sediment Traps

Temporary sediment traps may be implemented to intercept stormwater runoff during earthworks operations. The temporary sediment traps would be sized for the disturbed area directed to each trap.

Interceptor Swales with Check Dams

Interceptor swales may be required during construction to direct runoff towards temporary sediment traps. Rock check dams or silt sock check dams would be proposed within the interceptor swales in key locations.

8.0 CONCLUSIONS & RECOMMENDATIONS

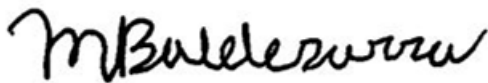
The proposed development can be serviced for water, sanitary, and stormwater in accordance with the Town of Milton and Halton Region requirements and standards. Our conclusions and recommendations include:

- Water servicing for the proposed development will be provided by a 300mm diameter watermain within the proposed condominium road, and an additional 300mm diameter watermain routed in front of the blocks fronting Quarry Crescent. The proposed watermain network will connect to the existing servicing stubs within the future condominium road and Quarry Crescent established as part of the Milton Meadows North Subdivision design within Quarry Crescent and the future road off of Quarry Crescent. Two (2) fire hydrants are proposed to provide adequate fire protection coverage.
- Sanitary servicing for the proposed development will be provided by a 200mm diameter PVC sanitary sewer within the proposed condominium road, and an additional 200mm diameter sanitary sewer routed in front of the blocks fronting Quarry Crescent. The proposed sanitary sewer will connect to the existing servicing stub within the future road off of Quarry Crescent, established as part of the Milton Meadows North subdivision design.
- Storm servicing for the proposed development will be provided by a 450mm diameter storm sewer within the proposed condominium road. The proposed storm sewer will connect to the existing storm maintenance hole (Ex. STM MH1) within the future road off of Quarry Crescent, established as part of the Milton Meadows North Subdivision design.
- Water quality, quantity and erosion control for the proposed development will be provided by the existing SWM Pond S43.
- Existing water, sanitary, storm and stormwater management infrastructure has been sized to accommodate the proposed development.

Based on the above conclusions we support the proposed development application from the perspective of water supply, sanitary servicing, and stormwater management.

Respectfully submitted,

C.F. CROZIER & ASSOCIATES INC.



Matthew Baldesarra, P.Eng.
Project Engineer, Land Development

MJB/tc

C.F. CROZIER & ASSOCIATES INC.



Matt Britton, P.Eng.
Manager, Burlington

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APPENDIX A

Site Plan

[illegible]

Drawing issued

Date:	Particular:	By:
26.06.02	SPA DESIGN REVIEW	AR
26.09.24	SITE PLAN REZONING ISSUE	AR

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The contractor is to verify dimensions and data noted herein with conditions on the site and is held responsible for reporting any discrepancy to Romanov Romanov Architects Inc., for adjustment. This drawing is not to be used for building purpose until signed and sealed by the Consultant.

Seals:



romanov romanov
ARCHITECTS INCORPORATED
DESIGNERS | URBANISTS | FUTURISTS

375 PARKSIDE DRIVE, TORONTO, ON, M6R 2Z6
tel: (416)766-8750 email: info@romrom.com

Project:

MILTON PANORAMA

Sheet Title:

B1 - B4 SITE PLAN

Design:	Drawn:	Approved:
AR	AR	JR

Comm. No:	Sheet No:
24.112	A0.01

APPENDIX B

Water Demand Calculations

 CROZIER & ASSOCIATES Consulting Engineers Project Name: Milton Meadows - Block 81 Project NO.: 2490-7940 Created by: BS Checked by: MJB Date: 2026.09.24			
Domestic Water Demand			
Total Site Area:2.0ha Number of Units:120units Population:520persons/ha Design Parameters Average Daily Flow =230L/capita/d Water Demand Average Daily Demand =119,600L/day =1.38L/s Peaking Factors (Residential) Max Day =1.90 Peak Hour =3.00 Average Day =1.38L/s Max Day =2.63L/s Peak Hour =4.15L/s			Notes & References Site Plan prepared by Romanov Romanov Architects Inc., dated September 24, 2026 260 person/ha from Table 2-3 EQUIVALENT POPULATION DENSITIES - Street Townhouse, Townhouses within Intensification Areas, or Back-to-Back of Halton Region Water and Wastewater Linear Design Manual (December 2025) Average Demand from Section 2.3.1 of Halton Region - Water and Wastewater Linear Design Manual (December 2025) Peaking Factors from Table 2-5 of Halton Region Water and Wastewater Linear Design Manual (December 2025) Max Day = Average Day Demand * Max Day Peak Hour = Average Day Demand * Peak Hour
Municipality	Average Daily Water Demand (L/s)	Max Day Demand (L/s)	Peak Hourly Demand (L/s)
Halton Region	1.38	2.63	4.15

Ben Sprang

From: alex@romrom.com
Sent: August 5, 2026 2:44 PM
To: Dave MacLeod; Matthew Baldesarra
Cc: Matt Britton
Subject: Re: Milton Meadows Block 81 FUS Questions

Hi Team,

Apologies on the late reply, was certain I responded so my sincere apologies. See my responses below in red

Best,

AR

Alex Romanov, M. Arch., B.Sc., DIP.ARCH.TECH., Assoc. AIA
Intern Architect

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From: Dave MacLeod <dave@elevateppm.ca>
Sent: Friday, July 31, 2026 10:48 AM
To: 'Matthew Baldesarra' <mbaldesarra@cfcrozier.ca>; 'Alex Romanov' <alex@romrom.com>
Cc: 'Matt Britton' <mbrampton@cfcrozier.ca>
Subject: RE: Milton Meadows Block 81 FUS Questions

Hi guys –

Alex – were you able to provide Matt with direction on this?

Thx
Dave

From: Matthew Baldesarra <mbaldesarra@cfcrozier.ca>
Sent: Wednesday, July 29, 2026 4:46 PM
To: 'Alex Romanov' <alex@romrom.com>
Cc: Matt Britton <mbrifton@cfcrozier.ca>; Dave MacLeod <dave@elevateppm.ca>
Subject: Milton Meadows Block 81 FUS Questions

Hi Alex,

Hope all is well.

I had a few questions I'd like to confirm with you for Milton Meadows Block 81.

We are working on the fire flow calculations and need your assistance confirming building details. We require confirmation regarding the building construction type, vertical openings and firewalls, occupancy fire hazards, and sprinkler systems. If known, please provide answers to the following questions:

1. What is the construction type of the townhouses? as defined in the attached FUS document.
 1. Type V Wood Frame Construction - **We are designing with standard wood construction**
 2. Type IV-A Mass Timber Construction (Encapsulated Mass Timber)
 3. Type IV-B Mass Timber Construction (Rated Mass Timber)
 4. Type IV-C Mass Timber Construction (Ordinary Mass Timber)
 5. Type IV-D Mass Timber Construction (Un-Rated Mass Timber)
 6. Type III Ordinary Construction (Jointed Masonry)
 7. Type II Non-Combustible Construction
 8. Type I Fire Resistance Construction
2. Do vertical openings (i.e. walls of masonry or other limited or non-combustible construction) have a fire resistance rating of at least 1 hour?
All vertical openings are contained within suites which are separated by a 1HR. Rated demising wall and/or 2HR. Fire rated firewall
3. Do all vertical firewalls have a fire resistance rating of at least 2 hours and meet the requirements of the National Building Code?
Yes, each BtoB Block is broken into two separate building separated by a 2 hr firewall that is as per requirement of the OBC.
4. What is the occupancy fire hazard for the buildings?
 1. Non-Combustible
 2. Limited Combustible - **This as per FUS 2020 the recommendation for Group C residential occupancy .**
 3. Combustible
 4. Free Burning
 5. Rapid Burning

*Refer to Table 3: Recommended Occupancy/Contents Charges by Major Occupancy Examples in the attached FUS 2020 document for further clarification

5. Are there any sprinkler systems provided for the building?
 1. If so, is it an automatic sprinkler protection design and installed in accordance with NFPA 13?

2. Is the water supply standard for both the system and Fire Department hose lines?
3. Is it a fully supervised system?

There are no sprinkler system provided in any of the buildings

Attached is the Fire Underwriter's Survey (2020) which outlines the requirements and provides more detail for the questions above.

If you have any questions or concerns, please let me know.

Thanks,
Matt

Matthew Baldesarra, P.Eng.

Project Engineer, Land Development

Office: 905.693.4708

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Notes:

- 1
- Fire flow calculation is completed based upon Block 12, as it generates the most conversative flow due to its size, layout, and separation distance, based on the Site Plan prepared by Romanov Romanov Architects Inc. dated September 24, 2026.
- 2
- The calculations are completed assuming a two-storey building.
- 3
- The type of construction is assumed to be Type V wood frame construction with the coefficient of 1.5
- 4
- The adjustment factor is taken as 15% for limited combustible.

Water Supply for Public Fire Protection (2020)
Fire Underwriters Survey

Part II - Guide for Determination of Required Fire Flow

1. An estimate of fire flow required for a given area may be determined by the formula:

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

where

F = the required fire flow in litres per minute

C = coefficient related to the type of construction:

=	1.5	for Type V Wood Frame Construction (all structure elements are constructed entirely or partially of wood or other materials)
=	0.8	for Type IV-A Encapsulated Mass Timber Construction (structure elements have a minimum 2-hour fire resistance rating and roof has a minimum 1-hour fire resistance rating, must meet requirements set out within the 2020 National Building Code of Canada set out for Encapsulated Mass Timber Construction)
=	0.9	for Type IV-B Rated Mass Timber Construction (all structure elements have a minimum 1-hour fire resistance rating)
=	1.0	for Type IV-C Ordinary Mass Timber Construction (only exterior walls have a minimum 1-hour fire resistance rating, combustible floor and interior)
=	1.5	for Type IV-D Un-Rated Mass Timber Construction (exterior walls do not have a minimum 1-hour fire resistance rating, combustible floor and interior)
=	1.0	for Type III Ordinary Construction (brick or other masonry walls with a minimum 1-hour fire resistnace rating, combustible floor and interior)
=	0.8	for Type II Non-Combustible Construction (all structure elements have a minimum 1-hour fire resistance rating and is entirely constructed with noncombustible materials)
=	0.6	for Type I Fire-Resistive Construction (all structure elements have a minimum 2-hour fire resistance rating and is entirely constructed with noncombustible materials)

A = The total floor area in square metres (including all storeys, but excluding basements at least 50 percent below grade) in the building considered.

Refer to page 22 of the Water Supply for Public Fire Protection for details regarding Total Effective Area (A).

Proposed Buildings

Floor Area = 436.12 sq.m.
Storey= 2
A = 872.24 sq.m.
C = 1.5

Type V Construction

Therefore F = 9,746 L/min

Fire flow determined above shall not exceed:
30,000 L/min for wood frame construction
30,000 L/min for ordinary construction
25,000 L/min for non-combustible construction
25,000 L/min for fire-resistive construction

No fire walls are assumed.

2. Values obtained in No. 1 may be reduced by as much as 25% for occupancies having low contents fire hazard or may be increased by up to 25% surcharge for occupancies having a high fire hazard.

Non-Combustible	-25%	Free Burning	15%
Limited Combustible	-15%	Rapid Burning	25%
Combustible	0% (No Change)		

*Refer to Table 3 in the Water Supply for Public Fire Protection for recommended occupancy charges.

Adjustment Factor: **Limited Combustible: -15%**

Reduction: -1,462 L/min
RFF: 8,284 L/min

Note: Flow determined shall not be less than 2,000 L/min

3. Sprinklers - The value obtained in No. 2 above maybe reduced by up to 50% for complete automatic sprinkler protection. The credit for the system will be a maximum of 30% for an adequately designed system conforming to NFPA 13 and other NFPA sprinkler standards. 10% may be granted if the water supply is standard for both the system and fire department hose lines required. Additional credit of up to 10% may be given for a fully supervised system.

Automatic Sprinkler System Design	Credit	
	With Complete Building Coverage	With Partial Building Coverage of X%
Automatic sprinkler protection designed and installed in accordance with NFPA 13	30%	30% x Percentage of Total Floor Area Served by Sprinkler System
Water supply is standard for both the system and Fire Department hose lines	10%	10% x Percentage of Total Floor Area Served by Sprinkler System
Fully supervised system	10%	10% x Percentage of Total Floor Area Served by Sprinkler System

Building will not have automatic sprinklers per NFPA 13 (typical 30% reduction)

Reduction: 0 L/min

Milton Meadows - Block 81
Fire Flow Calculation

Water Supply for Public Fire Protection (2020)
Fire Underwriters Survey

Part II - Guide for Determination of Required Fire Flow

4. Exposure - To the value obtained in No. 2, a percentage should be added for structures exposed within 45 metres by the fire area under consideration. The percentage shall depend upon the height, area, and construction of the building(s) being exposed, the separation, openings in the exposed building(s), the length and height of exposure, the provision of automatic sprinklers and/or outside sprinklers in the building(s) exposed, the occupancy of the exposed building(s) and the effect of hillside locations on the possible spread of fire.

Separation	Charge	Separation	Charge
0 to 3 m	25%	20.1 to 30 m	10%
3.1 to 10 m	20%	> 30 m	0%
10.1 to 20 m	15%		

Exposed buildings			
Description	Distance		
Block 13 on West side	2.3 m	25%	2071.05
Block 1 on South side	19.1 m	15%	1242.63
North side	> 30m	0%	0.00
Block 11 on East side	2.4 m	25%	2071.05
		0.65	5,385 L/min Surcharge

Determine Required Fire Flow

No. 1	9,746		
No. 2	-1,462 reduction		
No. 3	0 reduction		
No. 4	5,385 surcharge		
Required Flow:	13,669 L/min		
Rounded to nearest 1000 L/min:	14,000 L/min	or	233.3 L/s 3,698 USGPM

Required Flow (L/s):	234
Duration (hr):	3.00

Required Duration of Fire Flow	
Flow Required L/min	Duration (hours)
2,000 or less	1.0
3,000	1.25
4,000	1.5
5,000	1.75
6,000	2.0
8,000	2.0
10,000	2.0
12,000	2.5
14,000	3.0
16,000	3.5
18,000	4.0
20,000	4.5
22,000	5.0
24,000	5.5
26,000	6.0
28,000	6.5
30,000	7.0
32,000	7.5
34,000	8.0
36,000	8.5
38,000	9.0
40,000 and over	9.5

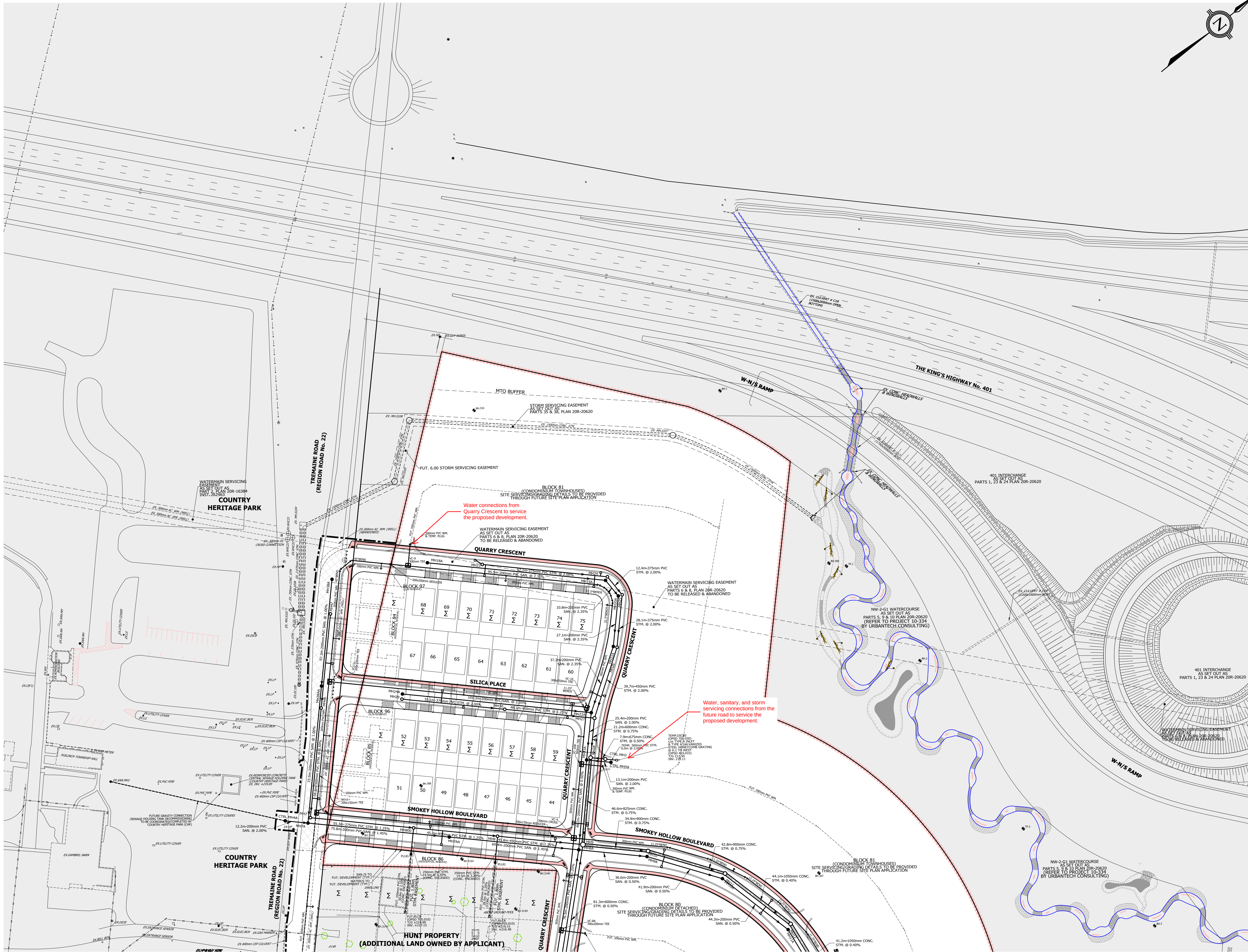
APPENDIX C

Sanitary Demand Calculations

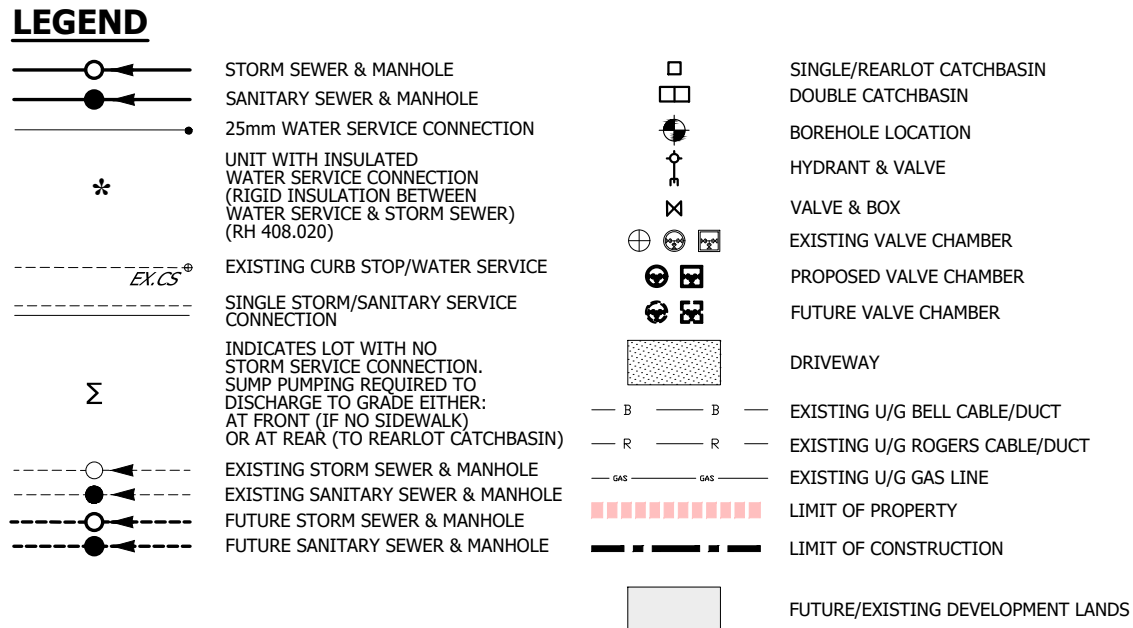
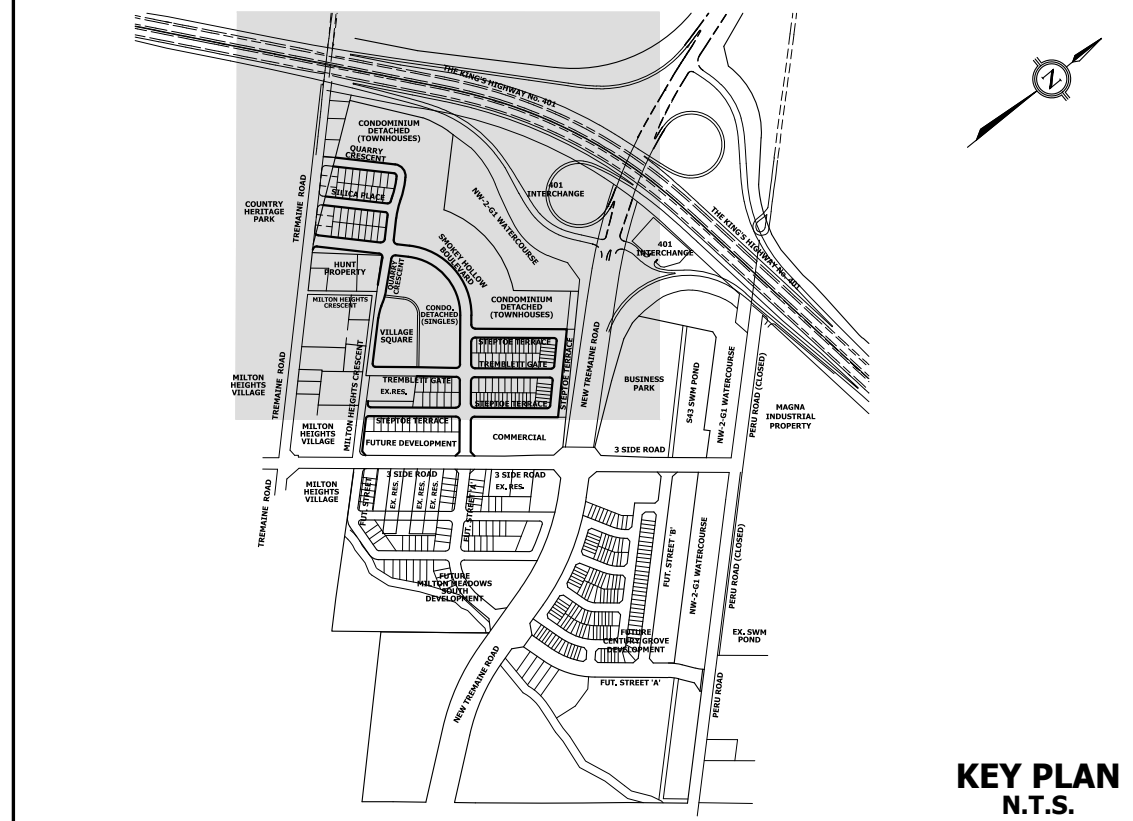
 CROZIER &ASSOCIATES Consulting Engineers Project Name: Milton Meadows - Block 81 Project No.: 2490-7940 Created by: BS Checked by: MJB Date: 2026.09.24					
SANITARY DESIGN FLOW					
Total Site Area:2ha Number of Units:120units Population:520capita				Notes & References Site Plan prepared by Romanov Romanov Architects Inc., dated September 24, 2026 260 person/ha from Table 3-3 EQUIVALENT POPULATION DENSITIES - Street Townhouse, Townhouses within Intensification Areas, or Back-to-Back of Halton Region Water and Wastewater Linear Design Manual (December 2025)	
Design Parameters: Average Daily Flow =215L/capita/d				Average Dry Weather Flow from Section 3.2.1 Unit Sewage Flow from Table 3-1 of Halton Region Water and Wastewater Linear Design Manual (December 2025)	
Sanitary Design Flow: Average Daily Flow =111,800L/d =1.29L/s				Average Daily Flow = Average Daily Flow (L/cap./day) * population / 86400	
Harmon Peak Factor: M =3.97 Peak Flow =5.13L/s				$M = 1 + 14 / (4 + (p/1000)^{.5})$ Peak Flow = Average Daily Flow * M	
Infiltration Flow: Infiltration =0.280L/s/ha Total Infiltration =0.56L/s Total Design Flow =5.69L/s				Infiltration Allowance from Section 3.2.5 of Halton Region Water and Wastewater Linear Design Manual (December 2025) Total Design Flow = Peak Flow + Total Infiltration	
Municipality	Average Daily Flow (L/s)	Peaking Factor	Peak Flow (L/s)	Infiltration Flow (L/s)	Total Design Flow (L/s)
Halton Region	1.29	3.97	5.13	0.56	5.69

APPENDIX D

Supporting Documentation



REFER TO DWG. 105



- NOTES**
- FOR GENERAL NOTES, REFER TO DWG. 100
 - GEOTECHNICAL REFERENCES REFER TO THE FOLLOWING:
 - BOREHOLES 301 TO 311 REFERENCE PRELIMINARY GEOTECHNICAL INVESTIGATION REPORT FOR PROPOSED RESIDENTIAL SUBDIVISION, TREMAINE ROAD AND HIGHWAY 401 BY AMEC EARTH & ENVIRONMENTAL LIMITED. REFERENCE NO.: T122829, REPORT DATE: MAY 14, 2022.
 - BOREHOLES 15 TO 15 REFERENCE PRELIMINARY GEOTECHNICAL INVESTIGATION REPORT FOR FORMER SCHOOL PROPERTY, NORTHEAST CORNER, MILTON HEIGHTS CRESCENT & No.3 SDRD, MILTON BY SHAD & ASSOCIATES INC. REFERENCE NO.: T10246, REPORT DATE: NOVEMBER 17, 2010.
 - BOREHOLES 1 TO 13A & TEST PITS TP 1 TO TP 7 REFERENCE GEOTECHNICAL INVESTIGATION REPORT FOR PROPOSED CHANNEL, STORMWATER MANAGEMENT PONDS & 3rd SIDEROAD SERVICING, MILTON HEIGHTS BY SHAD & ASSOCIATES INC. REFERENCE NO.: T11284, REPORT DATE: JULY 15, 2011.
 - BOREHOLES 311H TO 318H REFERENCE GEOTECHNICAL INVESTIGATION REPORT FOR PROPOSED RESIDENTIAL DEVELOPMENT, 149 TREMAINE ROAD & 31-33 MILTON HEIGHTS CRESCENT, MILTON, BY SHAD & ASSOCIATES INC. REFERENCE NO.: T11305, REPORT DATE: AUGUST 22, 2011.
 - BOREHOLES 1M TO 4M REFERENCE GEOTECHNICAL INVESTIGATION REPORT FOR PROPOSED RESIDENTIAL DEVELOPMENT, TWO SITES-NORTHEAST QUADRANT OF TREMAINE ROAD & 3rd SIDEROAD, MILTON, BY SHAD & ASSOCIATES INC. REFERENCE NO.: T18746, REPORT DATE: OCTOBER 12, 2018.
 - ALL UNITS TO BE EQUIPPED WITH SUMP PUMPS. REFER TO DETAIL DWG. 504
 - NOTES REGARDING EX. ASBESTOS CEMENT (AC) WATERMAIN:
 - PRIOR TO CONSTRUCTION, CONTRACTOR TO PREPARE CONTINGENCY PLAN IN CASE OF DAMAGE AND COORDINATE SAME WITH HALTON REGION.
 - CONTRACTOR TO MAINTAIN REPAIR PARTS ON-SITE AT ALL TIMES.
 - CONTRACTOR TO DAYLIGHT EX. JOINTS PRIOR TO EXCAVATION.
 - ENGINEERED SUPPORT IS REQUIRED WHERE EXCAVATING BENEATH WATERMAIN.
 - U-FILL BACKFILL IS REQUIRED BENEATH WATERMAIN.

BENCHMARK
108+66 CONCRETE BRIDGE CARRYING HALTON REG. ROAD No. 22 (TREMAINE ROAD) OVER HWY. 401 2.6km WEST OF INTERCHANGE 39 (JCT OF HWY. 29 AND HWY. 401) AND 5.8km EAST OF INTERCHANGE 39 (JCT OF CAMBELLVILLE SIDE ROAD AND HWY. 401).
TABLET IS SET HORIZONTALLY IN THE SOUTH FACE OF NORTH ABUTMENT, 40cm EAST OF THE S.W. CORNER AND 91cm ABOVE GROUND.
ELEVATION = 222.844
ID = 0081966010B

5	SIXTH ENGINEERING SUBMISSION	FEBRUARY 24, 2025	OS	
4	FIFTH ENGINEERING SUBMISSION	JUNE 19, 2024	OS	
3	FOURTH ENGINEERING SUBMISSION	FEBRUARY 13, 2024	OS	
2	THIRD ENGINEERING SUBMISSION	AUGUST 15, 2023	OS	
No.	REVISION	DATE	BY	APP'D

MILTON MEADOWS PROPERTIES LTD. MILTON MEADOWS NORTH

REGIONAL MUNICIPALITY OF HALTON
TOWN OF MILTON
DEVELOPMENT SERVICES

TOWN FILE No.: 24T-07002/M(A) REGION FILE No.: DM-1031

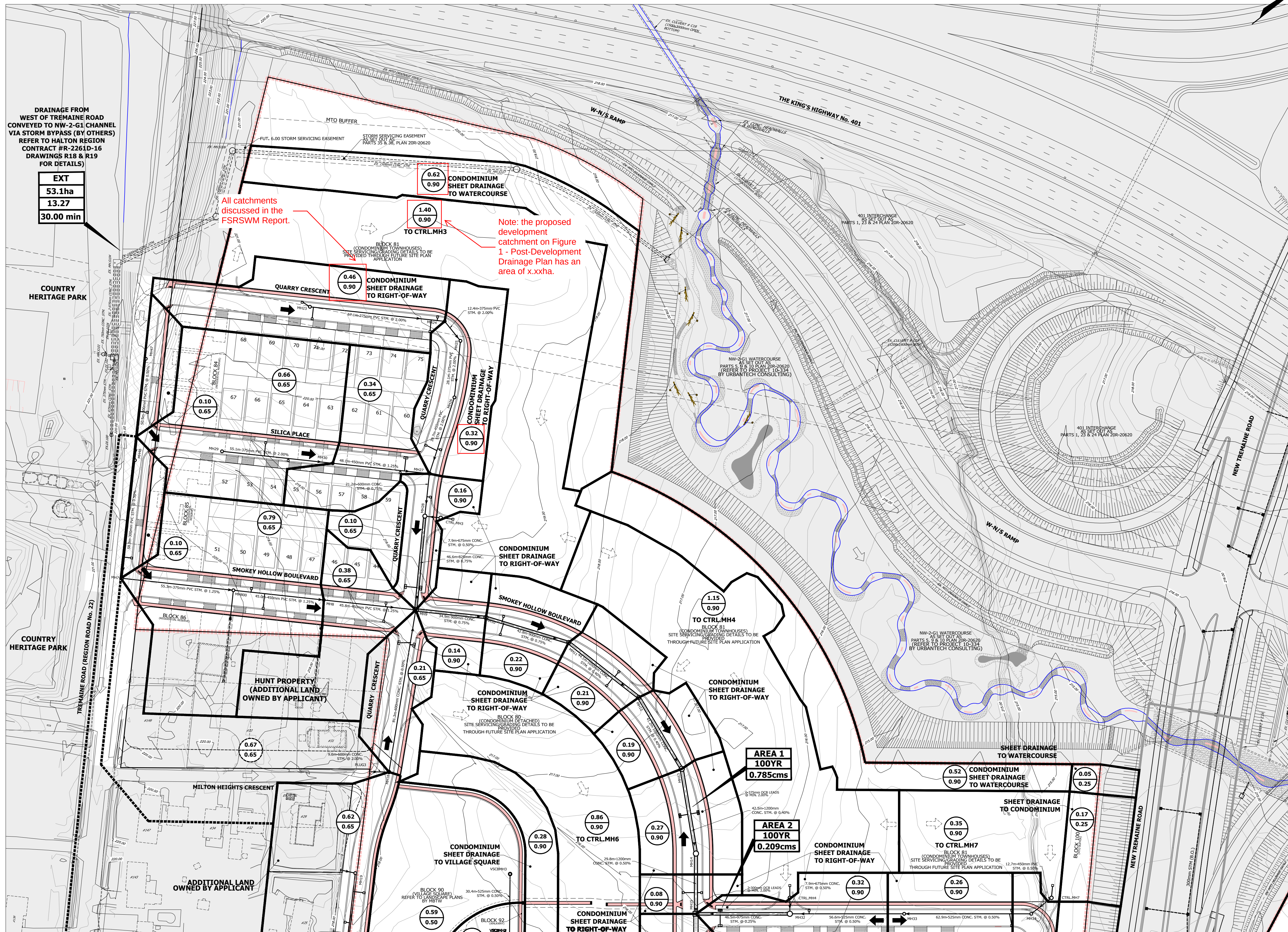
MUNICIPAL
TOWN OF MILTON - DEVELOPMENT SERVICES
DESIGN OF SANITARY, WATER SERVICES, AND REGIONAL ROAD WORKS APPROVED SUBJECT TO DETAIL CONSTRUCTION CONFORMING TO HALTON REGION STANDARDS AND SPECIFICATIONS AND LOCATION APPROVAL FROM AREA MUNICIPALITY.

ACCEPTED BY: ANITA SPARRE, C.E.T. ON: MAY 22, 2025
DIRECTOR, DEVELOPMENT ENGINEERING
VIA SIGNED LETTER

URBANTECH® Consulting
A Division of Leighton-Zac Ltd.
3760 14th Avenue, Suite 301,
Markham, ON L3R 3T7
TEL 905.946.9461 • urbantech.com

**UNDERGROUND SERVICING PLAN
(PART 1)**

DESIGNED: O.S. CHECKED: J.O. PROJECT No.: 10-326
DRAWN: J.G.S. DATE: SEPTEMBER, 2018 SHEET No.:
SCALE: H 1:1000 DRAWING No.: 104



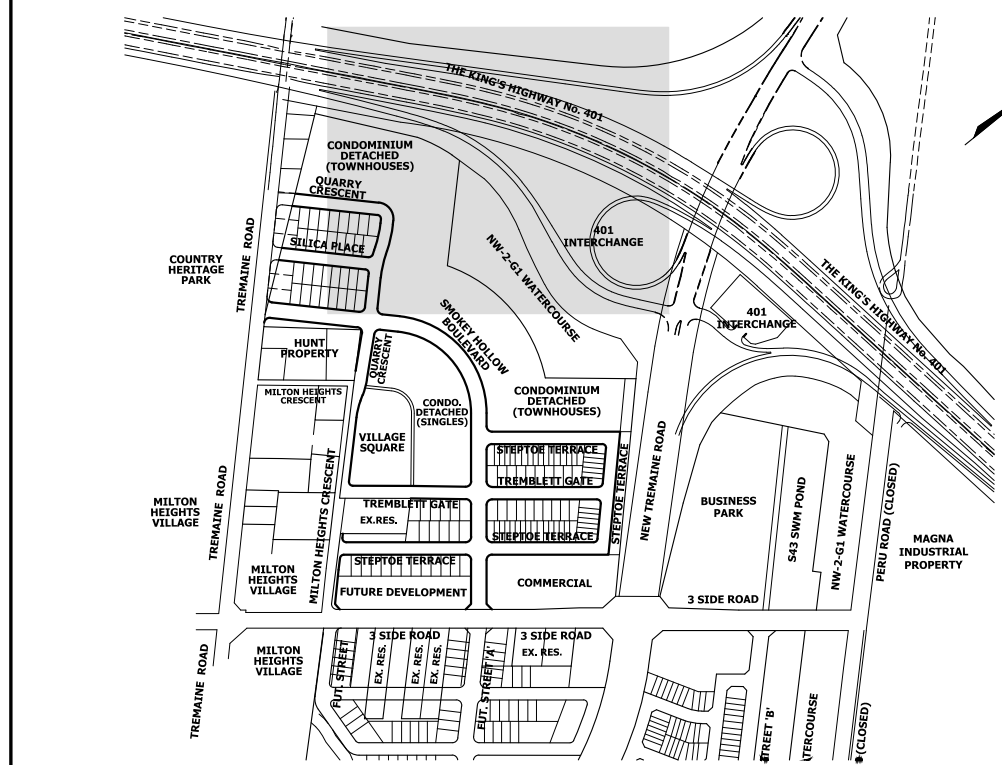
DRAINAGE FROM WEST OF TREMAINE ROAD CONVEYED TO NW-2-G1 CHANNEL VIA STORM BYPASS (BY OTHERS) REFER TO HALTON REGION CONTRACT #R-2261D-16 DRAWINGS R18 & R19 FOR DETAILS)

EXT
53.1ha
13.27
30.00 min

All catchments discussed in the FSRSM Report.

Note: the proposed development catchment on Figure 1 - Post-Development Drainage Plan has an area of x.xxha.

REFER TO DRAWING 303



- LEGEND**
- PROPOSED STORM SEWER & FLOW DIRECTION ARROW
 - EXISTING STORM SEWER & FLOW DIRECTION ARROW
 - FUTURE STORM SEWER & FLOW DIRECTION ARROW
 - SINGLE HOUSE CONNECTION
 - SINGLE/REARLOT, DOUBLE CATCHBASIN
 - PROPOSED DRAINAGE AREA (ha) FOR MINOR SYSTEM (5 YEAR) FLOW
 - PROPOSED RUNOFF COEFFICIENT
 - EXISTING DRAINAGE AREA (ha) FOR MINOR SYSTEM (5 YEAR) FLOW
 - EXISTING RUNOFF COEFFICIENT
 - FUTURE DRAINAGE AREA (ha) FOR MINOR SYSTEM (5 YEAR) FLOW
 - FUTURE RUNOFF COEFFICIENT
 - MINOR SYSTEM DRAINAGE AREA BOUNDARY
 - EXTERNAL MINOR SYSTEM DRAINAGE AREA BOUNDARY
 - EXISTING MINOR SYSTEM DRAINAGE AREA BOUNDARY
 - OVERLAND FLOW ROUTE
 - EXISTING OVERLAND FLOW ROUTE
 - FUTURE OVERLAND FLOW ROUTE
 - LIMIT OF PROPERTY
 - FUTURE / EXISTING DEVELOPMENT LANDS
- AREA 1**
100 YR
0.079cms
- EXT. 3**
3.25ha
2.44
12.50 min
- NOTES**
- REFER TO DWG. 304 FOR MAJOR SYSTEM CAPTURE AREAS
 - REFER TO DWG. 305 FOR FUTURE PHASE PRE-DEVELOPMENT DRAINAGE
 - REFER TO DWG. 306 FOR STORM DESIGN SHEETS
 - FOR NEW TREMAINE ROAD STORM DRAINAGE DETAILS, REFER TO HALTON REGION CONTRACT NO. 22-2161D-15 DRAWINGS BY WSP
- BENCHMARK**
- 10B-66: CONCRETE BRIDGE CARRYING HALTON REG. ROAD NO. 22 (TREMAINE ROAD) OVER HWY. 401 INTERCHANGE 39 (JCT OF CAMBELLVILLE SIDE ROAD AND HWY. 401). TABLET IS SET HORIZONTALLY IN THE SOUTH FACE OF NORTH ABUTMENT, 40cm EAST OF THE S.W. CORNER AND 91cm ABOVE GROUND. ELEVATION = 222.844
ID = 008196680105
- | No. | REVISION | DATE | BY | APPD |
|-----|-------------------------------|-------------------|----|------|
| 5 | SIXTH ENGINEERING SUBMISSION | FEBRUARY 24, 2025 | OS | |
| 4 | FIFTH ENGINEERING SUBMISSION | JUNE 19, 2024 | OS | |
| 3 | FOURTH ENGINEERING SUBMISSION | FEBRUARY 13, 2024 | OS | |
| 2 | THIRD ENGINEERING SUBMISSION | AUGUST 15, 2023 | OS | |
| 1 | SECOND ENGINEERING SUBMISSION | NOV. 25, 2022 | OS | |

MILTON MEADOWS PROPERTIES LTD. MILTON MEADOWS NORTH

REGIONAL MUNICIPALITY OF HALTON
TOWN OF MILTON
DEVELOPMENT SERVICES

TOWN FILE No.: 24T-07002/M(A) REGION FILE No.: DM-1031

MUNICIPAL
TOWN OF MILTON - DEVELOPMENT SERVICES
DESIGN OF SANITARY, WATER SERVICES, AND REGIONAL ROAD WORKS APPROVED SUBJECT TO DETAIL CONSTRUCTION CONFORMING TO HALTON REGION STANDARDS AND SPECIFICATIONS AND LOCATION APPROVAL FROM AREA MUNICIPALITY.

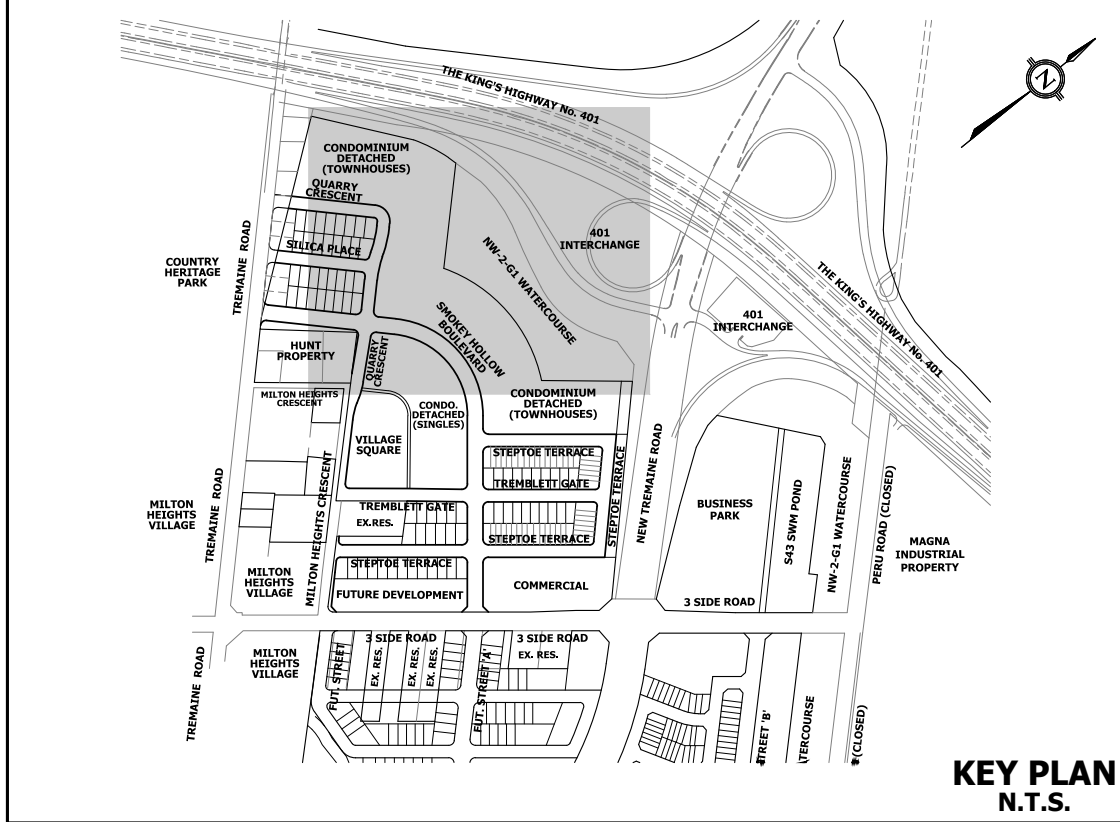
ACCEPTED BY: ANITA SPARRE, C.E.T., ON: MAY 22, 2025
DIRECTOR, DEVELOPMENT ENGINEERING
SIGNED: _____ DATE: _____
DEVELOPMENT SERVICES, PUBLIC WORKS

Urbantech® Consulting
A Division of Leighton-Zac Ltd.
3760 14th Avenue, Suite 301,
Markham, ON L3R 3T7
TEL 905.948.9461 • urbantech.com

STORM DRAINAGE PLAN (PART 1)

DESIGNED: O.S. CHECKED: J.O. PROJECT No.: 10-326
DRAWN: J.G.S. DATE: SEPTEMBER, 2018 SHEET No.:
SCALE: H 1:1000 0 20 40 Meters
DRAWING No.: **301**

STORM SEWER DESIGN SHEET										PROJECT DETAILS				DESIGN CRITERIA																			
Year Storm + CONST. FLOWS (PIPE SIZING)										Project No: 10-326				Minimum Diameter = 300 mm Mannings 'n' = 0.013 Starting Tc = 10 min Factor of Safety = 15										Rainfall Intensity = A (Tc+B)^c A = 999 B = 5.7 c = 0.8024									
Milton Meadows North										Date: 14-Jan-25 Last Updated: 14-Jan-25 Designed by: OS Checked by: OS																							
Town of Milton																																	
										Shading indicates 100-year pipe capturing 100-5 year flow										NOMINAL PIPE SIZE USED													
STREET	FROM MANHOLE	TO MANHOLE	AREA (A) (m²)	RUNOFF COEFFICIENT (C)	A/R	ACCUM. A/R	RAINFALL INTENSITY (mm/hr)	FLOW (Q5) (m³/s)	CONSTANT FLOW (Q100-Q5) (m³/s)	ACCUM. CONSTANT FLOW (Q100-Q5) (m³/s)	TOTAL FLOW (Q TOTAL) (m³/s)	LENGTH (m)	SLOPE (%)	PIPE DIAMETER (mm)	FULL FLOW CAPACITY (m³/s)	FULL FLOW VELOCITY (m/s)	INITIAL TIME OF CONC. (min)	TIME OF CONCENTRATION (min)	ACCUMULATED TIME OF CONCENTRATION (min)	PERCENT FULL (%)													
MAIN ROAD	47	48	0.10	0.65	0.07	0.07	105.3	0.019			0.019	50.5	0.50	300	0.068	0.97	10.00	0.87	10.87	28%													
MAIN ROAD	48	7	0.10	0.65	0.07	0.13	100.8	0.036			0.036	58.8	0.50	300	0.068	0.97	10.87	1.01	11.88	53%													
LOW BOULEVARD	7	800				0.13	96.1	0.035			0.035	55.3	1.25	375	0.196	1.77	11.88	0.57	12.46	18%													
LOW BOULEVARD	800	8	0.79	0.65	0.51	0.64	93.9	0.168			0.168	45.0	1.25	450	0.319	2.00	12.40	0.52	12.92	53%													
LOW BOULEVARD	8	9	0.38	0.65	0.25	0.89	92.4	0.228			0.228	45.8	1.25	450	0.319	2.00	12.78	0.38	13.16	72%													
RIGHTS CRESCENT	PLUG3	18	0.67	0.65	0.44	0.44	105.3	0.127			0.127	9.6	2.00	600	0.868	3.07	10.00	0.05	10.05	15%													
RIGHTS CRESCENT	18	9	0.21	0.65	0.14	0.57	105.0	0.167			0.167	81.3	0.50	600	0.434	1.54	10.05	0.88	10.93	38%													
RIGHTS CRESCENT	23	24	0.46	0.90	0.41	0.41	105.3	0.121			0.121	67.1	2.00	375	0.248	2.25	10.00	0.50	10.50	49%													
RIGHTS CRESCENT	24	25				0.41	102.6	0.118			0.118	12.4	2.00	375	0.248	2.25	10.50	0.69	10.59	48%													
RIGHTS CRESCENT	25	26				0.41	102.7	0.118			0.118	28.1	2.00	375	0.248	2.25	10.59	0.21	10.80	47%													
RIGHTS CRESCENT	26	27	0.32	0.90	0.29	0.70	101.1	0.197			0.197	39.7	2.00	450	0.403	2.54	10.80	0.26	11.06	49%													
SILICA PLACE	29	30	0.66	0.65	0.43	0.43	105.3	0.125			0.125	55.1	2.00	375	0.248	2.25	10.00	0.41	10.41	51%													
SILICA PLACE	30	27	0.34	0.65	0.22	0.65	103.1	0.186			0.186	48.1	1.25	450	0.319	2.00	10.41	0.40	10.81	58%													
RIGHTS CRESCENT	27	28				1.35	99.9	0.375			0.375	21.2	0.75	600	0.532	1.88	11.06	0.19	11.25	71%													
CONDOTOWNHOUSE	CTRUMH3	28	1.40	0.90	1.26	1.26	91.5	0.320			0.320	7.9	0.50	675	0.594	1.66	13.00	0.06	13.06	54%													
RIGHTS CRESCENT	28	0.10	0.65	0.07	0.07						0.105	12.7	0.50	450						70%													
RIGHTS CRESCENT	28	9	0.16	0.90	0.14	2.82	91.2	0.714			0.714	46.6	0.75	825	1.543	2.33	13.08	0.31	13.41	57%													
LOW BOULEVARD	9	10	0.14	0.90	0.13	4.41	89.9	1.101			1.101	34.9	0.75	900	1.768	2.46	13.41	0.24	13.65	79%													
LOW BOULEVARD	10	11	0.22	0.90	0.20	4.61	89.0	1.139			1.139	42.8	0.75	900	1.568	2.42	13.60	0.24	13.84	73%													
LOW BOULEVARD	11	12	0.21	0.90	0.19	4.80	87.9	1.172			1.172	44.1	0.40	1050	1.727	1.99	13.94	0.37	14.31	68%													
LOW BOULEVARD	12	13	0.19	0.90	0.17	4.97	86.6	1.196			1.196	41.2	0.40	1050	1.727	1.99	14.31	0.34	14.65	69%													
LOW BOULEVARD	13	14	0.27	0.90	0.24	5.21	85.5	1.237	0.785	0.785	2.023	42.5	0.40	1200	2.466	2.18	14.03	0.15	14.18	82%													
LOW BOULEVARD	14	15	0.08	0.90	0.07	5.28	84.4	1.258	0.785	0.785	2.024	29.8	0.50	1200	2.757	2.44	14.98	0.20	15.18	73%													
(MTO BUFFER)	CTRUMH7	34	0.17	0.25	0.04	0.04					0.105	12.7	0.50	450						50%													
CONDOTOWNHOUSE	CTRUMH7	34	0.35	0.90	0.32	0.36	105.3	0.105			0.105	12.7	0.50	450	0.202	1.27	10.00	0.17	10.17	56%													
OE TERRACE	34	33	0.26	0.90	0.23	0.59	104.4	0.171			0.171	62.9	0.50	525	0.304	1.40	10.17	0.75	10.91	52%													
OE TERRACE	33	32				0.59	100.6	0.165			0.165	56.6	0.50	525	0.304	1.40	10.91	0.67	11.58	54%													
CONDOTOWNHOUSE	CTRUMH4	32	1.15	0.90	1.04	1.04	105.3	0.303			0.303	7.9	0.50	675	0.594	1.66	10.00	0.08	10.08	51%													
OE TERRACE	32	15	0.32	0.90	0.29	1.91	97.4	0.518	0.209	0.209	0.727	46.5	0.25	975	1.121	1.50	11.58	0.52	12.10	65%													
LOW BOULEVARD	15	16	0.27	0.90	0.24	7.44	83.7	1.730	0.994	0.994	2.725	71.0	0.25	1200x1800 (BOX)	4.204	1.95	15.18	0.61	15.79	65%													
BLETT GATE	41	40	0.13	0.75	0.10	0.10					0.086	46.9	0.50	375	0.124	1.12	10.00	0.70	10.70	69%													
BLETT GATE	40	0.30	0.65	0.20	0.22	105.3	0.086				0.086	46.9	0.50	375	0.124	1.12	10.00	0.70	10.70	69%													
BLETT GATE	40	16	0.40	0.65	0.26	0.64	101.6	0.179			0.179	80.7	0.50	525	0.304	1.40	10.70	0.96	11.65	59%													
CONDOTOWNHOUSE	VSCBHM3	0.28	0.90	0.25	0.25						0.160	30.4	0.50	525	0.304	1.40	10.00	0.36	10.36	53%													
VILLAGE SQUARE	VSCBHM3	0.59	0.50	0.30	0.55	105.3	0.160				0.160	30.4	0.50	525	0.304	1.40	10.00	0.36	10.36	53%													
VILLAGE SQUARE	VSCBHM2	0.09	0.50	0.05	0.59	103.4	0.170				0.170	26.1	0.50	525	0.304	1.40	10.36	0.31	10.67	56%													
VILLAGE SQUARE	VSCBRLMH	0.13	0.50	0.07	0.66	101.8	0.186				0.186	25.1	0.50	525	0.304	1.40	11.06	0.31	11.37	61%													
VILLAGE SQUARE	VSCBRLMH	43	0.13	0.50	0.07	0.72	100.3	0.201			0.201	8.0	0.50	525	0.304	1.40	10.97	0.09	11.06	66%													
BLETT GATE	43	44	0.31	0.65	0.20	99.9	0.256	0.197	0.197	0.453	46.8	0.50	750	0.787	1.78	11.06	0.44	11.50	58%														
CONDOTOWNHOUSE	CTRUMH6	44	0.86	0.90	0.77	0.77	105.3	0.226			0.226	7.9	0.25	675	0.420	1.17	10.00	0.11	10.11	54%													
BLETT GATE	44	16	0.22	0.65	0.14	1.84	97.8	0.500	0.161	0.358	0.858	50.0	0.25	900	0.905	1.42	11.50	0.59	12.09	95%													
LOW BOULEVARD	16	0.05	0.75	0.04	0.04						1.352	3.647	75.5	0.25	1200x1800 (BOX)	4.204	1.95	15.79	0.65	16.43	87%												
LOW BOULEVARD	16	17	0.22	0.65	0.14	10.10	81.8	2.295			1.352	3.647	75.5	0.25	1200x1800 (BOX)	4.204	1.95	15.79	0.65	16.43	87%												
(MTO BUFFER)	36	36	0.41	0.25	0.10	0.10					0.111	85.5	0.50	450	0.202	1.27	10.00	1.12	11.12	55%													
OE TERRACE	36	37	0.37	0.75	0.28	0.38	105.3	0.111			0.111	85.5	0.50	450	0.202	1.27	11.12	0.14	11.26	52%													
OE TERRACE	37	38				0.38	99.6	0.105			0.105	19.4	0.50	450	0.202	1.27	11.12	0.14	11.26	52%													
OE TERRACE	38	380				0.38	98.9	0.104			0.104	31.8	0.50	525	0.304	1.40	11.26	0.36	11.64	34%													
OE TERRACE	380	0.05	0.65	0.03	0.03						0.180	55.0	0.50	525	0.304	1.40	11.64	0.65	12.29	99%													
OE TERRACE	380	39	0.34	0.75	0.26	0.67	97.2	0.180			0.180	55.0	0.50	525	0.304	1.40	11.64	0.65	12.29	99%													
OE TERRACE	39	17	0.27	0.75	0.20	0.95	94.4	0.248	0.304	0.304	0.552	66.1	0.50	675	0.594	1.66	12.29	0.66	12.95	93%													
OE TERRACE	46	462	0.18	0.65	0.12	0.12	105.3	0.034			0.034	36.3	0.50	300	0.068	0.97	10.00	0.63	10.63	50%													
OE TERRACE	462	461	0.64	0.65	0.42	0.53	102.0	0.151			0.151	36.3	0.50	525	0.304	1.40	10.63	0.43	11.06	50%													
OE TERRACE	461	460	0.05	0.65	0.03	0.57	99.9	0.157			0.157	36.3	0.50	525	0.304	1.40	11.06	0.43	11.49	52%													
OE TERRACE	460	17	0.47	0.65	0.31	0.87	97.9	0.237			0.237	29.5	0.50	525	0.304	1.40	11.49	0.35	11.84	78%													
LOW BOULEVARD	17	4	0.21	0.90	0.19	12.10	79.9	2.686	0.325	1.981	4.667	87.7	0.20	1200x2400 (BOX)	5.379	1.87	16.43	0.78	17.22	87%													
RIGHTS CRESCENT	19	200	0.62	0.65	0.40	0.40	105.3	0.118			0.118	91.1	1.40	375	0.207	1.88	10.00	0.81	10.81	57%													
RE STREET	CTRUMH9	200	1.93	0.65	1.25	1.25	105.3	0.367			0.367	7.5	2.00	675	1.189	3.32	10.00	0.24	10.24	31%													
RIGHTS CRESCENT	200	20				1.66	101.1	0.465			0.465	27.0	0.50	675	0.594	1.66	10.01	0.27	11.08	78%													
RIGHTS CRESCENT	20	21	0.24	0.65	0.16	1.81	99.8	0.503			0.503	75.9	0.50	750	0.787	1.78	11.08	0.71	11.79	64%													
RIGHTS CRESCENT	21	22	0.48	0.65	0.31	2.13	96.5	0.570	0.349	0.349	0.919	50.9	0.50	900	1.280	2.01	11.79	0.27	12.06	71%													
RIGHTS CRESCENT	22	6				2.13	94.7	0.559	0.349	0.349	0.908	7.5	0.50	900	1.280	2.01	12.21	0.06	12.27	71%													
IDE ROAD	6	1.38	0.65	0.90	0.90																												
IDE ROAD	6	0.14	0.65	0.09	0.09						0.349	1.196	99.1	0.20	1200	1.744	1.54	12.27	1.07	13.34	69%												
IDE ROAD	6	5	0.23	0.90	0.21	3.23	94.4	0.847			0.349	1.196	99.1	0.20	1200	1.744	1.54	12.27	1.07	13.34	69%												
(URE DEVELOPMENT)	CTRUMH8	5	0.74	0.90	0.67	0.67	105.3	0.195			0.195	10.4	0.20	600	0.725	0.97	10.00	0.18	10.18	71%													
IDE ROAD	5	0.13	0.65	0.08	0.08						0.349	1.381	106.1	0.20	1200	1.744	1.54	13.34															



- LEGEND**
- SANITARY MANHOLE AND FLOW DIRECTION ARROW
 - EXISTING SANITARY MANHOLE AND FLOW DIRECTION ARROW
 - FUTURE SANITARY MANHOLE AND FLOW DIRECTION ARROW
 - DRAINAGE AREA (Ha.)
 - POPULATION
 - # OF UNITS / OR POPULATION PER HECTARE (p/Ha.)
 - EXISTING DRAINAGE AREA (Ha.)
 - POPULATION
 - # OF UNITS / OR POPULATION PER Ha (p/Ha.)
 - FUTURE DRAINAGE AREA (Ha.)
 - POPULATION
 - # OF UNITS / OR POPULATION PER Ha (p/Ha.)
 - DRAINAGE AREA BOUNDARY
 - SUB-DRAINAGE AREA BOUNDARY
 - EXISTING DRAINAGE AREA BOUNDARY
 - EXTERNAL DRAINAGE AREA BOUNDARY
 - SINGLE HOUSE CONNECTION
 - FUTURE / EXISTING DEVELOPMENT LANDS
 - LIMIT OF PROPERTY
- EXT. 1**
- EXTERNAL SANITARY SYSTEM CAPTURE DATA
 - EXTERNAL SYSTEM DRAINAGE AREA (Ha.)
 - EXTERNAL POPULATION

NOTES

- REFER TO DWG. 310 FOR EXTERNAL DRAINAGE AREA DETAILS
- REFER TO DWG. 311 FOR SANITARY DESIGN SHEET

BENCHMARK

108-66: CONCRETE BRIDGE CARRYING HALTON REG. ROAD No. 22 (TREMAINE ROAD) OVER HWY. 401 2.6km WEST OF INTERCHANGE 39 (JCT OF HWY. 25 AND HWY. 401) AND 5.8km EAST OF INTERCHANGE 39 (JCT OF CAMBELLVILLE SIDE ROAD AND HWY. 401). TABLE IS SET HORIZONTALLY IN THE SOUTH FACE OF NORTH ABUTMENT, 40cm EAST OF THE S.W. CORNER AND 91cm ABOVE GROUND. ELEVATION = 222.844. ID = 008196680108

5	SIXTH ENGINEERING SUBMISSION	FEBRUARY 24, 2025	OS	
4	FIFTH ENGINEERING SUBMISSION	JUNE 19, 2024	OS	
3	FOURTH ENGINEERING SUBMISSION	FEBRUARY 13, 2024	OS	
2	THIRD ENGINEERING SUBMISSION	AUGUST 15, 2023	OS	
1	SECOND ENGINEERING SUBMISSION	NOV. 25, 2022	OS	
No.	REVISION	DATE	BY	APPD

MILTON MEADOWS PROPERTIES LTD. MILTON MEADOWS NORTH

REGIONAL MUNICIPALITY OF HALTON
TOWN OF MILTON
DEVELOPMENT SERVICES

TOWN FILE No.: 24T-07002/M(A)	REGION FILE No.: DM-1031
MUNICIPAL	REGIONAL
TOWN OF MILTON - DEVELOPMENT SERVICES DEPARTMENT FINAL ACCEPTANCE	DESIGN OF SANITARY, WATER SERVICES, AND REGIONAL ROAD WORKS APPROVED SUBJECT TO DETAIL CONSTRUCTION CONFORMING TO HALTON REGION STANDARDS AND SPECIFICATIONS AND LOCATION APPROVAL FROM AREA MUNICIPALITY.
ACCEPTED BY: _____ ON: _____ DIRECTOR, DEVELOPMENT ENGINEERING VIA SIGNED LETTER	SIGNED: ANTHONY D'AUZZO DATE: JULY 17, 2024 DEVELOPMENT SERVICES, PUBLIC WORKS

Urbantech® Consulting
A Division of Leighton-Zec Ltd.
3760 14th Avenue, Suite 301,
Markham, ON L3R 3T7
TEL 905.946.9461 • urbantech.com

SANITARY DRAINAGE PLAN (PART 1)

DESIGNED: O.S.	CHECKED: J.O.	PROJECT No.: 10-326
DRAWN: J.G.S.	DATE: SEPTEMBER, 2018	SHEET No.:
SCALE: H 1:1000		DRAWING No.: 307

SANITARY SEWER DESIGN SHEET				PROJECT DETAILS										DESIGN CRITERIA																					
Milton Meadows North Town of Milton, Halton Region				Project No: 10-326 Date: 24-May-24 Designed by: OS Checked by: OS										Min Diameter = 200 mm Mannings 'n' = 0.013 Avg. Domestic Flow = 275.0 l/c/d Infiltration = 0.280 l/s/ha Min. Velocity = 0.6 m/s Max. Velocity = 3.0 m/s Max. Peaking Factor = 4.00 Min. Peaking Factor = 2.00 Factor of Safety = 40 %																					
														NOMINAL PIPE SIZE USED																					
STREET	FROM MH	TO MH	RESIDENTIAL										COMMERCIAL/INDUSTRIAL/INSTITUTIONAL					FLOW CALCULATIONS													PIPE DATA				
			AREA (ha)	ACC. AREA (ha)	UNITS (#)	DENSITY (P/ha)	DENSITY (P/unit)	POP	ACCUM. RES. POP.	AREA (ha)	ACC. AREA (ha)	EQUIV. POP. (p/ha)	FLOW RATE (l/s/ha)	EQUIV. POP.	ACCUM. EQUIV. POP.	INFILTRATION (l/s)	TOTAL ACCUM. POP.	PEAKING FACTOR	RES. FLOW (l/s)	COMM. FLOW (l/s)	ACCUM. COMM. FLOW (l/s)	TOTAL FLOW (l/s)	LENGTH (m)	SLOPE (%)	PIPE DIAMETER (mm)	FULL FLOW CAPACITY (l/s)	FULL FLOW VELOCITY (m/s)	ACTUAL VELOCITY (m/s)	PERCENT FULL (%)						
COUNTRY HERITAGE PK. TREMAINE ROAD	CTRMH8A	CTRMH8A 7A						172	172							0.056	172	4.00	2.190				2.246	12.2	2.00	200	46.4	1.5	0.72	5%					
TREMAINE ROAD	38A	38AA	0.23	0.23		55		13	13							0.1	13	4.00	0.2			0.2	57.3	1.00	200	32.8	1.0	0.27	1%						
TREMAINE ROAD	38AA	7A	0.23	0.46		55		13	26							0.1	26	4.00	0.3			0.5	73.5	1.00	200	32.8	1.0	0.32	1%						
SMOKEY HOLLOW BLVD. SMOKEY HOLLOW BLVD.	7A 7AA	7AA 8A	0.45 0.50	0.91 1.41		55 55		25 28	223 251							0.3 0.4	223 251	4.00 4.00	2.8 3.2			3.1 3.6	75.8 69.4	1.45 1.45	200 200	39.5 39.5	1.3 1.3	0.74 0.78	8% 9%						
MILTON HEIGHTS CR. QUARRY CRESCENT	PLUG5A	17A 17A	1.43 0.11	1.43 1.54		55		79 79								0.4 0.4	79 79	4.00 4.00	1.0 1.0			1.4 1.4	7.6 76.5	2.00 1.25	200 200	46.4 36.7	1.5 1.2	0.62 0.55	3% 4%						
QUARRY CRESCENT	18A	19A	0.51	0.51		55		29 29								0.1 0.1	29 29	4.00 4.00	0.4 0.4			0.5 0.5	95.5 10.8	2.35 2.35	200 200	50.3 50.3	1.6 1.6	0.42 0.42	1% 1%						
QUARRY CRESCENT	19A	20A	0.12	0.63				29 29								0.2 0.2	29 29	4.00 4.00	0.4 0.4			0.5 0.5	10.8 27.1	2.35 2.35	200 200	50.3 50.3	1.6 1.6	0.42 0.42	1% 1%						
QUARRY CRESCENT	20A	21A		0.63				29 29								0.2 0.2	29 29	4.00 4.00	0.4 0.4			0.5 0.5	27.1 37.2	2.35 2.35	200 200	50.3 50.3	1.6 1.6	0.42 0.42	1% 1%						
SILICA PLACE	24A	22A	0.76	0.76		55		42 42								0.2 0.2	42 42	4.00 4.00	0.5 0.5			0.7 0.7	101.2 101.2	2.35 2.35	200 200	50.3 50.3	1.6 1.6	0.50 0.50	1% 1%						
QUARRY CRESCENT	22A	23A	0.04	1.43					71							0.4 0.4	71 71	4.00 4.00	0.9 0.9			1.3 1.3	25.4 25.4	2.00 2.00	200 200	46.4 46.4	1.5 1.5	0.62 0.62	3% 3%						
BLK 81 (CONDO TH.)	CTRMH5A	23A	2.10	2.10		135		284 284								0.6 0.6	284 284	4.00 4.00	3.6 3.6			4.2 4.2	13.1 13.1	2.00 2.00	200 200	46.4 46.4	1.5 1.5	0.92 0.92	9% 9%						
QUARRY CRESCENT	23A	8A	0.07	3.60					355							1.0 1.0	355 355	4.00 4.00	4.5 4.5			5.5 5.5	48.2 48.2	0.50 0.50	200 200	23.2 23.2	0.7 0.7	0.60 0.60	24% 24%						
SMOKEY HOLLOW BLVD. SMOKEY HOLLOW BLVD. SMOKEY HOLLOW BLVD. SMOKEY HOLLOW BLVD. SMOKEY HOLLOW BLVD. SMOKEY HOLLOW BLVD.	8A 9A 10A 10A 11A 11A 12A 12A 13A 13A 14A	9A 10A 10A 11A 12A 13A 14A	0.45 7.00 7.00 7.00 7.00 7.00					685 685 685 685 685 685								2.0 2.0 2.0 2.0 2.0 2.0	685 685 685 685 685 685	3.90 3.90 3.90 3.90 3.90 3.90	8.5 8.5 8.5 8.5 8.5 8.5			10.5 10.5 10.5 10.5 10.5 10.5	36.6 41.9 44.3 38.8 32.6 40.5	0.50 0.50 0.50 0.50 0.50 0.50	200 200 200 200 200 200	23.2 23.2 23.2 23.2 23.2 23.2	0.7 0.7 0.7 0.7 0.7 0.7	0.71 0.71 0.71 0.71 0.71 0.71	45% 45% 45% 45% 45% 45%						
STEPTOE TERRACE	27A	26A	0.35	0.35		135		48 48								0.1 0.1	48 48	4.00 4.00	0.6 0.6			0.7 0.7	81.6 81.6	1.45 1.45	200 200	39.5 39.5	1.3 1.3	0.44 0.44	2% 2%						
BLK 100 (MTO BUFFER) BLK 81 (CONDO TH.)	CTRMH6A	CTRMH6A 26A	0.22 2.35	0.22 2.57		135		323 323								0.1 0.7						0.1 4.8													
STEPTOE TERRACE	26A	14A	0.21	3.13		135		29 29	400 400							0.9 0.9	400 400	4.00 4.00	5.1 5.1			6.0 6.0	49.5 49.5	1.00 1.00	200 200	32.8 32.8	1.0 1.0	0.78 0.78	18% 18%						
SMOKEY HOLLOW BLVD.	14A	15A	0.12	10.25					1085 1085							2.9 2.9	1085 1085	3.78 3.78	13.0 13.0			15.9 15.9	71.0 71.0	0.50 0.50	250 250	42.0 42.0	0.9 0.9	0.77 0.77	38% 38%						
TREMBLETT GATE TREMBLETT GATE	32A 32AA	32AA 15A	0.41 0.46	0.41 0.87		55 55		23 25	23 48							0.1 0.2	23 48	4.00 4.00	0.3 0.6			0.4 0.9	54.2 74.9	1.50 1.50	200 200	40.2 40.2	1.3 1.3	0.33 0.45	1% 2%						
TREMBLETT GATE	34A	35A	0.56	0.56		55		31 31								0.2 0.2	31 31	4.00 4.00	0.4 0.4			0.6 0.6	21.9 21.9	1.00 1.00	200 200	32.8 32.8	1.0 1.0	0.32 0.32	2% 2%						
BLK 80 (CONDO DTCH.)	CTRMH8A	35A	1.65	1.65		135		225 225								0.5 0.5	225 225	4.00 4.00	2.9 2.9			3.3 3.3	12.9 12.9	2.00 2.00	200 200	46.4 46.4	1.5 1.5	0.84 0.84	7% 7%						
TREMBLETT GATE	35A	15A	0.18	2.39		55		10 10	266 266							0.7 0.7	266 266	4.00 4.00	3.4 3.4			4.1 4.1	44.0 44.0	1.00 1.00	200 200	32.8 32.8	1.0 1.0	0.70 0.70	12% 12%						
SMOKEY HOLLOW BLVD.	15A	16A	0.11	13.62					1399 1399							3.8 3.8	1399 1399	3.70 3.70	16.5 16.5			20.3 20.3	71.1 71.1	1.50 1.50	250 250	72.8 72.8	1.5 1.5	1.26 1.26	28% 28%						
BLK 99 (MTO BUFFER) STEPTOE TERRACE STEPTOE TERRACE STEPTOE TERRACE	28A 28A 29A 30A	28A 29A 30A 31A	0.40 0.64 1.04 0.29	0.40 1.04 1.04 1.33		135 135 135		87 40 41	87 168 168							0.1 0.3 0.3	87 168 168	4.00 4.00 4.00	1.1 1.1 1.1			0.1 1.4 1.4													
STEPTOE TERRACE STEPTOE TERRACE	30A 31A	31A 16A	0.29 0.30	1.33 1.63		135 135		127 41	127 168							0.4 0.5	127 168	4.00 4.00	1.6 2.1			2.0 2.6	82.7 73.7	1.00 1.60	200 200	32.8 41.5	1.0 1.3	0.51 0.71	4% 6%						
STEPTOE TERRACE STEPTOE TERRACE	36A 37A	37A 16A	0.58 0.63	0.58 1.21		55 55		32 35	32 67							0.2 0.3	32 67	4.00 4.00	0.4 0.9			0.6 1.2	68.9 95.5	1.00 1.00	200 200	32.8 32.8	1.0 1.0	0.32 0.47	2% 4%						
SMOKEY HOLLOW BLVD.	16A	160A	0.08	16.54					1634 1634							4.6 4.6	1634 1634	3.65 3.65	19.0 19.0			23.6 23.6	47.5 47.5	1.00 1.00	250 250	59.5 59.5	1.2 1.2	1.13 1.13	40% 40%						
BLK 82 (FUT. DEV.) BLK 82 (FUT. DEV.)	CTRMH7A	CTRMH7A 160A	0.74 0.74	0.74 0.74		135		100 100								0.2 0.4	67 167	4.00 4.00	0.9 2.1			1.1 2.5													
SMOKEY HOLLOW BLVD.	160A	4A	0.08	17.36					1734 1734							5.1 5.1	1801 1801	3.62 3.62	20.8 20.8			25.8 25.8	44.0 44.0	1.00 1.00	250 250	59.5 59.5	1.2 1.2	1.13 1.13	43% 43%						
MILTON HEIGHTS CR. MILTON HEIGHTS CR.	40A 40AA	40AA 41A	0.30 0.27	0.30 0.57		55 55		17 15	17 32							0.1 0.2	17 32	4.00 4.00	0.2 0.4			0.3 0.6	58.1 68.4	2.00 2.00	200 200	46.4 46.4	1.5 1.5	0.38 0.38	1% 1%						
FUT. STREET	CTRMH9A	41A	0.61	0.61		55		34 34								0.2 0.2	34 34	4.00 4.00	0.4 0.4			0.6 0.6	9.2 9.2	2.00 2.00	200 200	46.4 46.4	1.5 1.5	0.46 0.46	1% 1%						
MILTON HEIGHTS CR. MILTON HEIGHTS CR. MILTON HEIGHTS CR.	41A 42A 43A	42A 43A 6A	0.63 0.17 1.98	1.81 1.98 1.98		55 55 55		35 10 111	101 111 111							0.5 0.6 0.6	101 111 111	4.00 4.00 4.00	1.3 1.4 1.4			1.8 2.0 2.0	98.6 47.3 17.3	1.00 1.00 1.00	200 200 200	32.8 32.8 32.8	1.0 1.0 1.0	0.54 0.56 0.56	5% 6% 6%						
EXT.1 - M.H. VILLAGE EXT.1 - M.H. VILLAGE	PLUG1A	PLUG1A	3.13 2.25	3.13 2.25		55 55		173 124	173 124							0.9 0.6	173 124	4.00 4.00	2.2 1.6			3.1 2.2													
3 SIDE ROAD FUT. MILTON MEADOWS S. 3 SIDE ROAD 3 SIDE ROAD 3 SIDE ROAD	PLUG1A	6A 6A 5A 4A	0.45 0.23 0.22 0.43	5.38 8.04 8.26 0.43		55 135		25 433 433 59	297 433 433 59							1.5 2.3 2.3 0.1	297 433 433 59	4.00 4.00 4.00 4.00	3.8 0.3 5.5 0.8			5.3 7.8 7.8 0.9	11.6 94.8 94.9 88.9	0.55 0.55 0.55	250 250 250 300	44.1 44.1 44.1 53.0	0.9 0.9 0.9 0.7	0.60 0.67 0.67 0.77	12% 18% 18% 63%						
3 SIDE ROAD 3 SIDE ROAD	3A 3AA	EX-3A	0.37 26.42	0.37 26.42					2226 2226							7.6 7.6	2293 2293	3.54 3.54	25.8 25.8			33.4 33.4	62.6 62.6	0.30 0.30	300 300	53.0 53.0	0.7 0.7	0.77 0.77	63% 63%						
BLK 98 (MTO BUFFER) BLK 87 (COMMERCIAL)	EXCTRMH8A	EXCTRMH8A EX-3A	0.12 0.12	0.12 0.12						1.07 1.07	1.07 90					0.0 0.3	97 97	4.00 4.00	1.2 1.2			0.0 1.6													
EX. 3 SIDE ROAD	EX-3A	EX-2A	0.38	26.92					2226 2226							8.0 8.0	2390 2390	3.52 3.52	26.8 26.8			34.9 34.9	150.0 150.0	0.30 0.30	300 300	53.0 53.0	0.7 0.7	0.79 0.79	66% 66%						
BLK 88 (BUSINESS PK.)	EXCTRMH9A	EXCTRMH9A EX-2A	0.18 0.18	0.18 0.18						2.85 2.85	2.85 90					0.1 0.8	257 257	4.00 4.00	3.																



MILTON MEADOWS PROPERTIES INC. ROYALPARK NORTH

STORMWATER MANAGEMENT REPORT POND S43

Town of Milton

24T-07002/Re-zoning Z-02/07

Project Number 10-334

AUGUST 2023



APPENDIX C

SWM Design Calculations

- HYDRO-0: Land Use
- SWMF-0: Stage-Storage
- SWMF-1: Pond Storage Calculation
- SWMF-2: Drawdown time
- SWMF-3: Forebay Sizing
- SWMF-4a: Outlet Calculations
- SWMF-4b: Outlet Calculations
- SWMF-5: Pond L: W Ratio Calculations
- SWMF-6: Emergency Overflow Calculations
- SWMF-7a: Riverstone Apron Sizing (Outlet Protection)
- SWMF-7b: Outlet Apron/Trench Capacity Calculation

SWM DESIGN CALCULATIONS
HYRDO-0: Contributing Drainage Area and Land Use



Project Name: Milton Meadows Properties Inc.
Municipality: Town of Milton
Project No.: 10-334
Date: 6-Dec-22

Prepared by: K.V.
Checked by: A.F.
Submission #: 2nd Submission

Design - 1.40 ha

Block 81 Lands - 1.14 ha

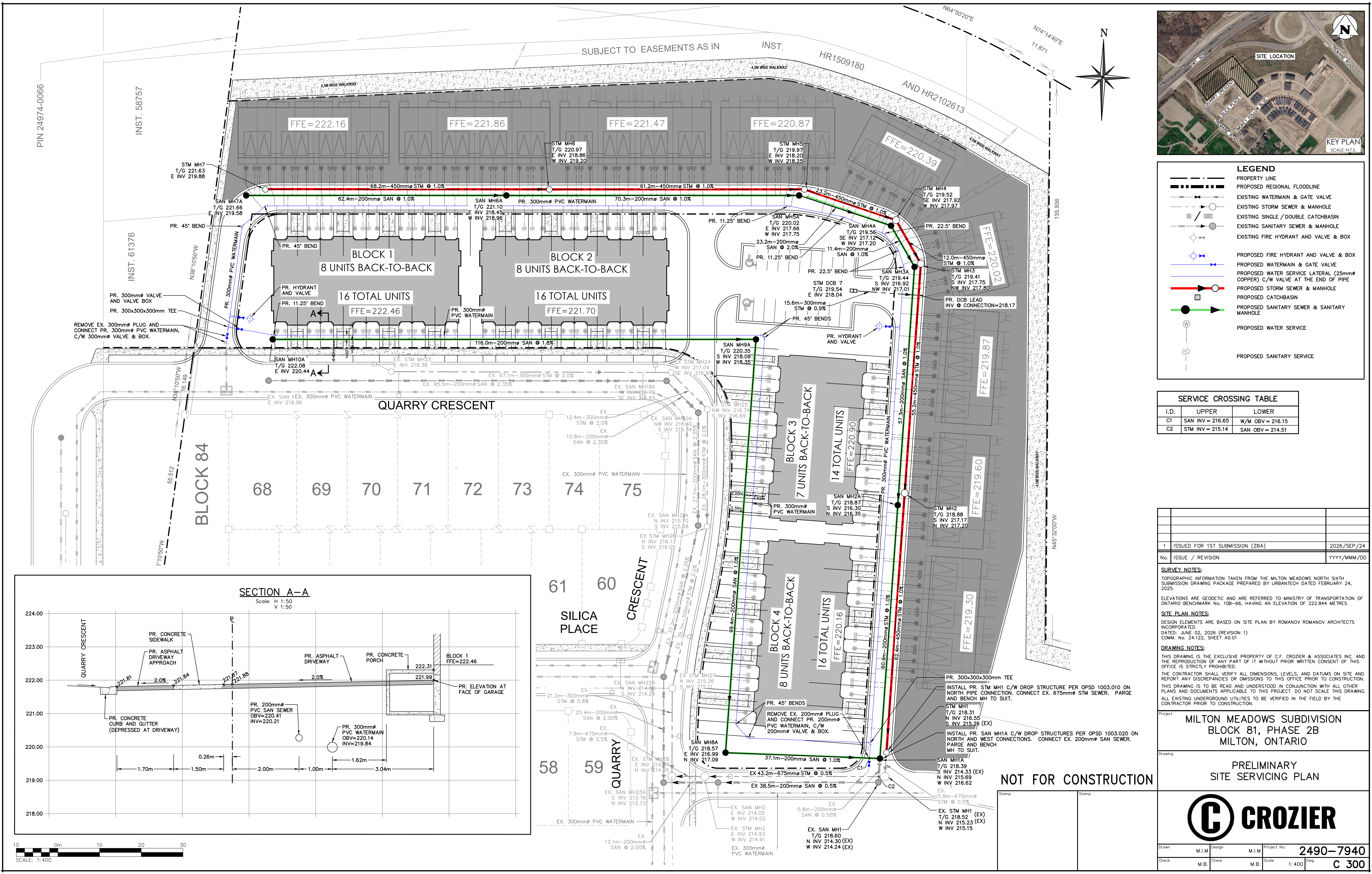
Design - 0.68 ha

Block 81 Lands - 0.38 ha

Contributing Drainage Area

STREET	From MH	To MH	Area [ha]	Runoff Coefficient	Imperviousness [%]
TREMAINE ROAD	47	48	0.1	0.65	64%
TREMAINE ROAD	48	7	0.1	0.65	64%
SMOKEY HOLLOW BOULEVARD	800	8	0.75	0.65	64%
SMOKEY HOLLOW BOULEVARD	8	9	0.36	0.65	64%
MILTON HEIGHTS CRESCENT	PLUG3	18	0.62	0.65	64%
QUARRY CRESCENT	18	9	0.3	0.65	64%
QUARRY CRESCENT	23	24	0.46	0.9	100%
QUARRY CRESCENT	26	27	0.32	0.9	100%
SILICA PLACE	29	30	0.66	0.65	64%
SILICA PLACE	30	27	0.34	0.65	64%
BLOCK 81 (CONDO TOWNHOUSE)	CTRLMH3	28	1.14	0.9	100%
QUARRY CRESCENT		28	0.1	0.65	64%
QUARRY CRESCENT	28	9	0.16	0.9	100%
SMOKEY HOLLOW BOULEVARD	9	10	0.14	0.9	100%
SMOKEY HOLLOW BOULEVARD	10	11	0.22	0.9	100%
SMOKEY HOLLOW BOULEVARD	11	12	0.21	0.9	100%
SMOKEY HOLLOW BOULEVARD	12	13	0.19	0.9	100%
SMOKEY HOLLOW BOULEVARD	13	14	0.27	0.9	100%
SMOKEY HOLLOW BOULEVARD	14	15	0.08	0.9	100%
BLOCK 93 (MTO BUFFER)		CTRLMH7	0.17	0.25	7%
BLOCK 81 (CONDO TOWNHOUSE)	CTRLMH7	34	0.35	0.9	100%
STEPTOE TERRACE	34	33	0.26	0.9	100%
BLOCK 81 (CONDO TOWNHOUSE)	CTRLMH4	32	1.15	0.9	100%
STEPTOE TERRACE	32	15	0.32	0.9	100%
SMOKEY HOLLOW BOULEVARD	15	16	0.27	0.9	100%
TREMBLETT GATE		41	0.13	0.75	79%
TREMBLETT GATE	41	40	0.3	0.65	64%
TREMBLETT GATE		40	0.11	0.75	79%
TREMBLETT GATE	40	16	0.4	0.65	64%
BLOCK 80 (CONDO TOWNHOUSE)		CTRLMH5	0.28	0.9	100%
BLOCK 60 (VILLAGE SQUARE)	CTRLMH5	43	0.94	0.5	43%
TREMBLETT GATE	43	44	0.31	0.65	64%
BLOCK 80 (CONDO TOWNHOUSE)	CTRLMH6	44	0.86	0.9	100%
TREMBLETT GATE	44	16	0.22	0.65	64%
SMOKEY HOLLOW BOULEVARD		16	0.05	0.75	79%
SMOKEY HOLLOW BOULEVARD	16	17	0.22	0.65	64%
BLOCK 58 (MTO BUFFER)		36	0.41	0.25	7%
STEPTOE TERRACE	36	37	0.37	0.75	79%
STEPTOE TERRACE		380	0.04	0.65	64%
STEPTOE TERRACE	380	39	0.32	0.75	79%
STEPTOE TERRACE		39	0.13	0.65	64%
STEPTOE TERRACE	39	17	0.29	0.75	79%
STEPTOE TERRACE	46	460	0.18	0.65	64%
STEPTOE TERRACE	460	461	0.64	0.65	64%
STEPTOE TERRACE	461	462	0.05	0.65	64%
STEPTOE TERRACE	460	17	0.47	0.65	64%
SMOKEY HOLLOW BOULEVARD	17	4	0.21	0.9	100%
MILTON HEIGHTS CRESCENT	19	200	0.44	0.65	64%
FUTURE STREET		200	1.95	0.65	64%
MILTON HEIGHTS CRESCENT	20	21	0.58	0.65	64%
MILTON HEIGHTS CRESCENT	21	22	0.9	0.65	64%
3 SIDE ROAD		6	0.8	0.65	64%
3 SIDE ROAD		6	0.14	0.65	64%
3 SIDE ROAD	6	5	0.23	0.9	100%
BLK. 82 (FUTURE DEVELOPMENT)	CTRLMH8	5	0.74	0.9	100%
3 SIDE ROAD		5	0.13	0.65	64%
3 SIDE ROAD	5	4	0.25	0.9	100%
3 SIDE ROAD	4	3	0.32	0.9	100%
BLOCK 91 (MTO BUFFER)		CTRLMH2	0.12	0.25	7%
BLOCK 87 (COMMERCIAL)	CTRLMH2	3	1.07	0.9	100%
3 SIDE ROAD	3	EX.2	0.18	0.9	100%
NEW TREMAINE ROAD	DCB	EX.2	1.6	0.9	100%
EX. 3 SIDE ROAD	EX.2	EX.1	0.35	0.9	100%
NEW TREMAINE ROAD		EX.CTRLMH1	0.18	0.25	7%
BLOCK 88 (BUSINESS PARK)	EX.CTRLMH1	EX.1	2.85	0.9	100%
EX. 3 SIDE ROAD	EX.AR2	EX.AR1	0.26	0.9	100%
Total to HW (Development Area)			29.32	0.77	81%
Pond Block			1.56	0.90	100%
Total Drainage Area to Pond			30.88	0.77	82%

DRAWINGS



LEGEND

- PROPERTY LINE
- PROPOSED REGIONAL FLOODLINE
- EXISTING WATERMAIN & GATE VALVE
- EXISTING STORM SEWER & MANHOLE
- EXISTING SINGLE / DOUBLE CATCHBASIN
- EXISTING SANITARY SEWER & MANHOLE
- EXISTING FIRE HYDRANT AND VALVE & BOX
- PROPOSED FIRE HYDRANT AND VALVE & BOX
- PROPOSED WATERMAIN & GATE VALVE
- PROPOSED WATER SERVICE LATERAL (25mm COPPER) C/W VALVE AT THE END OF PIPE
- PROPOSED STORM SEWER & MANHOLE
- PROPOSED CATCHBASIN
- PROPOSED SANITARY SEWER & SANITARY MANHOLE
- PROPOSED WATER SERVICE
- PROPOSED SANITARY SERVICE

SERVICE CROSSING TABLE			
I.D.	UPPER	LOWER	
C1	SAN INV = 216.65	W/M	OBV = 216.15
C2	STM INV = 215.14	SAN	OBV = 214.51

No.	ISSUE / REVISION	DATE
1	ISSUED FOR 1ST SUBMISSION (2BA)	2026/SEP/24
No.	ISSUE / REVISION	YYYY/MM/DD

SURVEY NOTES:
TOPOGRAPHIC INFORMATION TAKEN FROM THE MILTON MEADOWS NORTH SIXTH SUBMISSION DRAWING PACKAGE PREPARED BY URBANTECH DATED FEBRUARY 24, 2025.
ELEVATIONS ARE GEODETIC AND ARE REFERRED TO MINISTRY OF TRANSPORTATION OF ONTARIO BENCHMARK No. 10B-66, HAVING AN ELEVATION OF 222.844 METRES.

SITE PLAN NOTES:
DESIGN ELEMENTS ARE BASED ON SITE PLAN BY ROMANOV ROMANOV ARCHITECTS INCORPORATED.
DATED: JUNE 02, 2026 (REVISION 1)
COMM. No. 24.122, SHEET A0.01

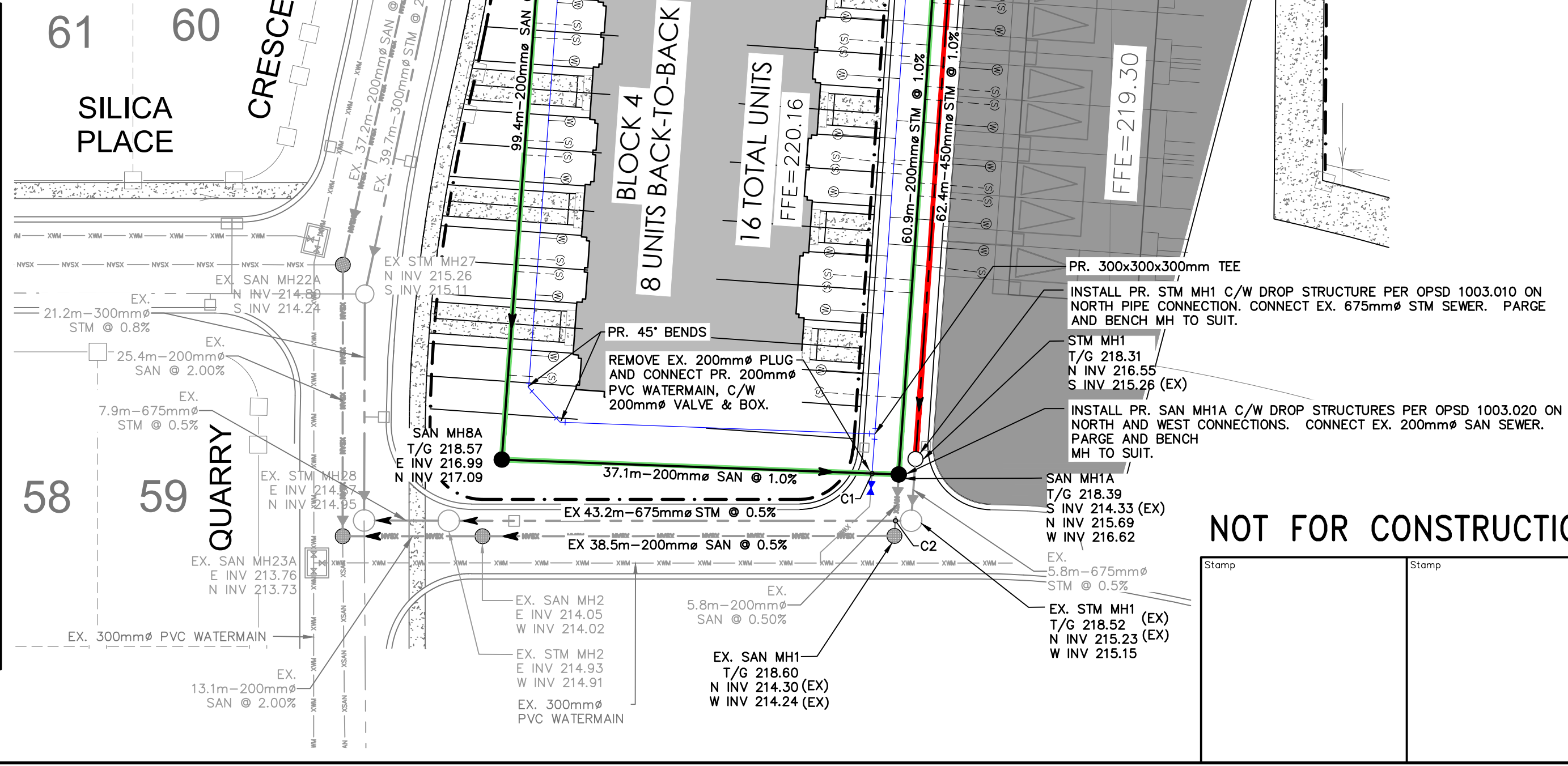
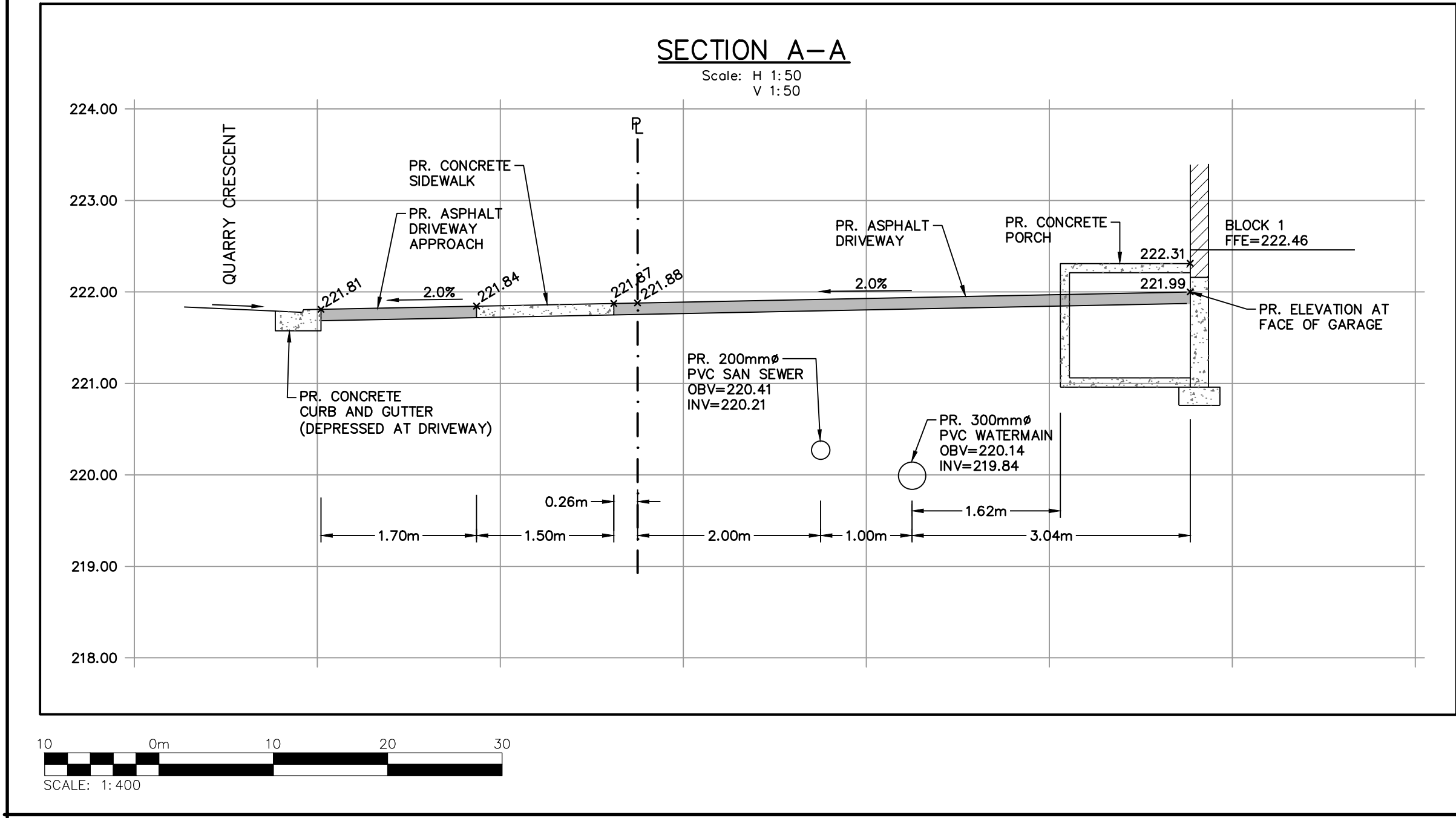
DRAWING NOTES:
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THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, LEVELS, AND DATUMS ON SITE AND REPORT ANY DISCREPANCIES OR OMISSIONS TO THIS OFFICE PRIOR TO CONSTRUCTION.
THIS DRAWING IS TO BE READ AND UNDERSTOOD IN CONJUNCTION WITH ALL OTHER PLANS AND DOCUMENTS APPLICABLE TO THIS PROJECT. DO NOT SCALE THIS DRAWING.
ALL EXISTING UNDERGROUND UTILITIES TO BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO CONSTRUCTION.

Project
**MILTON MEADOWS SUBDIVISION
BLOCK 81, PHASE 2B
MILTON, ONTARIO**

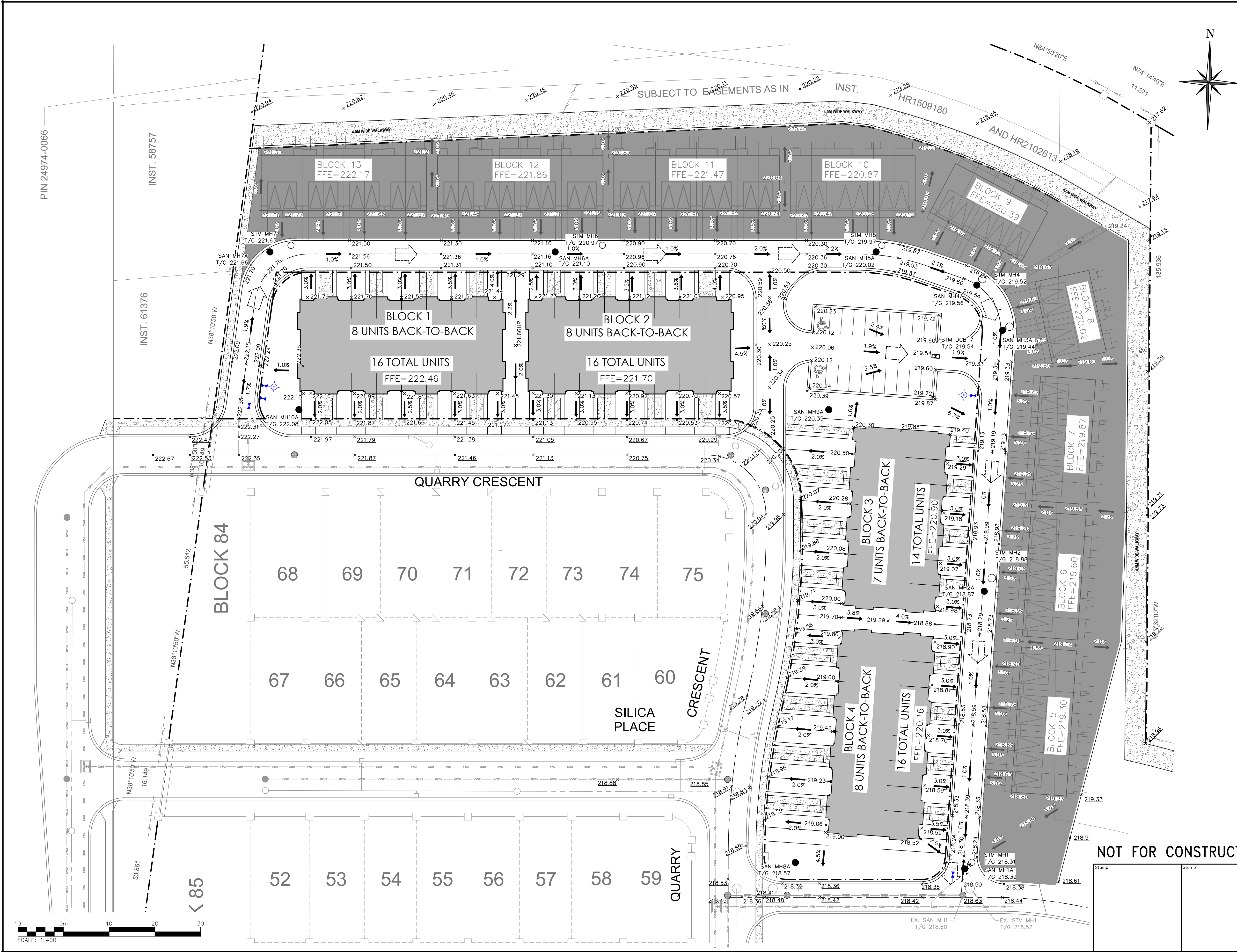
Drawing
**PRELIMINARY
SITE SERVICING PLAN**

C CROZIER

Drawn	M.I.M.	Design	M.I.M.	Project No.	2490-7940
Check	M.B.	Check	M.B.	Scale	1:400
				Dwg.	C 300



NOT FOR CONSTRUCTION



LEGEND	
	PROPERTY LINE
	EXISTING CONTOUR (0.5m)
	EXISTING CONTOUR (1.0m)
	PROPOSED REGIONAL FLOODLINE
	EXISTING GRADE
	PROPOSED GRADE
	PROPOSED MINOR FLOW DIRECTION
	PROPOSED SLOPE (3:1 MAX.)
	PROPOSED SWALE FLOW DIRECTION
	EXISTING SINGLE / DOUBLE CATCHBASIN
	EXISTING STORM MANHOLE
	PROPOSED CATCHBASIN
	PROPOSED STORM MANHOLE
	EXISTING SANITARY MANHOLE
	PROPOSED SANITARY MANHOLE
	PROPOSED TRANSFORMER
	EXISTING FIRE HYDRANT AND VALVE & BOX
	PROPOSED FIRE HYDRANT AND VALVE & BOX
	PROPOSED MAJOR OVERLAND FLOW DIRECTION

1	ISSUED FOR 1ST SUBMISSION (ZBA)	2026/SEP/24
No.	ISSUE / REVISION	YYYY/MM/DD

SURVEY NOTES:
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DATED: JUNE 02, 2026 (REVISION 1)
COMM. No. 24.122, SHEET A0.01
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Project
MILTON MEADOWS SUBDIVISION
BLOCK 81, PHASE 2B
MILTON, ONTARIO

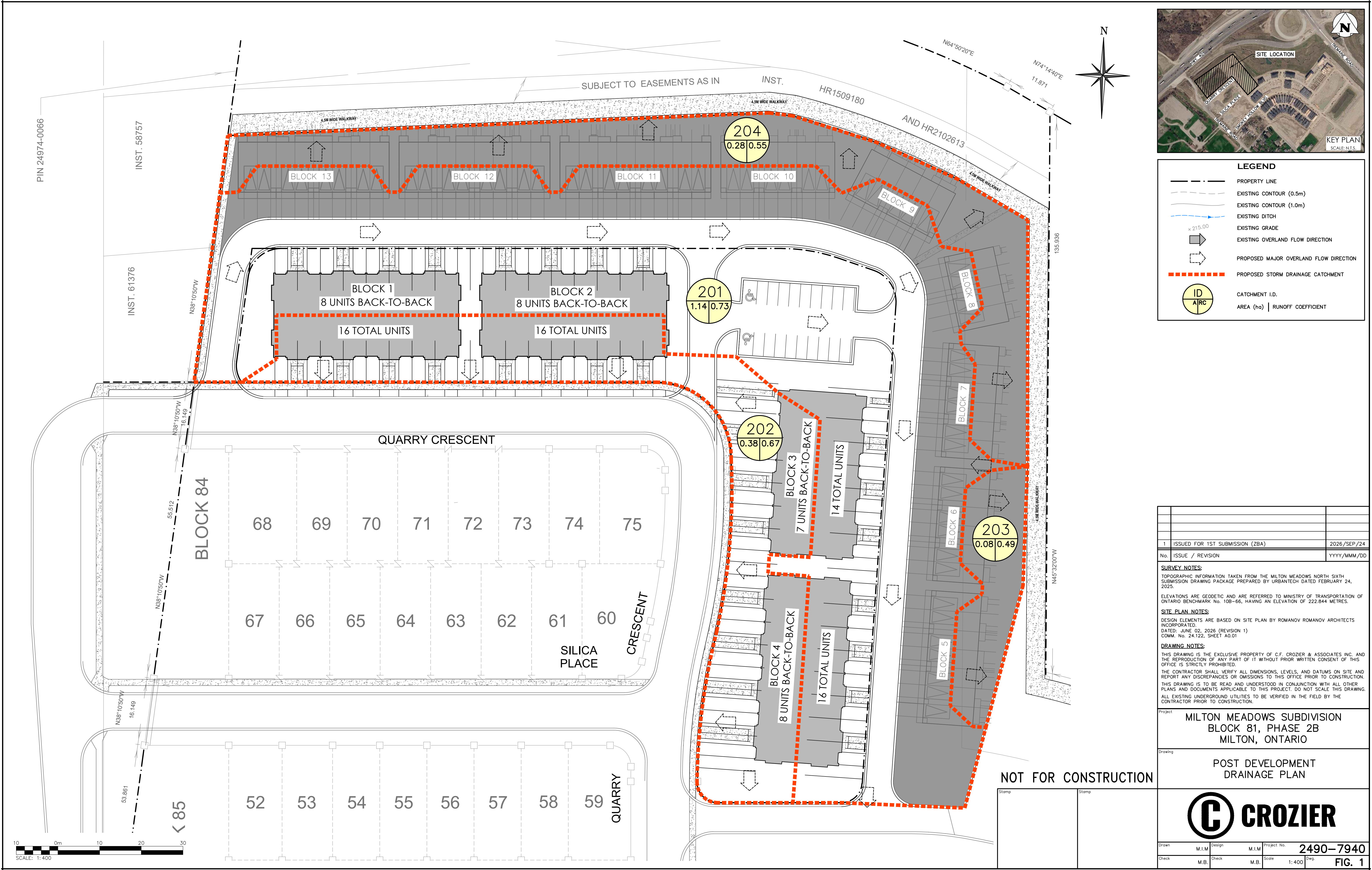
Drawing
PRELIMINARY
SITE GRADING PLAN

Drawn	M.I.M.
Design	M.I.M.
Project No.	2490-7940
Check	M.B.
Scale	1:400
Dwp	C 400

NOT FOR CONSTRUCTION

Stamp	Stamp
-------	-------

FIGURES



LEGEND	
	PROPERTY LINE
	EXISTING CONTOUR (0.5m)
	EXISTING CONTOUR (1.0m)
	EXISTING DITCH
	EXISTING GRADE
	EXISTING OVERLAND FLOW DIRECTION
	PROPOSED MAJOR OVERLAND FLOW DIRECTION
	PROPOSED STORM DRAINAGE CATCHMENT
	CATCHMENT I.D.
	AREA (ha) RUNOFF COEFFICIENT

1	ISSUED FOR 1ST SUBMISSION (ZBA)	2026/SEP/24
No.	ISSUE / REVISION	YYYY/MM/DD

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Project	MILTON MEADOWS SUBDIVISION BLOCK 81, PHASE 2B MILTON, ONTARIO
Drawing	POST DEVELOPMENT DRAINAGE PLAN

Drawn	M.I.M
Design	M.I.M
Project No.	2490-7940
Check	M.B.
Scale	1:400
Dwg.	FIG. 1