Functional Servicing & Stormwater Management Report

Residential Development

1315 Bough Beeches Boulevard

City of Mississauga, Region of Peel

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1.0 INTRODUCTION

fabian papa & partners (fp&p) has been retained by 1315 Bough Beeches Boulevard Limited to prepare this Functional Servicing & Stormwater Management Report in support of the Zoning By-Law Amendment (ZBA) application for a portion of the property municipally known as 1315 Bough Beeches Boulevard. This report discusses the provision of municipal services required for the development as well as the stormwater management strategy.

The subject site is located at the north-west corner of Rathburn Road East and Bough Beeches Boulevard in the City of Mississauga, Region of Peel. The site currently contains a 20-storey residential building (which shall remain) with one level of underground parking that is encompassed by Bough Beeches Boulevard to the east, Rathburn Road East to the south, Dixie Road to the west, and low-rise residential dwellings to the north. The site also consists of two sports courts with the balance of the site consisting of surface parking lots, pedestrian walkways, and landscaped islands. A key plan and aerial photograph of the subject site can be found in Appendix A.

The development proposal for the subject site envisions the construction of a 13-storey residential building, which is to be built on the east side of the existing 20-storey building with a construction re-development site area of approximately 3,274 m^2 (0.3274 ha). It should be noted that the proposed re-development area will be severed from the existing building (as noted on the design schematics) and shall act as a standalone entity with the surrounding land/20-storey building to remain.

The development will have a total of 144 residential units and two underground parking levels, which will be accessed on the east side of the building from the existing shared vehicular entrance/access from Bough Beeches Boulevard. Architectural schematic floor and elevation plans can be found in Appendix A for reference.

2.0 WATER SUPPLY

2.1. Overview

The existing municipal water infrastructure surrounding the subject site consists of a 400 mm diameter watermain along the northern side of Rathburn Road East. The plan and profile drawings for this municipal road was obtained from the City, with pertinent information included on the Site Servicing Plan (SSP-1) enclosed for reference. Excerpt copies of the plan and profile drawings are provided in Appendix B for reference.

To confirm that the existing watermain infrastructure has adequate pressure to accommodate the proposed building(s), a hydrant flow test was commissioned and performed by HydraTek & Associates on 05 September 2025, at the existing fire hydrant in front of the subject site, which is connected to the 400 mm diameter watermain on the northern side of Rathburn Road East. A copy of the test report is provided in Appendix C, and the results are summarized in Table 1.

Table 1: Hydrant Flow-Pressure Response Curve

Flow (usgpm)	Flow (L/s)	**Pressure (psi)**	Pressure (kPa)
0	0	**79.5**	550
1817	115	**76.9**	530
2307	146	**76.3**	526
2623	166	**75.8**	523
10952[1]	693	**20.0**	138

The proposed connections for the site will be to the local 400 mm distribution watermain on Rathburn Road East. The proposed water service configuration is shown on the enclosed Site Servicing Plan (SSP-1), and discussed further in Section 2.3.

2.2. Demand Estimation

The domestic water demand has been calculated based on the Region of Peel design criteria. The demands are summarized in Table 2 as follows (refer to Appendix C for the detailed calculations):

Table 2: Domestic Water Supply Demand

	Ave. Domestic Demand, ADD (L/s)	Peak Hour Demand, PHD (L/s)	Max Day Demand, MDD (L/s)
Total (Residential)	1.3	3.8	2.5

The recommended fire demand is calculated using the criteria outlined in the Water Supply for Public Fire Protection Manual, 2020, by the Fire Underwriters Survey. Appropriate reductions and increases have been applied and are shown in Table 3 below:

Table 3: Fire Underwriters Survey Coefficients

Construction Coefficient	0.6 (fire resistive construction)
Building Occupancy	-15% (limited-combustible)
Fire Suppression System	-50% (automatic sprinkler protection per NFPA 13)
Exposure / Proximity	+5%

The detailed fire demand is calculated as follows (refer to Appendix C for more details):

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

where:
F - Fire Flow (L/min)
C - Coefficient related to type of construction
A - Floor Area(s) dependent on structure (m^2)

The detailed fire flow calculations are as follows (detailed calculations provided in Appendix C):

$$F = 220 \times 0.6 \times \sqrt{1{,}233\ m^2} = 4{,}635 \approx 5{,}000\ L/min$$

By applying the factors listed in Table 3, the resulting Fire Flow (F) is adjusted as follows:

- Building Occupancy Factor | F1 = F × (1 - Factor) = 5,000 × (1 - 15%) = 4,250 L/min
- Fire Suppression System Factor | F2 = F1 × Factor = 4,250 × 50% = 2,125 L/min

[1] Maximum theoretical/estimated flow based on response curve at 20 psi

- Exposure / Proximity Factor | F3 = F1 × Factor = 4,250 × 5% = 213 L/min
- F = F1 – F2 + F3 = 4,250 – 2,215 + 213 = 2,338 ≈ 2,000 L/min
- F = 33.3 L/s

The design flows applied in the design of the service connections are as follows:

- Domestic Supply Line (PHD): 3.8 L/s
- Fire Supply Line (MDD + Fire Flow): 2.5 L/s + 33.3 L/s = **35.9 L/s**

2.3. Proposed Connections and Layout

Based on the demands calculated in Section 2.2, we propose a 150 mm diameter fire line to be connected to the existing 400 mm diameter watermain on Rathburn Road East, and there will be a 100 mm diameter domestic supply line that branches off of the 150 mm fire service. The water meter and back-flow preventers required by the Region will be installed within the incoming services room located in the parking level, immediately fronting the municipal right of way.

Given the type of building proposed, we understand that the building will be sprinklered. As such, we are proposing two fire department connections along the building face at the north-east corner fronting Bough Beeches Boulevard, in accordance with NFPA 14 (clause 7.12.2) high rise requirements for structures exceeding 23 meters in height. These connections are within 45 m of an existing hydrant located at the south-east corner of Bough Beeches Boulevard and Grazia Court.

2.4. Domestic and Fire Flow Analysis

The pressure at the building face is calculated as the residual pressure at the main less the head loss in the supply line. Based on the estimated residual pressure at the existing main and using the Hazen-Williams formula to determine the head losses in the lines, the resulting residual pressure at the building face for each connection is as follows (refer to Appendix C for the detailed calculations):

Head Loss using HW $= h_L$ (m)

$h_L = 10.675 \times L \times Q^{1.85} \times C^{-1.85} \times D^{-4.8655}$

Where:
C = Pipe Material Roughness Coefficient
Q = Flow Rate
D = Diameter of Pipe
L = Length of Service Connection

Table 4: Head Loss and Residual Pressures

Service Connections	Flow (L/s)	Head Loss (psi)	Head Loss (kPa)	Residual pressure at main (psi/kPa)	Residual pressure at Building (psi/kPa)
100 mm Domestic (PHD)	3.8	0.03	0.29	79.5/548.1	**79.5**/547.8
150 mm Fire (MDD + Fire)	35.9	0.52	3.58	79.3/546.4	**78.7**/542.8

The calculations in Table 4 above show that the residual pressures at the building face are above the Region's minimum acceptable pressures of 40 psi (275 kPa) for PHD conditions, and 20 psi (140 kPa) for MDD plus Fire demand conditions.

2.5. Water Servicing Summary

Based on the discussion in the previous sections, the proposed development can be adequately serviced by the existing municipal water infrastructure without the need for any upgrades or system modifications. The location of the existing and proposed water infrastructure is shown on the Site Servicing Plan (SSP-1) enclosed for reference.

3.0 SANITARY DRAINAGE

3.1. Overview

Local sanitary infrastructure includes a 300 mm diameter sanitary sewer on Bough Beeches Boulevard that drains south to a 300 mm sanitary sewer than drains west on Rathburn Road East, which drains west and connects to a 375 mm diameter sewer on Dixie Road that drains south.

3.2. Sanitary Design Flow

The sanitary design flow for the subject site is calculated using the Region's design criteria for sanitary sewers. The relevant criteria are summarized below.

- Design Flow: 302.8 Lpcd used for pre- & post-development flows
- Peaking Factor: Calculated using the Harmon Formula
- Infiltration Flow: 0.20 L/s/ha
- Population Density: 2.7 people/unit for apartments

The pre-development flow is calculated as follows:

$$Q_{San\ Pre} = \left(\frac{302.8\ Lpcd \times 0\ pers \times 4.50_{Peaking}}{86400\ s\ /\ day}\right) + 0.20\ L/s/ha \times 0.3274\ ha = 0.1\ L/s$$

The post-development flow is calculated as follows:

$$Q_{San\ Post} = \left(\frac{302.8\ Lpcd \times 389\ pers \times 4.03_{Peaking}}{86400\ s\ /\ day}\right) + 0.20\ L/s/ha \times 0.3274\ ha = 5.6\ L/s$$

Based on the above, the increase in flow is calculated to be **5.5 L/s** (5.6 L/s – 0.1 L/s). Please refer to Appendix D for the detailed sanitary design sheet.

3.3. Municipal Service Connections

The development will be serviced by a 150 mm diameter sanitary sewer which will be connected to the existing 300 mm sanitary sewer on Rathburn Road East. Based on the received subsurface utility investigation performed by Planview Utility Services Ltd., the invert of the existing sewer at the location of the proposed connection is approximately 143.03 m (5.24 m± below the surface elevation). A cast-in-place (1.2 m x 1.2 m) control manhole will be located at the property line inside the P1 level of the building, outside of the municipal right-of-way. The connection is proposed to be placed at an invert of approximately 143.95 m plus a riser at the existing sewer on Rathburn Road East. The connection will be constructed at a 2.0% gradient resulting in an invert of 144.30 m at the building. The proposed service is expected to convey the sanitary flow from the site operating at 24.7% of full flow capacity (22.5 L/s). Refer to Appendix D for detailed calculations.

Table 5: Sanitary Service Performance Table

From	To	Pipe Size (mm)	Pipe Slope	Peak Flow (L/s)	Capacity (L/s)	Percent of Full Flow
Control MH.1A	Ex. Sewer	150	2.0%	5.6	22.5	24.7%

4.0 STORM DRAINAGE

4.1. Overview

The existing storm infrastructure within the vicinity of the subject site consists of a 1200 mm diameter storm sewer on Bough Beeches Boulevard that drains south to a 1500 mm diameter storm sewer on Rathburn Road East that drains east. There is also a 750 mm diameter storm sewer on Rathburn Road East, separate to the 1500 mm diameter storm sewer mentioned above, that drains west and connects to a 1050 mm storm sewer in the eastern boulevard of Dixie Road which continues southerly and eventually to the Etobicoke Creek.

4.2. Design Criteria

The stormwater management servicing strategy for the subject development has been prepared in accordance with the City and TRCA's design standards and criteria for the Etobicoke Creek Sub-watershed. The relevant criteria are summarized below:

Water Quantity Management

- As the subject site falls within the Etobicoke Creek-Main Branch and Lower Etobicoke Area, there is no water quantity control requirement, in the City of Mississauga.
- However, it is important to ensure that the post-development discharge from the subject site under the 10-year storm event is equal to or less than the pre-development allowable site discharge.
- In addition, all rooftop drainage is to be controlled to 42 L/s/ha of roof area.

Water Quality Management

- All runoff from the site shall achieve a long-term average removal of 80% of Total Suspended Solids (TSS) on an annual loading basis.

Water Balance Management

- To achieve the water balance targets, a minimum of the first 27 mm from each rainfall event must be retained on-site for rainwater reuse or infiltration.

4.3. Pre-Development Conditions

The existing drainage for the site consists primarily of sheet drainage onto Bough Beeches Boulevard and Rathburn Road East where flow is collected in catch basins and discharged into the 1200 mm diameter storm sewer located on Bough Beeches Boulevard and the 750 mm diameter storm sewer located on Rathburn Road East. In addition, there are three catch basins directing flow east towards the existing 20-storey building's internal plumbing network, of which the existing service connection (to remain) discharges to the 1050 mm diameter storm sewer located on Rathburn Road East. Refer to Appendix E for the Pre-Development Drainage Plan (SWM-1).

4.4. Water Quantity Management

Since the proposed development falls within the Etobicoke Creek-Main Branch and Lower Etobicoke Area subwatershed according to Section 8.3.4 of the City of Mississauga Development Requirements, no quantity control is required. Table 6 below re-states what is outlined in the City of Mississauga Stormwater Quantity Control Requirements.

Table 6: City of Mississauga Stormwater Quantity Control Requirements

Subwatershed Name (Conservation Authority)	Quantity Control Criteria	References & Notes
Etobicoke Creek – Main Branch & Lower Etobicoke (TRCA)	No control required in the City of Mississauga	Hydrologic Model: VISUAL OTTHYMO-Return period peak flows based on the AES – 12-hour design storm Hydrologic Study: Etobicoke Creek Hydrology Update (MMM Group, 2013)

Although there is no quantity control requirement, per City criteria listed in Section 4.2, the post-development site discharge under the 10-year storm event must be equal to or less than the pre-development allowable site discharge. The noted discharge rates are calculated as follows: (Refer to Appendix E for the detailed calculations, and the Pre- and Post-Development Storm Drainage Area Plans)

$$Q_{10\text{-Yr, Pre-Development}} = \frac{A \times C \times I_{10\text{-yr}}}{360} = \frac{0.3274\ \text{ha} \times 0.57 \times 99.2\ \text{mm/hr}}{360} = 0.0516 m^3/s = 51.6\ L/s$$

$$Q_{10\text{-Yr, Post-Development}} = \frac{A \times C \times I_{10\text{-yr}}}{360} = \frac{0.3274\ \text{ha} \times 0.53 \times 99.2\ \text{mm/hr}}{360} = 0.0478 m^3/s = 47.8\ L/s$$

Since the pre development site discharge rate (51.6 L/s) is less than the post development site discharge rate (47.8 L/s), the proposed development will reduce the site's discharge by 3.8 L/s (51.6 – 47.8 = 3.8 L/s) under the 10-year storm event, and thus no orifice controls are required.

The proposed storm service connection for the re-development site portion has been sized to convey a 10-year storm event per typical sewer sizing criteria. Refer to Appendix E for the detailed calculations.

4.4.1 Rooftop Discharge

Although the proposed site falls within the Etobicoke Creek – Main Branch and Lower Etobicoke Area subwatershed which doesn't require stormwater quantity control, the City of Mississauga still requires that all rooftop discharge be controlled to 42 L/s/ha of roof area. Therefore, pre-manufactured rooftop control flow drains are required to be installed throughout the rooftop, which has an area of approx. 1,274 m^2. The rooftop control flow drains will be a 'Control-Flo' product manufactured by Zurn Industries Limited (Product No. ZCF-121 or approved equivalent), which is a common control flow drain used in these applications, with a discharge release rate of 5 gal/min×inch (0.0126 L/s/mm) depth of storage (1 notch design). A copy of the detailed specification can be found in Appendix E for reference.

Based on the roof area of approx. 1,274 m² as stated above, the calculated allowable rooftop discharge for the subject site is calculated as follows:

$$Q_{allowable} = \text{Roof Area} \times 42 \text{ L/s/ha}$$

$$Q_{allowable} = 1{,}274 \text{ m}^2 \times \left(\frac{1 \text{ ha}}{10{,}000 \text{ m}^2}\right) \times 42 \text{ L/s/ha}$$

$$Q_{allowable} = 5.4 \text{ L/s}$$

It is recommended that fourteen (14) rooftop control flow drains be used, evenly spaced in order to have equal areas draining to them. Therefore, based on the City's rainfall intensity for the 10-year storm event, the total rooftop control flow drain release rate is calculated as follows:

$$Q_{10\text{-yr, Roof}} = q \times d \times \#\text{ of Drains}$$

$$Q_{10\text{-yr, Roof}} = (5 \text{ gal/min/inch})(18 \text{ mm})(14 \text{ Drains}) \times \left(\frac{3.785 \text{ L}}{\text{gal}}\right)\left(\frac{1 \text{ min}}{60 \text{ s}}\right)\left(\frac{1 \text{ inch}}{25 \text{ mm}}\right)$$

$$Q_{10\text{-yr, Roof}} = 3.2 \text{ L/s}$$

where,

q = control drain capacity (i.e. 5 gal/min/inch)
d = depth of water above drain (mm)

Since the proposed rooftop discharge (**3.2 L/s**) is less than the allowable rooftop discharge (**5.4 L/s**) the City of Mississauga's requirement rooftop discharge requirement is satisfied.

The resulting stormwater storage required on the rooftop area under the 10-year storm event is **22.9 m³** with a resulting water depth of 18 mm. Assuming a maximum storage depth of 100 mm (at which point the emergency overflow scuppers will be engaged) and a conical storage shape at each of the drain locations, the maximum storage provided on the rooftop area is calculated as follows:

$$V_{100\text{-yr}} = 1/3 \times \text{Storage Area} \times \text{Max. Depth}$$

$$V_{100\text{-yr}} = 1/3 \times 1{,}274 \text{ m}^2 \times 100 \text{ mm}$$

$$V_{100\text{-yr}} = 42.5 \text{ m}^3$$

The provided rooftop storage volume of **42.5 m³** is greater than the required rooftop storage volume of **22.9 m³**, and therefore, the criterion is satisfied accordingly. The storm drainage and rooftop storage calculation sheets are provided in Appendix C for reference.

The rooftop runoff will be collected and directed to the proposed rainwater harvesting tank located in the P1 level via the internal building plumbing.

It is important to note that regular maintenance inspections of the rooftop control flow drains should be conducted to ensure that there are no blockages or other conditions which would prevent the proper functioning of this design element. The recommended minimum frequency of such inspections is annually.

4.5. Stormwater Quality Management

Pursuant to the City's Design Criteria, stormwater quality controls are required to be implemented on-site to achieve a minimum of 80% long-term total suspended solid (TSS) removal. The

walkways are represented as permeable pavers and green roof areas have been added wherever possible in order to improve TSS removal rates. Refer to Appendix E for pre- and post-development storm drainage plans (SWM-1 & SWM-2). For the purposes of determining the quality control achieved on the site, the following TSS removal rates in Table 7 will be applied:

Table 7: TSS Removal Rates

Site Area	TSS Removal Rate
Roof	80%
Green Roof	80%
Landscaped Areas	80%
Permeable Pavers	80%
Hard Surface	0%

Based on the rates found in Table 7, Table 8 summarizes the inferred TSS removal rates for:

Table 8: Inferred TSS Removal Rates

Site Area	Area (m²)	(% of Total)	TSS Removal Rate	Overall
Bare Roof	562	17.2%	80%	13.7%
Green Roof	712	21.8%	80%	17.4%
Landscape	811	24.8%	80%	19.8%
Permeable Pavers	1,002	30.6%	80%	24.5%
Hard Surface	187	5.7%	0%	0.0%
Total	3,274	100 %		**75.4%**

In order to achieve the required TSS removal targets, the subject site requires supplemental treatment. It is therefore proposed to install 1 Contech Stormfilter© model SFPD0608 18" high cartridge in an off-line chamber upstream of the storm service connection to treat hard surfaces (primarily the asphalt driveway area). Note that roof areas are deemed clean and do not require treatment and will drain directly to the proposed service connection. Please refer to Contech's Stormfilter © Filter Sizing Report which can be found in Appendix E. Based on the above considerations, the subject site's inferred TSS removal rate having incorporated the treatment unit meets the City requirements for quality control (i.e., minimum 80% TSS removal).

As noted above, the proposed treatment unit is approved for use in an "off-line" configuration. The unit comes with a piped by-pass to direct smaller flows (which are the "dirty first flush") to the treatment unit and large flows are permitted to overflow to the storm service connection.

Per manufacturer specifications, it is recommended that the Stormfilter© be inspected on a regular basis to confirm proper operation as well as to check for the accumulation of oil and sediment in the system. Per Contech's recommendations, maintenance should be carried out at an interval of 6 months with quarterly inspections until enough historical data has been collected to ensure that the unit is functioning properly. A licensed waste management company should be engaged to inspect, maintain, and remove and responsibly dispose of any captured sediment, debris, and petroleum waste products accumulated in the unit. We note that this filter system is accepted as a standalone treatment unit, and meets the City of Mississauga's criteria for 80% TSS removal.

4.6. Water Balance Management

In order to promote preservation of the site's natural hydrological water balance, the City recommends that a minimum volume of 27 mm over the site's impervious area must be retained, and re-used on-site. Based on the inferred initial abstraction rates for the various site surfaces for the site, the total abstraction is calculated as follows in Table 9.

Table 9: Initial Abstraction Table

Site Area	Area (m^2)	% of Total	Initial Abstraction for Site Area	Total Initial Abstraction for Site Area
Bare Roof	562	17.2%	0 mm	0.0 m^3
Green Roof	712	21.8%	5 mm	3.6 m^3
Landscape	811	24.8%	5 mm	4.1 m^3
Permeable Pavers	1,002	30.6%	5 mm	5.0 m^3
Hard Surfaces	187	5.7%	0 mm	0.0 m^3
Total	3,274	100 %		**12.6 m^3**

Although the initial abstraction assists with the on-site retention, it is not used for volume re-use requirements as mentioned in Section 8.3.2 of the City of Mississauga Development Requirements. The total runoff volume is calculated as the product of the impervious site area times 27 mm excluding initial abstraction. See Table 10 for the impervious site area calculation.

Table 10: Runoff Coefficients

Site Area	Area (m^2)	% of Total	Runoff Coefficient	Overall	Impervious Area (m^2)
Bare Roof	562	17.2%	0.90	0.15	
Green Roof	712	21.8%	0.50	0.11	
Landscape	811	24.8%	0.25	0.06	
Permeable Pavers	1,002	30.6%	0.50	0.15	
Hard Surface	187	5.7%	0.90	0.05	
Total	3,274	100 %		0.53	**1,734**

The total volume to be retained is calculated below:

$$V_{required} = Depth \times A_{Impervious} = 27\ mm \times 1{,}734\ m^2 / 1000\ mm = 46.8\ m^3$$

Per standard current industry practices, acceptable methods for water balance reuse include:

- Irrigation of landscaped areas (including evapo-transpiration), and/or
- Groundwater infiltration, and/or
- Greywater Toilet systems.

Since the underground parking level footprint spans almost the entire property, it is not feasible to implement an infiltration system. As such, we recommend that rain harvesting storage tank be provided within the P1 underground level to retain the required volume for the irrigation system. The rainwater harvesting chamber can retain the following volume of water:

$$V_{Storage} = Depth \times Area = 2.5\ m \times 41.6\ m^2 = 104.0\ m^3$$

Details relating to the irrigation calculations provided by the Landscape Architect (Studio tla) can be found in Appendix E for reference.

Based on the above calculations, the total volume of storm water retained and available for re-use is 104.0 m^3 which is greater than the required volume of 46.8 m^3. Therefore, the water balance objectives for the City of Mississauga stormwater criteria have been met.

4.6.1. Underground Rainwater Harvesting Storage Tank

Although there is no quantity control required for the proposed development, an underground rainwater harvesting tank is required to retain the required volume for water balance purposes. Storm runoff generated on site will be collected and directed to this tank. It is important to stress that regular maintenance inspections of the storage tank, and the control manhole should be conducted to ensure that there are no blockages or other conditions which would prevent the proper functioning of this design element. The recommended minimum frequency of such inspections is annually.

4.7. Municipal Service Connections

The storm runoff from the site will be captured and directed to a new 300 mm diameter storm service connection to Rathburn Road East. Based on the received subsurface utility investigation performed by Planview Utility Services Ltd., the invert of the existing 750 mm diameter sewer at the proposed storm service connection is approximately 143.49 m. The proposed storm service will be connected to the existing sewer with an invert of 144.25 m plus a riser and be constructed at a 2.0% slope. The resultant invert of the storm service at the control manhole will be 144.65 m. A cast-in-place (1.2 m × 1.2 m) control manhole will be located adjacent to the property line on the south side of the site and outside of the municipal right-of-way. The service has adequate capacity to convey the post-development storm flow from the site and will operate at 24.0% of full flow capacity (142.7 L/s) under 10-year unattenuated flow conditions. Refer to the Site Servicing Plan (SSP-1) enclosed for more design information.

Table 11: Storm Service Performance Table

From	To	Pipe Size (mm)	Pipe Slope	Peak Flow (L/s)	Capacity (L/s)	Percent of Full Flow
Control MH.1	Ex. Sewer	300	2.0%	34.3	142.7	24.0%

4.8. Emergency Overflow

In the event there is a blockage in the drainage system, the underground rainwater harvesting storage tank will be provided with an access frame and cover with an 'open grate' type (OPSD 400.100) which will act as an emergency overflow, located at the west edge of the subject site. The lid will be at an elevation of 149.05 m, and if an emergency overflow is experienced, the tank will surcharge and spill stormwater toward Rathburn Road East in a southerly direction. We recommend backwater valves be installed between the rainwater harvesting storage structure and the incoming connections to prevent water from entering the individual leads should a blockage occur within the storage structure. We also recommend this facility to be inspected and maintained on an annual basis to ensure it is operating as designed.

4.9. Storm Servicing Summary

Based on the discussion in previous sections, the proposed development can be adequately serviced from a stormwater management and drainage perspective by the existing municipal storm infrastructure without the need for any upgrades or system modifications. The location of the existing and proposed infrastructure is shown on the Site Servicing Plan (SSP-1) enclosed for reference.

5.0 CONCLUSIONS

This report illustrates that the proposed development is feasible from municipal servicing and stormwater management perspectives. More Particularly:

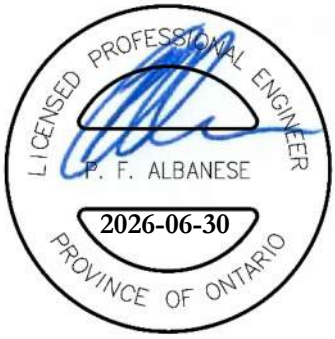
- Proposed domestic water and fire demands can be accommodated by the existing municipal water supply infrastructure on Rathburn Road East.
- As confirmed by the Region of Peel, the receiving municipal sewer on Rathburn Road East and the sanitary drainage network as a whole can accommodate the increase in sanitary wastewater flow as calculated herein, without the need for any upgrades or system modifications.
- The receiving storm drainage network can accommodate the proposed development without improvements and the proposed internal storm sewer network, on-site underground rainwater harvesting storage tank, and the quality treated discharge to the receiving sewer satisfy the City's stormwater management objectives.

We trust that this satisfies your current needs. Should you have any questions, or require additional information, please do not hesitate to contact the undersigned.

Respectfully Submitted,

fabian papa & partners
A Division of FP&P HydraTek Inc.





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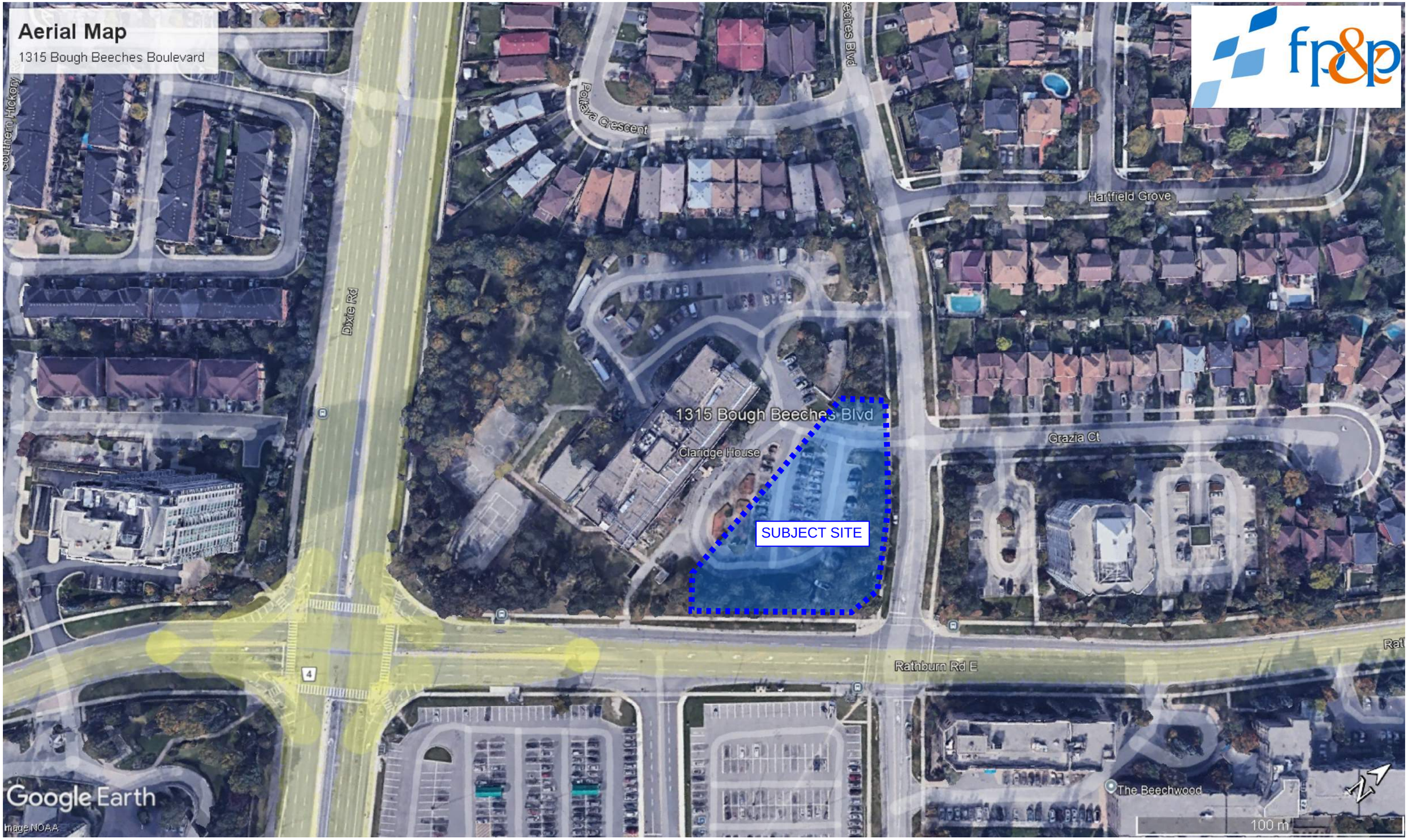
Tel: +1.905.264.2420 x420
E-Mail: palbanese@fabianpapa.com

h:\fp&p hydratek\projects\2025\25074 -1315 bough beeches boulevard, mississauga\reports\revision 2\25074 - fs and swm report (revision 2).docx

APPENDIX A

Key Map with Architectural Drawings -


Aerial Map
1315 Bough Beeches Boulevard
Southern Hickory
Dixie Rd
Poltava Crescent
Bough Beeches Blvd
Hartfield Grove
1315 Bough Beeches Blvd
Grazia Ct
Claridge House
SUBJECT SITE
Rathburn Rd E
The Beechwood
4
Google Earth
Image NOAA
100 m

PROPOSED SITE STATISTICS - 1315 BOUGH BEECHES 2026-02-25			
MUNICIPAL ADDRESS	1315 BOUGH BEECHES MISSISSAUGA, ONTARIO		* Please note, these statistics have been taken at a preliminary stage of design, and are subject to change through co-ordination.
PROPOSED USE	RES. DEVELOPMENT		
ROAD WIDENING - SIGHT TRIANGLE	84 m²	907 ft²	
SEVERANCE AREA	3,281 m²	35,311 ft²	

Above Grade

PROPOSED 13ST BUILDING	GCA SM	GCA SF	GFA SM	GFA SF	INDOOR AMENITY SM	OUTDOOR AMENITY SM
Ground (Indoor Amenity)	1,274 m²	13,709 ft²	464 m²	4,990 ft²	464 m²	442 m²
Floor 2	865 m²	9,313 ft²	822 m²	8,849 ft²		
Floor 3	865 m²	9,313 ft²	822 m²	8,849 ft²		
Floor 4	865 m²	9,313 ft²	822 m²	8,849 ft²		
Floor 5	865 m²	9,313 ft²	822 m²	8,849 ft²		
Floor 6	865 m²	9,313 ft²	822 m²	8,849 ft²		
Floor 7	865 m²	9,313 ft²	822 m²	8,849 ft²		
Floor 8	865 m²	9,313 ft²	822 m²	8,849 ft²		
Floor 9	865 m²	9,313 ft²	822 m²	8,849 ft²		
Floor 10	865 m²	9,313 ft²	822 m²	8,849 ft²		
Floor 11	865 m²	9,313 ft²	822 m²	8,849 ft²		
Floor 12	865 m²	9,313 ft²	822 m²	8,849 ft²		
Floor 13	865 m²	9,313 ft²	822 m²	8,849 ft²		
MPH	401 m²	4,315 ft²	0 m²	0 ft²		
TOTAL	**12,057 m²**	**129,779 ft²**	**10,329 m²**	**111,178 ft²**	**464 m²**	**442 m²**
					3.22 m²/unit	*3.07 m²/unit*
				Amenity Ratio:	*6.29 m²/unit*	

Below Grade

PROPOSED 13ST BUILDING	GCA SM	GCA SF	GFA SM	GFA SF
P1	2,691 m²	28,961 ft²	35 m²	381 ft²
P2	2,691 m²	28,961 ft²	35 m²	381 ft²
LOWER P2	176 m²	1,890 ft²	28 m²	302 ft²
TOTAL	**5,557 m²**	**59,813 ft²**	**99 m²**	**1,065 ft²**

Above + Below Grade

PROPOSED 13ST BUILDING	GCA SM	GCA SF	GFA SM	GFA SF
TOTAL	**17,614 m²**	**189,592 ft²**	**10,428 m²**	**112,243 ft²**

FSI (Severance Area)	**3.18**

PARKING				
	RESIDENT	**VISITOR**	**TANDEM**	**SUB-TOTAL**
Surface (offsite allocation)	15	15		30
P1	60		3	63
P2	69		8	77
Total	144	15	11	170
Total (Res + Vis)	159			

Parking Ratio = 1.10

Unit Mix

PROPOSED 13ST BUILDING	STUDIO	1BR	1B+D	2BR	3BR	TOTAL
Ground						0
Floor 2	1	4	2	4	1	12
Floor 3	1	4	1	5	1	12
Floor 4	1	4	1	5	1	12
Floor 5	1	4	1	5	1	12
Floor 6	1	4	1	5	1	12
Floor 7	1	4	1	5	1	12
Floor 8	1	4	1	5	1	12
Floor 9	1	4	1	5	1	12
Floor 10	1	4	1	5	1	12
Floor 11	1	4	1	5	1	12
Floor 12	1	4	1	5	1	12
Floor 13	1	4	1	5	1	12
MPH						0
TOTAL	**12**	**48**	**13**	**59**	**12**	**144**
	8.33%	*33.33%*	*9.03%*	*40.97%*	*8.33%*	*Provided*
	5.0%	*35.0%*	*10.0%*	*45.0%*	*5.0%*	*Targets*
	7.2	*50.4*	*14.4*	*64.8*	*7.2*	

SITE AREA: 23715.1 m² / 255267.5 ft²

PROPOSED BUILDING:
15 REGULAR RESIDENT PARKING

PROPOSED BUILDING:
4 REGULAR VISITOR PARKING

EXISTING FIRE ROUTE

UNDERGROUND PARKING

FIRE ROUTE ENTRY FOR BOTH BUILDINGS

PROPOSED BUILDING:
6 REGULAR VISITOR PARKING

FIRE ROUTE EXIT REVERSE D=<90m

EXISTING 20 STOREY BUILDING

EXISTING OUTDOOR AMENITY
1314.5 m² / 14149.0 ft²

EXISTING OUTDOOR AMENITY
298.3 m² / 3210.4 ft²

RELOCATED EXISTING PRIVATE FIRE HYDRANT. (REFER TO CIVIL DWGS)

FIRE ROUTE EXIT FOR BOTH BUILDINGS

LOADING

FIRE ROUTE EXISTING BUILDING

FIRE ROUTE NEW BUILDING

DROP OFF

PROPOSED BUILDING:
2 ACCESSIBLE VISITOR PARKING
1 REGULAR VISITOR PARKING
2 EXISTING BUILDING ACCESSIBLE VISITOR PARKING

13 ST + MPH
865.2 m² / 9312.7 ft²

OPEN SPACE
482.6 m² / 5195.0 ft²

SEVERANCE AREA: 3273.8 m² / 35238.4 ft²

PROP. SIAMESE CONNECTIONS (REFER TO CIVIL DWGS)

EX. FIRE HYDRANT (REFER TO CIVIL DWGS)

ROAD WIDENING 15m x 15m SIGHT TRIANGLE & 0.3m RESERVE

VEHICULAR ACCESS

VEHICULAR ACCESS

DIXIE ROAD

BOUGH BEECHES BOULEVARD

RATHBURN ROAD EAST
(FORMERLY RATHBURN ROAD)
(BY BY-LAW 423-74, INST No. VS330107)

MATHEMATICAL CENTRELINE

CENTRELINE OF ORIGINAL OF ROAD ALLOWANCE (ROAD ALLOWANCE BETWEEN LOTS 5 AND 6, CONCESSION 2 NORTH OF DUNDAS STREET)

PLAN 43R-27132

PART 1, PLAN 43R-18335

PART 3, PLAN 43R-18335

REGISTERED PLAN M-340

True North

Project North

CLIENT

1315 Bough Beeches Boulevard Limited
2700 Dufferin Street, Unit 50
Toronto ON
M6B 4J3

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Arcadis Architects (Canada) Inc.

ISSUES

No.	DESCRIPTION	DATE
1	OPA/ZBA SUBMISSION	2026-03-06

KEY PLAN

CONSULTANTS

SEAL

ARCADIS

55 St. Clair Avenue West,
Toronto, ON M4V 2Y7, Canada
tel 416 596 1930
www.arcadis.com

PROJECT

1315 BOUGH BEECHES BOULEVARD

PROJECT NO: 30280666

DRAWN BY: | CHECKED BY:

PROJECT MGR: | APPROVED BY:

SHEET TITLE
PLAN OF SUBJECT PROPERTY

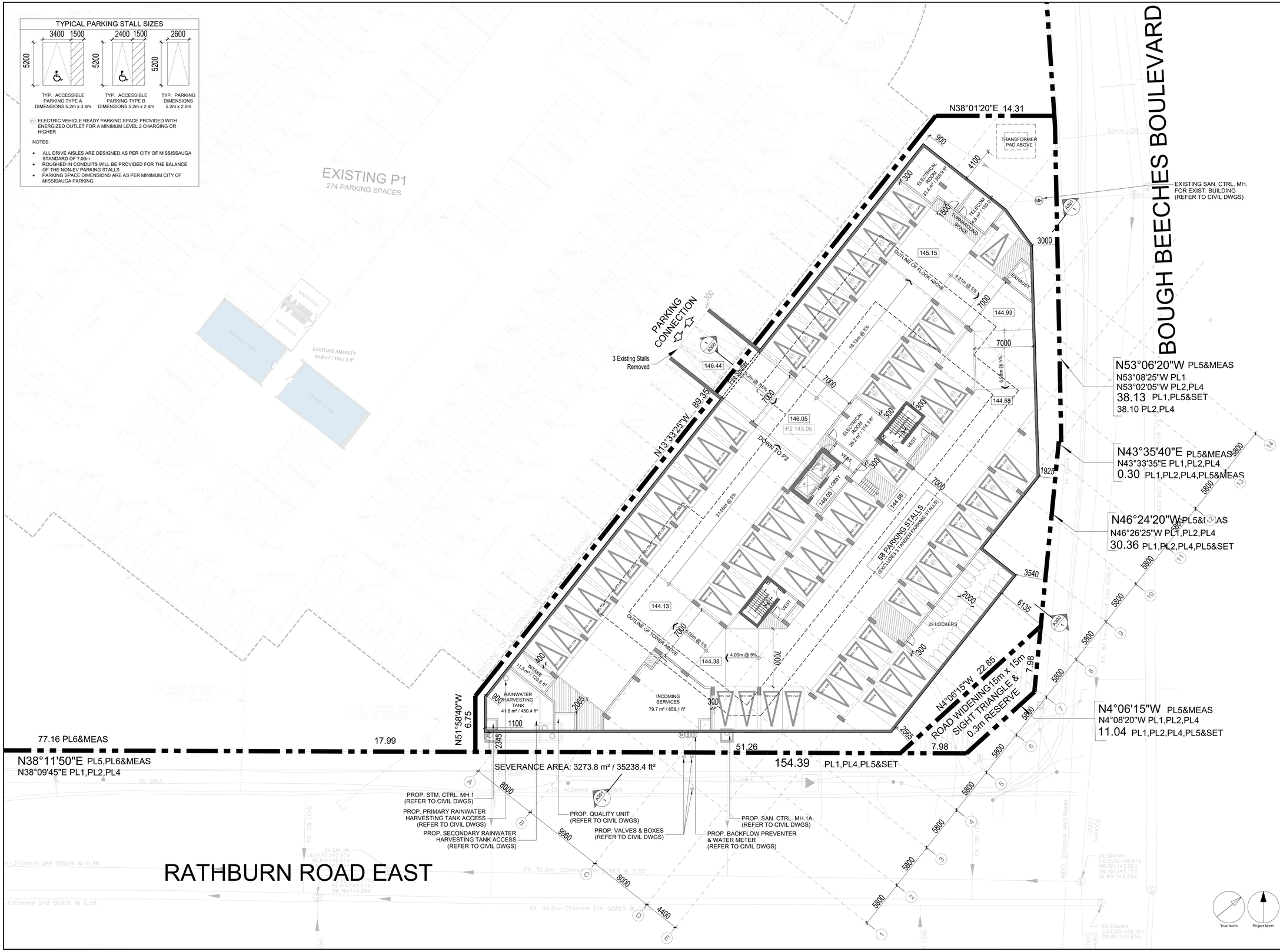
SCALE 1:300

DATE 2026-03-06

SHEET NUMBER
A004

ISSUE

SCALE CHECK 10mm 1 in.



CLIENT

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2700 Dufferin Street, Unit 50
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M6B 4J3

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Arcadis Architects (Canada) Inc.

APPLICATION NUMBERS
OZ/OPA 26-5 W3

ISSUES

No.	DESCRIPTION	DATE
1	OPA/ZBA SUBMISSION	2026-03-13
2	OPA/ZBA-2 SUBMISSION	2026-06-30

KEY PLAN

CONSULTANTS

SEAL

ARCADIS
55 St. Clair Avenue West,
Toronto, ON M4V 2Y7, Canada
tel 416 596 1930
www.arcadis.com

PROJECT
1315 BOUGH BEECHES BOULEVARD

PROJECT NO:
30280666

DRAWN BY: | CHECKED BY:

PROJECT MGR: | APPROVED BY:

SHEET TITLE
P1 PARKING PLAN

SCALE
1:200

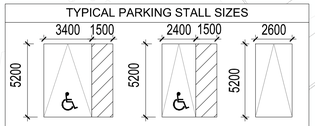
DATE
2026-05-21

SHEET NUMBER
A151

ISSUE

SCALE CHECK
1 in
10mm

TYPICAL PARKING STALL SIZES



TYP. ACCESSIBLE PARKING TYPE A DIMENSIONS 5.2m x 3.4m

TYP. ACCESSIBLE PARKING TYPE B DIMENSIONS 5.2m x 2.4m

TYP. PARKING DIMENSIONS 5.2m x 2.6m

EV ELECTRIC VEHICLE READY PARKING SPACE PROVIDED WITH ENERGIZED OUTLET FOR A MINIMUM LEVEL 2 CHARGING OR HIGHER

NOTES:

- ALL DRIVE AISLES ARE DESIGNED AS PER CITY OF MISSISSAUGA STANDARD OF 7.00m
- ROUGHED-IN CONDUITS WILL BE PROVIDED FOR THE BALANCE OF THE NON-EV PARKING STALLS

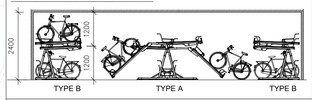
BIKE PARKING - LEGEND

VERTICAL BIKE STALLS (600 W x 1200 L x 1900 H)

BIKE STACKERS

HORIZONTAL BIKE STALLS (600 W x 1800 L x 1900 H)

BIKE STACKER SECTION (TYPICAL)



BICYCLE PARKING COUNT

	LONG-TERM	SHORT-TERM	TOTAL
GROUND	87	8	95
TOTAL	87	8	95

EXISTING 20 STOREY BUILDING

EXISTING INDOOR AMENITY 324.6 m² / 3493.9 ft²

PROPOSED BUILDING:
2 ACCESSIBLE VISITOR PARKING
1 REGULAR VISITOR PARKING
EXISTING BUILDING:
2 ACCESSIBLE VISITOR PARKING

RELOCATED EXISTING PRIVATE FIRE HYDRANT (REFER TO CIVIL DWGS)

RELOCATE EXISTING PRIVATE FIRE HYDRANT, VALVE & CONNECTION TO EXISTING ROADWAY & CONNECT TO EXISTING INTERNAL WATER PIPING

DROP OFF

LOADING

OUTLINE OF B/G LEVELS

TYPE 'G' SPACE
3.66m W x 12.00m L x 3.66m H (12' REINFORCED CONCRETE HEAD)
Bollards
GAS METER

4.40m WIDE DOOR AND MIN. 4.0m WIDTH
4.40m CLEARANCE

BIKE RACKS
4 SHORT-TERM SPACES
(REFER TO LANDSCAPE DWGS)

BIKE PARKING
87 LONG TERM BIKES
133.1 m² / 1434.5 ft²

MOVING CORRIDOR

GARBAGE
68.1 m² / 733.5 ft²

BULK
16.8 m² / 180.8 ft²

STAGING
24.8 m² / 267.0 ft²

EXIT

MAIL ROOM

WC

MOVING
7.4 m² / 80.1 ft²

CONCIERGE

CANOPY ABOVE

PARCEL ROOM

INDOOR AMENITY
192.6 m² / 2073.0 ft²
[149.75]

RESIDENTIAL LOBBY
206.8 m² / 2227.7 ft²
[149.75]

CACF

OFFICE
148.8 m² / 1601.6 ft²

OUTLINE OF TOWER ABOVE

PET WASH
16.6 m² / 200.1 ft²

INDOOR AMENITY
251.7 m² / 2709.3 ft²
[149.75]

OUTDOOR AMENITY
342.6 m² / 3687.7 ft²

OPEN SPACE
482.6 m² / 5195.0 ft²

INTAKE

OUTLINE OF EXISTING UNDERGROUND PARKING

PROPOSED LANDSCAPE RETAINING WALL. SEE PLANTER LANDSCAPE PLANS

EXHAUST

TRANSFORMER

BOOH TRUCK

VEHICULAR ACCESS

EXISTING SAN. CTRL. MH. FOR EXIST. BUILDING (REFER TO CIVIL DWGS)

PROP. SIAMESE CONNECTIONS (REFER TO CIVIL DWGS)

DISTANCE TO FH= ±32.0m

EX. FIRE HYDRANT (REFER TO CIVIL DWGS)

BOUGH BEECHES BOULEVARD

N38°01'20"E 14.31

2015

3425

7570

5030

2745

6725

6785

8235

N53°06'20"W PL5&MEAS
N53°08'25"W PL1
N53°02'05"W PL2,PL4
38.13 PL1,PL5&SET
38.10 PL2,PL4

N43°35'40"E PL5&MEAS
N43°33'35"E PL1,PL2,PL4
0.30 PL1,PL2,PL4,PL5&MEAS

N46°24'20"W PL5&MEAS
N46°26'25"W PL1,PL2,PL4
30.36 PL1,PL2,PL4,PL5&SET

N4°06'15"W PL5&MEAS
N4°08'20"W PL1,PL2,PL4
11.04 PL1,PL2,PL4,PL5&SET

N38°11'50"E PL5,PL6&MEAS
N38°09'45"E PL1,PL2,PL4
77.16 PL6&MEAS

N51°58'40"W 6.75

17.99

51.26

7.98

4500

4200

154.39 PL1,PL4,PL5&SET

N4°06'15"W 22.85

ROAD WIDENING15m x 1.5m SIGHT TRIANGLE & 0.3m RESERVE

7.98

SEVERANCE AREA: 3273.8 m² / 35238.4 ft²

PROP. STM. CTRL. MH.1 (REFER TO CIVIL DWGS)

PROP. PRIMARY RAINWATER HARVESTING TANK ACCESS LID (REFER TO CIVIL DWGS)

PROP. SECONDARY RAINWATER HARVESTING TANK ACCESS LID (REFER TO CIVIL DWGS)

PROP. QUALITY UNIT LIDS (REFER TO CIVIL DWGS)

PROP. VALVES & BOXES (REFER TO CIVIL DWGS)

PROP. SAN. CTRL. MH.1A (REFER TO CIVIL DWGS)

BIKE RACKS - 4 SHORT-TERM SPACES (REFER TO LANDSCAPE DWGS)

8000
9960
8000
4400
5800

RATHBURN ROAD EAST
(FORMERLY RATHBURN ROAD)
(BY BY-LAW 423-74, INST No. VS330107)

True North
Project North

CLIENT

1315 Bough Beeches Boulevard Limited
2700 Dufferin Street, Unit 50
Toronto ON
M6B 4J3

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Arcadis Architects (Canada) Inc.

ISSUES

No.	DESCRIPTION	DATE
1	OPA/ZBA SUBMISSION	2026-03-06

KEY PLAN

CONSULTANTS

SEAL

ARCADIS
55 St. Clair Avenue West,
Toronto, ON M4V 2Y7, Canada
tel 416 596 1930
www.arcadis.com

PROJECT

1315 BOUGH BEECHES BOULEVARD

PROJECT NO: 30280666

DRAWN BY: | CHECKED BY:

PROJECT MGR: | APPROVED BY:

SHEET TITLE: GROUND FLOOR

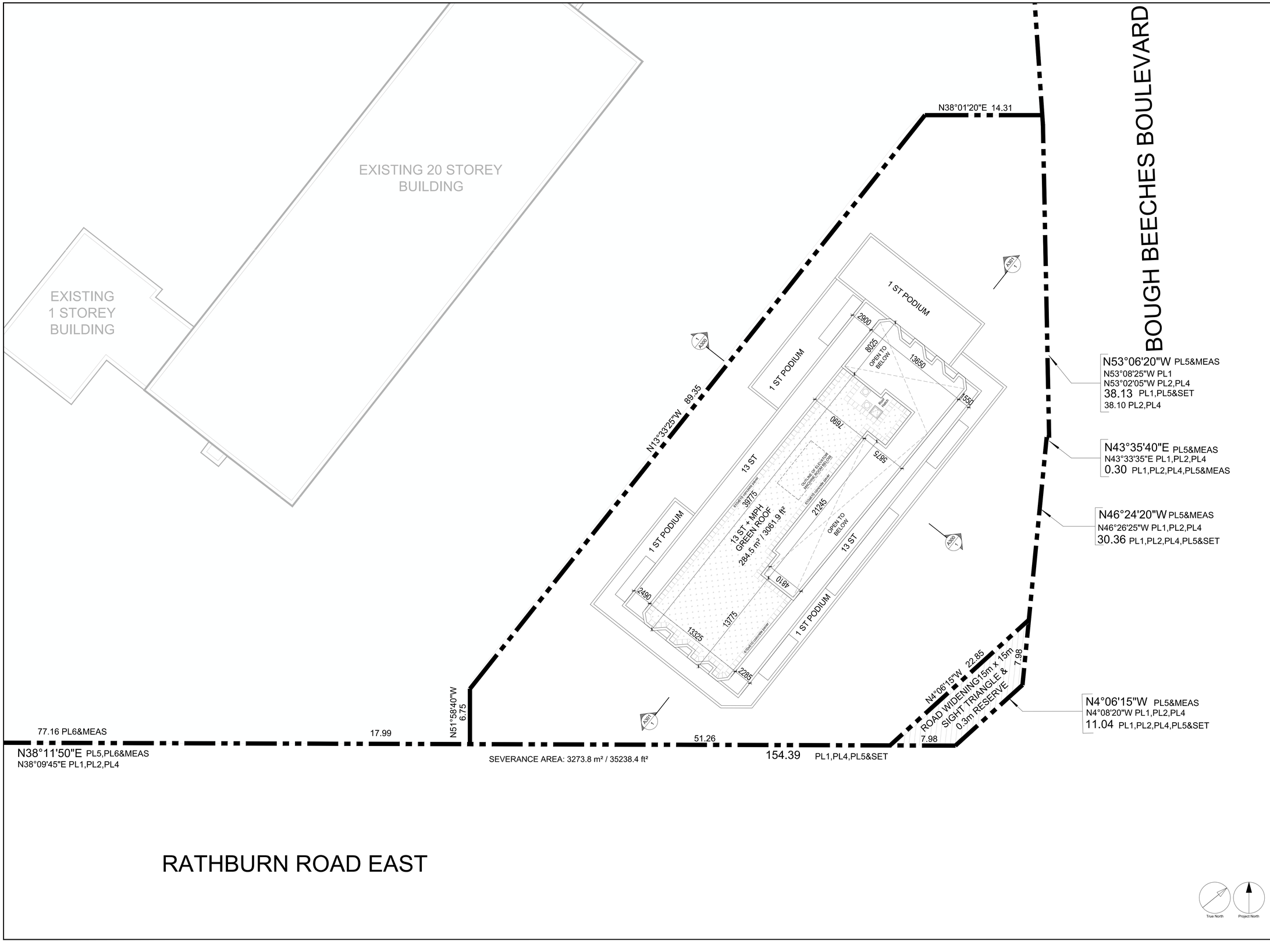
SCALE: 1:200

DATE: 2026-03-06

SHEET NUMBER: A101

ISSUE

SCALE CHECK 10mm 1 in



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Arcadis Architects (Canada) Inc.

ISSUES

No.	DESCRIPTION	DATE
1	OPA/ZBA SUBMISSION	2026-03-06

KEY PLAN

CONSULTANTS

SEAL

ARCADIS
55 St. Clair Avenue West,
Toronto, ON M4V 2Y7, Canada
tel 416 596 1930
www.arcadis.com

PROJECT

1315 BOUGH BEECHES BOULEVARD

PROJECT NO: 30280666

DRAWN BY: | CHECKED BY:

PROJECT MGR: | APPROVED BY:

SHEET TITLE: ROOF PLAN

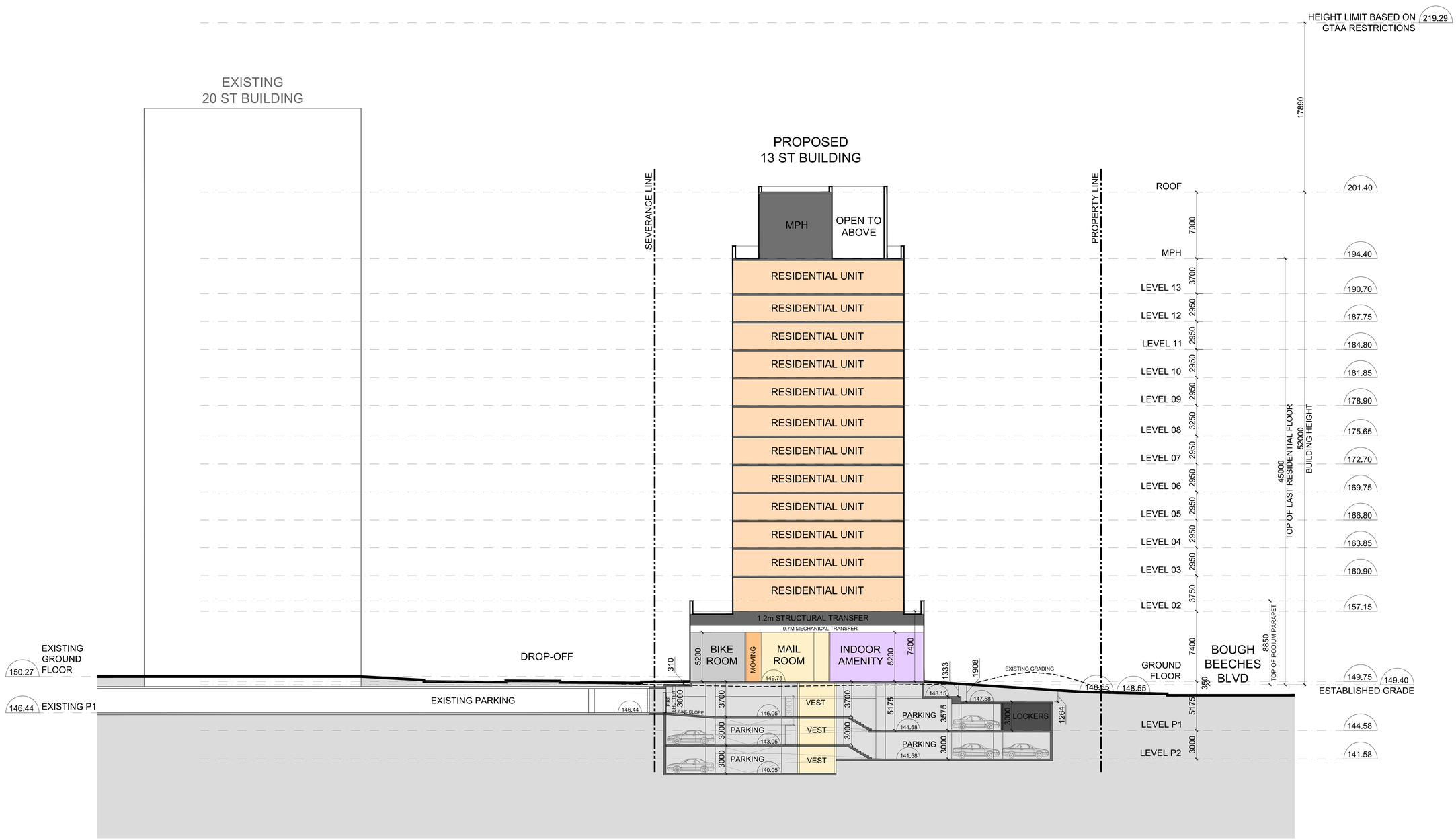
SCALE: 1:200

DATE: 2026-03-06

SHEET NUMBER: A105

ISSUE

SCALE CHECK 10mm 1 in



EAST - WEST SECTION

CLIENT

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M6B 4J3

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Arcadis Architects (Canada) Inc.

ISSUES

No.	DESCRIPTION	DATE
1	OPA/ZBA SUBMISSION	2026-03-06

KEY PLAN

CONSULTANTS

SEAL

ARCADIS

55 St. Clair Avenue West,
Toronto, ON M4V 2Y7, Canada
tel 416 596 1930
www.arcadis.com

PROJECT

1315 BOUGH BEECHES BOULEVARD

PROJECT NO: 30280666

DRAWN BY: | CHECKED BY:

PROJECT MGR: | APPROVED BY:

SHEET TITLE: EAST-WEST SECTION

SCALE: 1:200

DATE: 2026-03-06

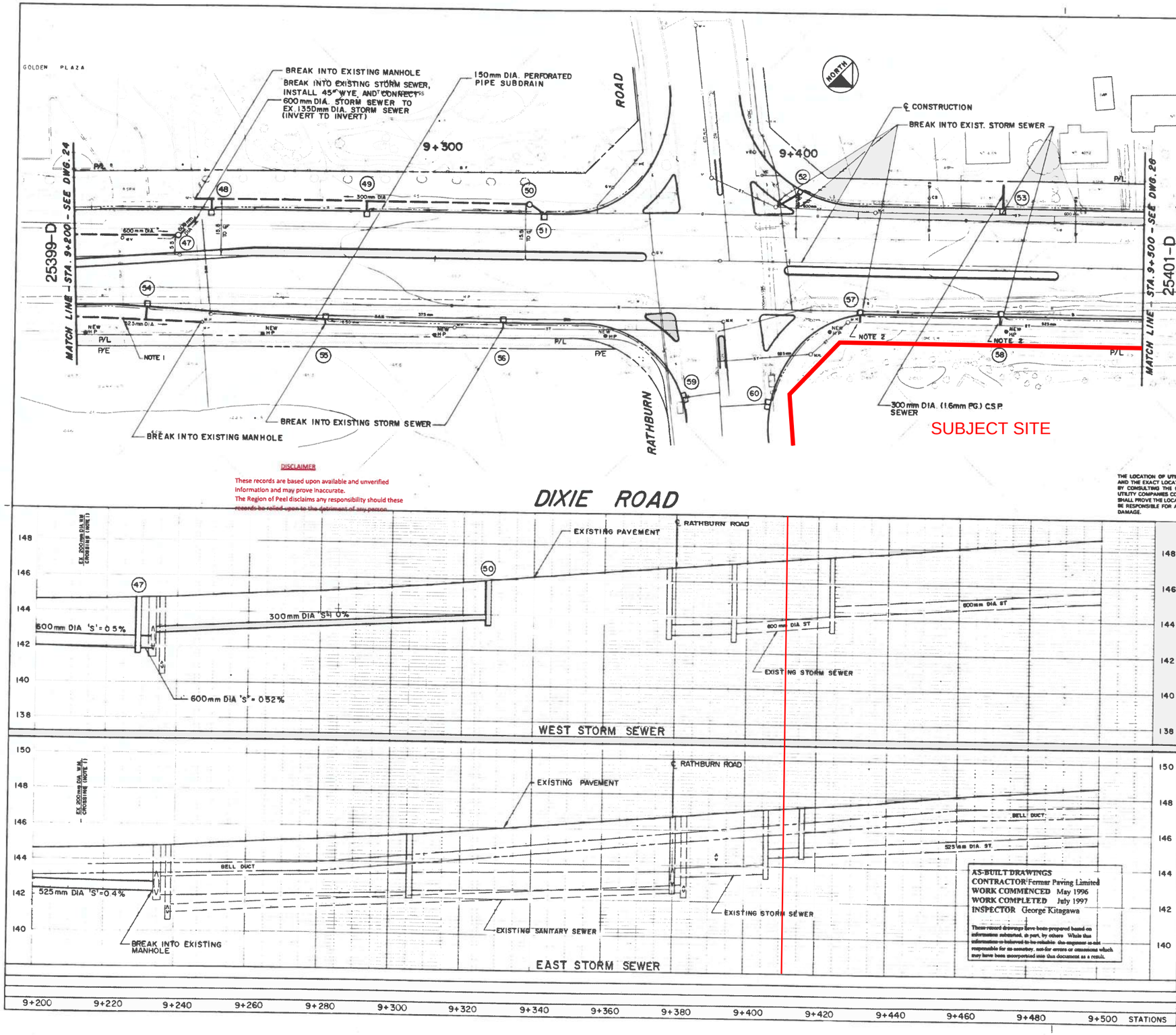
SHEET NUMBER: A300

ISSUE

SCALE CHECK 10mm 1 in

APPENDIX B

Plan & Profile Drawings -
SUE Investigation -



DISCLAIMER

These records are based upon available and unverified information and may prove inaccurate.
The Region of Peel disclaims any responsibility should these records be relied upon to the detriment of any person.

AS-BUILT DRAWINGS
CONTRACTOR Fermar Paving Limited
WORK COMMENCED May 1996
WORK COMPLETED July 1997
INSPECTOR George Kitagawa

These record drawings have been prepared based on information submitted, in part, by others. While this information is believed to be reliable, the engineer is not responsible for its accuracy, nor for errors or omissions which may have been incorporated into this document as a result.

SERVICE DATA					
SERVICE	DATE	INIT.	SERVICE	DATE	INIT.
SAN. SEWERS			GAS MAINS		
STORM SEWERS			BELL U/G CABLE		
WATERMAINS			HYDRO U/G CABLE		

REVISIONS		
DATE	DETAILS	INIT.

ISSUED FOR CONSTRUCTION

THE LOCATION OF UTILITIES IS APPROXIMATE ONLY AND THE EXACT LOCATION SHOULD BE DETERMINED BY CONSULTING THE MUNICIPAL AUTHORITIES AND UTILITY COMPANIES CONCERNED. THE CONTRACTOR SHALL PROVE THE LOCATION OF UTILITIES AND SHALL BE RESPONSIBLE FOR ADEQUATE PROTECTION FROM DAMAGE.

THESE DESIGN DOCUMENTS ARE PREPARED SOLELY FOR THE USE BY THE PARTY WITH WHOM THE DESIGN PROFESSIONAL HAS ENTERED INTO A CONTRACT AND THERE ARE NO REPRESENTATIONS OF ANY KIND MADE BY THE DESIGN PROFESSIONAL TO ANY PARTY WITH WHOM THE DESIGN PROFESSIONAL HAS NOT ENTERED INTO A CONTRACT.

General Notes

- All Driveways Gravel Unless Otherwise Noted.
- All Service Locations Are Approximate And Must Be Located Accurately In Field.
- Denotes Building - Not Located
- Denotes Building Located
- Type B Bedding Unless Otherwise Noted (SAN)

B.M. No Elev.

The Contractor Is Responsible For Locating And Protecting All Existing Utilities Prior To And During Construction Location of Existing Utilities Approximate Only, To Be Verified In Field By Contractor.

REGISTERED PROFESSIONAL ENGINEER
R. I. ROOK
3/1/96
PROVINCE OF ONTARIO

Designed by _____ chkd. _____ Approved by _____

NOTICE TO CONTRACTOR
48 HOURS PRIOR TO COMMENCING WORK NOTIFY THE FOLLOWING

THE REGIONAL MUNICIPALITY OF PEEL
CITY OF MISSISSAUGA WORKS DEPT.
CITY OF BRAMPTON WORKS DEPT.
TOWN OF CALEDON WORKS DEPT.
BELL TELEPHONE COMPANY
CONSUMERS GAS COMPANY
MINISTRY OF TRANSPORTATION
MINISTRY OF ENVIRONMENT
HYDRO ELECTRIC POWER COMM. OF ONTARIO
HYDRO ELECTRIC COMM. CITY OF MISSISSAUGA
HYDRO ELECTRIC COMM. CITY OF BRAMPTON
HYDRO ELECTRIC COMM. PORT CREDIT
HYDRO ELECTRIC COMM. STREETSVILLE
CABLE TELEVISION

McCORMICK RANKIN
CONSULTING ENGINEERS

Region of Peel
Department of Public Works

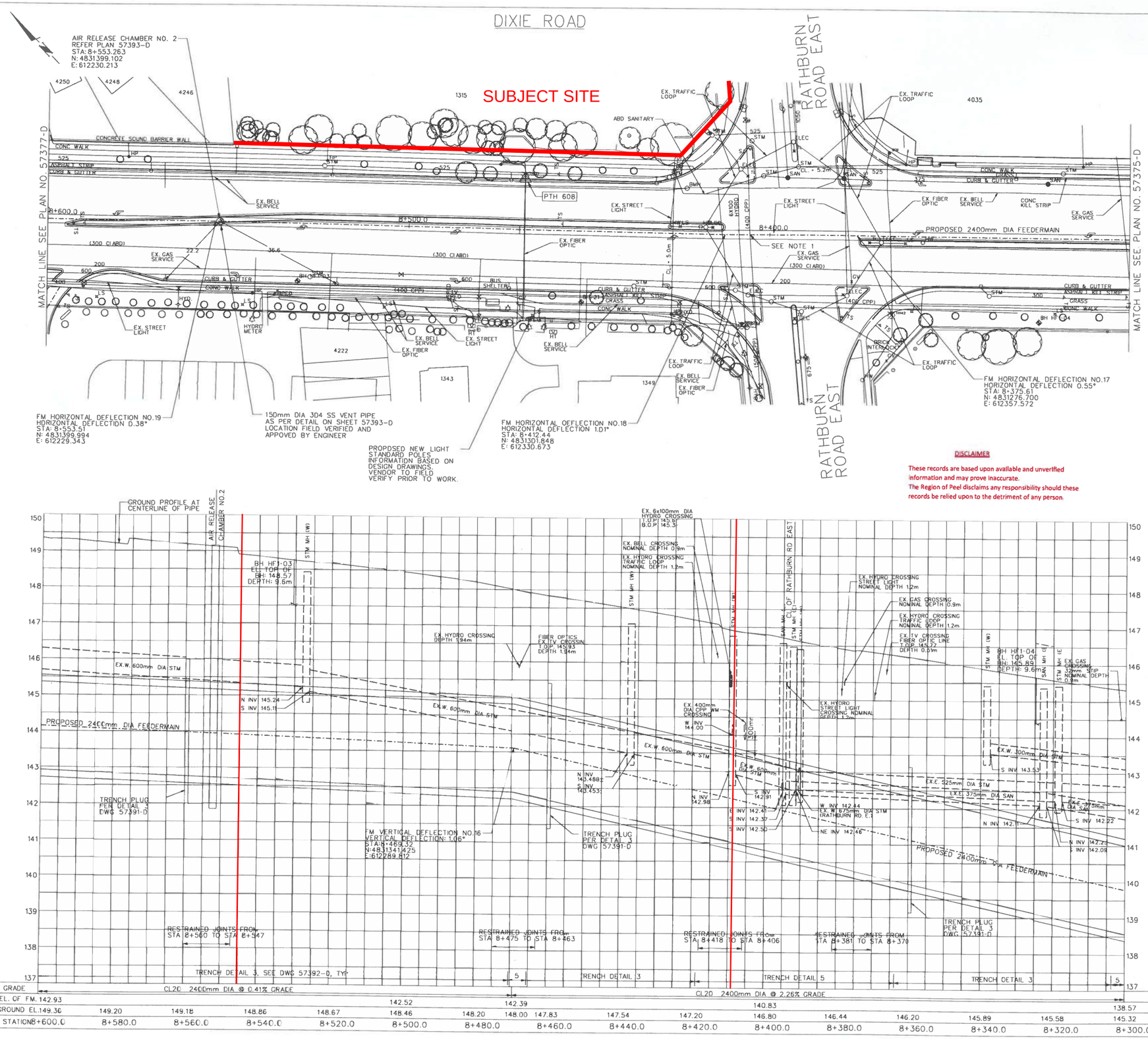
DIXIE ROAD
WINDING TRAIL TO EASTGATE PARKWAY

STORM SEWERS
Sta. 9+200 To Sta. 9+500

Lots	Area	Project No. 95-4050
Scale Hor. 1:500 Ver. 1:100	Drawn by G.H.B.	Checked by P. J. F.
Date AUG./93	Sheet 25 of 41	Plan No.

25400-D

DIXIE ROAD



PIPE GRADE	CL.20 2400mm DIA @ 0.41% GRADE							CL.20 2400mm DIA @ 2.26% GRADE								
INV. EL. OF FM. 142.93					142.52		142.39				140.83					138.57
EX. GROUND EL.149.36	149.20	149.18	148.86	148.67	148.46	148.20	148.00	147.83	147.54	147.20	146.80	146.44	146.20	145.89	145.58	145.32
PIPE STATION 8+600.0	8+580.0	8+560.0	8+540.0	8+520.0	8+500.0	8+480.0	8+460.0	8+440.0	8+420.0	8+400.0	8+380.0	8+360.0	8+340.0	8+320.0	8+300.0	

SERVICE DATA

SERVICE	DATE	INIT.	SERVICE	DATE	INIT.
SAN SEWERS			GAS MAINS		
STORM SEWERS			BELL U/G CABLE		
WATERMAINS			HYDRO U/G CABLE		
TRANSIT			HYDRO ONE		
PARKS & REC.			CTV		
ONT. CLEAN WATER			COMMUNIC. CABLES		

REVISIONS

DATE	DETAILS	INIT.
JUNE 14, 2016	AS RECORDED	J.C.

KEY PLAN (N.T.S.)

LEGEND

PTH XXX — TEST PIT

NOTE:

1. VENDOR TO PROVIDE AN ENGINEERED SUPPORT & PROTECTION SYSTEM FOR ALL PRESSURIZED CROSSING UTILITIES PRIOR TO START OF WORK. VENDOR MUST RESTRAIN ALL JOINTS INSIDE TRENCH AND 2 JOINTS OUTSIDE OF TRENCH ON BOTH DIRECTIONS.

DISCLAIMER

These records are based upon available and unverified information and may prove inaccurate.
The Region of Peel disclaims any responsibility should these records be relied upon to the detriment of any person.

THESE AS-BUILT DRAWINGS HAVE BEEN PREPARED BASED ON INFORMATION PROVIDED BY OTHERS. THE DESIGN PROFESSIONAL HAS NOT VERIFIED THE ACCURACY AND/OR THE COMPLETENESS OF THE INFORMATION AND SHALL NOT BE RESPONSIBLE FOR ANY ERRORS OR OMISSIONS WHICH MAY BE INCORPORATED HEREIN AS A RESULT.

10m 0 10 20 30m — HORIZONTAL SCALE
1m 0 1 2 3m — VERTICAL SCALE

halton water project
your water your future
building Peel's water capacity

Region of Peel
Working for you

CH2MHILL

DIXIE ROAD

FROM GOLDEN ORCHARD DRIVE TO EASTGATE PARKWAY

PROPOSED 2400mm CPP FEEDERMAIN

STA. 8+300 TO STA. 8+600

CAD Area	Area Z-19/20/26/27	Project No.	10-1205
Checked by T.M.	Drawn by A.G.		
Date AUG. 16, 2013	Sheet 17 of 234	Plan No.	57376-D

CONSTRUCTION LIMIT OF PAVEMENT, CURB & GUTTER, CONC. SIDEWALK, ISLANDS, CATCHBASINS, & STM. SEW. LATERALS, ONLY STA. 24+40 TO STA. 31+00

SUBJECT SITE

RATHBURN ROAD

DIXIE ROAD

BOUGH BEECHES BLVD.

LIMIT OF CONTRACT STA. 31+00

LIMIT OF CONTRACT STA. 24+40

REFER TO DETAIL A & B DWG. No. C-15922

STA. 31+86 PLUG & B.O.

CONNECT TO EXISTING LEAD

DITCH INLET 12" Ø LEAD

REPLACE C.B. GRATE WITH M.H. TOP

REMOVE EXIST. CURB - NORTH SIDE

5' C.S.W.

16" CONC. WM.

R' BY-PASS

ELEV. BOTTOM OF WM. 478.60

LIMIT OF CONTRACT - STA. 0+60

M.H. 6A

M.H. 7A

M.H. 8A

M.H. 8

SAN 15"

SAN 30"

STM. 48"

30" R

55'

BURN TO MATCH EXIST

14" B.V. & CH. No. 5

REFER TO C-16239

STA 30+20 16" B.V. & CH.

STA 28+50 HYD. V & B.

STA 27+40 DEFLECT PIPE 8Y JOINT DEFLECTION

STA 26+50 DEFLECT PIPE BY JOINT DEFLECTION

STA 24+80 8" V & B.

STA 23+50 HYD. V & B.

PLUG - INV. 470.04

80'-12"Ø CL.2400 A.C. SAN. SEW @ 0.4 %

LIMIT OF CONTRACT - STA. 0+69

ELEV. BOTTOM OF WM. 478.60

PLUG - INV. 470.38

75'-10"Ø CL.2400 A.C. SAN. SEW @ 0.5 %

BURN TO MATCH

STA 23+50 6" FL. OUTLET

REFER TO C-15917

PROJECT COMPLETE

DISCLAIMER

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V.C. DATA
L.V.C. 100'
P.V.I. STA. 30+00
P.V.I. ELEV. 480.34
E.V.C. STA. 30+50 ELEV 480.60
B.V.C. STA. 29+50 ELEV. 480.07

STA. 31+86 PLUG & B.O.

STA. 30+20 V.C. No 5 STD. DWG. S-9 & S-18

STA. 28+50 6" FL. OUTLET

STA. 24+80 8" FL. OUTLET

V.C. DATA
L.V.C. 100'
P.V.I. STA. 24+00
P.V.I. ELEV. 487.90
E.V.C. STA. 24+50 ELEV 487.60
B.V.C. STA. 23+50 ELEV 487.65

0.80 %

EXIST. GROUND PROFILE

FINAL ℄ ROAD GRADE

DIRECTION OF WM. LAYING

W.M. 16" TYPE 'A'

W.M. 8" TYPE 'A'

M.H.S.A. TYPE 'A'

W.M. 8" TYPE 'A'

EXIST. 20" CONC. WM.

EXIST. 16" CONC. WM.

ELEV. BOTTOM OF WM. 478.66

EXIST. 60" R.C.P.

24" STEEL EASEMENT PIPE FILLED WITH SAND OR GROUT AROUND PIPE ENDS OF LINER SEALED WITH BRICK

42" Ø CORR. STL. PIPE

FIRST 42" Ø STM. SEW.

EXIST. 60" R STM. SEW.

EXIST. 250'-48" Ø ST IV CONC.

EXIST. 550'-15" Ø CL. IV CONC. SAN. SEW @ 0.3 %

EXIST. 373'-15" Ø CL. IV CONC. SAN. SEW @ 0.3 %

	473.40		473.60		473.60		474.60		476.40		478.30		479.40		480.20		480.40	480.60 EL. BOTTOM OF WM.
		480.60		480.58		480.97		481.60		482.43		483.40		484.55		485.40		486.00		486.40		486.80		487.20		487.60		487.74		487.65		487.40 FINAL ℄ RD. GR.
	481.0		480.7		481.3		481.4		482.2		483.0		484.0		484.9		486.0		486.5		486.9		487.0		487.6	488.3		490.6		489.1		488.7 EXIST. ℄ RD. GR.
+00		+00		31+00		30+00		29+00		28+00		27+00		26+00		25+00		24+00		23+00 CHAINAGE

SERVICE DATA

SERVICE	DATE	INIT.	SERVICE	DATE	INIT.
SAN. SEWERS	SEPT. 21/78	T.J.	GAS MAINS	SEPT. 21/78	T.J.
STORM SEWERS	SEPT. 21/78	T.J.	BELL U/G CABLE	JUNE 10/81	DLN
WATERMAINS	NOV. 27/78	T.J.	HYDRO U/G CABLE	SEPT 21/78	T.J.
			ALL SERVICES	MAY /81	JB.

REVISIONS

DATE	DETAILS	INIT.
SEPT. 21/78	PROP. ROAD, STM. SEW. & SIDEWALK	T.J.
OCT. 5/78	RADIUS ALTERATION AT DIXIE RD.	T.J.
NOV. 27/78	PROP. WATERMAIN	T.J.
DEC. 4/78	PROP. SAN. SEW.	T.J.
MAY 13/81	WATERMAIN & SAN. SEW. PN 78-076 "AS CONST'D"	JB.
MAY 13/81	PROP. PAV'T, CURB, ISL., C.S.W., CB, & CB. LEADS	JB.

NOTE

1) SHADED AREA TO HAVE OVERLAY OF 1 1/2" HL.3 WITH HL.6 PADDING AS REQUIRED
2) ALL WORKS ON DIXIE ROAD TO BE DONE TO REGION OF PEEL SPECIFICATIONS AND REQUIREMENTS
3) THE ELEVATION OF THE EXISTING 14" WM. TO BE VERIFIED BY THE CONTRACTOR IN FIELD BY TEST HOLE PRIOR TO COMMENCING THE WM. CONSTRUCTION AND AOJUST THE PROPOSED WM. TO AVOID POSSIBLE CONFLICTION.

GENERAL NOTES

- ALL DRIVEWAYS ASPHALT UNLESS OTHERWISE NOTED.
- ALL SERVICE LOCATIONS ARE APPROXIMATE AND MUST BE LOCATED ACCURATELY IN FIELD.
- ● DENOTES BUILDING — NOT LOCATED.
- ■ DENOTES BUILDING LOCATED.
- T.T.B.M. No. ELEV.
- TEMP. BENCH MARK ELEV. DESCRIPTION.

D. Marchese CHKD.

H.E. Swiddle / D. Burt Donald APPROVED BY

CITY OF MISSISSAUGA
ENGINEERING DEPARTMENT

RATHBURN ROAD
DIXIE RD. TO BOUGH BEECHES BLVD.
STN. 23+00 TO STN. 31+00

SCALE	HOR 1"=40' VERT. 1"=4'	AREA Z-26	PROJECT NO. 78-076
DRAWN BY T.J.		CHECKED BY	PLAN NO. C-15918
DATE SEPT. 5, 1978		SHEET OF	

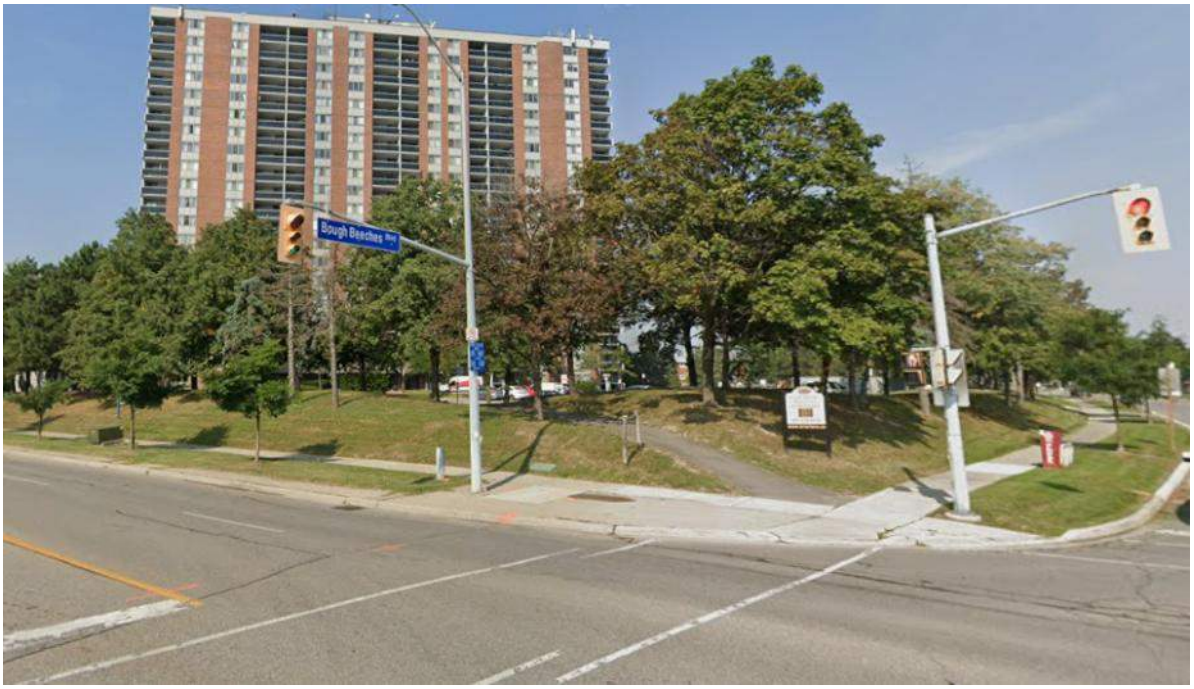
C 916

Subsurface Utility Investigation Report

Prepared for:

STANFORD

DESTINATION HOME



SUBSURFACE UTILITY ENGINEERING (SUE) LEVEL A SURVEY

1315 BOUGH BEECHES BLVD

MISSISSAUGA, ONTARIO

PLANVIEW PROJECT #25-3-0138

January 29, 2026

PLANVIEW
Utility Services Ltd.

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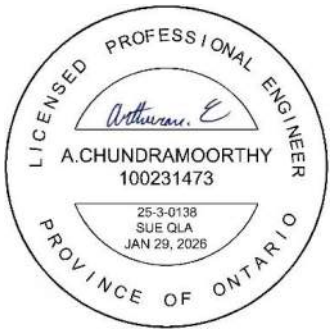


Report Version information

Ver.	Date	Prepared by	Approved by	Description
1	01/29/2026	A.Chundramoorthy	A.Chundramoorthy	ISSUANCE

1 Project Details

1.1 Scope of Work

The request was Quality Level A Test Pit Investigation at **19** locations at 1315 Bough Beeches Blvd in the City of Mississauga, Ontario:



The field work was completed from January 12 to January 21, 2026. A total of **19** test pits were excavated.

A CCTV survey was also done in order to collect the depth measurements of the pipes at the apartment on 1315 Bough Beeches Blvd, per client request. NASSCO & PACP

inspection was not required in this instance. CCTV was only required for location and depth purposes.

1.2 Project Background

Planview Utility Services (Planview) was retained by Stanford Destination Home to provide a Subsurface Utility Investigation in the City of Mississauga, Ontario.

1.3 Investigation Procedures

The following summarizes the procedures used by Planview to complete the utility investigation:

Step 1

The original site plan provided by Stanford Destination Home was used to complete geophysical locates. Locate documentation is available at the Planview office.

Step 2

Once the utility locates were completed, the test pit locations were reviewed to ensure the pits were at correct locations. The test pit locations were selected based on the potential impact on the existing subsurface utilities within the area of the proposed construction.

Step 3

Upon receipt of all of the required permits, the daylighting excavation process began to determine the vertical and horizontal positions of the desired underground utilities. Once the utilities were exposed, the vertical and horizontal locations were recorded using a Real-Time Kinematic (RTK) Global Positioning System (GPS) and Total Station survey instruments. This information has been included in the plans in Appendix B and the CAD, files delivered as part of the project deliverables. Some of the existing utilities were not found at the exact locations indicated on the markups, but instead in near proximity.

1.4 SUE Methodology and Applied Technology

The utility investigating and documenting methodology and Utility Quality Levels are explained and excerpted from CSA 250 (Mapping of underground utility Infrastructure) and ASCE/UESI/CI 38-22 (Standard Guideline for Investigating and Documenting Existing Utilities), which are the standards that Planview USL follows.

SUE Quality Level D

Utility Quality Level D (QLD) information is determined primarily from the review and documentation of existing second party information, such as Utility records, historical project records, permits, verbal accounts, existence of service, visual indicators, and/or One-Call markings, put into context with any other information the Professional has in their possession during a Utility Investigation.

SUE Quality Level C

Quality Level C data are determined by correlating underground Utility Segments from existing second-party information to observable and measurable visible Utility Features. It refers to the unobservable portion of the Utility Feature or Utility Segment that connects to visible, typically aboveground or within an accessible vault, surveyed Utility Features.

Quality Level C information confirms the existence, general location, Attributes, and, where applicable, direction of subsurface Utility assets that can at least be partially viewed or inferred without excavation. For example, a sewer that leaves or enters a manhole can be confirmed to exist and travel in the direction indicated by their records by opening the manhole and visually confirming the presence and direction of the pipe and the point at which the Utility Segment is anchored to the Utility Feature. Professional judgment is required to apply field observations to Utility record information to call it QLC.

SUE Quality Level B

Quality Level B data are determined by correlating appropriate geophysical interpretations indicating a Utility Segment or Utility Feature with other pertinent information in hand to determine the best positional Documentation for the Utility Segment. The Documentation of the Utility Segment depends on the geophysical equipment used for the investigation, interpretation of the geophysics, the horizontal interpreted position, and reduction of the resulting data into the Deliverable. Each of these factors involves a different source of positional error and compounds the overall positional error.

The horizontal accuracy of the surveyed position (either the location of the instrument or a mark on the ground for later survey) shall be 0.2 ft (60 mm) or better to reduce the survey aspect of the compounding error.

SUE Quality Level A

Quality Level A builds on QLB information by confirming the existence, exact location, and other Attributes of subsurface utilities through exposure of the Utility using safe excavating practices. QLA data are determined by physically exposing an unobservable Utility Feature or Utility Segment (essentially making it observable) and documenting its spatial extent and characteristics with a high degree of accuracy. Conventional accuracies shall be 0.1 ft (30 mm) vertical and to 0.2 ft (60 mm) horizontal for the measurements of the outside limits of the Utility Feature or Utility Segment that is exposed.

2 Test Pit Survey Methodology

2.1 Methodology of Test Pit investigation based on Level D information

Utility Designator will connect to an available above ground utility features and obtain readable tone/signal at the requested Test Pit location. The excavation will be completed to the anticipated standard utility depth; the investigation limits are extended perpendicularly on each side.

Possible reasons of unsuccessful Level D investigations:

- Joint-use of infrastructure with another utility.
- Utilities are abandoned, not in use or removed.
- Unusable or inaccurate records provided by the utility owners.

2.2 Methodology of Test Pit investigation based on Level C information

The Investigation would be performed at the requested test pit location and adjusted by available manhole information obtained at the time of the investigation. The excavation will be completed to the anticipated standard utility depth; the investigation limits are extended perpendicularly on each side.

2.3 Methodology of Test Pit investigation based on Level B information

Utility Designator will connect to an available above ground utility feature and obtain readable tone/signal at the requested Test Pit location. The excavation will be completed to the anticipated standard utility depth; the investigation limits are extended perpendicularly on each side.

Possible reasons of unsuccessful Level B investigations:

Signal interference caused by existing or old/abandoned utilities in the ground can cause inaccurate/incorrect locator device readings.

3 Test Pit Data (Level A)

3.1 Test Pit #1A



Test Pit #	Point #	Utility	Northing	Easting	Utility Elevation	Surface Elevation	Depth (m)	Diameter (mm)	Size W x H (m x m)	Direction	Ground Type	Comments
1A	100013	Footing	4831489.802	612387.900	149.294	149.849	0.555	-	-	-	Soft	Top of Garage Roof. The coordinates are for the vertical limit of investigation.

3.2 Test Pit #2A



N

Test Pit #	Point #	Utility	Northing	Easting	Utility Elevation	Surface Elevation	Depth (m)	Diameter (mm)	Size W x H (m x m)	Direction	Ground Type	Comments
2A	100015	Footing	4831473.973	612389.953	149.203	149.640	0.437	-	-	-	Soft	Top of Garage Roof. The coordinates are for the vertical limit of investigation.

3.3 Test Pit #3A



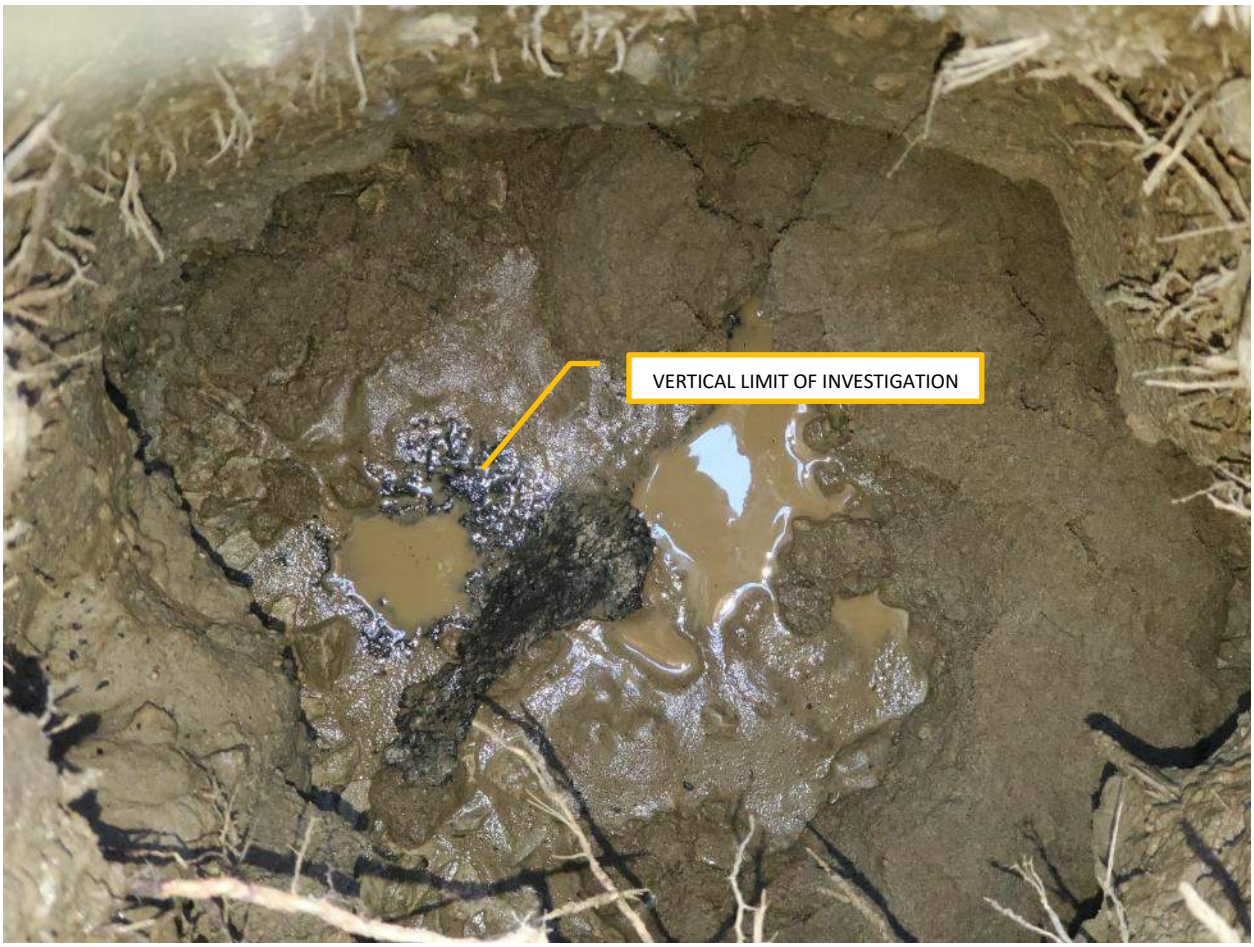
Test Pit #	Point #	Utility	Northing	Easting	Utility Elevation	Surface Elevation	Depth (m)	Diameter (mm)	Size W x H (m x m)	Direction	Ground Type	Comments
3A	100017	Footing	4831486.084	612358.486	149.148	149.582	0.434	-	-	-	Soft	Top of Garage Roof. The coordinates are for the vertical limit of investigation.

3.4 Test Pit #4A



Test Pit #	Point #	Utility	Northing	Easting	Utility Elevation	Surface Elevation	Depth (m)	Diameter (mm)	Size W x H (m x m)	Direction	Ground Type	Comments
4A	100019	Footing	4831472.796	612367.901	149.398	149.987	0.589	-	-	-	Soft	Top of Garage Roof. The coordinates are for the vertical limit of investigation.

3.5 Test Pit #5A



Test Pit #	Point #	Utility	Northing	Easting	Utility Elevation	Surface Elevation	Depth (m)	Diameter (mm)	Size W x H (m x m)	Direction	Ground Type	Comments
5A	100021	Footing	4831464.554	612384.002	149.223	149.732	0.509	-	-	-	Soft	Top of Garage Roof. The coordinates are for the vertical limit of investigation.

3.6 Test Pit #6A



Test Pit #	Point #	Utility	Northing	Easting	Utility Elevation	Surface Elevation	Depth (m)	Diameter (mm)	Size W x H (m x m)	Direction	Ground Type	Comments
6A	100024	Footing	4831445.146	612373.302	149.364	149.901	0.537	-	-	-	Soft	Top of Garage Roof. The coordinates are for the vertical limit of investigation.

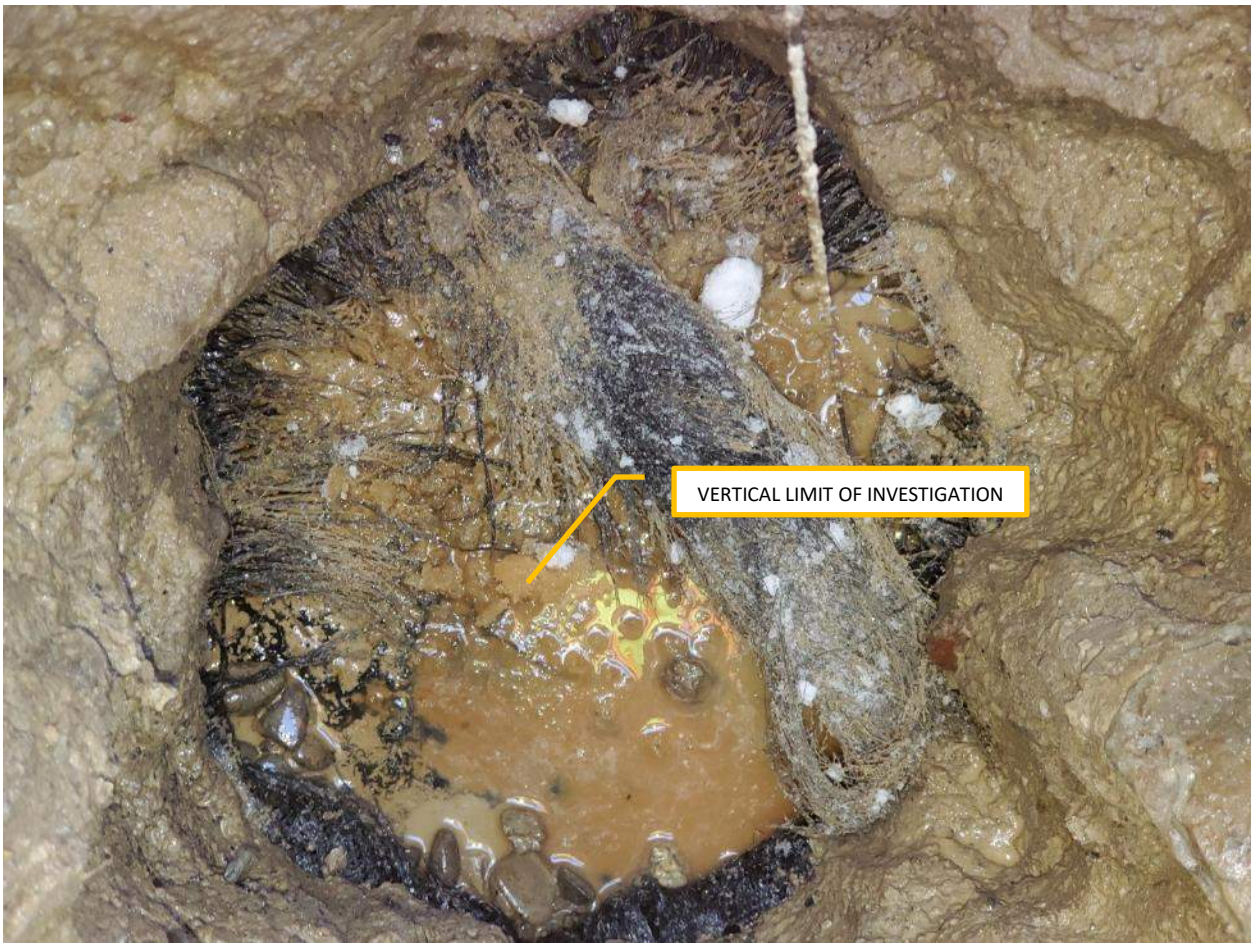
3.7 Test Pit #7A



N

Test Pit #	Point #	Utility	Northing	Easting	Utility Elevation	Surface Elevation	Depth (m)	Diameter (mm)	Size W x H (m x m)	Direction	Ground Type	Comments
7A	100026	Footing	4831413.364	612384.644	149.354	149.987	0.633	-	-	-	Soft	Top of Garage Roof. The coordinates are for the vertical limit of investigation.

3.8 Test Pit #8A



Test Pit #	Point #	Utility	Northing	Easting	Utility Elevation	Surface Elevation	Depth (m)	Diameter (mm)	Size W x H (m x m)	Direction	Ground Type	Comments
8A	100028	Footing	4831403.618	612386.955	149.263	149.849	0.586	-	-	-	Soft	Top of Garage Roof. The coordinates are for the vertical limit of investigation.

3.9 Test Pit #9A



N

Test Pit #	Point #	Utility	Northing	Easting	Utility Elevation	Surface Elevation	Depth (m)	Diameter (mm)	Size W x H (m x m)	Direction	Ground Type	Comments
9A	100030	Footing	4831409.207	612403.500	149.076	150.086	1.010	-	-	-	Soft	Top of Garage Roof. The coordinates are for the vertical limit of investigation.

3.10 Test Pit #10A



Test Pit #	Point #	Utility	Northing	Easting	Utility Elevation	Surface Elevation	Depth (m)	Diameter (mm)	Size W x H (m x m)	Direction	Ground Type	Comments
10A	100032	Footing	4831437.945	612400.118	149.140	149.630	0.490	-	-	-	Soft	Top of Garage Roof. The coordinates are for the vertical limit of investigation.

3.11 Test Pit #11A



Test Pit #	Point #	Utility	Northing	Easting	Utility Elevation	Surface Elevation	Depth (m)	Diameter (mm)	Size W x H (m x m)	Direction	Ground Type	Comments
11A	100038	Footing	4831430.531	612392.029	149.150	149.770	0.620	-	-	-	Soft	Top of Garage Roof. The coordinates are for the vertical limit of investigation.

3.12 Test Pit #12



Test Pit #	Point #	Utility	Northing	Easting	Utility Elevation	Surface Elevation	Depth (m)	Diameter (mm)	Size W x H (m x m)	Direction	Ground Type	Comments
12	100039	Hydro	4831505.782	612402.319	147.865	148.849	0.984	15	-	SE-NW	Soft	Group of two black Hydro Primary direct buried cables. The coordinates are for the north 15mm cable.
12	100040	Hydro	4831505.650	612402.239	147.841	148.849	1.008	15	-	SE-NW	Soft	Group of two black Hydro Primary direct buried cables. The coordinates are for the south 15mm cable.
12	100041	Hydro	4831505.685	612402.238	148.029	148.849	0.820	100	-	SE-NW	Soft	Single 100mm black PVC hydro duct.



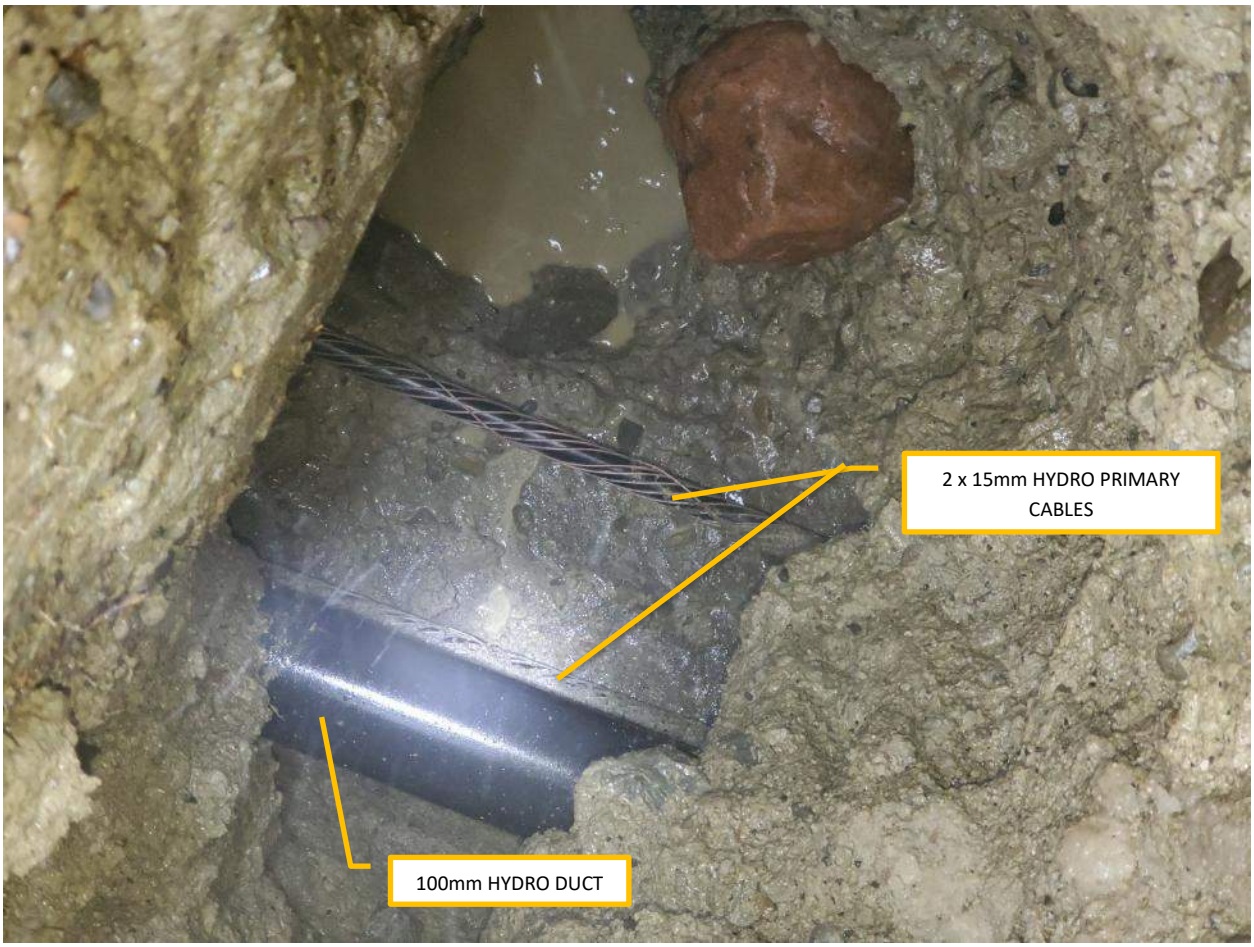
Test Pit #	Point #	Utility	Northing	Easting	Utility Elevation	Surface Elevation	Depth (m)	Diameter (mm)	Size W x H (m x m)	Direction	Ground Type	Comments
12	100043	DNF	4831506.185	612402.667	147.382	148.849	1.467	-	-	-	Soft	Did not find Bell utility. The coordinates are for the vertical limit of investigation.

3.13 Test Pit #13



Test Pit #	Point #	Utility	Northing	Easting	Utility Elevation	Surface Elevation	Depth (m)	Diameter (mm)	Size W x H (m x m)	Direction	Ground Type	Comments
13	100045	Gasmain	4831503.945	612401.430	148.136	148.903	0.767	50	-	SE-NW	Soft	Single 50mm orange PVC Gasmain.

3.14 Test Pit #14



Test Pit #	Point #	Utility	Northing	Easting	Utility Elevation	Surface Elevation	Depth (m)	Diameter (mm)	Size W x H (m x m)	Direction	Ground Type	Comments
14	100047	Hydro	4831490.423	612422.813	147.583	148.735	1.152	15	-	SE-NW	Soft	Group of two black Hydro Primary direct buried cables. The coordinates are for the north 15mm cable.
14	100048	Hydro	4831490.233	612422.763	147.596	148.735	1.139	15	-	SE-NW	Soft	Group of two black Hydro Primary direct buried cables. The coordinates are for the south 15mm cable.
14	100049	Hydro	4831490.327	612422.813	147.776	148.735	0.959	100	-	SE-NW	Soft	Single 100mm black PVC Hydro duct.



Test Pit #	Point #	Utility	Northing	Easting	Utility Elevation	Surface Elevation	Depth (m)	Diameter (mm)	Size W x H (m x m)	Direction	Ground Type	Comments
14	100050	DNF	4831491.006	612423.360	147.210	148.735	1.525	-	-	-	Soft	Did not find Bell utility. The coordinates are for the vertical limit of investigation.

3.15 Test Pit #15



Test Pit #	Point #	Utility	Northing	Easting	Utility Elevation	Surface Elevation	Depth (m)	Diameter (mm)	Size W x H (m x m)	Direction	Ground Type	Comments
15	100052	Gasmain	4831488.909	612421.366	147.900	148.774	0.874	50	-	SE-NW	Soft	Single 50mm orange PVC Gasmain.

3.16 Test Pit #16

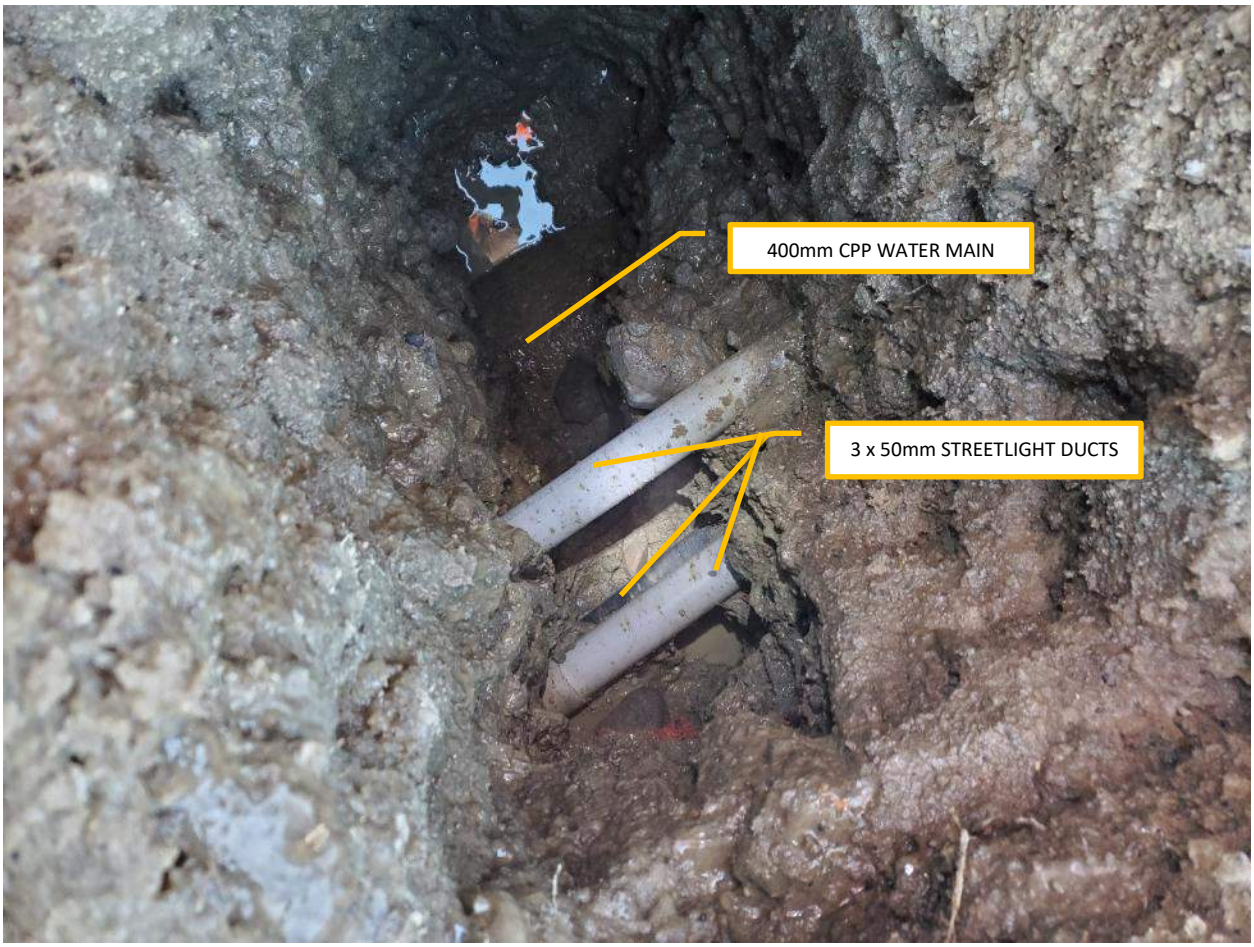


Test Pit #	Point #	Utility	Northing	Easting	Utility Elevation	Surface Elevation	Depth (m)	Diameter (mm)	Size W x H (m x m)	Direction	Ground Type	Comments
16	100001	Rogers	4831437.638	612445.238	147.810	148.527	0.717	25	-	NE-SW	Soft	Single 25mm black PVC Rogers duct.
16	100002	Hydro	4831437.648	612445.259	147.497	148.527	1.030	25	-	NE-SW	Soft	Group of four direct buried hydro primary cables. The coordinates are for the west 25mm duct.
16	100003	Hydro	4831437.520	612445.290	147.486	148.527	1.041	25	-	NE-SW	Soft	Group of four direct buried hydro primary cables. The coordinates are for the east 25mm cable.
16	3000	Hydro	4831437.408	612445.132	147.526	148.527	1.001	25	-	NE-SW	Soft	Group of four direct buried hydro primary cables. The coordinates are for the centre 25mm cable.
16	100004	Hydro	4831437.488	612445.399	147.477	148.527	1.050	10	-	NE-SW	Soft	Group of three 10mm black secondary hydro wires.



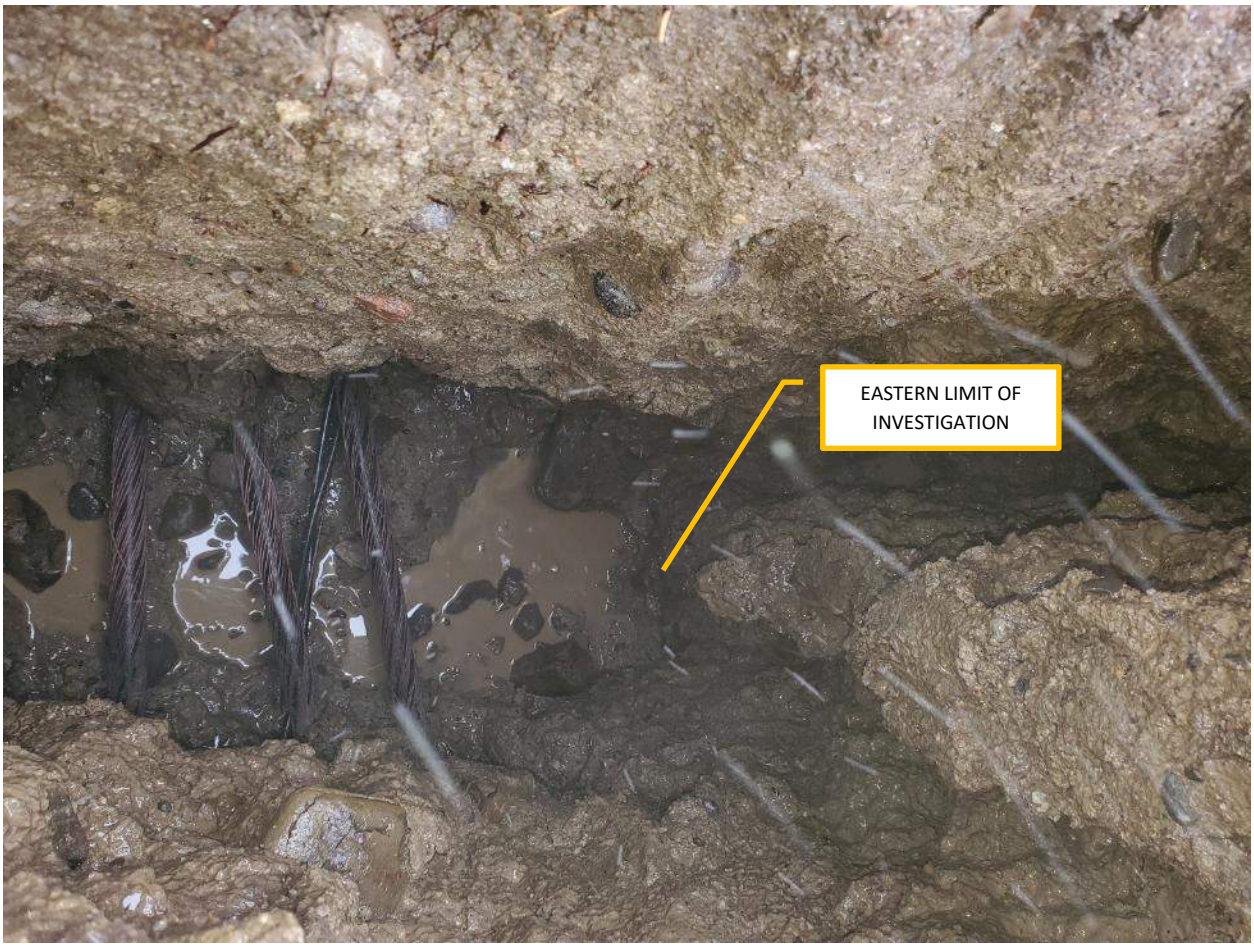
Test Pit #	Point #	Utility	Northing	Easting	Utility Elevation	Surface Elevation	Depth (m)	Diameter (mm)	Size W x H (m x m)	Direction	Ground Type	Comments
16	100006	Hydro	4831437.253	612445.758	147.940	148.527	0.587	50	-	NE-SW	Soft	Single 50mm white PVC Hydro duct.

3.17 Test Pit #17



Test Pit #	Point #	Utility	Northing	Easting	Utility Elevation	Surface Elevation	Depth (m)	Diameter (mm)	Size W x H (m x m)	Direction	Ground Type	Comments
17	100008	Watermain	4831436.148	612447.254	146.648	148.525	1.877	400	-	NE-SW	Soft	Single 400mm CPP Watermain.
17	100009	Streetlight	4831436.243	612447.166	147.794	148.525	0.731	50	-	NE-SW	Soft	Group of two grey and one black 50mm PVC streetlight ducts. The coordinates are for the west duct.
17	100010	Streetlight	4831436.066	612447.309	147.793	148.525	0.732	50	-	NE-SW	Soft	Group of two grey and one black 50mm PVC streetlight ducts. The coordinates are for the east duct.
17	100011	Streetlight	4831436.154	612447.395	147.605	148.525	0.920	50	-	NE-SW	Soft	Group of two grey and one black 50mm PVC streetlight ducts. The coordinates are for the bottom duct.

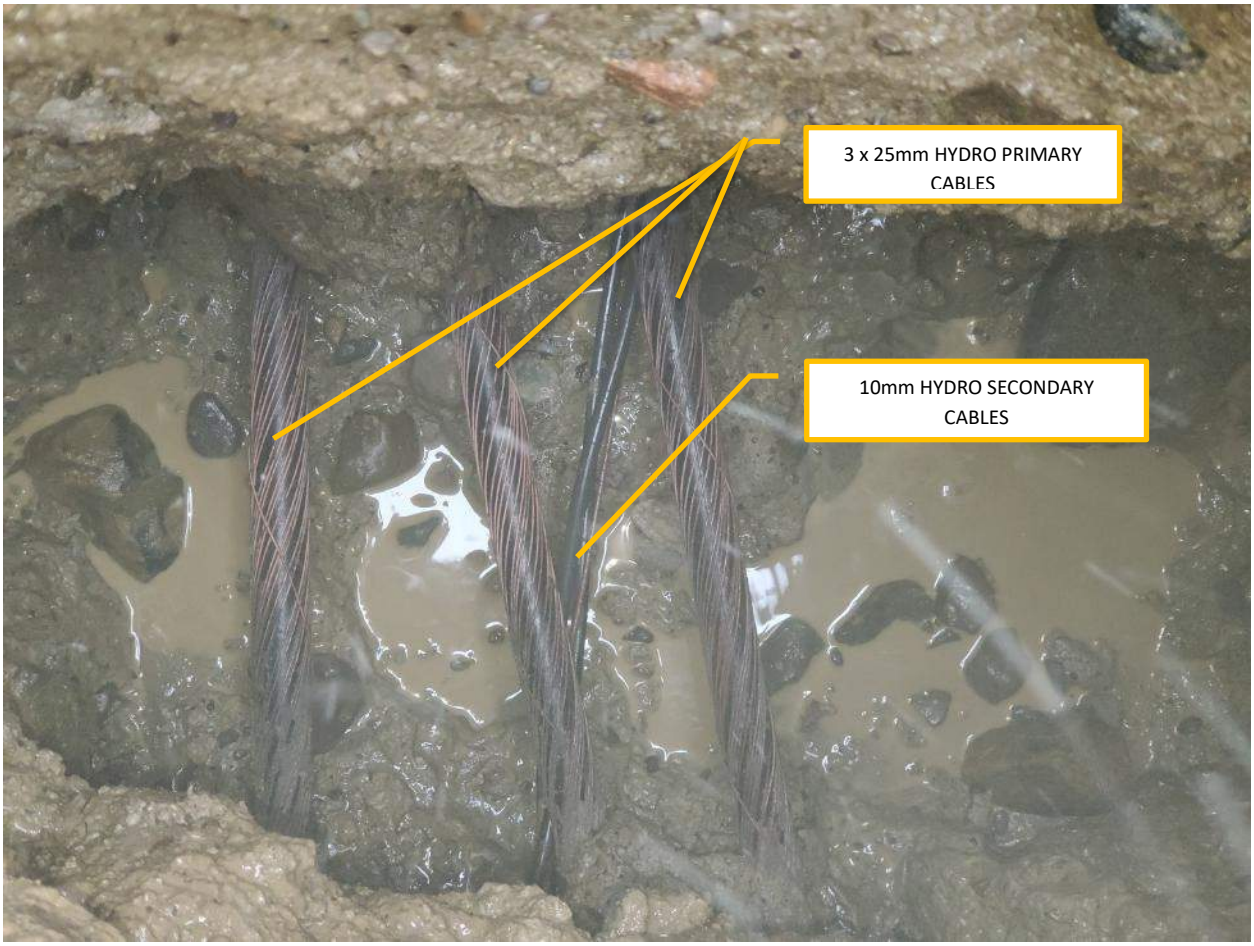
3.18 Test Pit #18



Test Pit #	Point #	Utility	Northing	Easting	Utility Elevation	Surface Elevation	Depth (m)	Diameter (mm)	Size W x H (m x m)	Direction	Ground Type	Comments
18	100057	DNF	4831406.601	612421.516	146.555	148.056	1.501	-	-	-	Soft	Did not find Rogers utility. The coordinates are for the eastern limit of investigation.

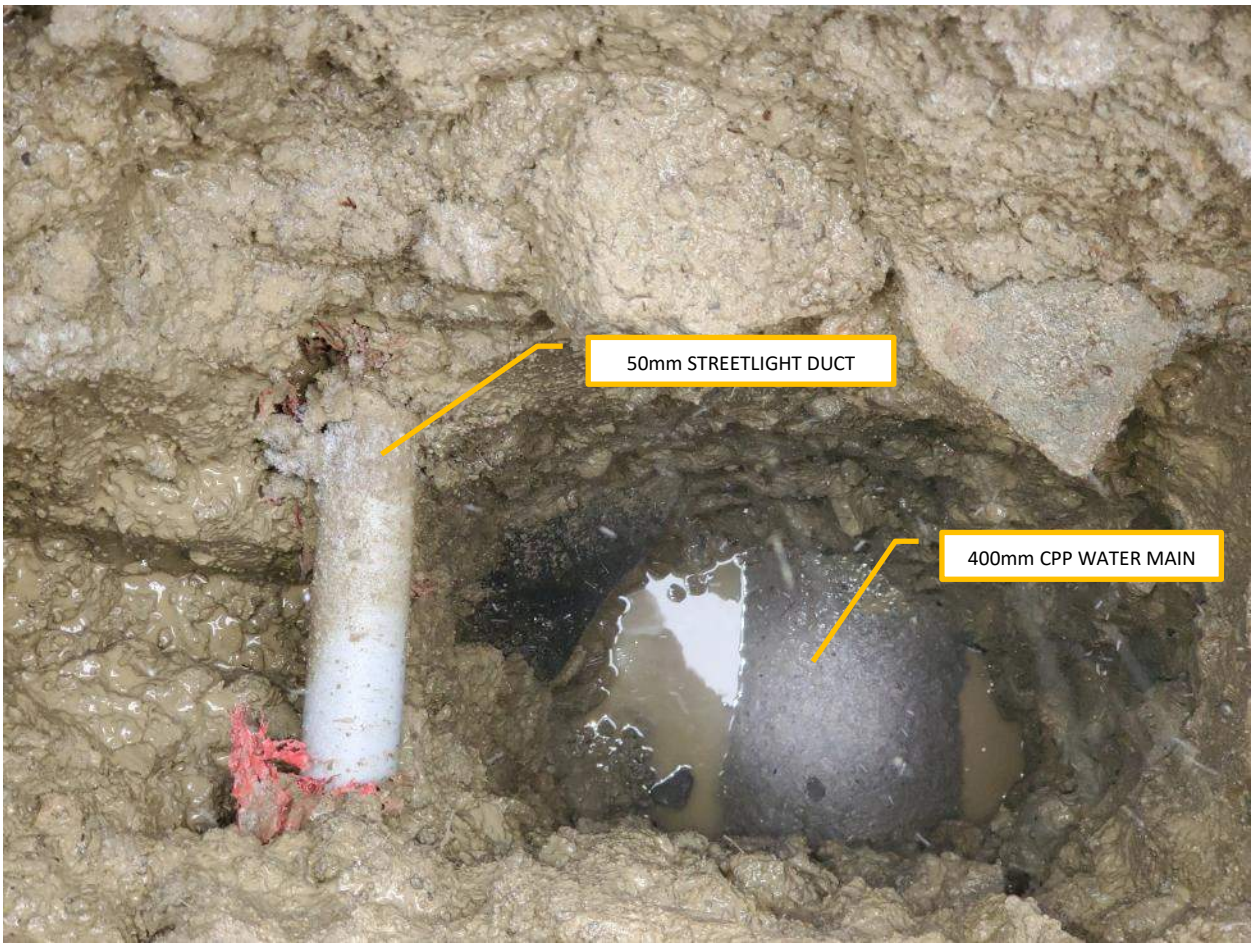


Test Pit #	Point #	Utility	Northing	Easting	Utility Elevation	Surface Elevation	Depth (m)	Diameter (mm)	Size W x H (m x m)	Direction	Ground Type	Comments
18	100058	DNF	4831407.266	612420.805	146.575	148.056	1.481	-	-	-	Soft	Did not find Rogers utility. The coordinates are for the western limit of investigation.



Test Pit #	Point #	Utility	Northing	Easting	Utility Elevation	Surface Elevation	Depth (m)	Diameter (mm)	Size W x H (m x m)	Direction	Ground Type	Comments
18	100059	Hydro	4831406.868	612421.283	146.852	148.056	1.204	25	-	N-S	Soft	Group of three direct buried hydro primary cables. The coordinates are for the east 25mm cable.
18	100060	Hydro	4831407.001	612421.212	146.852	148.056	1.204	25	-	N-S	Soft	Group of three direct buried hydro primary cables. The coordinates are for the centre 25mm cable.
18	100061	Hydro	4831407.069	612421.108	146.863	148.056	1.193	25	-	N-S	Soft	Group of three direct buried hydro primary cables. The coordinates are for the west 25mm cable.
18	100062	Hydro	4831406.944	612421.259	146.816	148.056	1.240	10	-	N-S	Soft	Group of two 10mm black hydro secondary wires.

3.19 Test Pit #19



Test Pit #	Point #	Utility	Northing	Easting	Utility Elevation	Surface Elevation	Depth (m)	Diameter (mm)	Size W x H (m x m)	Direction	Ground Type	Comments
19	100054	Watermain	4831405.688	612422.873	146.216	148.015	1.799	400	-	N-S	Soft	Single 400mm CPP Watermain.
19	100055	Streetlight	4831405.896	612422.532	147.323	148.015	0.692	50	-	N-S	Soft	Single 50mm white PVC Streetlight duct.

4 FIELD ASSESSMENT

4.1 Site Photos





















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4.2 Field Conditions

None.

4.3 Test Pits: Cancelled / Not Performed

None.

4.4 Utilities Not Found

Test Pit# 12 Did not find Bell utility.

Test Pit# 14 Did not find Bell utility.

Test Pit# 18 Did not find Rogers utility.

4.5 Special Notes

None.

5 Clarification Notes

- An Excel spreadsheet and a set of test pit drawings have been provided as part of the project deliverables. The hyperlinks in the spreadsheet allow the user to view high-quality pictures and/or Test Pit Diagrams/Profiles of each test pit should a more detailed examination be required.

- All pipe/utility materials are solely based on observations in the field and utility records. All utility materials must be confirmed by the specific utility company.

- Concrete encased structures are identified using a combination of as-built records, locate documentation and professional judgement, if applicable. Due to the nature of these structures, it is difficult to know exactly what is inside and the data given for these structures shall be utilized accordingly.

- All coordinates are based on and adjusted to match the drawing provided by Stanford Destination Home.

6 CCTV Inspection

6.1 CCTV Methodology and Applied Technology

Closed Circuit Television (CCTV) is a technology used to investigate sewer mains and building service laterals. The CCTV unit has a transmitter that sends images and data back to a monitor so the inspector can identify the condition of the utility / drain lines. The camera transmitter head has a built-in locating sonde to enable above ground tracing for line and depth when required. The condition information is recorded and later used to generate a report based on the findings produced.

For lateral inspection, the focus is to check for blockages or cross boring. The inspection can be performed without intrusion via entering the sewer from the mainline, advancing up the mainline, and then launching the camera head up into the lateral. This process and the equipment used allows for superior efficiency and quality.
Since CCTV cameras are non-invasive, they are highly cost-effective. They can even be used for preventive maintenance so that minor issues can be identified before they turn into major problems.

Prior to CCTV inspection process, flushing of the pipes is accomplished. Flushing task includes pushing high pressure/volume water into the pipe's upstream end and then vacuuming debris from pipe's downstream end into a flusher unit and disposing the material at a MOE approved disposal facility.

The defects found in the pipe have a specific code used to identify them. Each defect is assigned a number score denoting the severity of the defect. Levels 1-5 with level 5 defects being the worst. As we inspect and code the defects, the inspection program creates a survey for each pipe segment. The program then compiles all the codes with scores and produces an overall Pipe Score for that segment of sewer. The program uses a simplified 4-digit Quick rating system to assign a Risk Score to the segment.

Common issues that occurred during the CCTV inspection and Flushing are as following:

a) Excess levels of debris causing blockage of CCTV equipment. More cleaning may be required to clear the pipe to drive our camera tractor through. The presence of Hardened debris, roots or calcium deposits (calcite) may require mechanical sewer cleaning to remove.

b) High water level/surcharges may make it impossible for our camera equipment to identify defects in the pipe segment.
c) Dense steam or fog reduces visibility.
d) Construction Type/ Lay out of the Manholes and Sewer Pipe Segments may make it difficult or impossible to drive the wheeled camera tractor through the pipe or even position it in the MH Chambers.

Our CCTV inspection process is certified by NASSCO (National Association of Sewer Service Companies) and PACP (Pipeline Assessment Certification Program).

With the combination of experienced PACP-trained operators following PACP procedures and high-quality sewer inspection equipment used, precise CCTV inspection results are achieved.

For the investigation on 1315 Bough Beeches Blvd, NASSCO & PACP inspection was not required. CCTV was only required for pipe location and depth purposes.

6.2 Pipe Depth Measurement Summary

The drawing file showing the CCTV investigation results of the pipe depth measurements at the apartment on 1315 Bough Beeches Blvd can be found attached.

7 Quality Control and Assurance

Our process has a series of Quality control check points throughout the project duration. Our design process has inherent quality audit characteristics. The highlights of the process are as follows:

- The Level D-C utility owner data was overlaid on the design plan to assist in designating and searching for conflicts in record data
- A final data review is completed using the utility data provided by the owners to ensure that all features identified have been collected
- A CAD quality audit is completed to ensure layering standards and symbol standards meet the project specifications.

8 Locate Data

The utilities were located in advance of the test pit activities. The locate data should not be interpreted as comprehensive utility information for the area of interest as the data is only shown in the localized test pit area.

The linework between the collected data points was determined by interpolation. All data have limitations in terms of positional accuracy and so the data should be utilized accordingly.

Where test pit findings provided more accurate locations for utilities, the locate data gathered using utility locating devices were adjusted to align with more precise test pit information.

9 Statement of Limitations

This Report contains Information, including but not limited to, drawings, field observations and data that represent professional judgement. The information may be based upon facts that have been provided to Planview by third party organizations. The Information has not been independently verified.

10 Conclusion

The Quality Level A Subsurface Utility Engineering Investigation located at 1315 Bough Beeches Blvd in Mississauga has been summarized within this document. A total of **19** test pits were excavated.

The Level A investigation took place from January 12, 2026 to January 21, 2026. Bell utilities could not be found in Test Pit #12 and #14 at the time of the investigation. Similarly, Rogers utilities could not be found in Test Pit #18.

The CCTV survey to summarize the depth measurements of the pipes at the apartment on 1315 Bough Beeches Blvd, was also completed and can be found attached.

Appendix A Test Pit Matrix

PLANVIEW Utility Services Ltd.

Test Pit Matrix
1315 Bough Beeches Blvd, Mississauga, Ontario

September 18, 2025 and January 20-21, 2026

				Utility Coordinates			Natural Ground Coordinates									
Test Pit #	Point #	Code	Utility	Northing	Easting	Elevation	Point #	Northing	Easting	Elevation	Depth (m)	Diameter (mm)	Size W x H (m x m)	Direction	Ground Type	Comments
1	1000	HYD 1	Hydro	4831481.880	612433.093	147.497	1003	4831481.783	612433.007	148.561	1.064	30	-	E-W	Soft	Single 30mm black plastic hydro cable. The coordinates are for the top of the cable.
2	1001	BELL 2	Bell	4831481.906	612432.900	147.759	1003	4831481.783	612433.007	148.561	0.802	100	-	E-W	Soft	Single 100mm black plastic bell duct. The coordinates are for the top of the duct.
2	1002	HYD 2	Hydro	4831481.847	612432.870	147.542	1003	4831481.783	612433.007	148.561	1.019	30	-	E-W	Soft	Single 30mm black plastic hydro cable. The coordinates are for the top of the cable.
3	1004	HYD 3	Hydro	4831464.116	612452.740	147.306	1012	4831463.648	612452.291	148.444	1.138	50	-	NW-SE	Soft	Single 50mm black plastic hydro cable. The coordinates are for the top of the cable.
3	1005	HYD 3	Hydro	4831464.028	612452.609	147.336	1012	4831463.648	612452.291	148.444	1.108	50	-	NW-SE	Soft	Single 50mm black plastic hydro cable. The coordinates are for the top of the cable.
3	1006	HYD 3	Hydro	4831463.984	612452.572	147.346	1012	4831463.648	612452.291	148.444	1.098	50	-	NW-SE	Soft	Single 50mm black plastic hydro cable. The coordinates are for the top of the cable.
3	1007	HYD 3	Hydro	4831463.841	612452.602	147.386	1012	4831463.648	612452.291	148.444	1.058	30	-	NW-SE	Soft	Single 30mm black plastic hydro cable. The coordinates are for the top of the cable.
4	1008	BELL 4	Bell	4831463.920	612452.560	147.551	1012	4831463.648	612452.291	148.444	0.893	30	-	E-W	Soft	Single 30mm black plastic Bell cable. The coordinates are for the top of the cable.
4	1009	BELL 4	Bell	4831463.822	612452.467	147.513	1012	4831463.648	612452.291	148.444	0.931	30	-	E-W	Soft	Single 30mm black plastic Bell cable. The coordinates are for the top of the cable.
4	1010	BELL 4	Bell	4831463.774	612452.433	147.488	1012	4831463.648	612452.291	148.444	0.956	50	-	E-W	Soft	Single 50mm black plastic Bell conduit. The coordinates are for the top of the conduit.
4	1011	BELL 4	Bell	4831463.750	612452.400	147.657	1012	4831463.648	612452.291	148.444	0.787	30	-	E-W	Soft	Single 30mm black plastic Bell cable. The coordinates are for the top of the cable.
5	1013	HYD 5	Hydro	4831355.512	612380.998	145.640	1022	4831355.884	612380.548	146.777	1.137	10	-	N-S	Soft	Single 10mm black plastic hydro cable. The coordinates are for the top of the cable.
5	1014	HYD 5	Hydro	4831355.549	612381.012	145.647	1022	4831355.884	612380.548	146.777	1.130	10	-	N-S	Soft	Single 10mm black plastic hydro cable. The coordinates are for the top of the cable.
5	1015	HYD 5	Hydro	4831355.575	612380.876	146.228	1022	4831355.884	612380.548	146.777	0.549	50	-	N-S	Soft	Single 50mm white plastic hydro duct. The coordinates are for the top of the duct.
5	1016	HYD 5	Hydro	4831355.619	612380.850	145.704	1022	4831355.884	612380.548	146.777	1.073	50	-	N-S	Soft	Single 50mm balck plastic hydro duct. The coordinates are for the top of the duct.
5	1017	HYD 5	Hydro	4831355.649	612380.766	145.716	1022	4831355.884	612380.548	146.777	1.061	30	-	N-S	Soft	Single 30mm black plastic hydro cable. The coordinates are for the top of the cable.
5	1018	ROG 5	Rogers	4831355.742	612380.678	145.933	1022	4831355.884	612380.548	146.777	0.844	100	-	N-S	Soft	Single 100mm black plastic Rogers duct. The coordinates are for the top of the duct.
5	1019	ROG 5	Rogers	4831355.764	612380.647	145.999	1022	4831355.884	612380.548	146.777	0.778	100	-	N-S	Soft	Single 100mm black plastic Rogers duct. The coordinates are for the top of the duct.
5	1020	ROG 5	Rogers	4831355.792	612380.605	145.936	1022	4831355.884	612380.548	146.777	0.841	100	-	N-S	Soft	Single 100mm black plastic Rogers duct. The coordinates are for the top of the duct.
5	1021	HYD 5	Hydro	4831355.906	612380.835	145.706	1022	4831355.884	612380.548	146.777	1.071	30	-	N-S	Soft	Single 30mm black plastic hydro cable. The coordinates are for the top of the cable.
6	1023	WM 6	Watermain	4831354.296	612381.943	145.112	1024	4831354.429	612381.878	146.749	1.637	400	-	N-S	Hard	Single 400mm grey concrete watermain. The coordinates are for the top of the pipe.
7	1027	HYD 7	Hydro	4831332.370	612359.520	145.632	1031	4831332.027	612359.984	146.346	0.714	50	-	N-S	Soft	Single 50mm white plastic hydro duct. The coordinates are for the top of the duct.
7	1028	HYD 7	Hydro	4831332.447	612359.429	145.613	1031	4831332.027	612359.984	146.346	0.733	50	-	N-S	Soft	Single 50mm white plastic hydro duct. The coordinates are for the top of the duct.
7	1029	HYD 7	Hydro	4831332.522	612359.341	145.635	1031	4831332.027	612359.984	146.346	0.711	50	-	N-S	Soft	Single 50mm white plastic hydro duct. The coordinates are for the top of the duct.
7	1030	HYD 7	Hydro	4831332.262	612359.415	145.537	1031	4831332.027	612359.984	146.346	0.809	50	-	N-S	Soft	Single 50mm white plastic hydro duct. The coordinates are for the top of the duct.
8	1025	WM 8	Watermain	4831330.117	612362.381	144.480	1026	4831330.138	612362.278	146.346	1.866	400	-	N-S	Hard	Single 400mm grey concrete watermain. The coordinates are for the top of the pipe.
9	1032	ROG 9	Rogers	4831364.964	612295.796	147.574	1033	4831364.633	612295.405	148.558	0.984	100	-	E-W	Soft	Single 100mm black plastic Rogers duct. The coordinates are for the top of the duct.
10	1034	ROG 10	Rogers	4831390.044	612269.635	147.850	1035	4831389.724	612269.605	148.666	0.816	100	-	E-W	Soft	Single 100mm black plastic Rogers duct. The coordinates are for the top of the duct.
1A	100013	FOOT 1A	Footing	4831489.802	612387.900	149.294	100014	4831490.026	612387.697	149.849	0.555	-	-	-	Soft	Top of Garage Roof. The coordinates are for the vertical limit of investigation.
2A	100015	FOOT 2A	Footing	4831473.973	612389.953	149.203	100016	4831474.087	612390.083	149.640	0.437	-	-	-	Soft	Top of Garage Roof. The coordinates are for the vertical limit of investigation.

PLANVIEW Utility Services Ltd.

Test Pit Matrix
1315 Bough Beeches Blvd, Mississauga, Ontario

September 18, 2025 and January 20-21, 2026

Test Pit #	Point #	Code	Utility	Northing	Easting	Elevation	Point #	Northing	Easting	Elevation	Depth (m)	Diameter (mm)	Size W x H (m x m)	Direction	Ground Type	Comments
3A	100017	FOOT 3A	Footing	4831486.084	612358.486	149.148	100018	4831485.809	612358.313	149.582	0.434	-	-	-	Soft	Top of Garage Roof. The coordinates are for the vertical limit of investigation.
4A	100019	FOOT 4A	Footing	4831472.796	612367.901	149.398	100020	4831472.772	612368.117	149.987	0.589	-	-	-	Soft	Top of Garage Roof. The coordinates are for the vertical limit of investigation.
5A	100021	FOOT 5A	Footing	4831464.554	612384.002	149.223	100022	4831465.305	612383.486	149.732	0.509	-	-	-	Soft	Top of Garage Roof. The coordinates are for the vertical limit of investigation.
6A	100024	FOOT 6A	Footing	4831445.146	612373.302	149.364	100025	4831445.362	612374.189	149.901	0.537	-	-	-	Soft	Top of Garage Roof. The coordinates are for the vertical limit of investigation.
7A	100026	FOOT 7A	Footing	4831413.364	612384.644	149.354	100027	4831413.044	612384.741	149.987	0.633	-	-	-	Soft	Top of Garage Roof. The coordinates are for the vertical limit of investigation.
8A	100028	FOOT 8A	Footing	4831403.618	612386.955	149.263	100029	4831403.732	612387.434	149.849	0.586	-	-	-	Soft	Top of Garage Roof. The coordinates are for the vertical limit of investigation.
9A	100030	FOOT 9A	Footing	4831409.207	612403.500	149.076	100031	4831409.055	612403.278	150.086	1.010	-	-	-	Soft	Top of Garage Roof. The coordinates are for the vertical limit of investigation.
10A	100032	FOOT 10A	Footing	4831437.945	612400.118	149.140	100033	4831439.403	612401.572	149.630	0.490	-	-	-	Soft	Top of Garage Roof. The coordinates are for the vertical limit of investigation.
11A	100038	FOOT 11A	Footing	4831430.531	612392.029	149.150	100036	4831430.105	612391.671	149.770	0.620	-	-	-	Soft	Top of Garage Roof. The coordinates are for the vertical limit of investigation.
12	100039	HYD 12	Hydro	4831505.782	612402.319	147.865	100042	4831505.531	612402.174	148.849	0.984	15	-	SE-NW	Soft	Group of two black Hydro Primary direct buried cables The coordinates are for the north 15mm cable.
12	100040	HYD 12	Hydro	4831505.650	612402.239	147.841	100042	4831505.531	612402.174	148.849	1.008	15	-	SE-NW	Soft	Group of two black Hydro Primary direct buried cables The coordinates are for the south 15mm cable.
12	100041	HYD 12	Hydro	4831505.685	612402.238	148.029	100042	4831505.531	612402.174	148.849	0.820	100	-	SE-NW	Soft	Single 100mm black PVC Bell duct.
12	100043	DNF 12	DNF	4831506.185	612402.667	147.382	100042	4831505.531	612402.174	148.849	1.467	-	-	-	Soft	Did not find Bell utility. The coordinates are for the vertical limit of investigation.
13	100045	GAS 13	Gasmain	4831503.945	612401.430	148.136	100046	4831504.136	612401.597	148.903	0.767	50	-	SE-NW	Soft	Single 50mm orange PVC Gasmain.
14	100047	HYD 14	Hydro	4831490.423	612422.813	147.583	100051	4831490.179	612422.740	148.735	1.152	15	-	SE-NW	Soft	Group of two black Hydro Primary direct buried cables The coordinates are for the north 15mm cable.
14	100048	HYD 14	Hydro	4831490.233	612422.763	147.596	100051	4831490.179	612422.740	148.735	1.139	15	-	SE-NW	Soft	Group of two black Hydro Primary direct buried cables The coordinates are for the south 15mm cable.
14	100049	HYD 14	Hydro	4831490.327	612422.813	147.776	100051	4831490.179	612422.740	148.735	0.959	100	-	SE-NW	Soft	Single 100mm black PVC Hydro duct.
14	100050	DNF 14	DNF	4831491.006	612423.360	147.210	100051	4831490.179	612422.740	148.735	1.525	-	-	-	Soft	Did not find Bell utility. The coordinates are for the vertical limit of investigation.
15	100052	GAS 15	Gasmain	4831488.909	612421.366	147.900	100053	4831489.444	612421.706	148.774	0.874	50	-	SE-NW	Soft	Single 50mm orange PVC Gasmain.
16	100001	ROG 16	Rogers	4831437.638	612445.238	147.810	100005	4831437.731	612445.065	148.527	0.717	25	-	NE-SW	Soft	Single 25mm black PVC Rogers duct.
16	100002	HYD 16	Hydro	4831437.648	612445.259	147.497	100005	4831437.731	612445.065	148.527	1.030	25	-	NE-SW	Soft	Group of four direct buried hydro primary cables.The coordinates are for the west 25mm duct.
16	100003	HYD 16	Hydro	4831437.520	612445.290	147.486	100005	4831437.731	612445.065	148.527	1.041	25	-	NE-SW	Soft	Group of four direct buried hydro primary cables.The coordinates are for the east 25mm cable.
16	100004	HYD 16	Hydro	4831437.488	612445.399	147.477	100005	4831437.731	612445.065	148.527	1.050	10	-	NE-SW	Soft	Group of three 10mm black secondary hydro wires.
16	100006	HYD 16	Hydro	4831437.253	612445.758	147.940	100005	4831437.731	612445.065	148.527	0.587	50	-	NE-SW	Soft	Single 50mm grey PVC hydro duct.
16	30000	HYD 16	Hydro	4831437.408	612445.132	147.526	100005	4831437.731	612445.065	148.527	1.001	25	-	NE-SW	Soft	Group of four direct buried hydro primary cables.The coordinates are for the centre 25mm cable.
17	100008	WM 17	Watermain	4831436.148	612447.254	146.648	100012	4831436.042	612447.401	148.525	1.877	400	-	NE-SW	Soft	Single 400mm CPP Watermain.
17	100009	SL 17	Streetlight	4831436.243	612447.166	147.794	100012	4831436.042	612447.401	148.525	0.731	50	-	NE-SW	Soft	Group of two grey and one black 50mm PVC streetlight ducts. The coordinates are for the west duct.
17	100010	SL 17	Streetlight	4831436.066	612447.309	147.793	100012	4831436.042	612447.401	148.525	0.732	50	-	NE-SW	Soft	Group of two grey and one black 50mm PVC streetlight ducts. The coordinates are for the east duct.
17	100011	SL 17	Streetlight	4831436.154	612447.395	147.605	100012	4831436.042	612447.401	148.525	0.920	50	-	NE-SW	Soft	Group of two grey and one black 50mm PVC streetlight ducts. The coordinates are for the bottom duct.
18	100057	DNF 18	DNF	4831406.601	612421.516	146.555	100063	4831407.106	612420.964	148.056	1.501	-	-	-	Soft	Did not find Rogers utility. The coordinates are for the western limit of investigation.
18	100058	DNF 18	DNF	4831407.266	612420.805	146.575	100063	4831407.106	612420.964	148.056	1.481	-	-	-	Soft	Did not find Rogers utility. The coordinates are for the eastern limit of investigation.

PLANVIEW Utility Services Ltd.

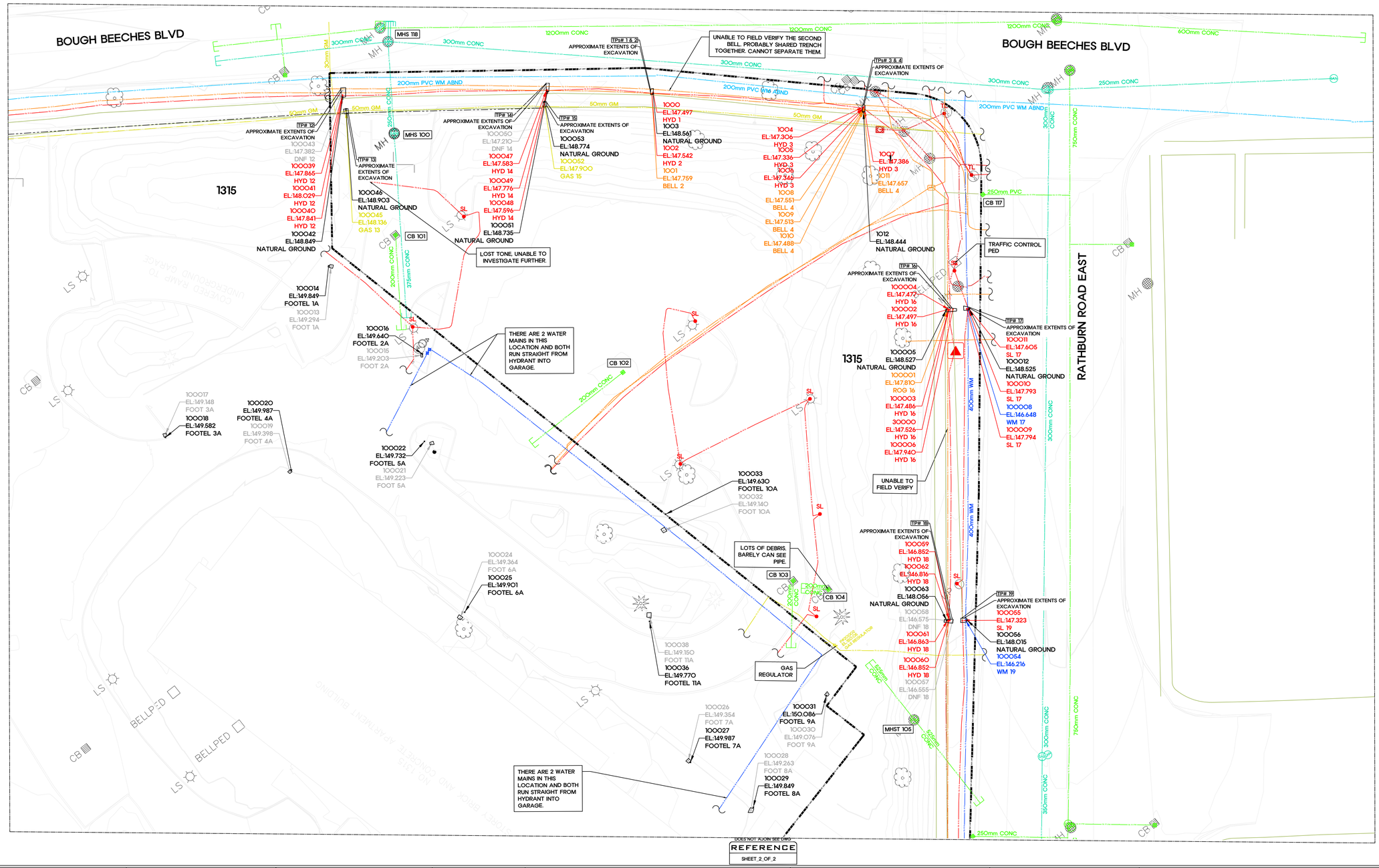
Test Pit Matrix
1315 Bough Beeches Blvd, Mississauga, Ontario

September 18, 2025 and January 20-21, 2026

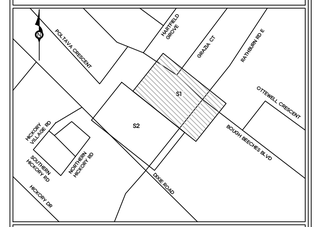
Test Pit #	Point #	Code	Utility	Northing	Easting	Elevation	Point #	Northing	Easting	Elevation	Depth (m)	Diameter (mm)	Size W x H (m x m)	Direction	Ground Type	Comments
18	100059	HYD 18	Hydro	4831406.868	612421.283	146.852	100063	4831407.106	612420.964	148.056	1.204	25	-	N-S	Soft	Group of three direct buried hydro primary cables.The coordinates are for the east 25mm cable.
18	100060	HYD 18	Hydro	4831407.001	612421.212	146.852	100063	4831407.106	612420.964	148.056	1.204	25	-	N-S	Soft	Group of three direct buried hydro primary cables.The coordinates are for the centre 25mm cable.
18	100061	HYD 18	Hydro	4831407.069	612421.108	146.863	100063	4831407.106	612420.964	148.056	1.193	25	-	N-S	Soft	Group of three direct buried hydro primary cables.The coordinates are for the west 25mm cable.
18	100062	HYD 18	Hydro	4831406.944	612421.259	146.816	100063	4831407.106	612420.964	148.056	1.240	10	-	N-S	Soft	Group of two 10mm black hydro secondary wires.
19	100054	WM 19	Watermain	4831405.688	612422.873	146.216	100056	4831405.573	612423.015	148.015	1.799	400	-	N-S	Soft	Single 400mm CPP Watermain.
19	100055	SL 19	Streetlight	4831405.896	612422.532	147.323	100056	4831405.573	612423.015	148.015	0.692	50	-	N-S	Soft	Single 50mm white PVC Streetlight duct.

1. All pipe/utility materials are solely based on observations in the field. All utility materials must be confirmed by the specific utility company.
2. In some instances the positions of the test pits were shifted from the original test pit drawing to avoid obstructions in the field.
3. Point # refers to the MicroSurvey Point number within the CAD drawing (MSPOINT layer). The point values can also be found on sheet two (Survey Points) of this digital Workbook.
4. All coordinates are based on the control survey **25080tp03a.dwg** provided by **Stanford Homes**.
5. Direction is based on the assumption that **Bough Beeches Blvd**. travels in an east to west direction.
6. All GPS measurements were taken on the obvert of the duct/pipe unless noted otherwise.

Appendix B Level A Drawing



KEY MAP (N.T.S)



CITY OF MISSISSAUGA

LEGEND

- STORM SEWER
- SANITARY SEWER
- WATERMAIN
- WATER SERVICE
- WATERMAIN (ABANDONED)
- GAS MAIN
- GAS SERVICE
- HYDRO
- HYDRO SERVICE
- STREET LIGHTING
- TRAFFIC CONTROL
- BELL CANADA
- ROGERS
- ROGERS FIBRE OPTIC

- LEVEL B
- LEVEL C
- LEVEL D

COULD NOT CONFIRM INVERT END POINT FOR SANITARY AND STORM

UTILITY CONTINUES OUTSIDE SCOPE/ PROPERTY LINE

LICENSED PROFESSIONAL ENGINEER
A.CHUNDRAMOORTHY
100231473
25-3-0138 SUE QLA JAN 29, 2026
PROVINCE OF ONTARIO

DISCLAIMERS

GENERAL NOTES

1. THE COLLECTION AND DEPICTION OF INFORMATION SHOWN ON THIS DRAWING CONFORMS TO THE PROVISIONS OF CI/ASCE 38-02. "STANDARD GUIDELINE FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA."
2. FIELD INVESTIGATION WAS COMPLETED USING A COMBINATION OF ELECTROMAGNETIC PIPE, CABLE LOCATE EQUIPMENT AND VACUUM EXCAVATION.
3. DESPITE BEST EFFORT, SOME UTILITIES MAY NOT BE LOCATED DUE TO BEING NON-CONDUCTIVE OR INACCESSIBLE.
4. BASE MAP WAS PROVIDED BY CLIENT AND IS SHOWN IN GREY. PLANVIEW IS NOT RESPONSIBLE FOR ITS ACCURACY.
5. THIS INFORMATION IS PROVIDED FOR DESIGN PURPOSES ONLY.
6. CONTRACTORS ARE REQUIRED TO OBTAIN THEIR OWN LOCATE DATA PRIOR TO ANY EXCAVATION.
7. REFER TO SUBSURFACE UTILITY INVESTIGATION REPORT FOR ADDITIONAL INFORMATION.
8. WHERE LEVEL A (TEST PIT) FINDINGS PROVIDE A MORE ACCURATE LOCATION FOR A UTILITY, THE LEVEL B INFORMATION ON THIS PLAN (GATHERED USING UTILITY LOCATING DEVICES) HAS BEEN ADJUSTED TO ALIGN WITH MORE PRECISE TEST PIT INFORMATION.

REVISIONS		REVISIONS
1	ISSUED FOR APPROVAL 24 September 2025	
2	ADDITIONAL TPs 30 January 2026	

COORDINATE SYSTEM: CSRS.UTM-17N

SCALE(S) 1 : 250 | SHEET SIZE 22x34

LICENSED PROFESSIONAL ENGINEER L. SUN 100575605 25-3-0074 SUE QLA Sept 24, 2025 PROVINCE OF ONTARIO

PLANVIEW Utility Services Ltd.

STANFORD DESTINATION HOME

SURVEYOR	G.S.
DRAWN	B.L.
CHECKED	S.S.
APPROVED	A.C.

PROJECT: 1315 BOUGH BEECHES BLVD

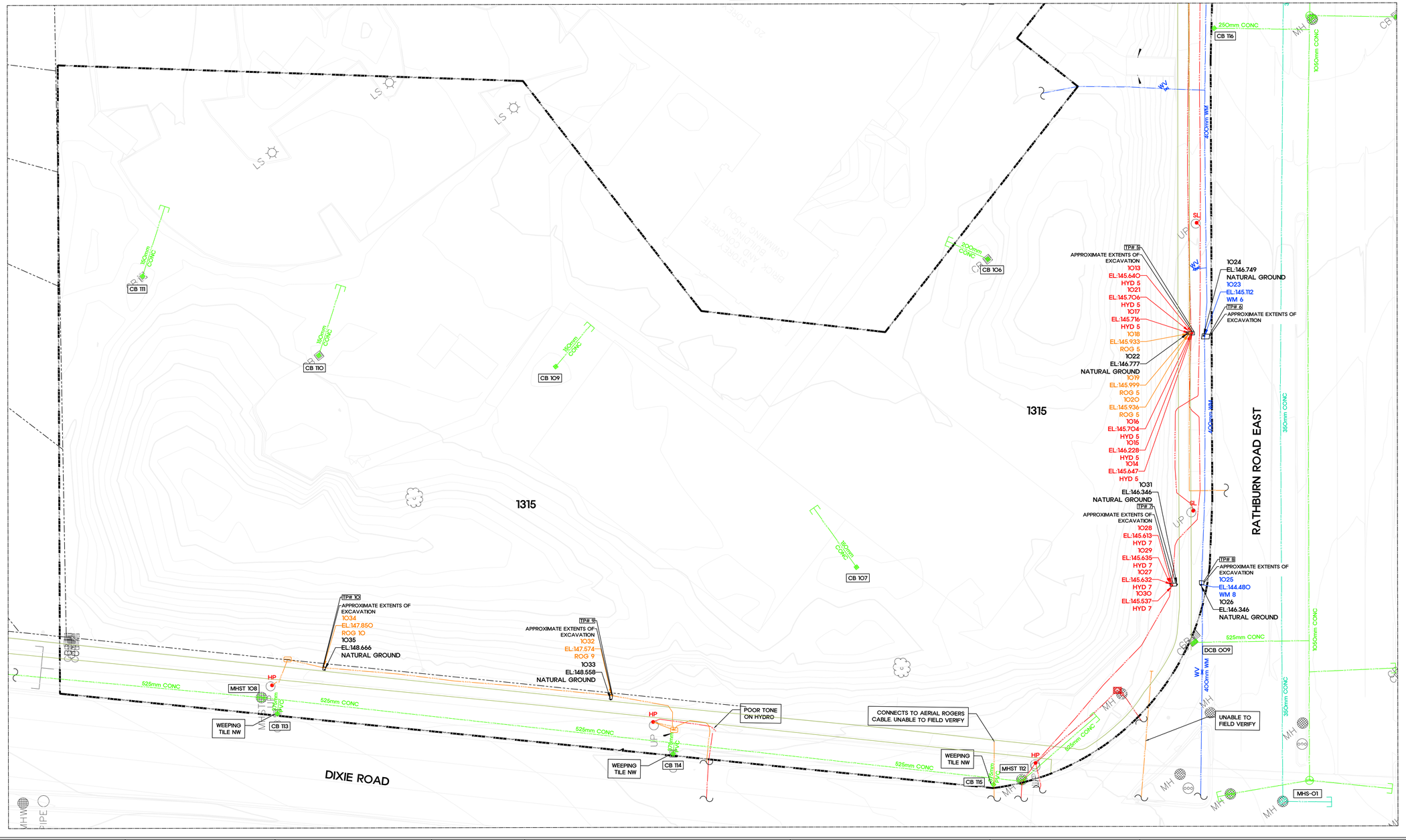
TITLE: SUBSURFACE UTILITY INVESTIGATION SUE LEVEL A

Plot Date:	30 January 2026
Planview Project #:	25-3-0138
Customer Project #:	T.B.D.
Sheet #:	S1

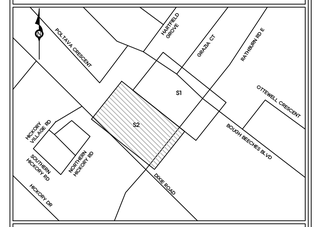
DOES NOT AJOIN SEE DWG

REFERENCE

SHEET_1_OF_2



KEY MAP (N.T.S)



CITY OF MISSISSAUGA

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- COULD NOT CONFIRM INVERT END POINT FOR SANITARY AND STORM
- UTILITY CONTINUES OUTSIDE SCOPE/ PROPERTY LINE

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REVISIONS		REVISIONS	
1	ISSUED FOR APPROVAL 24 September 2025		
2	ADDITIONAL TPs 30 January 2026		

COORDINATE SYSTEM: CSRS.UTM-17N

SCALE(S) 1 : 250

SHEET SIZE 22x34

LICENSED PROFESSIONAL ENGINEER — L. SUN 100575605 — 25-3-0074 SUE LOA Sept 24, 2025 — PROVINCE OF ONTARIO

PLANVIEW Utility Services Ltd.

STANFORD DESTINATION HOME

SURVEYOR	G.S.
DRAWN	B.L.
CHECKED	S.S.
APPROVED	A.C.

PROJECT: 1315 BOUGH BEECHES BLVD

TITLE: SUBSURFACE UTILITY INVESTIGATION SUE LEVEL A

Plot Date: 30 January 2026

Planview Project #: 25-3-0138

Customer Project #: T.B.D.

Sheet #: S2

APPENDIX C

Hydrant Flow Test Results

Water Demand & Capacity Analysis Calculations

HydraTek & Associates

HYDRANT FLOW TEST REPORT

PROJECT INFORMATION

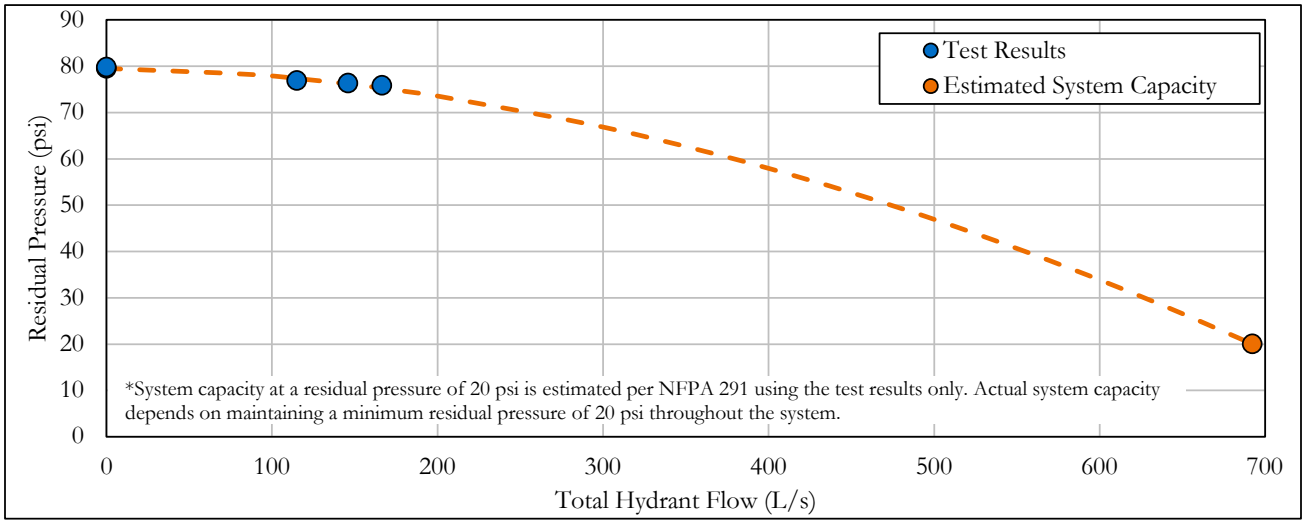
HydraTek Project No.:	25074
Project Name:	1315 Bough Beeches Boulevard, Mississauga
Client/Owner Name:	1315 Bough Beeches Boulevard Limited
Date and Time of Test:	05 September 2025 at 10:00 AM
Hydrant Permit CSR No:	n/a
Test Conducted By:	S. Genser / A. Ivanov
Design Flow:	n/a
Municipality:	Region of Peel
Pressure Zone/District:	Zone 3 (WPZ3)

TEST INFORMATION

Residual Hydrant:	Rathburn Road East, 1st hydrant E of Bough Beeches Boulevard (ID 2021386)
Flow Hydrant No. 1:	Rathburn Road East, 1st hydrant E of Dixie Road (ID 2021385)
Flow Hydrant No. 2:	n/a
Watermain Size / Material:	400 mm CPP (1979)

TEST RESULTS

Test No.	No. Ports and Size	Pitot Pressure (psi) Flow Hydrant			Total Flow (L/s)	Residual Pressure (psi)
		Port 1	Port 2	Port 3		
1	Initial Static	-	-	-	0	79.5
2	1 x 4.0-in	-	-	23.5	115	76.9
3	2 x 1.0-in + 1 x 4.0-in	18.7	-	19.0	146	76.3
4	2 x 2.0-in + 1 x 4.0-in	13.9	14.1	15.3	166	75.8
5	-	-	-	-	-	-
6	Final Static	-	-	-	0	79.8
				Estimated System Capacity (L/s):	693	20



TEST COMMENTS

-With a single flow hydrant the test was not able to achieve a minimum 10% drop in residual pressure per NFPA 291 (2022) test requirements.

-Estimated system capacity is based on NFPA 291 using the test results only. Actual system capacity depends on the maximum flow that can be withdrawn subject to maintaining a minimum residual pressure of 20 psi (14.3 m; 140 kPa) at the test location and throughout the rest of the water system.

PREPARED BY:

Name: S. Genser

Signature:

HydraTek & Associates
A Division of FP&P HydraTek Inc.
3901 Highway 7, Suite 500 | Vaughan, Ontario | L4L 8L5, Canada | t: 416-238-7681 | www.hydratek.com

1315 - Bough Beaches - Residential Development
Water Demand Calculations

Designed By: **Michael Papa**
Checked By: **Paolo Albanese**, P.Eng
File No.: 25074
Date: 26 June 2026

Domestic Water Supply Demands:
Per Region of Peel Watermain Design Criteria for Water Distribution Systems
- assume Average Day demand is 280 L/capita/day for residential uses
- assume Average Day demand is 300 L/capita/day for ICI uses
- assume Population Density (see chart)

Unit Type	Population Density
Residential Apartments	2.7 Pers / unit
Commercial	50 Pers / hectare

Building	Building Data		Population[3]	Ave. Day Flow	Peak Hour, ADxPH [1]	Max. Day, ADxMD [2]
	Units	(sq.m)	pers	(L/s)	(L/s)	(L/s)
Apartments	144	n/a	389	1.26	3.78	2.52
Retail	n/a	n/a	0	0.00	0.00	0.00
Office	n/a	n/a	0	0.00	0.00	0.00
Total	144		389	1.3	3.8	2.5

[1] Peak Hour Demand, PHD, is 3.0 for residential and 3.0 for ICI
[2] Max Day Demand, MDD, is 2.0 for residential and 1.4 for ICI
[3] Population based on 2.7 people/unit

Fire Protection Supply Demands:
Per Water Supply for Public Fire Protection Manual, 2020, by the Fire Underwriters Survey

STEP 1: Calculate Fire Flow
New 100 mm Domestic Watermain

$$F = 220 \cdot C \cdot \sqrt{A} \cdot (\text{various adjustments}) \text{ L/min}$$

C = Coefficient related to type of construction:
= 1.5 for Type V (Wood Frame Construction)
= 0.8 for Type IV-A (Encapsulated Mass Timber Construction and structural elements with min. 2 hr rating and roof has min. 1 hr rating)
= 0.9 for Type IV-B (Rated Mass Timber Construction and all elements have a min. 1 hr rating)
= 1.0 for Type IV-C (Ordinary Mass Timber Construction and structural elements with min. 1 hr rating and roof has no rating)
= 1.5 for Type IV-D (Un-Rate Mass Timber Construction and exterior walls have <1 hr rating regardless of other element ratings)
= 1.0 for Type III (Ordinary Construction - exterior masonry walls with min. 1 hr rating, combustible floor and interior)
= 0.8 for Type-II (Non Combustible Construction - structural elements, walls, floors, roofs with min. 1 hr rating)
= 0.6 for Type I (Fire Resistive Construction - structural elements, walls, floors, roofs with min. 2 hr rating)

C =	0.6		
Largest Floor Area =	822	m^2	
Floor Area Above =	822	m^2	
Floor Area Below =	822	m^2	
A =	1,233	m^2	Largest Floor + 25% x (Floor Above + Floor Below)
F =	4,635	L/min	
F =	5,000	L/min	Round to the nearest 1000

STEP 2: Adjust for building occupancy (Note: Number shall not be less then 2000 L/min)

= - 25% (Non-Combustible)	Factor =	-15%	
= - 15% (Limited Combustible)	F1 = F x Factor =	4,250	L/min
= 0 (Combustible)			
= + 15% (Free Burning)			
= + 25% (Rapid Burning)			

1315 - Bough Beaches - Residential Development

Water Demand Calculations

STEP 3: Decrease F1 if building contains fire suppression system

= - 50% (Automatic Sprinklers)
= - 30% (Adequately Designed System)
= Additional -10% if the water supply is standard for the system and the fire department hose lines required
= Additional -10% if the system is fully supervised

Factor =	50%	
F2 = F1 x Factor =	2,125	L/min

STEP 4: Increase F1 due to exposure / close pı

= 25% (0m to 3m)
= 20% (3.1m to 10m)
= 15% (10.1m to 20m)
= 10% (20.1m to 30.1m)
= 5% (30.1m to 45m)
= 0% (Greater then 45m)

Distances =	N > 45m / S > 45m / E > 45m / W > 34.7m		
Factors =	0% + 0% + 0% + 5%		
Factor =	5%	(max 75%)	
F3 = F1 x Factor =	213	L/min	

STEP 5: Calculate Fire Flow (Note: Fire flow shall not be less then 2000 L/min or greater then 45,000 L/min)

Fire Flow =	F1 - F2 + F3		
F1 =	4,250	L/min	
- F2 =	2,125	L/min	
+ F3 =	213	L/min	
Fire Flow =	2,338	L/min	
Fire Flow =	2,000	L/min	Round to the nearest 1000
Fire Flow =	33.3	L/s	

STEP 6: Calculate Total Water Demand (Max Day Demand + Fire Flow)

Recall Max Day Demand (from chart above) =	2.5	L/s
TOTAL Fire Demand (MDD + Fire Flow) =	35.9	L/s

1315 - Bough Beaches - Residential Development

Supply Line Head Loss Calculations

Designed By: **Michael Papa**
Checked By: **Paolo Albanese**, P.Eng

File No.: 25074
Date: 26 June 2026

Hydrant Flow Test Results

Flow (gpm)	Flow (L/s)	Pressure (psi)	Pressure (kPa)
0	0.0	79.5	550
1817	115	76.9	530
2307	146	76.3	526
2623	166	75.8	523
10952	693	20.0	138

Assumed Data Values

Estimated available Fire Flow calculated using:

$$Q_R = Q_F \times \frac{h_r^{0.54}}{h_f^{0.54}}$$

Hazen-Williams formula for watermain head loss:

$h_L = (10.675 * L * Q^{1.85}) / (C^{1.85} * D^{4.8655})$

where h_L = pressure drop (m)
L = length of pipe (m)
Q = flow rate (m^3/s)
C = roughness coefficient
D = inside hydraulic diameter (m)

New 100 mm Domestic Watermain

L= 5.1 m
D= 100 mm
C= 100

L= 4.1 m
D= 150 mm
C= 100

Peak Hour Flow		Head Loss, h_L				Residual Pressure [1]		Residual Pressure	
Q (L/s)	Q (m3/s)	(m)	(in)	(psi)	(kPa)	(psi)	(kPa)	(psi)	(kPa)
3.8	0.00	0.03	1.2	0.04	0.29	79.5	548.1	**79.5**	**547.8**

[1] Residual pressure taken from above

New 150 mm Fire Line

L= 7.9 m
D= 150 mm
C= 100

Total Fire Flow (Max Day + Fire Flow)		Head Loss, h_L				Residual Pressure [1]		Residual Pressure	
Q (L/s)	Q (m3/s)	(m)	(in)	(psi)	(kPa)	(psi)	(kPa)	(psi)	(kPa)
35.9	0.04	0.37	14.4	0.52	3.58	79.3	546.4	**78.7**	**542.8**

[1] Residual pressure taken from above

Michael Papa

From: Melnyk, Brian <brian.melnyk@peelregion.ca>
Sent: May 29, 2026 6:47 PM
To: palbanese@fabianpapa.com
Cc: mpapa@fabianpapa.com
Subject: Modeling Results - 1315 Bough Beeches Blvd - OZ-26-005M

Please find enclosed the modeling results for the above-mentioned site:

Water:
Review Outcome: - No objections

Conclusions: Region of Peel has no objection to the proposed water servicing plan for the proposed development with an area of 1.17 Ha and a growth of 389 persons, with the following details:

Population=389; Area=1.17 Ha; ADD=2.25 L/s; MDD=2.52 L/s; PHD=3.78 L/s; Fire Flows= 35 L/s

Recommendations: Recommendations are subject to change if there is a change in the proposed development population and the sanitary servicing plan.

Water Demand & Population :

The proposed site, 0.33 Ha, is planned to include 144 townhouse units. For water demand calculations, the FSR uses the Region of Peel criteria of 280 Lpcd for the average water flow rate for residential development, a max day factor of 2, and a peak hourly factor of 3.Population=389; Area=0.33 Ha; ADD=1.26 L/s; MDD=2.52 L/s; PHD=3.78 L/s; Fire Flows= 35 L/s

Wastewater

Review Outcome: No objections.

Conclusions: The Region of Peel has no objections to the proposed sanitary servicing plan for the proposed development discharging flows to the existing westerly 400mm sanitary sewer along Rathburn Road:

No. of units=144; PPU=2.7; Pop=389; Area = 1.17 Ha; Peak Wet Weather Flows= 5.6 L/s

Recommendations: Recommendations are subject to change if the sanitary servicing plan changes for any reason.

Sanitary Flow & Population: The subject site is located at the north-west corner of Rathburn Road East and Bough Beeches

Boulevard in the City of Mississauga, Region of Peel. The development proposal for the subject site envisions the construction of a 13-storey residential building, which is to be built on the east side of the existing 20-storey building with a construction redevelopment site area of approximately 3,274 m2 (0.3274 ha).

No. of units=144; PPU=2.7; Pop=389; Area = 1.17 Ha; Peak Wet Weather Flows= 5.6 L/s

Best regards,

Brian Melnyk, C. Tech
Specialist (Acting) – Servicing Connections

Water & Wastewater
Public Works, Region of Peel
10 Peel Centre Drive, 4th Floor
Brampton, Ontario L6T 4B9

Email: brian.melnyk@peelregion.ca
Direct Line: (289)305-7797

Region of Peel
working with you

Please be advised that the 2026 Fees by-law update will include an increase in some Engineering Fees. All fees may be subject to change on annual basis pending Council approval

We have recently updated our website to better serve your needs. For information on Planning and Engineering matters of Regional interest, please visit this link : Request a water or wastewater service connection - Region of Peel (peelregion.ca) *.Let us know how we can serve you better.*

Our working hours may be different. Please do not feel obligated to reply outside of your working hours. Let's work together to help foster healthy work-life boundaries.

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Arcadis
7th Floor – 55 St. Clair Avenue West
Toronto ON M4V 2Y7 Canada
tel 416 596 1930 fax 416 596 0644
arcadis.com

1315 Bough Beeches Boulevard Limited
2700 Differin Street, Unit 50
Toronto, ON M6B 4J3
Canada

June 25th, 2026

Municipal Address: 1315 Bough Beeches Boulevard, Mississauga

To whom it may concern,

This letter is to confirm that we are Architects for the proposed building at 1315 Bough Beeches Boulevard, Mississauga, Ontario and that the proposed building will be constructed as per the Ontario Building Code and of non-combustible materials and equipped with a Fire Protection System conforming to the NFPA 13 Standards for Installation of Sprinkler Systems.

We confirm that:

1. In accordance with the Fire Underwriters Survey 2020, the proposed buildings will be of the Fire Resistive Construction (Type 1), that all structural elements, wall, arches, floors and roofs will be constructed with a minimum 2-hour fire resistence rating and that all the materials used in the construction of the structural elements, walls, arches, floors and roofs with be constructed with noncombustile materials.

2. All vertical openings and exterior vertical communication will be constructed with a 1hr shaft wall assembly.

_____

Mansoor Kazerouni
Global Director – Arcadis Architects

ONTARIO ASSOCIATION OF ARCHITECTS
MANSOOR H. KAZEROUNI
LICENCE
5860

HAMMERSCHLAG & JOFFE INC.
Consulting Engineers

69 Lesmill Road, Toronto, Ontario Canada M3B 2T8
T: (416) 444.9263 F: (416) 444.1463

1315 Bough Beeches Boulevard Limited
2700 Differin Street, Unit 50
Toronto, ON M6B 4J3
Canada

February 26, 2026

Dear Sir or Madam,

Please note that it is our understanding that the mixed-use development project at 1315 Bough Beeches Boulevard, Mississauga will be fully sprinkled in accordance with Ontario Building Code and in accordance with the relevant NFPA guidelines. The sprinkler system will be fully automatic and fully supervised. The building fire protection will be hydraulically designed and submitted as part of the building permit application at the appropriate time.

PETAR JOVANOVIC

_____

Name (printed)





_____ _____

Signature Stamp

APPENDIX D

Sanitary Design Calculations -

1315 - Bough Beaches, City of Mississauga, Region of Peel

Region of Peel - Engineering & Construction Services

SANITARY SEWER DESIGN SHEET

NOTES

Pre-development domestic sewage flow based upon 302.8 Lpcd.
Post-development domestic sewage flow based upon a unit flow of 302.8 Lpcd.
Infiltration flow based upon a unit flow of 0.20 L/s/ha.
Maximum flow velocity for pipe flowing full = 3.5 m/s.
Minimum flow velocity for pipe flowing partially full (actual flow) = 0.75 m/s.

Designed By: **Michael Papa**
Checked By: **Paolo Albanese**, P.Eng.
File No.: 25074
Date: 26 June 2026

Street	from M.H.	to M.H.	DESIGN FLOW CALCULATIONS										SEWER DESIGN & ANALYSIS							
			Area (ha) or No. Units	Density (p/ha) OR (p/unit)	Population	Cumulative Area (ha)	Cumulative Population	Peaking Factor M	Sewage Flow (1) (L/s)	Infiltration Flow (2) (L/s)	Foundation Drain (3) (L/s)	Total Flow, Qd (1)+(2)+(3) (L/s)	Nominal Diameter (mm)	Pipe Slope (%)	Pipe Length (m)	Nominal Full Flow Capacity, Qf (L/s)	Nominal Full Flow Velocity (m/s)	Percent of Full Flow (Qd/Qf)	Actual Flow Velocity V (m/s)	Remarks
PRE-DEVELOPMENT - Population Scenario																				
1315 Bough Beaches	Existing*	Population			0															
	Existing	Total Site	0.327			0.327	0	4.50	0.00	0.07		0.1								
POST-DEVELOPMENT - Population Scenario																				
1315 Bough Beaches	Appartments		144	2.7	389															
		Total Site	0.327			0.327	389	4.03	5.5	0.07		5.6	150	2.0%	17.6	22.5	1.23	24.7%	1.0	Self Cleansing Ok
									Total increase in sanitary flow			5.5								

* The exsisting 20-storey building shall remain and shall continue to be serviced by a separate sanitary connection, and thus excluded in the above calculation for the re-development subject site.

fabian papa & partners
A Division of FP&P HydraTek Inc.
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Michael Papa

From: Melnyk, Brian <brian.melnyk@peelregion.ca>
Sent: May 29, 2026 6:47 PM
To: palbanese@fabianpapa.com
Cc: mpapa@fabianpapa.com
Subject: Modeling Results - 1315 Bough Beeches Blvd - OZ-26-005M

Please find enclosed the modeling results for the above-mentioned site:

Water:
Review Outcome: - No objections

Conclusions: Region of Peel has no objection to the proposed water servicing plan for the proposed development with an area of 1.17 Ha and a growth of 389 persons, with the following details:

Population=389; Area=1.17 Ha; ADD=2.25 L/s; MDD=2.52 L/s; PHD=3.78 L/s; Fire Flows= 35 L/s

Recommendations: Recommendations are subject to change if there is a change in the proposed development population and the sanitary servicing plan.

Water Demand & Population :

The proposed site, 0.33 Ha, is planned to include 144 townhouse units. For water demand calculations, the FSR uses the Region of Peel criteria of 280 Lpcd for the average water flow rate for residential development, a max day factor of 2, and a peak hourly factor of 3.Population=389; Area=0.33 Ha; ADD=1.26 L/s; MDD=2.52 L/s; PHD=3.78 L/s; Fire Flows= 35 L/s

Wastewater

Review Outcome: No objections.

Conclusions: The Region of Peel has no objections to the proposed sanitary servicing plan for the proposed development discharging flows to the existing westerly 400mm sanitary sewer along Rathburn Road:

No. of units=144; PPU=2.7; Pop=389; Area = 1.17 Ha; Peak Wet Weather Flows= 5.6 L/s

Recommendations: Recommendations are subject to change if the sanitary servicing plan changes for any reason.

Sanitary Flow & Population: The subject site is located at the north-west corner of Rathburn Road East and Bough Beeches

Boulevard in the City of Mississauga, Region of Peel. The development proposal for the subject site envisions the construction of a 13-storey residential building, which is to be built on the east side of the existing 20-storey building with a construction redevelopment site area of approximately 3,274 m2 (0.3274 ha).

No. of units=144; PPU=2.7; Pop=389; Area = 1.17 Ha; Peak Wet Weather Flows= 5.6 L/s

Best regards,

Brian Melnyk, C. Tech
Specialist (Acting) – Servicing Connections

Water & Wastewater
Public Works, Region of Peel
10 Peel Centre Drive, 4th Floor
Brampton, Ontario L6T 4B9

Email: brian.melnyk@peelregion.ca
Direct Line: (289)305-7797

Region of Peel
working with you

Please be advised that the 2026 Fees by-law update will include an increase in some Engineering Fees. All fees may be subject to change on annual basis pending Council approval

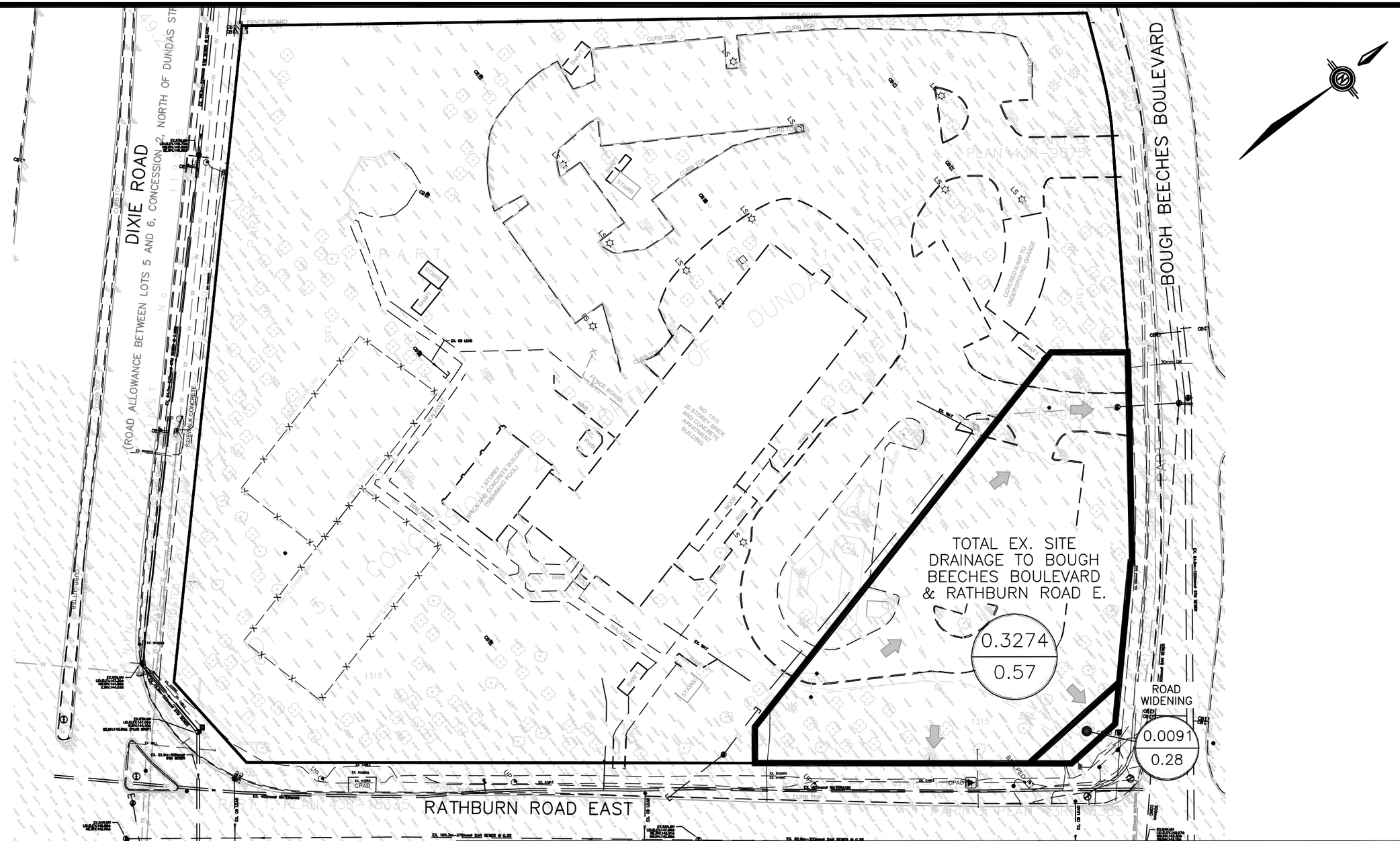
We have recently updated our website to better serve your needs. For information on Planning and Engineering matters of Regional interest, please visit this link : Request a water or wastewater service connection - Region of Peel (peelregion.ca) *.Let us know how we can serve you better.*

Our working hours may be different. Please do not feel obligated to reply outside of your working hours. Let's work together to help foster healthy work-life boundaries.

This email, including any attachments, is intended for the recipient specified in the message and may contain information which is confidential or privileged. Any unauthorized use or disclosure of this email is prohibited. If you are not the intended recipient or have received this e-mail in error, please notify the sender via return email and permanently delete all copies of the email.

APPENDIX E

Pre- & Post-Development Drainage Plans -
Storm Sewer Design Calculations -
Stormwater Quality Calculations -
Water Balance Calculations -



REFER TO WEIGHTED RUNOFF COEFFICIENT CALCULATION SHEET FOR DETAILS

LEGEND:

0.5432 / 0.71 — DRAINAGE AREA (ha) / RUNOFF COEFFICIENT

STORM DRAINAGE AREA

DWN. BY:	M.P.
DESIGNED BY:	M.P.
CHECKED BY:	P.F.A.
SCALE:	1: 750
DATE:	AUG 2025
SHEET NO:	1 OF 2

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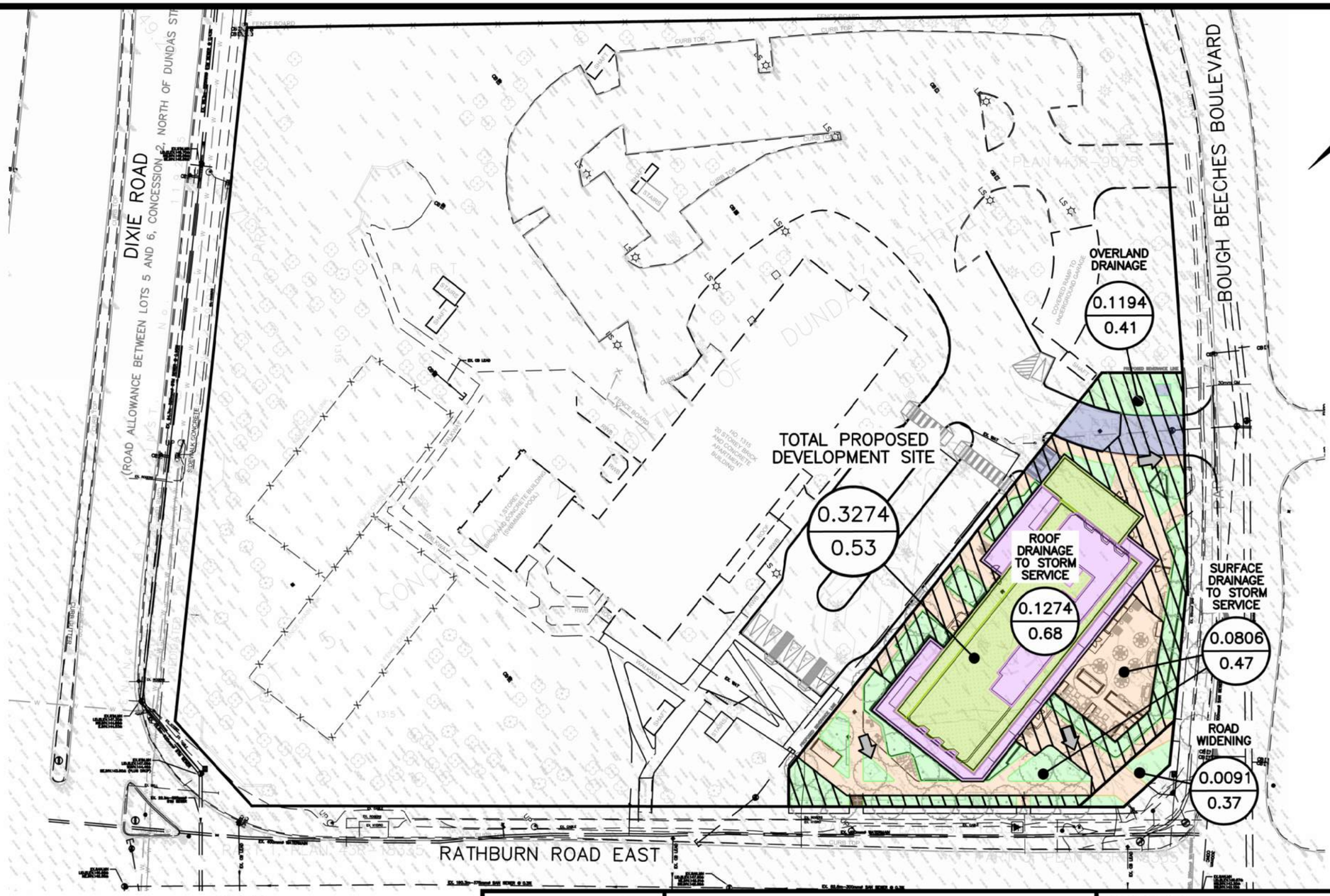
PROJECT NO:	DWG NO:	REV NO:
25074	SWM-1	0

PROJECT NAME:
1315 BOUGH BEECHES Blvd.
RESIDENTIAL DEVELOPMENT

DRAWING TITLE:
PRE-DEVELOPMENT STORM DRAINAGE AREA PLAN

H:\FP&P HydraTek\Projects\2025\25074 - 1315 Bough Beeches Boulevard, Mississauga\Drawings\Revision 1\25074 - Civil Engineering Plans (Revision 1, DRAFT).dwg (Feb 28, 2026 - 3:36pm)



REFER TO WEIGHTED RUNOFF COEFFICIENT CALCULATION SHEET FOR DETAILS

LEGEND:

- 0.5432 / 0.71 — DRAINAGE AREA (ha) / RUNOFF COEFFICIENT
- STORM DRAINAGE AREA
- OVERLAND DRAINAGE AREA
- GREENROOF DRAINAGE AREA
- PERMEABLE PAVER DRAINAGE AREA
- LANDSCAPED DRAINAGE AREA
- BARE ROOF AREA
- HARD SURFACE AREA

DWN. BY:	M.P.
DESIGNED BY:	M.P.
CHECKED BY:	P.F.A.
SCALE:	1: 750
DATE:	AUG 2025
SHEET NO:	2 OF 2

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PROJECT NO:	DWG NO:	REV NO:
25074	SWM–2	0

PROJECT NAME:
1315 BOUGH BEECHES Blvd.
RESIDENTIAL DEVELOPMENT

DRAWING TITLE:
POST–DEVELOPMENT STORM DRAINAGE AREA PLAN

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1315 Bough Beeches Boulevard - Residential Development

Weighted Run-Off Coefficient Calculations

Based on City of Mississauga Storm Design Criteria

Designed By: **Michael Papa**
Checked By: **Paolo Albanese**, P.Eng.
File No. 25074
Date: 26 June 2026

Existing Site Conditions (Excluding Road Widening)				
Surface	Area (m^2)			
Roof Bare	0.0	0.0%	0.90	0.00
Green Roof	0.0	0.0%	0.50	0.00
Landscape	1651.7	50.5%	0.25	0.13
Permeable	0.0	0.0%	0.50	0.00
Hard Surface	1622.1	49.5%	0.90	0.45
	3273.8	100%		0.57

Surface Drainage to Storm Service				
Surface	Area (m^2)			
Roof Bare	0.0	0.0%	0.90	0.00
Green Roof	0.0	0.0%	0.50	0.00
Landscape	190.6	23.6%	0.25	0.06
Permeable	547.0	67.9%	0.50	0.34
Hard Surface	68.5	8.5%	0.90	0.08
	806.2	100%		0.47

Roof Drainage to Storm Service				
Surface	Area (m^2)			
Roof Bare	561.6	44.1%	0.90	0.40
Green Roof	712.1	55.9%	0.50	0.28
Landscape	0.0	0.0%	0.25	0.00
Permeable	0.0	0.0%	0.50	0.00
Hard Surface	0.0	0.0%	0.90	0.00
	1273.6	100%		0.68

Overland Sheetflow Drainage				
Surface	Area (m^2)			
Roof Bare	0.0	0.0%	0.90	0.00
Green Roof	0.0	0.0%	0.50	0.00
Landscape	620.0	51.9%	0.25	0.13
Permeable	455.2	38.1%	0.50	0.19
Hard Surface	118.9	10.0%	0.90	0.09
	1194.0	100%		0.41

Total Proposed Development Site (Excluding Road Widening)				
Surface	Area (m^2)			
Roof Bare	561.6	17.2%	0.90	0.15
Green Roof	712.1	21.8%	0.50	0.11
Landscape	810.6	24.8%	0.25	0.06
Permeable	1002.2	30.6%	0.50	0.15
Hard Surface	187.4	5.7%	0.90	0.05
	3273.8	100%		0.53
			% IMP	43.0

1315 Bough Beeches Boulevard - Residential Development

City of Mississauga - Engineering & Construction Services

10 YEAR STORM SEWER DESIGN SHEET

10-Year IDF Curve - $I_{10-yr} = \frac{1010}{(T_c + 4.6)^{0.78}}$

Designed By: **Michael Papa**
Checked By: **Paolo Albanese**, P.Eng.
File No.: 25074
Date: 26 Jun 2026

Street	From MH	To MH	A (ha)	R	A x R	Accum. A x R	T_c (min)	I (mm/hr)	Q_{act} (L/s)	Size of Pipe (mm)	Slope (%)	Nominal Capacity Q_{cap} (L/s)	Full Flow Velocity (m/s)	Actual Flow Velocity (m/s)	Length (m)	Time in Sect. (min)	Total Time (min)	Q_{act}/Q_{cap}	Remarks
PRE-DEVELOPMENT CONDITIONS																			
10-YEAR PRE-DEVELOPMENT - Existing Site Conditions																			
1315 Bough Beeches Boulevard	Site	Rathburn/Bough Beeches	0.327	0.57	0.187	0.187	15.0	99.2	**51.6**										
(Proposed Development Site)																			
POST-DEVELOPMENT CONDITIONS																			
10-YEAR POST-DEVELOPMENT - Site Conditions																			
Storm Serivce Discharge		Roof Bare	0.056	0.90	0.051	0.051	15.0	99.2	13.9										
(To Rathburn Road East)		Green Roof	0.071	0.50	0.036	0.036	15.0	99.2	9.8										
		Landscape	0.019	0.25	0.005	0.005	15.0	99.2	1.3										
		Permeable	0.055	0.55	0.030	0.030	15.0	99.2	8.3										
		Hard Surface	0.007	0.90	0.006	0.006	15.0	99.2	1.7										
	Building	Sub-Total	0.208	0.60	0.124	0.124	15.0	99.2	**34.3**	300	2.0	142.7	1.93	1.58	20.2	0.2	15.2	24.0%	
Overland Drainage	Surface	Rathburn/Bough Beeches	0.119	0.41	0.049	0.049	15.0	99.2	**13.5**										
Total Discharge			0.327	0.53					**47.8**	As Per Section 8.3.4 of the City of Mississauga Development Reuirements, no quantity control is required for the Etobicoke Creek subwatershed which this development falls under.									

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1315 Bough Beeches Boulevard - Residential Development

Stormwater Management Storage Calculations using Rational Method

10-year Storm - City of Mississauga

10-Year IDF Curve $I_{10-yr} = \frac{1010}{(T_c + 4.6)^{0.78}}$

Rooftop Storage

Project No.	25074	Controlled Rooftop Area (ha) =		0.1274
Analysis By:	Michael Papa	Weighted Runoff Coefficient =		0.68
Last Revised:	26 June 2026	Peak Discharge (L/s) =		3.18
Time (min)	**Intensity (mm/hr)**	**Q-100 (L/s)**	**Q-stored (L/s)**	**Storage Vol. (m^3)**
0	0.0	0.000	0.000	0.000
15	99.2	23.729	20.550	18.495
25	71.9	17.204	14.025	21.037
35	57.3	13.710	10.531	22.115
45	48.1	11.502	8.323	22.471
55	41.7	9.967	6.787	22.398
65	36.9	8.831	5.652	22.041
75	33.2	7.953	4.774	21.481
85	30.3	7.252	4.072	20.769
95	27.9	6.677	3.498	19.938
105	25.9	6.197	3.018	19.012
115	24.2	5.789	2.610	18.007
125	22.7	5.438	2.258	16.937
135	21.4	5.131	1.952	15.811
145	20.3	4.862	1.682	14.637
155	19.3	4.623	1.443	13.421
165	18.4	4.409	1.229	12.168
175	17.6	4.216	1.036	10.883
185	16.9	4.041	0.862	9.568
195	16.2	3.883	0.703	8.227
205	15.6	3.737	0.558	6.862
215	15.1	3.604	0.424	5.476
225	14.5	3.481	0.301	4.070
235	14.1	3.367	0.188	2.645
245	13.6	3.261	0.082	1.204
255	13.2	3.163	0.000	0.000
265	12.8	3.071	0.000	0.000
275	12.5	2.985	0.000	0.000
285	12.1	2.904	0.000	0.000
295	11.8	2.828	0.000	0.000
305	11.5	2.757	0.000	0.000
315	11.2	2.689	0.000	0.000
325	11.0	2.626	0.000	0.000
335	10.7	2.565	0.000	0.000
345	10.5	2.508	0.000	0.000
355	10.3	2.453	0.000	0.000
365	10.0	2.401	0.000	0.000

# of Control Drains =	14	Volume Req'd (cu.m) =	**22.5**
10-Yr Depth of Water =	18 mm	Volume Prov'd (cu.m) =	**127.4**
Scupper Height =	100 mm		

1315 Bough Beeches Boulevard - Residential Development

Runoff Coefficients, Water Quality, and Water Balance
Based on City of Mississauga Storm Design Criteria

Designed By: **Michael Papa**
Checked By: **Paolo Albanese**, P.Eng.
File No. 25074
Date: 26 June 2026

Runoff Coefficients

Post-Development					Impervious Area
Roof Bare	561.6	17.2%	0.90	0.15	
Green Roof (Int.)	712.1	21.8%	0.50	0.11	
Landscape	810.6	24.8%	0.25	0.06	
Permeable Pavers	1,002.2	30.6%	0.50	0.15	
Hard Surface	187.4	5.7%	0.90	0.05	
	3,273.8	100%		0.53	1733.8

Water Quality

TSS Removal (without Treatment)

	Area (m^2)		TSS%	
Roof Bare	562	17.2%	80	13.7
Green Roof (Int.)	712	21.8%	80	17.4
Landscape	811	24.8%	80	19.8
Permeable Pavers	1,002	30.6%	80	24.5
Hard Surface	187	5.7%	0	0.0
	3,274	100%		75.4

Water Balance

Volume Required

Required Water Balance (mm):	27.0
Impervious Site Area (m^2):	1,734
Required Water Balance Volume (m^3):	46.8

Initial Abstraction

	Area (m^2)		mm	Vol (m^3)
Roof Bare	562	17.2%	0	0.0
Green Roof (Int.)	712	21.8%	5	3.6
Landscape	811	24.8%	5	4.1
Permeable Pavers	1,002	30.6%	5	5.0
Hard Surface	187	5.7%	0	0.0
	3274	100%		12.6

Although this value assists on-site retention, it is not used for volume re-use requirements as directed by the City of Mississauga.

Summary of Volumes Provided

Intial Abstraction (m^3):	0.0
Landscaping + Green Roof Irrigation (m^3):	7.6
Grey Water Systems (Toilet Flushing), Car Washes, etc. (m^3):	0.0
Total Volume Provided (m^3):	7.6

Excluded (as noted above)

Sump within SWM Tank

Area of SWM Tank (m^2):	41.6
Depth of Sump (m):	2.50
Volume Provided in Sump (m^3):	104.0

STUDIO TLA

PROJECT NUMBER	25-141	**PROJECT NAME**	1315 Bough Beeches Boulevard	**STUDIO TLA**
DATE	June 24, 2026	**COMPLETED BY**	LTC	

CALCULATIONS FOR WATER COLLECTED vs. LANDSCAPE WATER REQUIREMENTS

GENERAL INFO All measures are in Metric
Landscape Water Requirements (LWR) are based on regional evapotranspiration data (Etl),
Landscape Coefficient per plant type (Kl), and irrigation efficiency (IE).
Based on LEED v4, which refers to U.S. Environmental Protection Agency (EPA) WaterSense Water Budget Tool.

Species Factor (*Ks*) Plant water needs are determined as follows: North and East / shaded enter the 'Low' value (0.2 shrubs, 0.6 turf, and 0.1 Sedum)
South and West / sunny enter the ' Avg' based on shade (0.5 shrubs, 0.7 turf, and 0 .2 Sedum)

Density Factor (*Kd*) Plant grouping: Sparsely planted: 'Low' (0.5, shrubs, 0.6 mixed, 0.6 turf, and 0.6 Sedum mats)
Densely Planted: 'High' (1.0 shrubs, 1.3 mixed, 1.0 turf, and 1.0 Sedum Plugs)

Microclimate Factor (*Kmc*) Plant grouping exposure to wind, heat, reflected light: NE / shaded: 'Low', see above
SW / hot and gets the summer wind: 'Ave or High'

Kl = Ks x Kd x Kmc, landscape coefficient for the type of plant in that hydrozone.
Etl = Kl x 138.2 , local reference evapotranspiration for Greater Toronto Area, this example is for July.
IE can be Drip, Sprinkler (Spray) or Efficient Flow Nozzles, irrigation Efficient.
LWR (H)= area (m²) x (Etl / IE), landscape water requirement for each hydrozone.

WATER COLLECTION (if applicable)

					X
Cistern:	5mm Retention of Storm Water for Irrigation Purposes	0.000	m³		0.000

Part 2 - LWR

Hydro Zone Type	Feature Area (sq. m.) *m²*	Species Factor *Ks*	Density Factor *Kd*	Microclimate *Kmc*	*Landscape Coefficient (Kl)*	*Irrigation Efficiency (IE)* Drip (.9), Low flow (0.75), Spray (.625)	*LWR Average* (liters)	*LWR* May	*LWR* June	*LWR* July	*LWR* August	*LWR* Sept
Trees in Tree Pits*	0.000	0.500	1.000	0.500	0.250	0.750	0	0	0	0	0	0
Shrubs	67.600	0.400	1.100	1.300	0.572	0.625	6,765	6,286	7,727	8,550	6,830	4,430
Perennials	16.000	0.300	1.100	1.300	0.429	0.625	1,201	1,116	1,372	1,518	1,212	786
Mixed	364.200	0.200	1.300	0.500	0.130	0.625	8,283	7,697	9,462	10,469	8,363	5,424
Turfgrass	167.900	0.700	1.000	1.200	0.840	0.625	24,673	22,927	28,185	31,186	24,913	16,157
Green Walls	0.000	0.300	1.100	1.200	0.396	0.625	0	0	0	0	0	0
Sedum Mats	412.800	0.500	1.000	1.000	0.500	0.750	30,090	27,960	34,372	38,033	30,382	19,704
Total m²	**1028.500**				**Subtotal (L) per month**		**71,012**	**65,985**	**81,118**	**89,756**	**71,701**	**46,501**
					Net Landscape Water Requirement (LWR) per Week		17,753	16,496	20,279	22,439	17,925	11,625
*Trees in Tree Pits, include 6.4 sq m/Tree					**Irrigation water use for 72 hours, (Week LWR/7days)*3days**		***7,608***	***7,070***	***8,691***	***9,617***	***7,682***	***4,982***
					5mm Retention for Irrigation Purposes (see *X* above)		*0*	*0*	*0*	*0*	*0*	*0*
					AVERAGE WATER REMAINING IN CISTERN AFTER 72 HR (May-Sept)		**0**	**0**	**0**	**0**	**0**	**0**

STUDIO tla

Stormfilter Design
Determining Number of Cartridges for Flow Based Systems

Echelon Environmental
55 Albert Street, Suite #200 | Markham, ON, L3P 2T4
www.echelonenvironmental.ca info@echelonenvironmental.ca 905-948-0000

Project Name:	**1315 Bough Beeches**	**Engineer:**	FP&P
Location:	**Missauga, ON**	**Contact:**	Michael Papa
OGS ID:	**StormFilter**	**Report Date:**	4-Mar-26

Site Data

Drainage Area, Ad	**0.02**	ac	(0.0069 ha)
Runoff Coefficient, Rc	**0.90**		
Treatment storm flow rate, Q_{treat}	**0.01**	cfs	(0.22 L/s)
Peak storm flow rate, Q_{peak}	**0.39**	cfs	(11.1 L/s)

StormFilter System Configuration

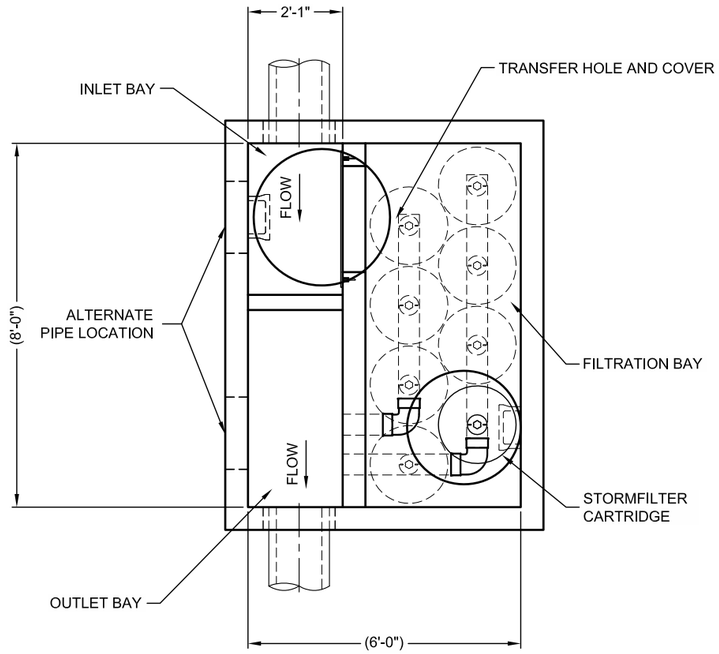
Filtration brand	**StormFilter**	
Cartridge height	**18**	in
Specific Flow Rate	**1.67**	gpm/ft^2
Flow rate per cartridge	**12.53**	gpm

Treatment Summary

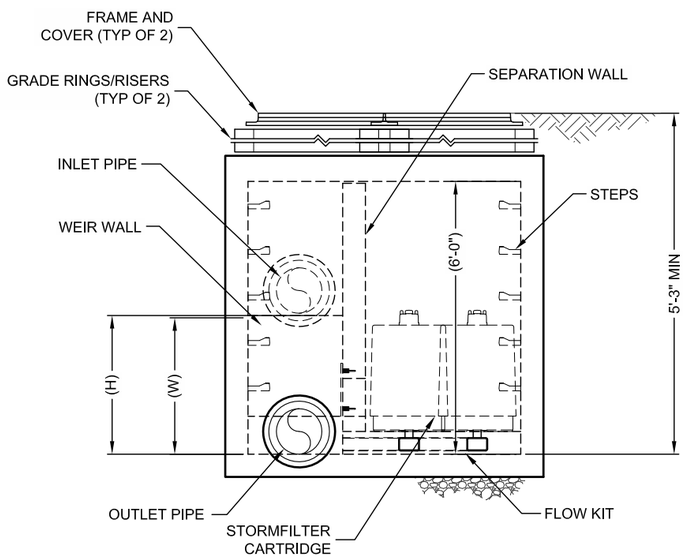
Number of Cartridges Required	1	
Filter Media Type	Phosphosorb	
Event Mean Concentration (EMC)	**120**	mg/L
Annual TSS Removal Efficency	**80%**	
Percent Annual Runoff Captured	**90%**	

Recommended Unit: **Stormfilter SFPD0608 vault or CIP**

***Connecting pipe sizes, materials, and orientation to be confirmed prior to design finalization.**
****Refer to provided standard detail for minimum installation depths. For low cover designs reach out to Echelon Environmental for a custom proposal.**



PLAN



ELEVATION

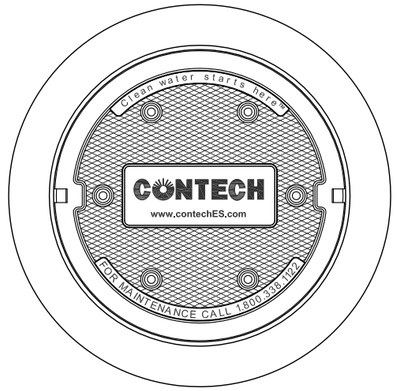
The Stormwater Management StormFilter®

THIS PRODUCT MAY BE PROTECTED BY ONE OR MORE OF THE FOLLOWING U.S. PATENTS: 5,322,629; 5,324,570; 5,707,527; 5,985,157; 6,027,639; 6,946,065; RELATED FOREIGN PATENTS, OR OTHER PATENTS PENDING.

STORMFILTER DESIGN TABLE

- THE 8' x 6' PEAK DIVERSION STORMFILTER TREATMENT CAPACITY VARIES BY CARTRIDGE COUNT AND LOCALLY APPROVED SURFACE AREA SPECIFIC FLOW RATE. PEAK CONVEYANCE CAPACITY TO BE DETERMINED BY ENGINEER OF RECORD.
- THE PEAK DIVERSION STORMFILTER IS AVAILABLE IN A LEFT INLET (AS SHOWN) OR RIGHT INLET CONFIGURATION.
- ALL PARTS AND INTERNAL ASSEMBLY PROVIDED BY CONTECH UNLESS OTHERWISE NOTED.

CARTRIDGE HEIGHT	27"		18"		LOW DROP	
SYSTEM HYDRAULIC DROP (H - REQ'D. MIN.)	3.05'		2.3'		1.8'	
HEIGHT OF WEIR (W)	3.00'		2.25'		1.75'	
TREATMENT BY MEDIA SURFACE AREA	2 gpm/ft²	1 gpm/ft²	2 gpm/ft²	1 gpm/ft²	2 gpm/ft²	1 gpm/ft²
CARTRIDGE FLOW RATE (gpm)	22.5	11.25	15	7.5	10	5



FRAME AND COVER
(DIAMETER VARIES)
N.T.S.

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID	*
WATER QUALITY FLOW RATE (cfs)	*
PEAK FLOW RATE (cfs)	*
RETURN PERIOD OF PEAK FLOW (yrs)	*
# OF CARTRIDGES REQUIRED	*
CARTRIDGE FLOW RATE	*
MEDIA TYPE (CSF, PERLITE, ZPG)	*

PIPE DATA:	I.E.	MATERIAL	DIAMETER
INLET PIPE	*	*	*
OUTLET PIPE	*	*	*

INLET BAY RIM ELEVATION	*
FILTER BAY RIM ELEVATION	*

ANTI-FLOTATION BALLAST	WIDTH	HEIGHT
	*	*

NOTES/SPECIAL REQUIREMENTS:

PERFORMANCE SPECIFICATION

FILTER CARTRIDGES SHALL BE MEDIA-FILLED, PASSIVE, SIPHON ACTUATED, RADIAL FLOW, AND SELF CLEANING. **RADIAL MEDIA DEPTH SHALL BE 7-INCHES**. FILTER MEDIA CONTACT TIME SHALL BE AT LEAST **37 SECONDS**. SPECIFIC FLOW RATE SHALL BE **2 GPM/SF (MAXIMUM)**. SPECIFIC FLOW RATE IS THE MEASURE OF THE FLOW (GPM) DIVIDED BY THE MEDIA SURFACE CONTACT AREA (SF). MEDIA VOLUMETRIC FLOW RATE SHALL BE **6 GPM/CF OF MEDIA (MAXIMUM).**

GENERAL NOTES

1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. DIMENSIONS MARKED WITH ( ) ARE REFERENCE DIMENSIONS. ACTUAL DIMENSIONS MAY VARY.
3. FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHTS, PLEASE CONTACT YOUR CONTECH REPRESENTATIVE. www.ContechES.com
4. STORMFILTER WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
5. STRUCTURE SHALL MEET AASHTO HS20 LOAD RATING, ASSUMING EARTH COVER OF 0' - 5' AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M306 AND BE CAST WITH THE CONTECH LOGO.

INSTALLATION NOTES

A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STORMFILTER STRUCTURE (LIFTING CLUTCHES PROVIDED).
C. CONTRACTOR TO INSTALL JOINT SEALANT BETWEEN ALL SECTIONS AND ASSEMBLE STRUCTURE.
D. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT PIPES. MATCH OUTLET PIPE INVERT WITH OUTLET BAY FLOOR.
E. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO PROTECT CARTRIDGES FROM CONSTRUCTION-RELATED EROSION RUNOFF.
F. CONTRACTOR TO REMOVE THE TRANSFER HOLE COVER WHEN THE SYSTEM IS BROUGHT ONLINE.

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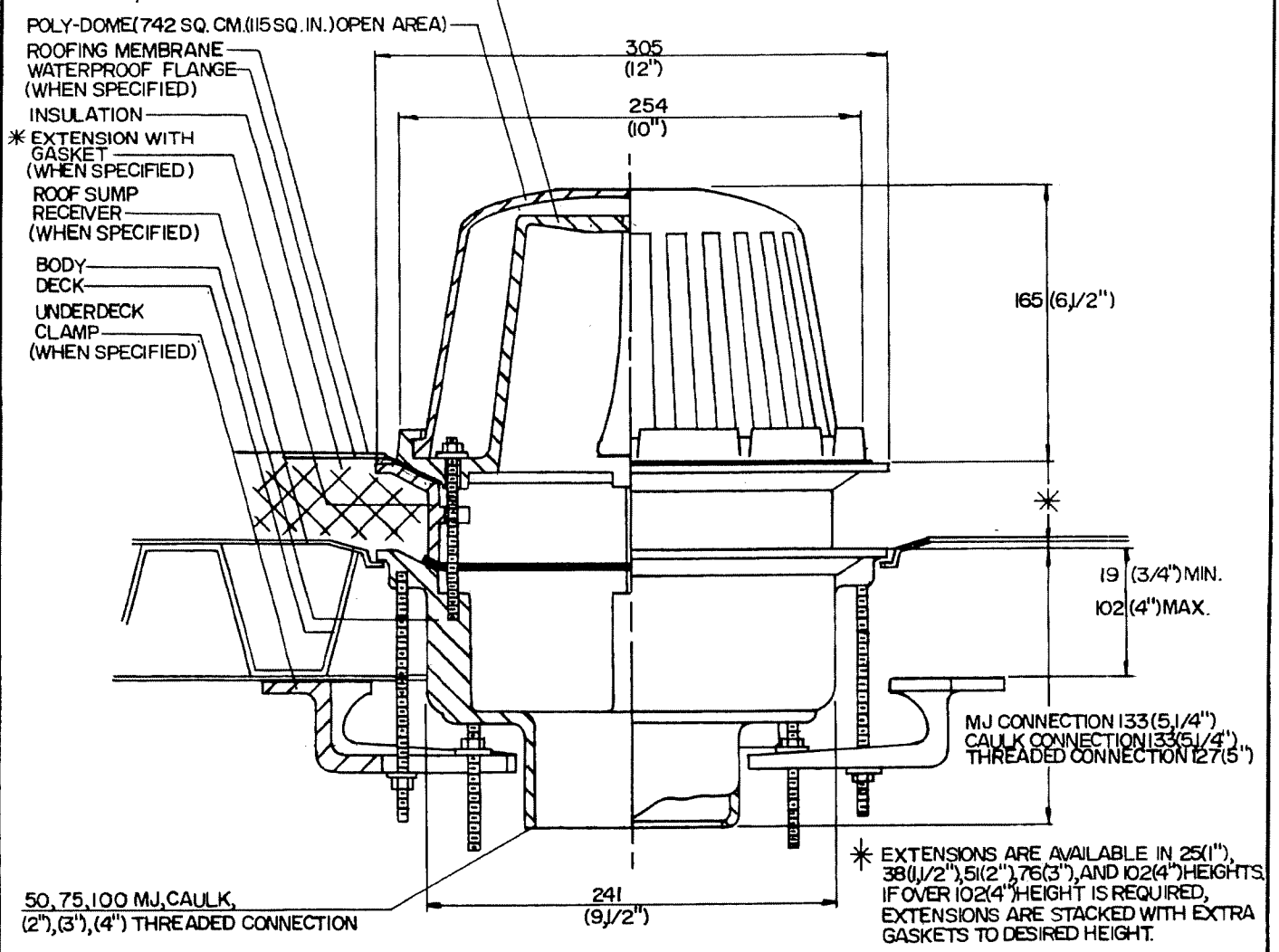
THE STORMWATER MANAGEMENT STORMFILTER 8' x 6' PEAK DIVERSION STORMFILTER STANDARD DETAIL

MULTI-WEIR BARRIER WITH INTEGRAL CLAMP COLLAR & GRAVEL GUARD IS DESIGNED TO PROVIDE FLOW RATES DIRECTLY PROPORTIONAL TO THE HEAD. WEIR IS AVAILABLE WITH 1 TO 6 INVERTED PARABOLIC NOTCHES. BOTTOM OF WEIR SHOULD BE FLUSH WITH TOP OF ROOF. TAPERED INSULATION IS NOT ACCEPTABLE



REGULARLY FURNISHED

* DURA-COATED CAST IRON BODY, 152 (6") HIGH SINGLE NOTCH ALUMINUM CONTROL FLO WEIR WITH INTEGRAL CLAMP COLLAR AND GRAVEL GUARD, HARDWARE, AND POLY-DOME.

FUNCTION - RECOMMENDED FOR INSTALLATION ON FLAT OR SLOPED ROOFS, WHERE CONTROL OF RAINWATER RUN-OFF IS REQUIRED.

NOTE
- BODY DECK OPENING 292 (11,1/2") DIAMETER
- IF ROOF SUMP RECEIVER IS USED, DECK OPENING 330 (13") DIAMETER.

*D.C. (DURA-COATED) OVEN CURED, FUSION BONDED EPOXY POWDER COATING

DIMENSIONS ARE IN INCHES (BRACKETS) AND TO THE NEAREST MILLIMETRE.

FURNISHED WHEN SPECIFIED

- ☐ -ZG GALVANIZED
- ☐ -C UNDERDECK CLAMP
- ☐ -E EXTENSION (SPECIFY HEIGHT REQUIRED)
- ☐ -R ROOF SUMP RECEIVER
- ☐ -A WATERPROOF FLANGE
- ☐ -EB ELEVATING BODY PLATE
- ☐ -SSM STAINLESS STEEL MESH OVER DOME
- ☐ -SS STAINLESS STEEL DRAINAGE GRID
- ☐ -ALUMINUM DOME
- ☐ -LONGER UNDERDECK CLAMP STUDS (SPECIFY LENGTH REQUIRED)
- ☐ -SPECIFY NUMBER OF NOTCHES REQUIRED IN WEIR IF SINGLE NOTCH NOT SUITABLE

MAY 21 '81 LM REV2 OCT 25 '85 LM 5/95 BC

'CONTROL FLO' ROOF DRAIN FOR LEVEL OR SLOPED ROOF	PRODUCT NUMBER ZCF-121
ZURN INDUSTRIES LIMITED	DRAWING NUMBER 0013

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