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PROPOSED MULTI-TOWER DEVELOPMENT

314 & 318 Athlone Avenue and 2006, 2020 & 2026 Scott Street

Development Servicing Study and Stormwater Management Report

PROPOSED MULTI-TOWER DEVELOPMENT
314 & 318 Athlone Avenue, 2006, 2020 & 2026 Scott Street

DEVELOPMENT SERVICING STUDY
AND STORMWATER MANAGMENT REPORT

Prepared by:

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February 22, 2023
Revised October 16, 2023
Revised March 5, 2024

Ref: R-2023-003
Novatech File No. 121302

March 5, 2024

Hoppner Holdings Inc.
1818 Bradley Side Road,
Carp, Ontario
K0A 1L0

Attention: Mr. Ken Hoppner

Dear Mr. Hoppner:

Re: Development Servicing Study & Stormwater Management Report
Proposed Multi-Tower Development
314 & 318 Athlone Avenue and 2006, 2020 & 2026 Scott Street, Ottawa, ON
Novatech File No.: 121302

Enclosed is a copy of the revised 'Development Servicing Study & Stormwater Management Report' for the proposed multi-tower residential development located at 314 & 318 Athlone Avenue, 2006, 2020 & 2026 Scott Street, in the City of Ottawa. This report addresses the approach to site servicing and stormwater management and is being submitted in support of a Site Plan Control application.

Please contact the undersigned, should you have any questions or require additional information.

NOVATECH

François Thauvette, P. Eng.
Senior Project Manager

FT/SM

cc: Shawn Wessel (City of Ottawa)
Pat Bisson (Hobin)

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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF APPENDICES

LIST OF PLANS

1.0 INTRODUCTION

Novatech has been retained by Hoppner Holdings Inc. to complete the site servicing, grading, and stormwater management design related to the proposed re-development of the properties at 314, 318 Athlone Avenue and 2006, 2020, 2026 Scott Street. This report is being submitted in support of a Site Plan Control application.

1.1 Location and Site Description

The 0.663-hectare site currently consists of five (5) properties that will be merged, including the Granite Curling Club (2026 Scott Street), existing commercial properties (2006 and 2020 Scott Street) as well as two residential properties to the east (314 and 318 Athlone Avenue). The subject site is located on the south side of Scott Street, west of Athlone Avenue, and is bordered by other residential and commercial developments. The Ottawa Gymnastics Centre and Lion's Park abuts the subject site to the south. The legal description of the site based on the Geowarehouse is designated as Part of Lot 31, Concession 1, being as in CR312969, CR570140 and Parts 1 and 2 on Plan 5R10777; Part of Lot 60 on Plan 263, and Parts 1 and 2 on Plan 5R6295; Lots 61 and 62 on Plan 263, City of Ottawa.

Figure 1: Aerial View of the Subject Site

Image Source: geoOttawa (City of Ottawa)

1.2 Pre-Consultation Information

A pre-consultation meeting was held with the City of Ottawa on December 21, 2021, at which time the client was advised of the general submission requirements. The Rideau Valley Conservation Authority (RVCA) was also consulted regarding the proposed development. Based on a review of **O. Reg. 525/98: Approval Exemptions**, a Ministry of the Environment, Conservation and Parks (MECP) Environmental Compliance Approval (ECA) will not be required for the proposed

development. Refer to **Appendix A** for a summary of the correspondence related to the proposed development.

1.3 Proposed Development

The proposed development will consist of two (2) residential towers with podiums covering approximately 0.597 ha of the total 0.663 ha site. Both towers will be 40-storeys in height. The development will include underground parking with site entrances off Scott Street and Athlone Avenue. The remainder of the site will consist of outdoor amenity space, with the southern portion of the site (~0.066 ha) being dedicated as park space, thus increasing the size of the City of Ottawa's Lion's Park to the south.

1.4 Reference Material

The following reports and studies were prepared and/or reviewed as part of the design process:

[1] Assessment of Adequacy of Public Services Report (Ref. No. R-2022-163), prepared by Novatech, dated September 14, 2022.

[2] The Geotechnical Investigation Report (Ref. No. PG5829-1), prepared by Paterson Group Inc. on June 7, 2021.

2.0 SITE SERVICING

The objective of this report is to demonstrate that proper sewage outlets (sanitary and storm) as well as a suitable domestic water supply and appropriate fire protection are available for the proposed development. The servicing criteria, the expected sewage flows, and water demands are to conform to the requirements of the City of Ottawa municipal design guidelines for sewer and water distribution systems. The City of Ottawa Servicing Study Guidelines for Development Applications requires that a Development Servicing Study Checklist be included to confirm that each applicable item is deemed complete and ready for review by City of Ottawa Infrastructure Approvals. A completed checklist is enclosed in **Appendix B** of the report.

2.1 Sanitary Servicing

The existing buildings are currently being serviced by the 300mm dia. and 375mm dia. sanitary sewers in Athlone Avenue and Scott Street. The local sanitary sewer flows north along Athlone Avenue, then west along Scott Street and discharges into the 1500mm dia. West Nepean Collector sewer, directly north of the subject site on the north side of Scott Street.

Under post-development conditions, the proposed site will continue to be serviced by the local municipal sanitary sewers in Scott Street. Based on a review of the as-built plan and profile provided by the City of Ottawa (15350p&p19_Scott), it appears the existing sanitary sewer along the western frontage of the site is in fact a 450mm dia. concrete pipe as opposed to a 375mm dia. pipe (as shown on geoOttawa). The City of Ottawa design criteria were used to calculate the theoretical sanitary flows for the proposed development. The following design criteria were taken from the City of Ottawa Sewer Design Guidelines and subsequent Technical Bulletins:

- Residential Units (1-Bedroom or Studio): 1.4 people per unit
- Residential Units (2-Bedroom): 2.1 people per unit
- Residential Units (3-Bedroom): 3.1 people per unit
- Average Daily Residential Sewage Flow: 280 L/person/day (ISTB-2018-01)

- Residential Peaking Factors = 3.32, 3.30 (Harmon Equation) – East Tower, West Tower
- Average Commercial Sewage Flow: 2.8 L/m^2/day
- Commercial Peaking Factor = 1.5
- Infiltration Allowance: 0.33 L/s/ha (ISTB-2018-01)

Table 1 identifies the theoretical sanitary flows for the proposed development based on the above design criteria and information provided by the architect.

Table 1: Theoretical Post-Development Sanitary Flows

Proposed Development	Unit Count	Design Population	Res Peak Flow (L/s)	Comm. Peak Flow (L/s)	Infiltration Allowance (L/s)	Sanitary Peak Flow (L/s)
East Tower	392	672	7.24	0.01	0.10	7.34
West Tower	464	773	8.26	0.01	0.10	8.36
Total	**856**	**1,445**	**15.5***	**0.02***	**0.20***	**15.7***

*Represents rounded values

To simplify the internal plumbing, each building will be equipped with its own service lateral. A PVC sanitary service lateral having a size of 200mm dia. at a minimum slope of 1.0% has a full flow conveyance capacity of 34.2 L/s and should have enough capacity to convey the theoretical sanitary flows from the proposed towers. Based on the internal plumbing configuration and OBC requirements determined by the mechanical consultant the sanitary laterals may need to increase in size, which will thus also increase their conveyance capacity. Refer to the enclosed **General Plan of Services** (121302-GP) and to **Appendix C** for detailed sanitary sewage calculations. Sanitary site flows will travel less than 50m within the local municipal sanitary sewers in Scott Street before being discharged into the 1500mm dia. West Nepean Collector on the north side of Scott Street.

2.2 Water Supply for Domestic Use and Firefighting

The existing buildings are currently being serviced by a 200mm dia. PVC watermain on the south side of Scott Street and a 150mm UCI watermain in Athlone Avenue. A 1220mm dia. (backbone) watermain is also running along the north side of Scott Street, however the proposed development will not connect into this large diameter feeder main. The subject site is located within the City of Ottawa 1W pressure zone.

Under post-development conditions, the proposed site will continue to be serviced by the 200mm dia. local municipal watermain in Scott Street. The anticipated daily water demands will be greater than 50m^3/day (~0.58 L/s), therefore, the proposed development will require two (2) water supplies for redundancy purposes. The proposed towers will be sprinklered and the water meter(s) will be located within the water entry room(s), with the remote meter(s) and siamese connection(s) on the exterior face of the Towers.

2.2.1 Water Demands and Watermain Analysis

The theoretical water demand and fire flow calculations are based on criteria in the City of Ottawa Design Guidelines – Water Distribution. The fire flow requirements were calculated per the Fire Underwriters Survey (FUS) as indicated in City of Ottawa Technical Bulletin ISTB-2021-03, based

on information provided by the architect. The following design criteria were taken from City of Ottawa Sewer Design Guidelines and subsequent Technical Bulletins:

- Residential Units (1-Bedroom or Studio): 1.4 people per unit
- Residential Units (2-Bedroom): 2.1 people per unit
- Residential Units (3-Bedroom): 3.1 people per unit
- Average Daily Residential Water Demand: 280 L/person/day (ISTB-2021-03)
- Maximum Day Demand Peaking Factor = 2.5 x Avg. Day Demand (City Water Table 4.2)
- Peak Hour Demand Peaking Factor = 2.2 x Max. Day Demand (City Water Table 4.2)
- Average Commercial Water Demand: 2.8 L/m^2/day
- Maximum Day Demand Peaking Factor = 1.5 x Avg. Day Demand (City Water Table 4.2)
- Peak Hour Demand Peaking Factor = 1.8 x Max. Day Demand (City Water Table 4.2)

Table 2 identifies the theoretical domestic water demands and fire flow requirements for the development based on the above design criteria. Refer to **Appendix D** for detailed calculations.

Table 2: **Theoretical Water Demand for Proposed Development**

Proposed Development	Unit Count	Design Population	Avg. Daily Demand (L/s)	Max. Daily Demand (L/s)	Peak Hour Demand (L/s)	FUS Fire Flow (L/s)
East Tower	392	672	2.2	5.5	12.0	200
West Tower	464	773	2.5	6.3	13.8	217
Total	**856**	**1,445**	**4.7***	**11.8***	**25.8***	**217 (Max)**

*Represents rounded values, including commercial.

The following design criteria were taken from Section 4.2.2 – 'Watermain Pressure and Demand Objectives' of the City of Ottawa Design Guidelines for Water Distribution:

- Normal operating pressures are to range between 345 kPa (50 psi) and 483 kPa (70 psi) under Max Day demands.
- Minimum system pressures are to be 276 kPa (40 psi) under Peak Hour demands.
- Minimum system pressures are to be 140 kPa (20 psi) under Max Day + Fire Flow demands.

Preliminary domestic water demands, and fire flow requirements were provided to the City of Ottawa to generate the municipal watermain network boundary conditions assuming two (2) water supplies. **Table 2.1** summarizes the municipal watermain boundary conditions and the preliminary hydraulic analysis results based on the information provided by the City of Ottawa.

Table 2.1: Hydraulic Boundary Conditions Provided by the City (Existing Conditions)

Municipal Watermain Boundary Condition	Boundary Condition Head of Water (m)	Normal Operating Pressure Range (psi)	Anticipated WM Pressure (psi)*
Assuming Two (2) Connections to the 200mm dia. WM in Scott Street			
Minimum HGL (Peak Hour Demand)	108.3 m	40 psi (min.)	~ 67 psi
Maximum HGL (Max Day Demand)	115.0 m	50-70 psi	~ 77psi
HGL Max Day + Fire Flow FF=200 L/s (East Tower) FF=217 L/s (West Tower)	98.2 m 96.4 m	20 psi (min.)	~ 53 psi ~ 50 psi

* Based on an approximate elevation of 63.2m at the WM connection points in Scott Street. Design pressure = (HGL – watermain elevation) x 1.42197 PSI/m.

Based on preliminary calculations and correspondence received from the City of Ottawa, it is anticipated that the pressure within the municipal watermain network will be adequate, and possibly exceed the upper end of the normal operating pressure range during the Max Day Conditions. Pressure reducing valves (PRV) may be required given the relatively high system pressures. Given the height of the proposed buildings, booster pumps will be required to provide adequate water pressure to the upper floors.

As discussed with the City of Ottawa, a multi-hydrant approach to firefighting will be required to supply adequate fire flow to the proposed development. There are currently several Class AA (blue bonnet) hydrants within 150m of the proposed site. Based on the City of Ottawa Technical Bulletin ISTB-2018-02, Class AA (blue bonnet) hydrants within 75m have a maximum capacity of 95 L/s while hydrants between 75m and 150m have a maximum capacity of 63 L/s (at a pressure of 20 PSI). **Table 2.2** summarizes the theoretical combined fire flow available from the nearby municipal fire hydrants and compares it to the fire flow demands based on the FUS calculations.

Table 2.2: **Theoretical Fire Protection Summary Table**

Building	(FUS) Fire Flow Demand (L/s)	Fire Hydrant(s) within 75m (~ 95 L/s each)	Fire Hydrant(s) within 150m (~ 63 L/s each)	Theoretical Combined Available Fire Flow (L/s)
East Tower	200	3	2	**>200**
West Tower	217	2	2	**>217**

The combined maximum flow from the nearby municipal hydrants will exceed the Max Day + Fire Flow requirement of the proposed development. This multi-hydrant approach to firefighting is in accordance with the City of Ottawa Technical Bulletin ISTB-2018-02. Refer to the enclosed **General Plan of Services** (121302-GP) and to **Appendix D** for detailed calculations, correspondence from the City of Ottawa, a fire hydrant sketch showing the existing fire hydrant locations and the dimensions confirming the appropriate site coverage.

2.3 Storm Drainage and Stormwater Management

Storm drainage from the existing properties is currently being directed towards the local storm sewers in Scott Street and Athlone Avenue. The local storm sewers discharge into the West Transit Way Storm Trunk Sewer and outlet into the Ottawa River (just west of Onigam Street) approximately 2.9 km downstream of the subject site.

Under post-development conditions, storm flows from the subject site will continue to be directed to various storm outlets: Storm flows from the majority of the site (0.597 ha) will be directed to the 1200mm dia. storm sewer in Scott Street. Due to existing elevations, storm drainage from a small low-lying portion of the site will be directed to the 750mm dia. storm sewer in Athlone Avenue. This will ensure that existing drainage patterns and major overland flow paths are generally maintained. Stormwater runoff from the southern portion of the site (~0.066 ha) being dedicated as parkland, expanding the City of Ottawa Lion's Park, will be directed to the 300mm dia. storm sewer in Ashton Avenue as this is the only municipal storm sewer fronting this portion of the park. As previously discussed with the City of Ottawa, the intent is to remove the existing 375mm dia. STM sewer running along the west property line. Leaving the pipe and creating an easement will only encumber the proposed development.

2.3.1 Stormwater Management Criteria and Objectives

The stormwater management (SWM) quantity control criteria have been provided during a pre-consultation meeting with the City of Ottawa and the objectives are as follows:

- Provide a dual drainage system (i.e., minor, and major system flows).
- Control post-development storm flows, up to an including the 100-year design event, to the maximum allowable release rate calculated using the Rational Method, with a runoff coefficient equivalent to existing conditions, but in no case greater than C=0.5, a time of concentration no less than 10 minutes and a 2-year rainfall intensity (despite the pre-consultation notes stating a 5-year rainfall intensity from City of Ottawa IDF curves).
- Maintain existing drainage patterns and major overland flow paths as much as possible.
- Provide guidelines to ensure that site preparation and construction is in accordance with the current Best Management Practices for Erosion and Sediment Control.

The subject site is located within the jurisdiction of the Rideau Valley Conservation Authority (RVCA). Based on correspondence from the RVCA on-site stormwater quality control measures will not be required due to the nature of the development, the fact that parking will be underground and that the distance to the stormwater outlet is >2km downstream. Refer to **Appendix A** for correspondence from the City of Ottawa and RVCA.

2.3.2 Pre-Development Conditions and Allowable Release Rate

Although unknown, it is assumed that site flows are currently not being controlled prior to being released into the municipal storm sewer systems. As specified by the City of Ottawa, the maximum allowable release rate from the subject site is to be calculated using the Rational Method, with a runoff coefficient equivalent to existing conditions, but in no case greater than C=0.5, a time of concentration of 10 minutes and a 2-year rainfall intensity from City of Ottawa IDF curves. The maximum allowable release rates for the residential and dedicated parkland expansion block were calculated as follows:

Residential portion of the site:

T_c = 10 min C =0.50
I_{2yr} = 76.8 mm/hr A = 0.597 ha

Q_{allow} = 2.78 CIA
= 2.78 (0.50) (76.8) (0.597)
= 63.7 L/s

Parkland dedication block portion of the site:

T_c = 10 min C =0.50
I_{2yr} = 76.8 mm/hr A = 0.066 ha

Q_{allow} = 2.78 CIA
= 2.78 (0.50) (76.8) (0.066)
= 7.0 L/s

Refer to the **Pre-Development Storm Drainage Area Plan** (121302-SWM1) and to **Appendix D** for detailed SWM calculations.

2.3.3 Post-Development Conditions

The post-development conditions will include both uncontrolled direct runoff and controlled site flows. The uncontrolled direct runoff and site flows include areas on the north, east and west sides of the site. These areas will either sheet drain uncontrolled towards the adjacent streets as there is no practical way to capture this drainage and/or be captured by a catch basin and directed to the municipal storm sewer uncontrolled. The flows from the tower roofs and outdoor amenity space (above the underground parking structure) will be sent directly to an internal SWM storage tank and controlled (pumped) prior to being discharged into the municipal storm sewer in Scott Street. Stormwater runoff from the southern portion of the site, being dedicated as parkland will need to be controlled prior to being directed to the 300mm dia. storm sewer in Ashton Avenue.

2.3.3.1 Area A-1: Direct Runoff

The uncontrolled post-development flow from this sub-catchment area was calculated using the Rational Method to be approximately 7.6 L/s during the 5-year design event and 14.9 L/s during the 100-year design event. Refer to the **Post-Development Storm Drainage Area Plan** (121302-SWM2) and to **Appendix E** for detailed SWM calculations.

2.3.3.2 Area A-2 + OS-1: Uncontrolled Flow

Due to existing elevations, storm drainage from these small low-lying drainage areas will be captured by a new catch basin located adjacent to the east property line. Uncontrolled flows from sub-catchments A-2 + OS-1 (contributing off-site residential drainage) will be directed to the 750mm dia. storm sewer in Athlone Avenue via internal plumbing. This configuration will ensure that existing drainage patterns and major overland flow paths are generally maintained along the south and east sides of the subject site. The uncontrolled post-development flow from these combined sub-catchment areas was calculated using the Rational Method to be approximately 13.6 (0.3+13.3) L/s during the 5-year design event and 27.0 (0.6+26.4) L/s during the 100-year design event. Refer to the **Post-Development Storm Drainage Area Plan** (121302-SWM2) and to **Appendix E** for detailed SWM calculations (representing rounded values).

2.3.3.3 Area A-3: Controlled Site Flow

Stormwater runoff from this larger sub-catchment area will be captured by the tower roofs and site drains and directed to an internal SWM storage tank. Stormwater collected within the storage tank will be pumped up to the storm service lateral and released into the existing 1200mm dia. storm sewer in Scott Street. A pump (designed by the mechanical consultant) is required to control flow from the tank to a maximum rate of 31.5 L/s (540 USGPM). A "stand-by" pump will be provided for emergency and/or maintenance purposes. An emergency power supply will also be provided. CBMH will provide access to the SWM storage tank as well as act as the emergency overflow from the tank to the surface. The internal plumbing is to be pressure rated piping specified by the mechanical engineer. The storm service will be equipped with a backflow prevention device to protect the building from any potential sewer back-ups. **Table 3** summarizes the controlled post-development design flows and approximate storage volumes from area A-3 during the 5-year and 100-year design events.

Table 3: Internal Stormwater Storage Tank and Pumped Flow

Design Event	Post-Development Conditions		
	Pumped Design Flow (L/s)	Volume Required (m^3)	Volume Provided (m^3)
5-Year	31.5 L/s	69.0 m^3	> 182 m^3
100-Year		181.7 m^3	

As indicated in **Table 3** above, the internal stormwater storage tank will provide sufficient storage for the 100-year design event. Refer to **Appendix E** for detailed calculations.

2.3.3.4 Area A-4: Uncontrolled Flow

The uncontrolled post-development flow from this sub-catchment area was calculated using the Rational Method to be approximately 1.1 L/s during the 5-year design event and 2.2 L/s during the 100-year design event. Refer to the **Post-Development Storm Drainage Area Plan** (121302-SWM2) and **Appendix E** for detailed SWM calculations.

2.3.3.5 Area A-5 + OS-2: Controlled Site Flow

As part of the proposed development the existing storm sewer running along the west property line will be removed to accommodate the proposed residential development. As a result, stormwater runoff from sub-catchment areas A-5 (the southern portion of the site being dedicated as parkland) and OS-2 (City of Ottawa property) will need to be directed to the 300mm dia. storm sewer in Ashton Avenue as this is the only municipal storm sewer fronting this portion of the park. Runoff from these combined sub-catchment areas will need to be captured by a new catch basin(s) and attenuated by an ICD installed at the downstream end of the system prior to being released into the Ashton Avenue storm sewer. Since the detailed grading, servicing, and stormwater designs for the expanded City of Ottawa park are unknown at this time, we are simply providing conceptual stormwater management design values based on general assumptions (i.e., the existing paved area will be removed and replaced with sod and the 5-year weighted runoff coefficient for this combined drainage area will be in the order of C_w=0.37).

Table 3.1 summarizes the conceptual post-development design for this combined area as well as the likely type of ICD and anticipated storage volumes requirements for the 5-year and the 100-year design events.

Table 3.1: Stormwater Flows, ICD & Surface Storage

Design Event	Controlled Flows from Areas A-5 + OS-2 (Conceptual Only)			
	ICD Type	Peak Flow (L/s)	Storage Volume Required (m^3)	Storage Volume to be Provided (m^3)
5-Year	Tempest Vortex ICD LMF-Custom	5.5 L/s	5.5 m^3	>16.3 m^3
100-Year		6.0 L/s	16.3 m^3	

*Above values based on an assumed 5-year weighted runoff coefficient of 0.37.

Refer to **Appendix D** for conceptual SWM calculations. The detailed grading, servicing, and stormwater designs will need to be refined as part of the expanded park design. As a result, the peak flows and storage requirements will vary.

2.3.3.6 Stormwater Flow Summary

Table 3.2 and **Table 3.3** provides a summary of the total post-development flows from the site and compares them to the uncontrolled pre-development flows and to the respective allowable release rates specified by the City of Ottawa.

Table 3.2: Stormwater Flows Comparison Table (Residential Site)

Design Event	Drainage Areas A-1, A-2, A-3, and A-4							
	Pre-Development Conditions		Post-Development Conditions					
	Uncontrolled Flow (L/s)	Allowable Release Rate (L/s)	A-1 Flow (L/s)	A-2 Flow (L/s)	A-3 Flow (L/s)	A-4 Flow (L/s)	Total Flow (L/s)	Reduction in Flow (L/s or %)*
5-Yr	149.4	63.7	7.6	0.3	31.5	1.1	40.5	108.9 or 73%
100-Yr	285.0		14.9	0.6	31.5	2.2	49.2	235.8 or 83%

*Reduced flow compared to pre-development uncontrolled conditions.

As indicated in the table above, the post-development flows from the residential portion of the site will not exceed the allowable release rate specified by the City of Ottawa. Furthermore, this represents significant reductions in total site flow rate when compared to the uncontrolled pre-development conditions. Most of the flows are being directed towards the storm sewer in Scott Street, however a small portion (A-2) is being directed to the municipal storm sewer in Athlone Avenue.

Table 3.3: Stormwater Flows Comparison Table (Expanded Parkland)

Design Event	Drainage Areas A-5 + OS-2 (Conceptual Only)				
	Pre-Development Conditions		Post-Development Conditions		
	Uncontrolled Flow (L/s)	Allowable Release Rate (L/s)	A-5 + OS-2 Flow (L/s)	Storage Volume Required (m^3)	Storage Volume to be Provided (m^3)
5-Yr	28.6	7.0	5.5	5.5 m^3	>16.3 m^3
100-Yr	54.9		6.0	16.3 m^3	

*Reduced flow compared to pre-development uncontrolled conditions.

As discussed above, the detailed grading, servicing, and stormwater designs will need to be refined as part of the expanded park design.

2.3.4 Stormwater Quality Control

The subject site is located within the jurisdiction of the Rideau Valley Conservation Authority (RVCA) and is tributary to the Ottawa River. Based on preliminary feedback from the RVCA, landscaped areas and roof tops are considered clean for the purpose of protecting water quality for aquatic habitat. In this case, since parking will be provided underground and the distance to the stormwater outlet is > 2 km downstream, on-site stormwater quality control will not be required. Refer to **Appendix A** for correspondence from the RVCA and City of Ottawa.

3.0 SITE GRADING

The existing site is relatively flat, and generally slopes in a northeastern direction. Along the front of the site, the northwest property corner is approximately 63.28 m and slopes to 62.51m at the northeastern property corner. Along the back of the site, the site slopes in a southeasterly direction, the existing grade at the southwestern corner of the property is approximately 62.79 and slopes to approximately 62.59m in the southeastern corner of the site. Under post-development conditions, the site will continue to slope from the back to the front. The proposed finished floor elevation (FFE) will be set at 63.65m for each building to provide a barrier free access to the proposed building at the front entrance and the east side. The existing grades around the perimeter of the site will be maintained. Refer to the enclosed **Grading and Erosion & Sediment Control Plan** (121302-GR) for details.

4.0 GEOTECHNICAL INVESTIGATIONS

A Geotechnical Investigation Report has been prepared by Paterson Group Inc. for the proposed project. Refer to the Geotechnical Report[2] for subsurface conditions, construction recommendations and geotechnical inspection requirements.

5.0 EROSION AND SEDIMENT CONTROL

To mitigate erosion and to prevent sediment from entering the storm drainage system, temporary erosion and sediment control measures will be implemented on-site during construction in accordance with Best Management Practices for Erosion and Sediment Control. Details are

provided on the Grading and Erosion and Sediment Control Plan. This includes the following measures:

- Filter bags / catch basin inserts (sediment sacks) will be placed under the grates of nearby catch basins and manholes, and they will remain in place until vegetation has been established and construction is completed.
- Silt fencing will be placed per OPSS 577 and OPSD 219.110 along the surrounding construction limits.
- Mud mats will be installed at the site entrances.
- Street sweeping and cleaning will be performed, as required, to suppress dust and to provide safe and clean roadways adjacent to the construction site.
- On-site dewatering is to be directed to a sediment trap and/or gravel splash pad and discharged safely to an approved outlet as directed by the engineer.
- Any stockpiled material will be properly managed to prevent those materials from entering the sewer system and/or the downstream ditch or watercourse.

The temporary erosion and sediment control measures will be implemented prior to construction and will remain in place during all phases of construction. Regular inspection and maintenance of the erosion control measures will be undertaken.

6.0 CONCLUSION

This report has been prepared in support of a Site Plan Control application for the proposed development located at 2026 Scott Street. The conclusions are as follows:

- The proposed development will be serviced by the municipal infrastructure in Scott Street, Athlone Avenue and Ashton Avenue.
    - Sanitary flows from the East and West Towers will be directed to the existing 375mm dia. and 450mm dia. municipal sanitary sewers in Scott Street.
    - Storm flows from the main portion of the site, including the building roofs and site area (above the underground parking structure) will be sent to an internal SWM tank, then pumped out to the existing 1200mm dia. municipal storm sewer in Scott Street.
    - Storm flows from the low-lying areas on the east side of the site, including tributary off-site flow from the adjacent residential properties will be directed to the existing 750mm dia. municipal storm sewer in Athlone Avenue, thus maintaining existing drainage patterns.
    - Storm flows from the dedicated parkland at the south end of the existing property will be directed to the existing 300mm dia. municipal storm sewer in Ashton Avenue.
    - The proposed development will continue to be serviced by the municipal watermain network via two (2) water service laterals connecting to the existing 200mm watermain in Scott Street. Adequate water supply and system pressures will exist throughout the watermain network under the specified ‘Max Day + Fire Flow’ and ‘Peak Hour’ conditions.
- The proposed building will be sprinklered and the municipal watermain network, including the nearby municipal fire hydrants will provide the necessary water for firefighting purposes.

- The total post-development flow directed to the municipal storm sewer system in Scott Street will be approximately 40.2 (40.5-0.3) L/s during the 5-year design event and 48.6 (49.2-0.6) L/s during the 100-year event, all less than the allowable release rate for the site (63.7 L/s) specified by the City of Ottawa.
- The total post-development flow directed to the municipal storm sewer system in Athlone Avenue will be approximately 13.6 (0.3+13.3) L/s during the 5-year design event and 27.0 (0.6+26.4) L/s during the 100-year event (representing rounded values).
- The total post-development flow directed to the municipal storm sewer system in Ashton Avenue will need to be defined as part of the park block design.
- Regular inspection and maintenance of the building services, roof drains, internal SWM tank and pumps is recommended to ensure that the storm drainage system is clean and operational.
- Erosion and sediment controls are to be provided during construction.

It is recommended that the proposed site servicing and stormwater management design be approved for implementation.

NOVATECH

Prepared by:

Chris Visser
Project Coordinator

Reviewed by:

François Thauvette, P. Eng.
Senior Project Manager

APPENDIX A

Project Correspondence

Steve Matthews

To: Francois Thauvette
Subject: FW: Pre-consultation 2026 Scott Street follow up - PC2021-0379
Attachments: 2026 Scott Meeting Minuites final.pdf; 2026 Scott St Pre-Consul Notes Engineering.docx; 2026 Scott Street_Parks comments.pdf; design_brief_submission requirements_2026 Scott.pdf; Pre-con Applicant's Study and Plan Identification List.pdf; Scott Street_Ultimate - 1. Churchill to Lanark.pdf

-------- Forwarded Message --------
Subject: Pre-consultation 2026 Scott Street follow up - PC2021-0379
Date: Thu, 23 Dec 2021 20:47:13 +0000
From: Button, Jessica <jessica.button@ottawa.ca>
To: Ken Hoppner <khoppner@morleyhoppner.com>, Patrick Bisson <pbisson@hobinarc.com>
CC: McCreight, Andrew <Andrew.McCreight@ottawa.ca>, Dubyk, Wally <Wally.Dubyk@ottawa.ca>, Wessel, Shawn <shawn.wessel@ottawa.ca>, Wang, Randolph <Randolph.Wang@ottawa.ca>, Russett, Mike <Mike.Russett@ottawa.ca>, Wherry, Kevin <Kevin.Wherry@ottawa.ca>, Heather Mitchell <heathertodmitchell@gmail.com>

Good afternoon,

Please refer to the below and attached notes regarding the Pre-Application Consultation (pre-con) Meeting held on December 21, 2021 for the property at 2026 Scott St. The proposal proposes to develop the site with three towers, containing residential units along with commercial uses at grade.The proposed development requires application for Site Plan Control and Zoning By-law Amendment.

Attached is the required Plans & Study List for application submission. This is based on a concurrent submission of the applications.

Note: Prior to application submission, confirm submission process and if hard copies are required. Procedures are subject to change due to current pandemic procedures.

Attached are staff's preliminary comments based on the information available at the time of pre-con meeting. The attached pre-con Meeting Minutes summarize the meeting discussion. If any comments were recorded incorrectly, please respond to the group and clarify. Similarly, if anyone has any additional comments please do not hesitate to pass those along to the group.

Planning

- See comments in attached minutes
- The Richmond Road / Westboro Secondary Plan applies to this property
- Review the policy context and requirements for high-rise development, including the High-rise Guidelines and potential zoning changes.
- Review the Bird-Safe Design Guidelines and status prior to submitting an application.
- Review the new Tree Protection By-law

- The Scott Street ultimate design (may be subject to change) for Scott/Clifton is attached so that the site frontage design and at grade treatment are considered accordingly.
- Applications required:
    - Site Plan Control - Complex
        - For information on Site Plan Control Thresholds under the Site Plan Control By-law, please visit: https://documents.ottawa.ca/sites/documents/files/siteplan_thresholds_en.pdf
    - Zoning By-law Amendment (Major)

Urban Design Comments- Randolph Wang

- As this proposal runs along one of the City's Design Priority Areas and must attend the City's UDRP;
- A Design Brief is a required submittal for all Site Plan/Re-zoning applications. Please see the scoped Design Brief Terms of Reference provided and consult the City's website for details regarding the UDRP schedule. The material required for the design brief can also be used for the UDRP submission.
- Additional comments are attached in minutes

Engineering Comments –Shawn Wessel

- See the engineering comments in the document "Engineering Comments" attached to this email.
- Feel free to have your consultant contact shawn.wessel@ottawa.ca if they have any questions or to request boundary conditions.

Transportation Comments

- See comments in attached minutes

Feel free to contact Transportation Project Manager, Wally Dubyk, at wally.dubyk@ottawa.ca, ext.13783, for follow-up questions.

Waste Management

- Review the Waste Management Guidelines. Once the number of units is determined, Waste Services can suggest the bin requirements. You can forward a preliminary plan for review to start thinking about garbage room requirements and management for pick-up.

Parkland

- Parkland will be collected in the form of land. Addition details are attached.

Community Association Comments – Heather

- Comments recorded in the attached minutes.

Other

- You are encouraged to contact the Ward Councillor, Jeff Leiper, for awareness of the proposed development.
- I encourage discussing the proposal with the Ward Councillor, and reaching out to the surrounding neighbours for awareness of the potential proposal. If you reach out to the general public prior to application submission, please consider waiving the Non-Disclosure Agreement confidentiality for Heather.

Please refer to the links to "Guide to preparing studies and plans" and fees for further information. Additional information is available related to building permits, development charges, and the Accessibility Design Standards. Be aware that other fees and permits may be required, outside of the development review process. You may obtain background drawings by contacting informationcentre@ottawa.ca.

These pre-con comments are valid for one year. If you submit a development application(s) after this time, you may be required to meet for another pre-consultation meeting and/or the submission requirements may change. You are encouraged to contact us for a follow-up meeting if the plan/concept will be further refined.

Please do not hesitate to contact me if you have any questions.

Jessica Button, MCIP, RPP
Planner II | *Urbaniste II*
Development Review Central | Examen des demandes d'aménagement secteur centre
Planning, Infrastructure and Economic Development Department | *Services de la planification, de l'infrastructure et du développement économique*
City of Ottawa | *Ville d'Ottawa*
110 Laurier Avenue West. Ottawa, ON | *110, avenue. Laurier Ouest. Ottawa (Ontario) K1P 1J1*
ottawa.ca/planning / *ottawa.ca/urbanisme*

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Pre-Application Consultation Meeting Notes

PC2021-0379

Property Address: 2026 Scott Street
December 21, 2021

Attendees:

City of Ottawa:
Andrew McCreight (File Lead), Jessica Button (Planning), Wally Dubyk, (Transportation), Shawn Wessel (Engineering), Randolph Wang (Urban Design), Mike Russett (Parks), Kevin Wherry (Parks)

Applicant Team:
Cyril Leeder, Ken Hoppner, Patrick Bisson, Nick Sutherland, Miguel Tremblay, Geoff Publow, Francois Thauvette, Brad Byvelds, Barry Hobin, Stephen Martin

Community: Heather Mitchel (Westboro Community Association)

Meeting notes:
Opening & attendee introduction

- Introduction of meeting attendees
- Overview of proposal:
  - Former Granite Curling Club to be re-located. Site will be amalgamated with corner lot.
  - 3 buildings to create a micro-urban hub
  - Lion's Park and the Gymnastic Club are located to the immediate south
  - Building heights are proposed at 40, 35 and 30 storeys
  - Commercial space at grade / Scott street to support active street frontage
  - Buildings are intended to provide rental units.
  - 60% 1 bedroom, rest 2 bedrooms and studios
  - Key design narratives: public space, street level animation, mixed use visibility, connectivity, built form to add to the development

Parks (Kevin Wherry)

Detailed parkland comments are attached.

Planning (Andrew McCreight)

- The proposal will be subject to application for Zoning and Site Plan

- It will be essential that the application demonstrate compliance with Richmond Road/Westboro Secondary Plan and Parent OP to avoid an OPA. High-level up to 40-storeys may be considered but need rationale for support re: secondary plan policies for consideration of taller buildings.

- The new OP is expected to be approved around April from the Minister. If an application is submitted prior to this date Planning Rationale shall cover both OPs. Staff will apply the most restrictive policies.
    - Limit surface parking to very small amount and only for drop-off, delivery. Look at car-share options
    - Transition on this site is very important and staff see two distinct contexts, 1 – along Scott and 2 -rear portion of the site. Towers along Scott should be designed with podium heights consistent with recent builds and approval (5/6-storey) and small tower floor plates (up to 750 sq.m) with the tower at least 20m away from abutting residential zones. The rear portion of the site would be better suited for an angular plane assessment, resulting in much lower height, likely mid-rise.
    - Respond to the proposal at 2050 Scott – transitions to 6 and 3-storey are rear along Ashton.
    - Looking for minimum 23 metres tower separation.
- What is meant by the project description of “World Class Transit Hub focusing on mixed-use, high density housing forms focused on multiple forms of housing and public realm”
    - Applicant response - The site is an important site and will be developed to it’s full potential to be a rich and vibrant hub with activities to draw people to the site. The LRT is nearby and people can filter through the site as they walk to Westboro. This site is approximately 800 units, lots of services and amenities need to be provided on site as it is more of a community or mini city along a transit station.
- A north south mid-block connection is essential in the design of the site, and this will remain a constant as the design evolves, looking to making connections from Scott street to Ashton Street and the Park.
- Further evaluate the site access to avoid open suburban style garage ramp and look for opportunity to internalize this access to the site.
    - Corridor policies suggest that vehicle access should be directed to the site street.
- TDM strategies should be very strong to support the development as being transit oriented –bike parking/location, presto cards for first tenants, lobby display boards,

less parking, car-share etc. Sell the idea further of being a “World Class Transit hub”.

- Section 111 - Bicycle Parking Space Rates and Provisions provides the zoning requirements for bicycle parking including stacked bicycle parking.
- Affordable Housing is encouraged and is more strongly supported by the new OP
- Be mindful that Inclusionary Zoning (IZ) and Community Benefits By-law is anticipated to come into effect next year and may apply to this development.
    - Currently, Section 37 would apply. An analysis shall be covered within the Planning Rationale demonstrating the as-of-right zoning permissions vs proposed. See the Section 37 guidelines for direction.
- Driveway or private road access servicing as fire access route over parking garage requires construction to bridge standard.
- Think about public use and enjoyment of the site or even tourism. Westboro is a very popular neighbourhood and one that warrants some consideration for tourism as a trendy urban neighbourhood of Ottawa. Looks for opportunities within the tallest towers for things like an observation deck / top level amenity (views back towards downtown and Parliament) or viewing platforms, upper restaurant/bar, etc. This stems from the 41+ building policies but should not be discounted for the intent of this site being world class. Being creative and exploring these public opportunities is encouraged.
- Any unprogrammed space at grade (such as driveway and walkways) should be designed for soft landscaping and trees.
- Look for opportunity to have a public pathway connection from Scott to Park.
- Refer to the Bird-friendly guidelines.
- The construction of the Scott Street corridor is currently going through design detail and is subject to change. Development should coordinate the frontage design accordingly. Current plans (Ultimate Scott Design) are provided for your consideration.

Urban Design (Randolph Wang)

- A Design Brief is required as part of the submission. The Terms of Reference is attached for convenience. Please note both wind and shadow studies are required.
- The site is within a Design Priority Area. Formal review by the City’s UDRP is required. Given the significance of the location and the development, the applicant can also benefit from UDRP informal review at pre-consultation stage before submission. The UDRP is currently experiencing high volume of demands and the

priority is given to formal review. It is recommended that the applicant further study the development and design options and come back for a second staff pre-consultation. The merits of a UDRP pre-consultation can then be determined and confirmed.

- Urban design agrees with many general principles presented by the applicants. However, as evidenced in the discussion at the meeting, the location and size of the required municipal park play a significant role in determining the overall site plan layout and will influence built form and public realm design. At the first glance the proposed 3-tower concept appears to be overwhelming for the site and its context. Moving forward please continue to study the context of the area and the neighbourhood. At high level, the development should:
    - Create an animated frontage along Scott Street through appropriate at grade uses and built form design;
    - Provide a generous pedestrian realm along Scott Street with allowance for a continuous tree canopy;
    - Respect the residential character of Athlone Avenue through built form design and landscaping;
    - Increase pedestrian connectivity from the transit station to the residential neighbourhood by creating pedestrian short cuts through the site;
    - Provide meaningful transition to the low-rise area and the municipal park. Use angular planes are a tool to facilitate the design for transition;
    - Ensure a good relationship and coordination with the proposed development at 2050 Scott Street. Respect tower separations, minimize shadow and wind impacts on the public realm, outdoor amenity spaces, and ensure livable conditions for all future residents;
    - Provide appropriate built form scales along Scott, including the height and scale of both the towers and the podium. It is important to study the completed and approved buildings along Scott Street and develop an understanding of what is likely to unfold and what might be the appropriate strategy moving forward. The general rule of thumbs, as provided for in the City's many policies and guidelines, is that tallest buildings should be located close to transit station. Building heights should decrease as the distances to the transit station increase. The City's policies and guidelines also call for variations.

Transportation (Wally Dubyk)

The Screening Form indicates that the TIA Triggers have been met. Please proceed with the next TIA Step 2 – Scoping Report.

This development falls under a TOD area. The development requires TDM measures that support achieving the area mode share targets.

Update to the TIA Guideline Forecasting Report

- We would like to inform all consultants making TIA Forecasting Report submissions to the City of Ottawa as part of a development application, that all new applications (pre-consultation meetings dated after March 3, 2021) must use the NEW TRANS Trip Generation Manual when forecasting site generated trips using this manual (see attached).

- The TRANS committee (a joint transportation planning committee serving the National Capital region) finalized a new manual early in March 2021. The document will be available in French and English on the TRANS website http://www.ncr-trans-rcn.ca/surveys/2009-trip-generation.

- The new manual has simplified the conversion from vehicle trips to person trips and then trips by modal share. The City has also developed a spreadsheet that will apply the factors of location and building type to quickly provide the existing trip numbers by mode share.

General

Transitway structure renewal targeted to start 2-3 years.

Athlone Avenue is classified as a Local road. There are no additional protected ROW limits identified in the OP.

Scott Street is designated as an Arterial road within the City's Official Plan with a ROW protection limit of 23.0 metres. The ROW protection limit and the offset distance (13.0 metres) are to be dimensioned from the existing centerline of pavement and shown on the drawings. The Certified Ontario Land Surveyor is to confirm the ROW protected limits and any portion that may fall within the private property to be conveyed to the City.

ROW interpretation – Land for a road widening will be taken equally from both sides of a road, measured from the centreline in existence at the time of the widening if required by the City. The centreline is a line running down the middle of a road surface, equidistant from both edges of the pavement. In determining the centreline, paved shoulders, bus lay-bys, auxiliary lanes, turning lanes and other special circumstances are not included in the road surface.

A 5.0 metres x 5.0 metres sight triangle would be required at the intersection of Scott Street and Athlone Avenue. The sight triangle area is to be conveyed to the City and is

to be shown on all drawings. The sight triangle dimensions are to be measured from the ROW protected limits.

All underground and above ground building footprints and permanent walls need to be shown on the plan to confirm that any permanent structure does not extend either above or below into the existing property lines, sight triangles and/or future road widening protection limits.

Permanent structures such as curbing, stairs, retaining walls, and underground parking foundation also bicycle parking racks are not to extend into the City's right-of-way limits.

The consultant should review the sight distance to the access and any obstructions that may hinder the view of the driver.

The closure of an existing private approach shall reinstate the sidewalk, shoulder, curb and boulevard to City standards.

The Owner acknowledges and agrees that all private accesses to Roads shall comply with the City's Private Approach By-Law being By-Law No. 2003-447 as amended, or as approved through the Site Plan control process.

The Owner shall be required to enter into maintenance and liability agreement for all pavers, plant and landscaping material placed in the City right-of-way and the Owner shall assume all maintenance and replacement responsibilities in perpetuity.

Bicycle parking spaces are required as per Section 111 of the Ottawa Comprehensive Zoning By-law. Bicycle parking spaces should be located in safe, secure places near main entrances and preferably protected from the weather.

Should the property Owner wish to use a portion of the City's road allowance for construction staging, prior to obtaining a building permit, the property Owner must obtain an approved Traffic Management Plan from the Manager, Traffic Management, Transportation Services Department. The city has the right for any reason to deny use of the Road Allowance and to amend the approved Traffic Management Plan as required.

- Proceed to the transportation report.

Update on ultimate design for Scott street

Engineering (Shawn Wessel)

- Detailed engineering comments are attached.

Heather – Westboro Community Association

- The community anticipated a tower in this location.
- A tower in rear is problematic, located in the middle of the residential area, community will be surprized (and opposed).
- A better transition is preferable, consider the inclusion of townhomes to provide a better transition.
- A pathway between the park and Scott Street is desirable.
- Traffic is a concern; traffic study needs to consider all the other development proposals.
- On street visitor parking in the neighbourhood is already a concern.

Closing comments

- Staff strongly recommend a 2nd pre-consult with more focused design and response to initial comments.
- Key takeaway: transition and density, park location, and connectivity.
- Consider how a third tower can work on the site. Consider how a two-tower design can better meet the policies of the plan.

APPLICANT'S STUDY AND PLAN IDENTIFICATION LIST

Legend: **S** indicates that the study or plan is required with application submission.
A indicates that the study or plan may be required to satisfy a condition of approval/draft approval.

For information and guidance on preparing required studies and plans refer here:

S/A	Number of copies	ENGINEERING		S/A	Number of copies
S	PDF Only	1. Site Servicing Plan	2. Site Servicing Study / Assessment of Adequacy of Public Services	S	PDF Only
S	PDF Only	3. Grade Control and Drainage Plan	4. Geotechnical Study / Slope Stability Study	S	PDF Only
	2	5. Composite Utility Plan	6. Groundwater Impact Study		3
	3	7. Servicing Options Report	8. Wellhead Protection Study		3
S	PDF Only	9. Transportation Impact Assessment (TIA)	10.Erosion and Sediment Control Plan / Brief	S	PDF Only
S	PDF Only	11.Storm water Management Report / Brief	12.Hydro geological and Terrain Analysis		3
	3	13.Hydraulic Water main Analysis	14.Noise / Vibration Study	S	PDF Only
A	PDF only	15.Roadway Modification Functional Design	16.Confederation Line Proximity Study		3

S/A	Number of copies	PLANNING / DESIGN / SURVEY		S/A	Number of copies
	15	17.Draft Plan of Subdivision	18.Plan Showing Layout of Parking Garage	S	PDF Only
	5	19.Draft Plan of Condominium	20.Planning Rationale	S	PDF Only
S	PDF Only	21.Site Plan	22.Minimum Distance Separation (MDS)		3
	15	23.Concept Plan Showing Proposed Land Uses and Landscaping	24.Agrology and Soil Capability Study		3
	3	25.Concept Plan Showing Ultimate Use of Land	26.Cultural Heritage Impact Statement		3
S	PDF Only	27.Landscape Plan	28.Archaeological Resource Assessment Requirements: **S** (site plan) **A** (subdivision, condo)		3
S	PDF Only	29.Survey Plan	30.Shadow Analysis	S	PDF Only
S	PDF Only	31.Architectural Building Elevation Drawings (dimensioned)	32.Design Brief (includes the Design Review Panel Submission Requirements)	S	PDF Only
S	PDF Only	33.Wind Analysis			

S/A	Number of copies	ENVIRONMENTAL		S/A	Number of copies
S	PDF Only	34.Phase 1 Environmental Site Assessment	35.Impact Assessment of Adjacent Waste Disposal/Former Landfill Site		3
S	PDF Only	36.Phase 2 Environmental Site Assessment (depends on the outcome of Phase 1)	37.Assessment of Landform Features		3
S	PDF Only	38.Record of Site Condition	39.Mineral Resource Impact Assessment		3
S	PDF Only	40.Tree Conservation Report	41.Environmental Impact Statement / Impact Assessment of Endangered Species		PDF Only
	3	42.Mine Hazard Study / Abandoned Pit or Quarry Study	43.Integrated Environmental Review (Draft, as part of Planning Rationale)		3

S/A	Number of copies	ADDITIONAL REQUIREMENTS		S/A	Number of copies
S	PDF Only	44. Applicant's Public Consultation Strategy (may be provided as part of the Planning Rationale)	45. Floor Plan - Typical	**S**	PDF Only

Meeting Date: December 21, 2021 Application Type: *Re-zoning / Site Plan*

File Lead (Assigned Planner): Andrew McCreight Infrastructure Approvals Project Manager: Shawn Wessel

Site Address (Municipal Address): 2026 Scott Street *Preliminary Assessment: 1☐ 2☐ 3☐ 4☐ 5

*One (1) indicates that considerable major revisions are required before a planning application is submitted, while five (5) suggests that proposal appears to meet the City's key land use policies and guidelines. **This assessment is purely advisory and does not consider technical aspects of the proposal or in any way guarantee application approval.**

It is important to note that the need for additional studies and plans may result during application review. If following the submission of your application, it is determined that material that is not identified in this checklist is required to achieve complete application status, in accordance with the Planning Act and Official Plan requirements, the* Planning, Infrastructure and Economic Development Department *will notify you of outstanding material required within the required 30 day period. Mandatory pre-application consultation will not shorten the City's standard processing timelines, or guarantee that an application will be approved. It is intended to help educate and inform the applicant about submission requirements as well as municipal processes, policies, and key issues in advance of submitting a formal development application. This list is valid for one year following the meeting date. If the application is not submitted within this timeframe the applicant must again pre-consult with the Planning, Infrastructure and Economic Development Department.

ZONING BY LAW AMENDMENT and
SITE PLAN APPLICATION PRE-CONSULTATION
Parks & Facilities Planning Comments

File: PC2021-0379
Lead Planner: Andrew McCreight / Jessica Button

Site Location: 2026 Scott Street etc. (Granite Curling Club), Ward 15
Date: December 23, 2021

The following are preliminary comments from the Parks & Facilities Planning regarding Pre-consultation application meeting PC2021-0379, being 2026 Scott St., 2020 Scott St., 2006 Scott St., 314 and 318 Athlone Ave., Ward 15, held December 21st, 2021.

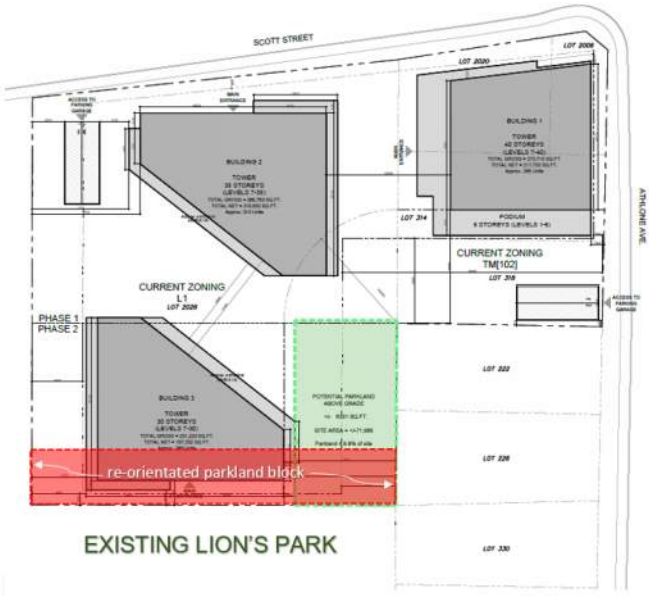
Based on size of the consolidated lot, Parks & Facilities Planning will be requesting dedication of land for parkland purposes, as supported by the new official plan and in accordance with the City's Parks and Facilities Master Plan and City's Parkland Dedication By-law No 2009-95.

Parkland dedication

Parkland dedication has been calculated based on the proposed redevelopment of the site, approximate lot area of 6,686 m^2 (to be confirmed), at a 10% maximum of land area, for a parkland dedication requirement of 668.6m^2 or 0.06686Ha.

Parkland orientation

Park block, as shown on the 2026 Scott Street package submission, to be re-oriented to locate the future proposed park block linear to the extents of the existing Lion's Park property boundaries…the applicant should be advised that the requirements of the Park Dedication By-Law apply which includes that the newly dedicated parkland is to be clear of encumbrances such as Limiting Distance Agreements, per Ontario Building Code, will not be permitted to impact the dedicated park block.



PROJECT/LOCATION:
MORLEY HOPPNER LTD.
2026 SCOTT STREET
OTTAWA ON.

DRAWING TITLE:
SITE PLAN

DRAWN BY:	DATE:	SCALE:
PB	21-04-12	1:100

PROJECT: 2126

DRAWING NO.: A1.00

REVISION NO.:

Source: 2026 Scott Street Package submission

Section 37

Depending on timing of approvals and the execution of a new Community Benefits Charges (CBC) By Law, Parks & Facilities Planning request that in the event that this application is approved prior to a new CBC, the Section 37 community benefits funding agreement consider allocating funds for the design & construction of the proposed future Lion's Park expansion.

Zoning, Parkland

Parks & Facilities Planning request L1 – Community Leisure Facility Zone for the future park block, to match the zoning for existing Lion's Park.

Park Development

Funding for new park development on lands acquired through this application will be subject of an updated or replacement Development Charges by Law currently destined for 2024. Should park development be desired in advance of a new by law coming into effect, a development or front ending agreement between the applicant and the city may be considered.

Regards,

Mike

Mike Russett
Parks and Facilities Planning,
Recreation, Cultural and Facility Services Dept.,
100 Constellation Drive, 8th Floor West, Ottawa. K2G 6J8
(613) 580-2424 Ext. 15459

Pre-Consul Meeting Notes to the File Lead - Andrew McCreight December 21, 2021
Re: 2026 Scott St.
Ward 15 - Kitchesippi, Councillor Jeff Leiper
30-Storey, 35-Storey and a 40-Storey high rise towers on a single podium, with 6 levels of UG Parking

Infrastructure:

A 203 mm dia. PVC Watermain (c. 1994) is available.

A 1220 mm dia. C00 Feeder High Pressure Watermain (c. 1959) is in ROW on North side of Scott Street. Monitoring of Feed WM is required when within 15m of proposed footing and foundation location.

A 375 mm dia. Clay. Sanitary Sewer (c. 1961) is available, which drains to West Nepean Trunk Collector and conveys effluent to the Interceptor Sewer.

A 900 mm dia. Conc. Storm Sewer (c. 1981) is available at western side of frontage to Scott St, which drains to West Transit Way Storm Trunk Sewer and Outlets to the Ottawa River at Onigam Street.

A 1200 mm dia. Conc. Storm Sewer (c. 1972) is available at eastern side of frontage to Scott St., which drains to West Transit Way Storm Trunk Sewer and Outlets to the Ottawa River at Onigam Street.

The following apply to this site and any development within a separated sewer area:

- Total allowable release rate will be 5-year pre-development rate.
- Coefficient (C) of runoff will need to be determined **as per existing conditions** but in no case more than 0.5
- TC = 20 minutes or can be calculated
  TC should be not be less than 10 minutes, since IDF curves become unrealistic at less than 10 min.
- Any storm events greater than 5 year, up to 100 year, and including 100-year storm event must be detained on site.
- Two separate sewer laterals (one for sanitary and other for storm) will be required.

Please note:
Foundation drains are to be independently connected to sewermain (separated or combined) unless being pumped with appropriate back up power, sufficient sized pump and back flow prevention.

Roof drains are to be connected downstream of any incorporated ICD within the SWM system. Provide Roof plan showing roof drain and scupper locations with a table that indicates flow rates, drain type and weir opening, if controlled. Provide Manufacturer Specifications on drains and also provide 5- and 100-year ponding limits on plan.

Boundary Conditions will be provided at request of consultant after providing Average Daily Demands, Peak Hour Demands & Max Day + Fire Flow Demands

If window wells are proposed, they are to be indirectly connected to the footing drains.
A detail of window well with indirect connection is required, as is a note at window well location speaking to indirect connection.

Please note:
We have reached out to our colleagues in the City Water Resource Department for any additional comments regarding this proposal in regard to capacity, historical flooding issues etc.

Note:

If applicable, existing buildings require a CCTV inspection and report to ensure existing services to be re-used are in good working order and meet current minimum size requirements. Located services to be placed on site servicing plans.

CCTV Scan Guideline.pdf

Other:

Environmental Noise Study is required due to Scott Street and Transit Way.

Stationary Noise Study – consultant to speak to this in their report as per City NCG and NPC 300 Guidelines. May be required after Mechanical Design completed and prior to building permit issuance.

When greater than 9 Storeys in height, a Shadow Study required for all buildings/dwellings.

When greater than 9 Storeys in height Wind Study for all buildings/dwellings.

Water Supply Redundancy – Fire Flow:

Applicant to ensure that a second service with an inline valve chamber be provided where the average daily demand exceeds 50 m^3 / day (0.5787 l/s per day)
FUS Fire Flow Criteria to be used unless a low-rise building, where OBC requirements may be applicable.


W12.pdf

Site Lighting:
Site lighting certificate and photometric plan required for this site. This will be a condition of agreement(s).

Site lighting certificate and photometric plan required for this site, particularly looking at light spillage and effects on nearby residential properties.

Capital Works:
Temporary Emergency Construction Restriction Process in effect on Scott Street – until April 2022 - for Cleary Watermain Work.
LRT Construction in effect

Trees:
Please note that a new Tree By-law is now in effect.


General Bulletin_New Tree Protection Bylaw

A gas pressure regulating station may be required depending on HVAC needs (typically for 12+ units). Be sure to include this on the Grading, Site Servicing, SWM and Landscape plans.
This is to ensure that there are no barriers for overland flow routes (SWM) or conflicts with any proposed grading or landscape features with installed structures and has nothing to do with supply and demand of any product.


Gas Pressure Regulating Station.pd

Regarding Quantity Estimates:

Please note that external Garbage and/or bicycle storage structures are to be added to QE under Landscaping as it is subject to securities.

In addition, sump pumps for Sanitary and Storm laterals and/or cisterns are to be added to QE under Hard items as it is subject to securities, even though it is internal and is spoken to under SWM and Site Servicing Report and Plan.

Source Protection Policy Screening (SPPS):
SPPS will be provided to applicant by City Risk Mgmt. Officer within Asset Mgmt. Dept.

Applicant to contact Rideau Valley Conservation Authority (RVCA) for possible restrictions due to quality control. Provide correspondence in Report.

Where servicing involves three or more service trenches, either a full road width or full lane width 40 mm asphalt overlay will be required, as per amended Road Activity By-Law 2003-445 and City Standard Detail Drawing R10. The amount of overlay will depend on condition of roadway and width of roadway(s).

Vibration monitoring will be required for all backbone watermains within 15m proximity of footings/foundation for this site. Conditions for Vibration will be applied to agreements. For example:

Vibration Monitoring

Prior to the issuance of a building permit, the Owner shall, at its expense:

(i) provide the General Manager, Planning, Infrastructure and Economic Development with an engineering memorandum from a Professional Engineer, licensed in the Province of Ontario, which shall outline the centreline location and overt elevation of the existing 1.220mm diameter C00 City owned Feeder Watermain (FWM), located on the north side of Scott Street, and its measured proximity to the frontage property boundary limits of 2026 Scott Street in order to evaluate the impact on said FWM from the proposed building's footing and foundation walls proposed for this development.

(ii) obtain a legal survey acceptable to the General Manager, Planning, Infrastructure and Economic Development and the City's Surveyor, showing the existing location of the 1.220mm diameter C00 FWM within Scott Street Right-of-Way ("ROW") between Winona and Athlone Avenues and identify the location of the proposed building and its footings in relation the said FWM;

(iii) provide the General Manager, Planning, Infrastructure and Economic Development with a Vibration Monitoring Plan from a Professional Engineer, specializing in vibration and monitoring, licensed in the Province of Ontario, which shall outline applicable recommendations for continuous monitoring of the existing 1220 mm dia. C00 FWM during all stages of the Work, including, but not limited to, the boundary area in the ROW between East side of Winona Avenue intersection and the West side of Athlone Avenue intersection. This monitoring will also as provide a Work Plan speaking to Work in Vicinity of Large Diameter WM & Monitoring for site development as well as an extensive Emergency Contingency Plan, to be pre-approved by City Infrastructure Services Department (ISD).

(iv) provide, during the construction process and upon completion of construction on the private & City lands, at the Owner's expense and to the satisfaction of the General Manager, Planning, Infrastructure and Economic Development, all daily and hourly data reports (as applicable) of completed monitoring works

(v) assume all liability for any damages caused to the City Water & Sewer Systems within Scott Street ROW between Winona and Athlone Avenues and compensate the City for the full amount of any required repairs to the City Water & Sewer Systems.

Note: In addition to requirement of a vibration specialist engineer required to design and monitor vibration, a certificate of liability insurance shall be submitted to the City wherein the Owner is the named insured and the City of Ottawa is an additional insured. The limits of the policy shall be in the amount of $25,000,000 and shall be kept in full force and effect for the term of the construction work.

Excavation:

Pre-Construction (Piling/Hoe Ramming or close proximity to City Assets) and/or Pre-Blasting (if applicable) Survey required for any buildings/dwellings in proximity of 75m of site and circulation of notice of vibration/noise to residents within 150 m of site. Conditions for Pre-Construction/ Pre-Blast Survey & Use of Explosives will be applied to agreements. Refer to City's Standard S.P. No. F-1201 entitled *Use of Explosives,* as amended.

Proximity to Transit Way:

Due to proximity of site to Transit Way and Westboro Transit Station, applicant to contact City LRT Group in regard to required building offset from transitway. Noise study to review vibration conditions within 75m of Transitway. See Rail Guidelines and CPCS Report as well as OP Annex 17, Zones of Influence and Guidelines for Proximity Study.


2013_05_29_Guidelines_NewDevelopment_E


CPCS Report Appendix_F.pdf


annex_17_en.pdf


Trillium ZOI.pdf


Confederation East ZOI.pdf


Confederation West ZOI.pdf


Confed Railway Line Prox. Guidelines.pdf

Where underground storage (UG) and surface ponding are being considered:

Show all ponding for 5- and 100-year events

Above and below ground storage is permitted although uses ½ Peak Flow Rate or is modeled. Please confirm that this has been accounted for and/or revise.

Rationale:

The Modified Rational Method for storage computation in the Sewer Design Guidelines was originally intended to be used for above ground storage (i.e. parking lot) where the change in head over the orifice varied from 1.5 m to 1.2 m (assuming a 1.2 m deep CB and a max ponding depth of 0.3 m). This change in head was small and hence the release rate fluctuated little, therefore there was no need to use an average release rate.

When underground storage is used, the release rate fluctuates from a maximum peak flow based on maximum head down to a release rate of zero. This difference is large and has a significant impact on storage requirements. We therefore require that an average release rate be used to estimate the required volume. Alternatively, the consultant may choose to use a submersible pump in the design to ensure a constant release rate.

In the event that there is a disagreement from the designer regarding the required storage, The City will require that the designer demonstrate their rationale utilizing dynamic modelling, that will then be reviewed by City modellers in the Water Resources Group.

Note that the above will added to upcoming revised Sewer Design Guidelines to account for underground storage, which is now widely used.

Further to above, what will be the actual underground storage provided during the major (100 year) and minor (2 year) storm events?

Please provide information on UG storage pipe. Provide required cover over pipe and details, chart of storage values, capacity etc. How will this pipe be cleaned of sediment and debris?

Note - There must be at least 15cm of vertical clearance between the spill elevation and the ground elevation at the building envelope that is in proximity of the flow route or ponding area. The exception in this case would be at reverse sloped loading dock locations. At these locations, a minimum of 15cm of vertical clearance must be provided below loading dock openings. Ensure to provide discussion in report and ensure grading plan matches if applicable.

Provide information on type of underground storage system including product name and model, number of chambers, chamber configuration, confirm invert of chamber system, top of chamber system, required cover over system and details, interior bottom slope (for self-cleansing), chart of storage values, length, width and height, capacity, entry ports (maintenance) etc.

Provide a cross section of underground chamber system showing invert and obvert/top, major and minor HWLs, top of ground, system volume provided during major and minor events. UG storage to provide actual 2- and 100-year event storage requirements.

In regard to all proposed UG storage, ground water levels (and in particular HGW levels) will need to be reviewed to ensure that the proposed system does not become surcharged and thereby ineffective.

Modeling can be provided to ensure capacity for both storm and sanitary sewers for the proposed development by City's Water Distribution Dept. – Modeling Group, through PM and upon request.

For proposed depressed driveways or developments with private lanes, parking areas or with entrances etc. lower than roadway…

S18.pdf S18.1.pdf

Rear yard on grade parking to be permeable pavement. Refer to City Standard Detail Drawings SC26 (maintenance/temp parking areas), SC27 or permeable asphalt materials. No gravel or stone dust parking areas permitted.

Severance:
If severance is planned, this needs to be addressed in servicing to satisfy severance requirements. Where a large parcel with multiple buildings is planned, City will require an ultimate servicing plan so as to appropriately understand how severance requirements are being met.

Note:
"Provided Info to applicant":
Please be advised that it is the responsibility of the applicant and their representatives/consultants to verify information provided by the City of Ottawa.
Please contact City View and Release Info Centre at Ext. 44455

Environmental Source Information:

Due to more sensitive use, a Record of Site Condition (RSC) is required. Ensure Phase I, and if applicable, Phase II ESA's speak to required RSC.

City of Ottawa - Historical Land Use Inventory (HLUI) - Required

Rationale:
The HLUI database is currently undergoing an update. The updated HLUI will include additional sources beyond those included in the current database, making the inclusion of this record search even more important.
Although a municipal historic land use database is not specifically listed as required environmental record in O. Reg 153/04, Schedule D, Part II states the following:

The following are the specific objectives of a records review:

1. To obtain and review records that relate to the Phase I (One) property and to the current and past uses of and activities at or affecting the Phase I (One) property in order to determine if an area of potential environmental concern exists and to interpret any area of potential environmental concern.

2. To obtain and review records that relate to properties in the Phase I (One) study area other than the Phase I (One) property, in order to determine if an area of potential environmental concern exists and to interpret any area of potential environmental concern.

It is therefore reasonable to request that the HLUI search be included in the Phase I ESA to meet the above objectives.
Please submit.

All existing reports and plans will need to be revised if older than 2 years and must reflect current City Standards, Guidelines, By-laws and Policies.

Please refer to City of Ottawa website portal **for "Guide to preparing Studies and Plans"** at https://ottawa.ca/en/city-hall/planning-and-development/information-developers/development-application-review-process/development-application-submission/guide-preparing-studies-and-plans.

Please ensure you are using the current guidelines, bylaws and standards including materials of construction, disinfection and all relevant reference to OPSS/D and AWWA guidelines - all current and as amended, such as:

City of Ottawa Sewer Design Guidelines (**CoOSDG**) complete with all current and relative ISTB technical bulletin updates as well as current Sewer, Landscape & Road Standard Detail Drawings as well as Material Specifications (MS Docs).
Sewer Connection (2003-513) & Sewer Use (2003-514) By-Laws.

City of Ottawa Water Distribution Design Guidelines (**CoOWDDG**) complete with all current and relative ISTB technical bulletin updates as well as current Watermain/ Services Material Specifications (MS Docs) as well as Water and Road Standard Detail Drawings.
FUS Fire Flow standards
Water (2018-167) By-Law

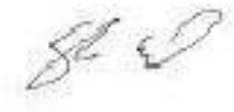
Ensure to include version date and add **"(as amended)"** when referencing all standards, detail drwaings, by-Laws and guidelines.

Fourth (4th) Review Charge:
Please be advised that additional charges for each review, after the 3rd review, will be applicable to each file. There will be no exceptions.

Construction approach – Please contact the Right-of-Ways Permit Office (TMconstruction@ottawa.ca) early in the zoning and site plan process to determine the ability to construct site and copy Andrew McCreight on this request.

Contact me by e-mail at shawn.wessel@ottawa.ca if you have any questions.

Sincerely,



Shawn Wessel, A.Sc.T., rcji
Project Manager
Development Review, Central Branch

Steve Matthews

From: Jamie Batchelor <jamie.batchelor@rvca.ca>
Sent: Tuesday, April 5, 2022 9:18 AM
To: Francois Thauvette
Cc: Steve Matthews; Eric Lalande
Subject: RE: 2026 Scott St - Pre-Consultation with the RVCA

Good Morning Francois,

I apologize for the delay. It looks like this came in around the time I went off on leave. I can confirm that based on the parking being underground and the development consisting of rooftop drainage and landscaping, the RVCA would not require additional on-site water quality measures save and except best management practices.

From: Francois Thauvette <f.thauvette@novatech-eng.com>
Sent: Friday, April 1, 2022 12:43 PM
To: Jamie Batchelor <jamie.batchelor@rvca.ca>
Cc: Steve Matthews <S.Matthews@novatech-eng.com>
Subject: RE: 2026 Scott St - Pre-Consultation with the RVCA

Hi Jamie,

I sent you the e-mail below back in December 2021, but do not recall receiving a response. Please review the e-mail below and provide a response so that we may finalize our servicing and SWM report? Also attached is the updated conceptual Site Plan.

Regards,

François Thauvette, P. Eng., Senior Project Manager | Land Development & Public Sector Engineering
NOVATECH Engineers, Planners & Landscape Architects
Please note that I am working from home. Email or MS Teams are the best ways to contact me.
240 Michael Cowpland Drive, Suite 200, Ottawa, ON, K2M 1P6 | Tel: 613.254.9643 Ext: 219 | Cell: 613.276.0310 | Fax: 613.254.5867

From: Francois Thauvette <f.thauvette@novatech-eng.com>
Sent: Wednesday, December 8, 2021 11:55 AM
To: jamie.batchelor@rvca.ca
Cc: Steve Matthews <S.Matthews@novatech-eng.com>
Subject: 2026 Scott St - Pre-Consultation with the RVCA

Hi Jamie,

We are working on a proposed multi-tower high-rise residential development located at 2026 Scott Street in Ottawa (see attached conceptual Site Plan). The proposed development will include three (3) high-rise towers (ranging from 20 to 40-storeys), exterior amenity space and underground parking. We are sending this e-mail to ask the RVCA to confirm if there are any stormwater management (quality control criteria) requirements for this site. Based on recent RVCA correspondence (for a new project at 1950 Scott Street) stormwater quality control measures are not required due to the nature of the development, the fact that all parking will be underground (i.e. no surface parking) and that the distance to the stormwater outlet is >2km downstream. Please confirm if this is also applicable to the proposed development.

Regards,

François Thauvette, P. Eng., Senior Project Manager | Land Development & Public Sector Engineering
NOVATECH Engineers, Planners & Landscape Architects
Please note that I am working from home. Email or MS Teams are the best ways to contact me.
240 Michael Cowpland Drive, Suite 200, Ottawa, ON, K2M 1P6 | Tel: 613.254.9643 Ext: 219 | Cell: 613.276.0310 | Fax: 613.254.5867

APPENDIX B

Development Servicing Study Checklist

Servicing study guidelines for development applications

4. Development Servicing Study Checklist

The following section describes the checklist of the required content of servicing studies. It is expected that the proponent will address each one of the following items for the study to be deemed complete and ready for review by City of Ottawa Infrastructure Approvals staff.

The level of required detail in the Servicing Study will increase depending on the type of application. For example, for Official Plan amendments and re-zoning applications, the main issues will be to determine the capacity requirements for the proposed change in land use and confirm this against the existing capacity constraint, and to define the solutions, phasing of works and the financing of works to address the capacity constraint. For subdivisions and site plans, the above will be required with additional detailed information supporting the servicing within the development boundary.

4.1 General Content

- ☐ Executive Summary (for larger reports only).
- ☒ Date and revision number of the report.
- ☒ Location map and plan showing municipal address, boundary, and layout of proposed development.
- ☒ Plan showing the site and location of all existing services.
- ☒ Development statistics, land use, density, adherence to zoning and official plan, and reference to applicable subwatershed and watershed plans that provide context to which individual developments must adhere.
- ☒ Summary of Pre-consultation Meetings with City and other approval agencies.
- ☐ Reference and confirm conformance to higher level studies and reports (Master Servicing Studies, Environmental Assessments, Community Design Plans), or in the case where it is not in conformance, the proponent must provide justification and develop a defendable design criteria.
- ☒ Statement of objectives and servicing criteria.
- ☒ Identification of existing and proposed infrastructure available in the immediate area.
- ☐ Identification of Environmentally Significant Areas, watercourses and Municipal Drains potentially impacted by the proposed development (Reference can be made to the Natural Heritage Studies, if available).
- ☒ Concept level master grading plan to confirm existing and proposed grades in the development. This is required to confirm the feasibility of proposed stormwater management and drainage, soil removal and fill constraints, and potential impacts to neighbouring properties. This is also required to confirm that the proposed grading will not impede existing major system flow paths.
- ☐ Identification of potential impacts of proposed piped services on private services (such as wells and septic fields on adjacent lands) and mitigation required to address potential impacts.
- ☐ Proposed phasing of the development, if applicable.

☒ Reference to geotechnical studies and recommendations concerning servicing.

☒ All preliminary and formal site plan submissions should have the following information:
- Metric scale
- North arrow (including construction North)
- Key plan
- Name and contact information of applicant and property owner
- Property limits including bearings and dimensions
- Existing and proposed structures and parking areas
- Easements, road widening and rights-of-way
- Adjacent street names

4.2 Development Servicing Report: Water

☐ Confirm consistency with Master Servicing Study, if available
☒ Availability of public infrastructure to service proposed development
☒ Identification of system constraints
☒ Identify boundary conditions
☒ Confirmation of adequate domestic supply and pressure
☒ Confirmation of adequate fire flow protection and confirmation that fire flow is calculated as per the Fire Underwriter's Survey. Output should show available fire flow at locations throughout the development.
☒ Provide a check of high pressures. If pressure is found to be high, an assessment is required to confirm the application of pressure reducing valves.
☐ Definition of phasing constraints. Hydraulic modeling is required to confirm servicing for all defined phases of the project including the ultimate design
☒ Address reliability requirements such as appropriate location of shut-off valves
☐ Check on the necessity of a pressure zone boundary modification.
☒ Reference to water supply analysis to show that major infrastructure is capable of delivering sufficient water for the proposed land use. This includes data that shows that the expected demands under average day, peak hour and fire flow conditions provide water within the required pressure range

- ☒ Description of the proposed water distribution network, including locations of proposed connections to the existing system, provisions for necessary looping, and appurtenances (valves, pressure reducing valves, valve chambers, and fire hydrants) including special metering provisions.
- ☐ Description of off-site required feedermains, booster pumping stations, and other water infrastructure that will be ultimately required to service proposed development, including financing, interim facilities, and timing of implementation.
- ☒ Confirmation that water demands are calculated based on the City of Ottawa Design Guidelines.
- ☒ Provision of a model schematic showing the boundary conditions locations, streets, parcels, and building locations for reference.

4.3 Development Servicing Report: Wastewater

- ☒ Summary of proposed design criteria (Note: Wet-weather flow criteria should not deviate from the City of Ottawa Sewer Design Guidelines. Monitored flow data from relatively new infrastructure cannot be used to justify capacity requirements for proposed infrastructure).
- ☐ Confirm consistency with Master Servicing Study and/or justifications for deviations.
- ☒ Consideration of local conditions that may contribute to extraneous flows that are higher than the recommended flows in the guidelines. This includes groundwater and soil conditions, and age and condition of sewers.
- ☒ Description of existing sanitary sewer available for discharge of wastewater from proposed development.
- ☐ Verify available capacity in downstream sanitary sewer and/or identification of upgrades necessary to service the proposed development. (Reference can be made to previously completed Master Servicing Study if applicable)
- ☐ Calculations related to dry-weather and wet-weather flow rates from the development in standard MOE sanitary sewer design table (Appendix ‘C’) format.
- ☒ Description of proposed sewer network including sewers, pumping stations, and forcemains.
- ☐ Discussion of previously identified environmental constraints and impact on servicing (environmental constraints are related to limitations imposed on the development in order to preserve the physical condition of watercourses, vegetation, soil cover, as well as protecting against water quantity and quality).
- ☐ Pumping stations: impacts of proposed development on existing pumping stations or requirements for new pumping station to service development.
- ☐ Forcemain capacity in terms of operational redundancy, surge pressure and maximum flow velocity.
- ☐ Identification and implementation of the emergency overflow from sanitary pumping stations in relation to the hydraulic grade line to protect against basement flooding.
- ☐ Special considerations such as contamination, corrosive environment etc.

4.4 Development Servicing Report: Stormwater Checklist

- ☒ Description of drainage outlets and downstream constraints including legality of outlets (i.e. municipal drain, right-of-way, watercourse, or private property)
- ☐ Analysis of available capacity in existing public infrastructure.
- ☒ A drawing showing the subject lands, its surroundings, the receiving watercourse, existing drainage patterns, and proposed drainage pattern.
- ☒ Water quantity control objective (e.g. controlling post-development peak flows to pre-development level for storm events ranging from the 2 or 5 year event (dependent on the receiving sewer design) to 100 year return period); if other objectives are being applied, a rationale must be included with reference to hydrologic analyses of the potentially affected subwatersheds, taking into account long-term cumulative effects.
- ☐ Water Quality control objective (basic, normal or enhanced level of protection based on the sensitivities of the receiving watercourse) and storage requirements.
- ☒ Description of the stormwater management concept with facility locations and descriptions with references and supporting information.
- ☐ Set-back from private sewage disposal systems.
- ☐ Watercourse and hazard lands setbacks.
- ☐ Record of pre-consultation with the Ontario Ministry of Environment and the Conservation Authority that has jurisdiction on the affected watershed.
- ☐ Confirm consistency with sub-watershed and Master Servicing Study, if applicable study exists.
- ☒ Storage requirements (complete with calculations) and conveyance capacity for minor events (1:5 year return period) and major events (1:100 year return period).
- ☐ Identification of watercourses within the proposed development and how watercourses will be protected, or, if necessary, altered by the proposed development with applicable approvals.
- ☒ Calculate pre and post development peak flow rates including a description of existing site conditions and proposed impervious areas and drainage catchments in comparison to existing conditions.
- ☐ Any proposed diversion of drainage catchment areas from one outlet to another.
- ☒ Proposed minor and major systems including locations and sizes of stormwater trunk sewers, and stormwater management facilities.
- ☐ If quantity control is not proposed, demonstration that downstream system has adequate capacity for the post-development flows up to and including the 100 year return period storm event.
- ☐ Identification of potential impacts to receiving watercourses
- ☐ Identification of municipal drains and related approval requirements.
- ☒ Descriptions of how the conveyance and storage capacity will be achieved for the development.
- ☐ 100 year flood levels and major flow routing to protect proposed development from flooding for establishing minimum building elevations (MBE) and overall grading.

- ☐ Inclusion of hydraulic analysis including hydraulic grade line elevations.
- ☒ Description of approach to erosion and sediment control during construction for the protection of receiving watercourse or drainage corridors.
- ☐ Identification of floodplains – proponent to obtain relevant floodplain information from the appropriate Conservation Authority. The proponent may be required to delineate floodplain elevations to the satisfaction of the Conservation Authority if such information is not available or if information does not match current conditions.
- ☐ Identification of fill constraints related to floodplain and geotechnical investigation.

4.5 Approval and Permit Requirements: Checklist

The Servicing Study shall provide a list of applicable permits and regulatory approvals necessary for the proposed development as well as the relevant issues affecting each approval. The approval and permitting shall include but not be limited to the following:

- ☐ Conservation Authority as the designated approval agency for modification of floodplain, potential impact on fish habitat, proposed works in or adjacent to a watercourse, cut/fill permits and Approval under Lakes and Rivers Improvement Act. The Conservation Authority is not the approval authority for the Lakes and Rivers Improvement Act. Where there are Conservation Authority regulations in place, approval under the Lakes and Rivers Improvement Act is not required, except in cases of dams as defined in the Act.
- ☐ Application for Certificate of Approval (CofA) under the Ontario Water Resources Act.
- ☐ Changes to Municipal Drains.
- ☐ Other permits (National Capital Commission, Parks Canada, Public Works and Government Services Canada, Ministry of Transportation etc.)

4.6 Conclusion Checklist

- ☒ Clearly stated conclusions and recommendations
- ☐ Comments received from review agencies including the City of Ottawa and information on how the comments were addressed. Final sign-off from the responsible reviewing agency.
- ☒ All draft and final reports shall be signed and stamped by a professional Engineer registered in Ontario

APPENDIX C

Preliminary Sanitary Sewage Calculations

2026 SCOTT STREET - EAST TOWER
POST-DEVELOPMENT SANITARY FLOWS

Residential Flows	**Post-Development**	
Number of Studio / 1-Bedroom Units	228	
Persons per Studio / 1-Bedroom Unit	1.4	
Number of 2-Bedroom Units	156	
Persons per 2-Bedroom Unit	2.1	
Number of 3-Bedroom Units	8	
Persons per 3-Bedroom Unit	3.1	
Total Number of Units	392	
Design Population	672	
Average Daily Flow per Resident	280	L/c/day
Peak Factor (Harmon Formula)	3.32	
Peak Residential Flow	**7.24**	**L/s**
Commercial Flows		
Ground Floor Area	120	m^2
Average Commercial Daily Demand	2.8	$L/m^2/day$
Peaking Factor	1.5	
Peak Commercial Flows	**0.01**	**L/s**
Extraneous Flow		
Tower Site Area	0.304	ha
Infiltration Allowance	0.33	L/s/ha
Peak Extraneous Flow	**0.10**	**L/s**
Total Peak Sanitary Flow	**7.34**	**L/s**

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Engineers, Planners & Landscape Architects

2026 SCOTT STREET - WEST TOWER
POST-DEVELOPMENT SANITARY FLOWS

Residential Flows	**Post-Development**	
Number of Studio / 1-Bedroom Units	298	
Persons per Studio / 1-Bedroom Unit	1.4	
Number of 2-Bedroom Units	159	
Persons per 2-Bedroom Unit	2.1	
Number of 3-Bedroom Units	7	
Persons per 3-Bedroom Unit	3.1	
Total Number of Units	464	
Design Population	773	
Average Daily Flow per Resident	280	L/c/day
Peak Factor (Harmon Formula)	3.30	
Peak Residential Flow	**8.26**	**L/s**
Commercial Flows		
Ground Floor Area	178	m^2
Average Commercial Daily Demand	2.8	$L/m^2/day$
Peaking Factor	1.5	
Peak Commercial Flows	**0.01**	**L/s**
Extraneous Flow		
Tower Site Area	0.293	ha
Infiltration Allowance	0.33	L/s/ha
Peak Extraneous Flow	**0.10**	**L/s**
Total Peak Sanitary Flow	**8.36**	**L/s**

APPENDIX D

Preliminary Water Demands, FUS Calculations, Watermain Boundary Conditions, E-mail Correspondence from the City of Ottawa, E-mail correspondence from Architect to support FUS Calculations

2026 SCOTT STREET - EAST BUILDING
POST-DEVELOPMENT WATER DEMANDS

DOMESTIC WATER DEMANDS

Residential Use	Post-Development	
Number of Studio / 1-Bedroom Units	228	
Persons per Studio / 1-Bedroom Unit	1.4	
Number of 2-Bedroom Units	156	
Persons per 2-Bedroom Unit	2.1	
Number of 3-Bedroom Units	8	
Persons per 2-Bedroom Unit	3.1	
Total Number of Units	392	
Total Design Population	672	
Average Day Demand (280 L/c/day)	**2.18**	L/s/day
Maximum Day Demand (2.5 x avg. day)	**5.44**	**L/s**
Peak Hour Demand (2.2 x max. day)	**11.98**	**L/s**
Commercial/Amenity Use		
Commercial Space	120	m^2
Average Day Demand (28,000 L/ha/day)	**0.00**	**L/s**
Maximum Day Demand (1.5 x avg. day)	**0.01**	**L/s**
Peak Hour Demand (1.8 x max. day)	**0.01**	**L/s**
Total Average Day Demand	**2.18**	**L/s**
Total Maximum Day Demand	**5.45**	**L/s**
Total Peak Hour Demand	**11.99**	**L/s**

BOUNDARY CONDITIONS

Minimum HGL =	**108.3**	**m**
Maximum HGL =	**115.0**	**m**
Max Day + Fire Flow =	**98.2**	**m**

PRESSURE TESTS

Existing ground elevation at connection	**63.2**	**m**

Low Pressure Pressure =(Min. HGL - (Existing Ground Elevation -Watermain Elevation)) x 1.42 PSI/m (should be > 40 PSI)	**67.0**	**PSI**
High Pressure Pressure = (Max HGL - (Existing Ground Elevation -Watermain Elevation)) x 1.42 PSI/m (should be between 50- 70 PSI)	**77.0**	**PSI**
Max Day + Fire Flow Pressure = (Max Day + Fire Flow - (Existing Ground Elevation -Watermain Elevation)) x 1.42 PSI/m (should be > 20 PSI)	**53.0**	**PSI**

To convert Head(m) to PSI: multiply by 1.42

2026 SCOTT STREET - WEST BUILDING
POST-DEVELOPMENT WATER DEMANDS

DOMESTIC WATER DEMANDS

Residential Use	Post-Development	
Number of Studio / 1-Bedroom Units	298	
Persons per Studio / 1-Bedroom Unit	1.4	
Number of 2-Bedroom Units	159	
Persons per 2-Bedroom Unit	2.1	
Number of 3-Bedroom Units	7	
Persons per 2-Bedroom Unit	3.1	
Total Number of Units	464	
Total Design Population	773	
Average Day Demand (280 L/c/day)	**2.51**	L/s/day
Maximum Day Demand (2.5 x avg. day)	**6.26**	**L/s**
Peak Hour Demand (2.2 x max. day)	**13.78**	**L/s**
Commercial/Amenity Use		
Commercial Space	178	m^2
Average Day Demand (28,000 L/ha/day)	**0.01**	**L/s**
Maximum Day Demand (1.5 x avg. day)	**0.01**	**L/s**
Peak Hour Demand (1.8 x max. day)	**0.02**	**L/s**
Total Average Day Demand	**2.51**	**L/s**
Total Maximum Day Demand	**6.27**	**L/s**
Total Peak Hour Demand	**13.79**	**L/s**

BOUNDARY CONDITIONS

Minimum HGL =	**108.3**	**m**
Maximum HGL =	**115.0**	**m**
Max Day + Fire Flow =	**96.4**	**m**

PRESSURE TESTS

Existing ground elevation at connection	**63.2**	**m**

Low Pressure Pressure =(Min. HGL - (Existing Ground Elevation -Watermain Elevation)) x 1.42 PSI/m (should be > 40 PSI)	**67.0**	**PSI**
High Pressure Pressure = (Max HGL - (Existing Ground Elevation -Watermain Elevation)) x 1.42 PSI/m (should be between 50- 70 PSI)	**77.0**	**PSI**
Max Day + Fire Flow Pressure = (Max Day + Fire Flow - (Existing Ground Elevation -Watermain Elevation)) x 1.42 PSI/m (should be > 20 PSI)	**50.0**	**PSI**

To convert Head(m) to PSI: multiply by 1.42

FUS - Fire Flow Calculations

As per 2020 Fire Underwriter's Survey Guidelines

NOVATECH
Engineers, Planners & Landscape Architects

Novatech Project #: 121302
Project Name: 2026 Scott - East Tower
Date: 10/11/2023
Input By: C. Visser
Reviewed By: F. Thauvette

Legend: Input by User; No Information or Input Required

Building Description: 40-Storey Building with 10-Storey Podium
Type II - Non-combustible construction

Step			Choose		Value Used	Total Fire Flow (L/min)
Base Fire Flow						
1	**Construction Material**			**Multiplier**		
	Coefficient related to type of construction C	Type V - Wood frame		1.5	0.8	
		Type IV - Mass Timber		Varies		
		Type III - Ordinary construction		1		
		Type II - Non-combustible construction	Yes	0.8		
		Type I - Fire resistive construction (2 hrs)		0.6		
2	**Floor Area**					
	A	Podium Level Footprint (m^2)	1284			
		Total Floors/Storeys (Podium)	10			
		Tower Footprint (m^2)	769			
		Total Floors/Storeys (Tower)	30			
		Protected Openings (1 hr)	No			
		Area of structure considered (m^2)			**7,704**	
	F	**Base fire flow without reductions**				**15,000**
		$F = 220\ C\ (A)^{0.5}$				
Reductions or Surcharges						
3	**Occupancy hazard reduction or surcharge**			**Reduction/Surcharge**		
	(1)	Non-combustible		-25%	-15%	**12,750**
		Limited combustible	Yes	-15%		
		Combustible		0%		
		Free burning		15%		
		Rapid burning		25%		
4	**Sprinkler Reduction (100% sprinkler coverage of building used)**			**Reduction**		
	(2)	Adequately Designed System (NFPA 13)	Yes	-30%	-30%	**-6,375**
		Standard Water Supply	Yes	-10%	-10%	
		Fully Supervised System	Yes	-10%	-10%	
				Cumulative Total	**-50%**	
5	**Exposure Surcharge (cumulative %, Maximum Exposure Adjustment Charge Used)**				**Surcharge**	
	(3)	North Side	> 45.1m		0%	**5,738**
		East Side	10.1 - 20 m		15%	
		South Side	3.1 - 10 m		20%	
		West Side	20.1 - 30 m		10%	
				Cumulative Total	**45%**	
Results						
6	**(1) + (2) + (3)**	**Total Required Fire Flow, rounded to nearest 1000L/min**			**L/min**	**12,000**
		(2,000 L/min < Fire Flow < 45,000 L/min)		or	L/s	**200**
				or	USGPM	3,170
7	**Storage Volume**	Required Duration of Fire Flow (hours)			Hours	2.5
		Required Volume of Fire Flow (m^3)			m^3	1800

FUS - Fire Flow Calculations

As per 2020 Fire Underwriter's Survey Guidelines

NOVATECH
Engineers, Planners & Landscape Architects

Novatech Project #: 121302
Project Name: 2026 Scott - West Building
Date: 10/11/2023
Input By: C. Visser
Reviewed By: F. Thauvette

Legend: Input by User; No Information or Input Required

Building Description: 40-Storey Building with 10-Storey Podium
Type II - Non-combustible construction

Step			Choose		Value Used	Total Fire Flow (L/min)
Base Fire Flow						
1	**Construction Material**			**Multiplier**		
	Coefficient related to type of construction C	Type V - Wood frame		1.5	0.8	
		Type IV - Mass Timber		Varies		
		Type III - Ordinary construction		1		
		Type II - Non-combustible construction	Yes	0.8		
		Type I - Fire resistive construction (2 hrs)		0.6		
2	**Floor Area**					
	A	Podium Level Footprint (m^2)	1608			
		Total Floors/Storeys (Podium)	10			
		Tower Footprint (m^2)	848			
		Total Floors/Storeys (Tower)	30			
		Protected Openings (1 hr)	No			
		Area of structure considered (m^2)			**9,648**	
	F	**Base fire flow without reductions**				**17,000**
		$F = 220\ C\ (A)^{0.5}$				
Reductions or Surcharges						
3	**Occupancy hazard reduction or surcharge**			**Reduction/Surcharge**		
	(1)	Non-combustible		-25%	-15%	**14,450**
		Limited combustible	Yes	-15%		
		Combustible		0%		
		Free burning		15%		
		Rapid burning		25%		
4	**Sprinkler Reduction (100% sprinkler coverage of building used)**			**Reduction**		
	(2)	Adequately Designed System (NFPA 13)	Yes	-30%	-30%	**-7,225**
		Standard Water Supply	Yes	-10%	-10%	
		Fully Supervised System	Yes	-10%	-10%	
				Cumulative Total	**-50%**	
5	**Exposure Surcharge (cumulative %, Maximum Exposure Adjustment Charge Used)**				**Surcharge**	
	(3)	North Side	> 45.1m		0%	**5,780**
		East Side	20.1 - 30 m		10%	
		South Side	20.1 - 30 m		10%	
		West Side	3.1 - 10 m		20%	
				Cumulative Total	**40%**	
Results						
6	**(1) + (2) + (3)**	**Total Required Fire Flow, rounded to nearest 1000L/min**			**L/min**	**13,000**
		(2,000 L/min < Fire Flow < 45,000 L/min)		or	L/s	**217**
				or	USGPM	3,435
7	**Storage Volume**	Required Duration of Fire Flow (hours)			Hours	2.5
		Required Volume of Fire Flow (m^3)			m^3	1950

Francois Thauvette

From: Wessel, Shawn <shawn.wessel@ottawa.ca>
Sent: Tuesday, March 8, 2022 9:33 AM
To: Francois Thauvette
Cc: Steve Matthews
Subject: RE: 2026 Scott Street - Watermain Boundary Conditions Request
Attachments: 2026 Scott Street March 2022.pdf

Good morning, Francois

Please find conditions, as requested, below:

Concerns with Building #3 meeting required fire flow:

- Confirm 362028H057 is measured along a fire access route within their site.
- Hydrant 362028H059 will not be able to deliver the maximum fire flow and therefore this watermain may need to be upgraded unless Hydrant 362028H070 is within 150m measured from the hydrant to building along the fire access roads – Technical Bulletin 2018-02.
- Is there fire access roads within the site from Scott Street as the hydrants the consultant has identified need to measured along these to the buildings

******The following information may be passed on to the consultant, but do NOT forward this e-mail directly.******

The following are boundary conditions, HGL, for hydraulic analysis at 2026 Scott Street (zone 1W) assumed to be connected to the 203 mm watermain on Scott Street and the 203 mm on Athlone Avenue (see attached PDF for location).

Both Connections

Minimum HGL: 108.3 m

Maximum HGL: 115.0 m

Max Day + Fire Flow (167 L/s): 101.6 m (Scott connection) and 100.5 m (Athlone connection)

Max Day + Fire Flow (183 L/s): 100.1 m (Scott connection) and 98.8 (Athlone connection)

Max Day + Fire Flow (217 L/s): 96.4 m (Scott connection) and 94.6 (Athlone connection)

These are for current conditions and are based on computer model simulation.

Disclaimer: The boundary condition information is based on current operation of the city water distribution system. The computer model simulation is based on the best information available at the time. The operation of the water distribution system can change on a regular basis, resulting in a variation in boundary conditions. The physical properties of watermains deteriorate over time, as such must be assumed in the absence of actual field test data. The variation in physical watermain properties can therefore alter the results of the computer model simulation.

If you require additional information or clarification, please do not hesitate to contact me anytime.

Thank you

Regards,

Shawn Wessel, A.Sc.T.,rcji
Project Manager - Infrastructure Approvals
Gestionnaire de projet – Approbation des demandes d'infrastructures

Development Review Central Branch | Direction de l'examen des projets d'aménagement, Centrale
Planning, Real Estate and Economic Development Department | Direction générale de la planification des biens immobiliers et du développement économique
City of Ottawa | Ville d'Ottawa
110 Laurier Ave. W. | 110, avenue Laurier Ouest, Ottawa ON K1P 1J1
(613) 580 2424 Ext. | Poste 33017
Int. Mail Code | Code de Courrier Interne 01-14
shawn.wessel@ottawa.ca

Please consider the environment before printing this email

Vacation Alert:
I will be out of the office February 14-18th inclusive. Please contact John Wu or Abdul Mottalib in my absence.

*****Please also note that, while my work hours may be affected by the current situation and am working from home, I still have access to email, video conferencing and telephone. Feel free to schedule video conferences and/or telephone calls, as necessary.*****

From: Francois Thauvette <f.thauvette@novatech-eng.com>
Sent: March 02, 2022 2:48 PM
To: Wessel, Shawn <shawn.wessel@ottawa.ca>
Cc: Steve Matthews <S.Matthews@novatech-eng.com>
Subject: FW: 2026 Scott Street - Watermain Boundary Conditions Request

Hi Shawn,

We are sending you this message to request municipal watermain boundary conditions for the proposed residential development at 2036 Scott Street (incl. other adjacent properties to be merged). See e-mail below and attachments for

details. Please note that although the attached sketch shows 2 watermain connections (one off Scott Street and the other off Athlone Avenue), it may be possible to have 2 connections to Scott Street with an isolation valve between the services. The exact configuration of the water services will have TBD at the detailed design stage, unless advised otherwise by the City's Water Department.

Please let us know if you require any additional information.

Regards,

François Thauvette, P. Eng., Senior Project Manager | Land Development & Public Sector Engineering
NOVATECH Engineers, Planners & Landscape Architects
Please note that I am working from home. Email or MS Teams are the best ways to contact me.
240 Michael Cowpland Drive, Suite 200, Ottawa, ON, K2M 1P6 | Tel: 613.254.9643 Ext: 219 | Cell: 613.276.0310 | Fax: 613.254.5867

From: Steve Matthews <S.Matthews@novatech-eng.com>
Sent: Wednesday, March 2, 2022 2:29 PM
To: Francois Thauvette <f.thauvette@novatech-eng.com>
Subject: 2026 Scott Street - Watermain Boundary Conditions Request

Hi François,

The proposed residential development located at 2026 Scott Street (in the City of Ottawa) will include three residential towers and a common underground parking garage. Refer to the attached Site Plan for details.

Please request watermain boundary conditions from the City of Ottawa for the existing 200mm dia. municipal watermain in Scott Street and the 150mm dia. municipal watermain in Athlone Avenue (as shown on geoOttawa). We do not anticipate requiring any on-site private fire hydrants as there are multiple existing municipal hydrants surrounding the property. The proposed redundant water connections will be located in the north-east corner of the building underground levels and will be serviced off the both the adjacent existing municipal watermains. The anticipated water demands for the proposed development are as follows:

- Average Day Demand = 4.4 L/s
- Maximum Day Demand = 11.1 L/s
- Peak Hour Demand = 24.4 L/s
- Maximum Fire Flow Demand = 217 L/s

See attached calculation sheets for details.

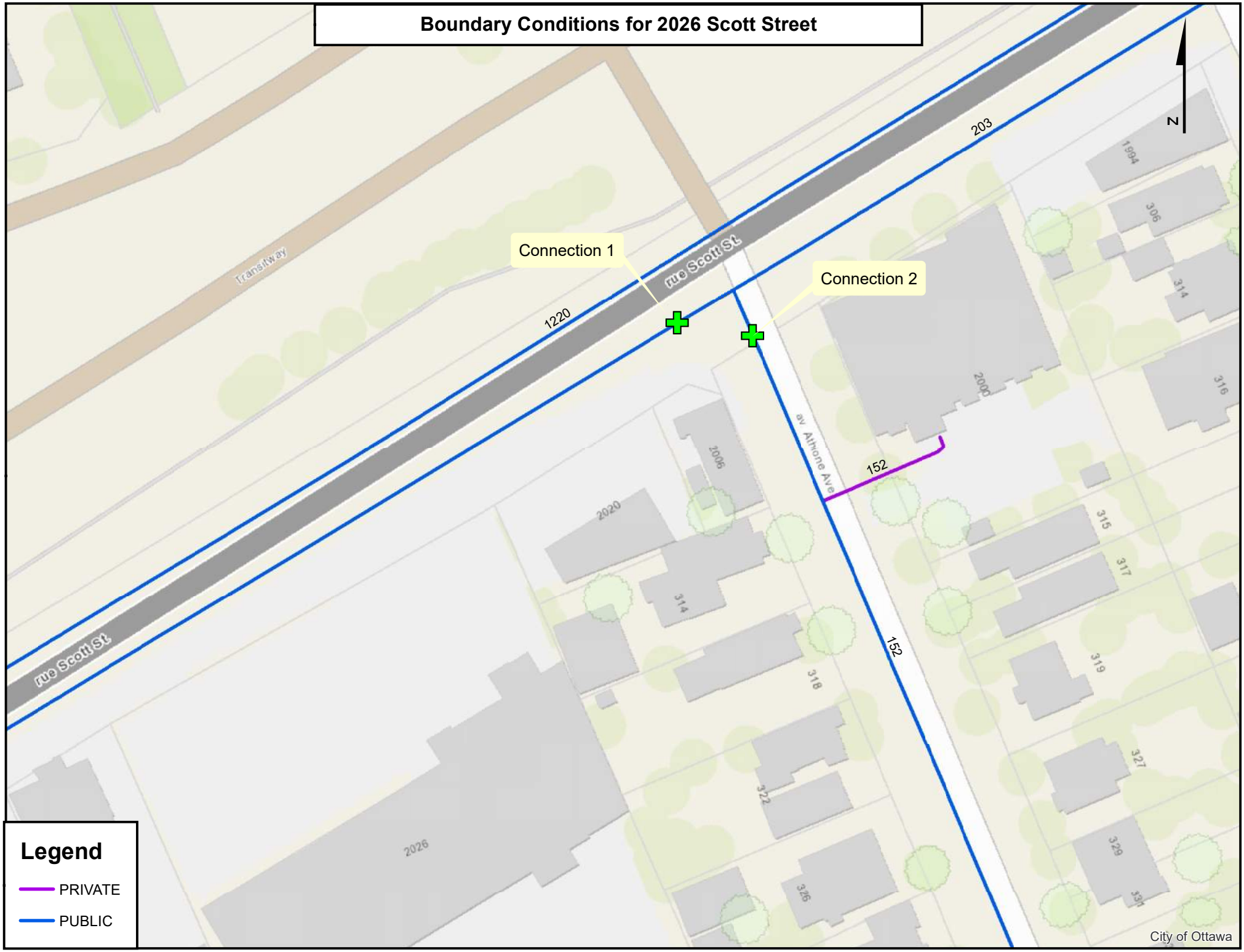
A multi-hydrant approach to firefighting is anticipated to be required. As indicated on the geoOttawa website, there are multiple blue bonnet municipal hydrants within 75m of the site, as well as additional blue bonnet municipal hydrants within 150m of the subject site that could be used for firefighting purposes. See attached Boundary Conditions Request Sketch for details.

Please review and let me know if you require any additional information.

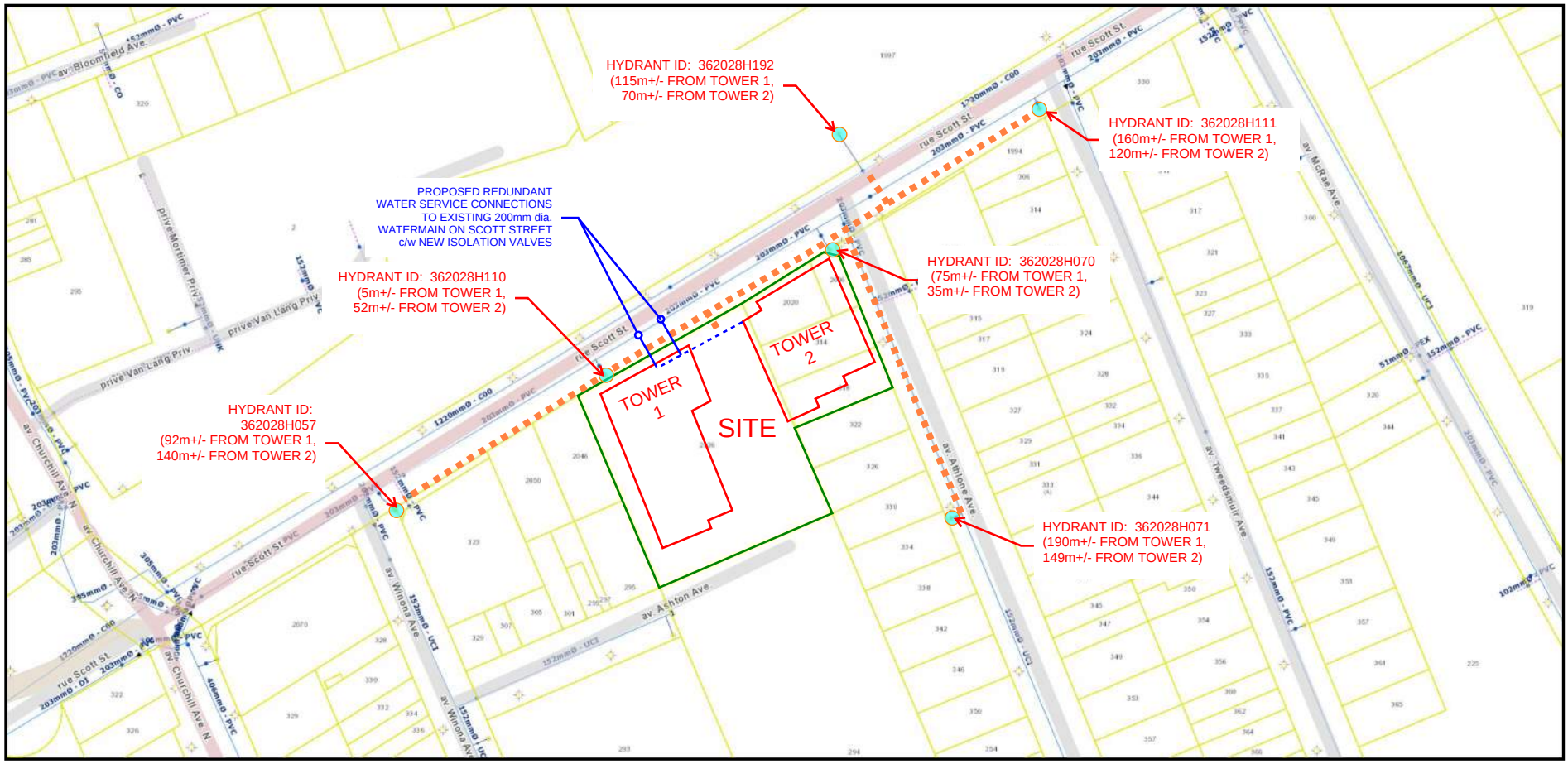
Regards,
Steve

Stephen Matthews, B.A.(Env), Senior Design Technologist
NOVATECH Engineers, Planners & Landscape Architects
240 Michael Cowpland Drive, Suite 200, Ottawa, ON, K2M 1P6 | Tel: 613.254.9643 x 223 | Fax: 613.254.5867

Boundary Conditions for 2026 Scott Street



FIRE HYDRANT SKETCH
AND WATER INFRASTRUCTURE



HOBIN
ARCHITECTURE

October 13, 2023

To: Jean-Charles Renaud, MCIP/MICU, RPP/UPC Planner III (A)
110 Laurier Avenue West
Ottawa, ON
K1P 1J1

Please find this letter as a formal confirmation that the drawings pertaining to the Site Plan Control Application – 2006, 2020, 2026 Scott Street & 314, 318 Athlone Avenue meet the required parameters resulting in a reduction in fire flow. The development, comprised of two 40 storey buildings and a four storey below grade parking garage will be constructed to ensure:

- The development is fully sprinklered, fully supervised, and designed as per NFPA 13,
- All structural elements have a minimum 2-hour fire rating,
- The development will be comprised of noncombustible materials as per the Ontario Building Code,
- The construction coefficient will equal 0.8 for Type II Noncombustible Construction

Sincerely,

Patrick Bisson
Hobin Architecture Inc.

ONTARIO ASSOCIATION OF ARCHITECTS
BARRY J. HOBIN
LICENCE
3049

Partners

Barry J. Hobin
OAA, FRAIC, Hon. Fellow AIA
Founding Partner

Wendy Brawley
OAA, MRAIC, Associate AIA

Douglas Brooks
Arch. Tech.

Marc Thivierge
OAA, MRAIC

Reinhard Vogel
Arch. Tech.

Rheal Labelle
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t 613-238-7200
f 613-235-2005

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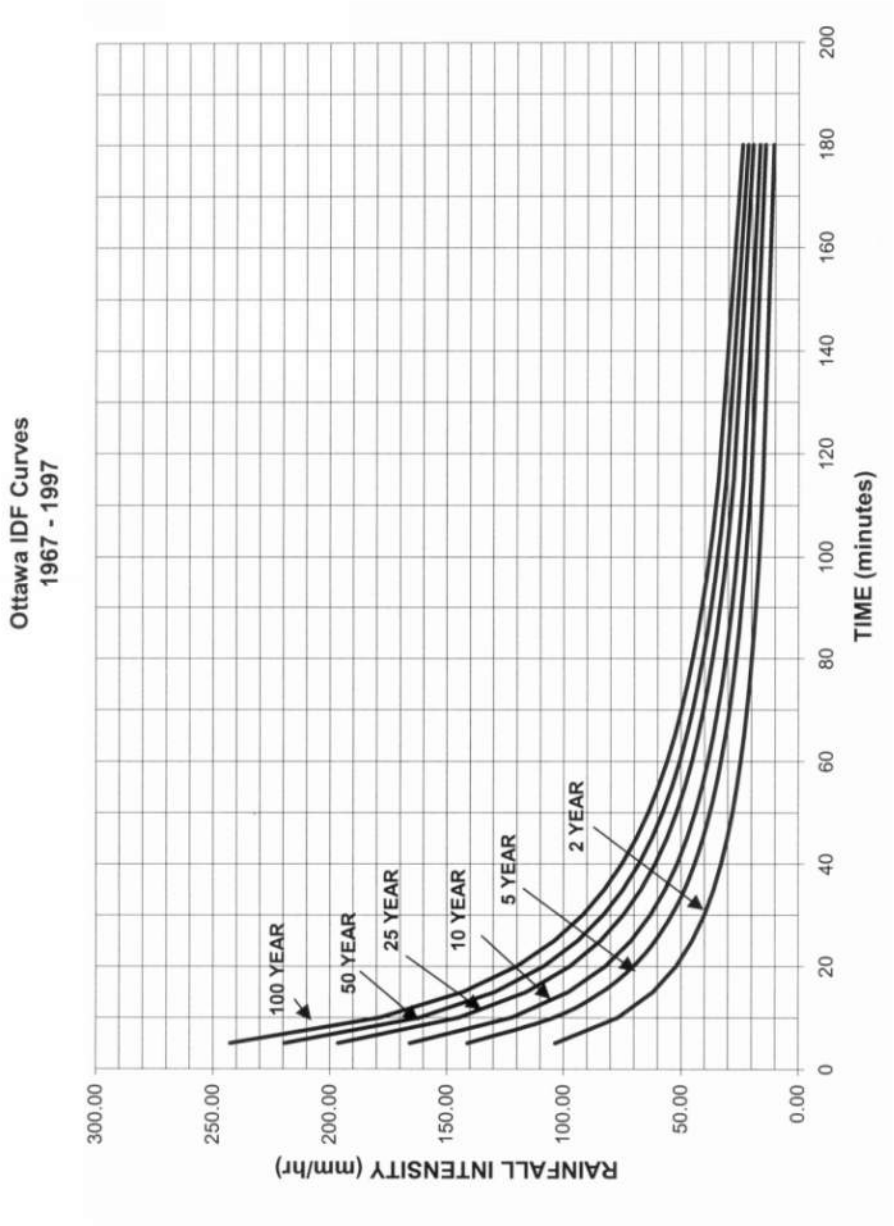
APPENDIX E

IDF Curves and Preliminary SWM Calculations

APPENDIX 5-A OTTAWA INTENSITY DURATION FREQUENCY (IDF) CURVE



Proposed Multi -Use, Multi-Tower Site Development
2026 Scott Street

Pre - Development Site Flows

Description	Area (ha)	$A_{impervious}$ (ha) C=0.9	A_{gravel} (ha) C=0.6	$A_{pervious}$ (ha) C=0.2	Weighted C_{w5}	Weighted C_{w100}	5-Year Flow (L/s)	100-Year Flow (L/s)	Allowable C_w=0.5 Max	Allowable Flow 5-year (L/s)
Off-Site Tributary Area OS-1 (East)	0.105	0.036	0.000	0.069	0.44	0.51	13.3	26.4	0.50	-
Off-Site Tributary Area OS-2 (South)	0.069	0.067	0.000	0.002	0.88	0.98	17.6	33.6	0.50	-
Site to be Developed	0.597	0.566	0.000	0.031	0.86	0.96	149.4	285.0	0.50	63.7
Dedicated Parkland	0.066	0.035	0.000	0.031	0.57	0.65	11.0	21.3	0.50	7.0
									C=0.5 (Max.)	T_c = 20mins

Post - Development Site Flows

Area	Description	Area (ha)	A_{imp} (ha) C=0.9	$A_{planters}$ (ha) C=0.6	A_{perv} (ha) C=0.2	C_5	C_{100}	Uncontrolled Flow (L/s) 5-year	Uncontrolled Flow (L/s) 100-year	Controlled Flow (L/s) 5-year	Controlled Flow (L/s) 100-year	Storage Required (m^3) 5-year	Storage Required (m^3) 100-year
OS-1	Off-Site Tributary Area OS-1 (East)	0.105	0.036	0.000	0.069	0.44	0.51	13.3	26.4	-	-	-	-
OS-2	Off-Site Tributary Area OS-2 (South)	0.069	0.067	0.000	0.002	0.88	0.98	17.6	33.6	-	-	-	-
A-1	Direct Runoff	0.033	0.023	0.009	0.001	0.80	0.91	7.6	14.9	-	-	-	-
A-2	Uncontrolled Flow (East)	0.005	0.000	0.000	0.005	0.20	0.25	0.3	0.6	-	-	-	-
A-3	Controlled Site Flow	0.555	0.450	0.074	0.031	0.82	0.92	-	-	31.5	31.5	69.0	181.7
A-4	Uncontrolled Site Flow (West)	0.004	0.004	0.000	0.000	0.90	1.00	1.1	2.2	-	-	-	-
A-5	Dedicated Parkland	0.066	0.033	0.000	0.033	0.55	0.63	-	-	5.5	6.0	5.0	14.1
							Total Site Flows :	40.5	49.2				
						T_c = 10mins	T_c = 10mins	23.2	14.6				
A-2 + OS-1	Uncontrolled Flow (East) + Off-Site Tributary Area (East)	0.110	0.036	0.000	0.074	0.43	0.49	13.6	27.0	-	-	-	-
A-5 + OS-2	Parkland + Off-Site Tributary Area (South)	0.135	0.033	0.000	0.102	0.37	0.43	-	-	5.5	6.0	5.5	16.3

Proposed Multi-Tower Residential Development
Novatech Project No. 121302
REQUIRED STORAGE - 1:2 YEAR EVENT
AREA OS-1 Off-Site Tributary Area OS-1 (East)

OTTAWA IDF CURVE

Area =	0.105	ha	Qallow =	9.8	L/s
C =	0.44		Vol(max) =	-	m^3

Time (min)	Intensity (mm/hr)	Q (L/s)	Qnet (L/s)	Vol (m^3)
5	103.68	13.28	3.48	1.04
10	76.52	9.80	0.00	0.00
15	61.36	7.86	-1.94	-1.75
20	51.59	6.61	-3.19	-3.83
25	44.72	5.73	-4.07	-6.11
30	39.60	5.07	-4.73	-8.51
35	35.63	0.03	-9.76	-20.51
40	32.45	4.15	-5.64	-13.54
45	29.84	0.56	-9.24	-24.96
50	27.65	3.54	-6.26	-18.77
55	25.79	3.30	-6.50	-21.43
60	24.19	3.10	-6.70	-24.12
65	22.80	2.92	-6.88	-26.83
70	21.57	2.76	-7.04	-29.55
75	20.48	2.62	-7.18	-32.29
80	19.51	2.50	-7.30	-35.04
85	18.63	2.39	-7.41	-37.80
90	17.84	2.28	-7.51	-40.57

Proposed Multi-Tower Residential Development
Novatech Project No. 121302
REQUIRED STORAGE - 1:5 YEAR EVENT
AREA A-1 Off-Site Tributary Area OS-1 (East)

OTTAWA IDF CURVE

Area =	0.105	ha	Qallow =	13.3	L/s
C =	0.44		Vol(max) =	-	m^3

Time (min)	Intensity (mm/hr)	Q (L/s)	Qnet (L/s)	Vol (m^3)
5	141.18	18.08	8.28	2.48
10	104.19	13.34	3.54	2.13
15	83.56	10.70	0.90	0.81
20	70.25	9.00	-0.80	-0.96
25	60.90	7.80	-2.00	-3.00
30	53.93	6.91	-2.89	-5.21
35	48.52	6.21	-3.59	-7.53
40	44.18	5.66	-4.14	-9.94
45	40.63	5.20	-4.60	-12.41
50	37.65	4.82	-4.98	-14.93
55	35.12	4.50	-5.30	-17.49
60	32.94	4.22	-5.58	-20.09
65	31.04	3.98	-5.82	-22.71
70	29.37	3.76	-6.04	-25.35
75	27.89	3.57	-6.23	-28.02
80	26.56	3.40	-6.40	-30.70
85	25.37	3.25	-6.55	-33.40
90	24.29	3.11	-6.69	-36.11

Proposed Multi-Tower Residential Development
Novatech Project No. 121302
REQUIRED STORAGE - 1:100 YEAR EVENT
AREA OS-1 Off-Site Tributary Area OS-1 (East)

OTTAWA IDF CURVE

Area =	0.105	ha	Qallow =	26.4	L/s
C =	0.51		Vol(max) =	-	m^3

Time (min)	Intensity (mm/hr)	Q (L/s)	Qnet (L/s)	Vol (m^3)
5	242.70	35.83	9.47	2.84
10	178.56	26.36	0.00	0.00
15	142.89	21.09	-5.26	-4.74
20	119.95	17.71	-8.65	-10.38
25	103.85	15.33	-11.03	-16.54
30	91.87	13.56	-12.80	-23.04
35	82.58	12.19	-14.17	-29.75
40	75.15	11.09	-15.27	-36.64
45	69.05	10.19	-16.17	-43.65
50	63.95	9.44	-16.92	-50.75
55	59.62	8.80	-17.56	-57.94
60	55.89	8.25	-18.11	-65.19
65	52.65	7.77	-18.59	-72.49
70	49.79	7.35	-19.01	-79.84
75	47.26	6.98	-19.38	-87.22
80	44.99	6.64	-19.72	-94.64
85	42.95	6.34	-20.02	-102.09
90	41.11	6.07	-20.29	-109.57

Proposed Multi-Tower Residential Development
Novatech Project No. 121302
REQUIRED STORAGE - 1:100 YR + 20% IDF Increase
AREA A-1 Off-Site Tributary Area OS-1 (East)

OTTAWA IDF CURVE

Area =	0.105	ha	Qallow =	31.6	L/s
C =	0.51		Vol(max) =	-	m^3

Time (min)	Intensity (mm/hr)	Q (L/s)	Qnet (L/s)	Vol (m^3)
5	291.24	42.99	16.63	4.99
10	214.27	31.63	5.27	3.16
15	171.47	25.31	-1.05	-0.94
20	143.94	21.25	-5.11	-6.13
25	124.62	18.40	-7.96	-11.94
30	110.24	16.27	-10.09	-18.15
35	99.09	14.63	-11.73	-24.63
40	90.17	13.31	-13.05	-31.31
45	82.86	12.23	-14.13	-38.14
50	76.74	11.33	-15.03	-45.09
55	71.55	10.56	-15.80	-52.13
60	67.07	9.90	-16.46	-59.25
65	63.18	9.33	-17.03	-66.43
70	59.75	8.82	-17.54	-73.66
75	56.71	8.37	-17.99	-80.95
80	53.99	7.97	-18.39	-88.27
85	51.54	7.61	-18.75	-95.62
90	49.33	7.28	-19.08	-103.01

Proposed Multi-Tower Residential Development
Novatech Project No. 121302
REQUIRED STORAGE - 1:2 YEAR EVENT
AREA OS-2 Off-Site Tributary Area OS-2 (South)

OTTAWA IDF CURVE

Area =	0.069	ha	Qallow =	12.9	L/s
C =	0.88		Vol(max) =	-	m^3

Time (min)	Intensity (mm/hr)	Q (L/s)	Qnet (L/s)	Vol (m^3)
5	103.68	17.54	4.59	1.38
10	76.52	12.94	0.00	0.00
15	61.36	10.38	-2.56	-2.31
20	51.59	8.73	-4.22	-5.06
25	44.72	7.56	-5.38	-8.07
30	39.60	6.70	-6.24	-11.24
35	35.63	0.03	-12.91	-27.11
40	32.45	5.49	-7.45	-17.89
45	29.84	0.56	-12.39	-33.44
50	27.65	4.68	-8.26	-24.79
55	25.79	4.36	-8.58	-28.31
60	24.19	4.09	-8.85	-31.86
65	22.80	3.86	-9.09	-35.43
70	21.57	3.65	-9.29	-39.03
75	20.48	3.46	-9.48	-42.65
80	19.51	3.30	-9.64	-46.28
85	18.63	3.15	-9.79	-49.93
90	17.84	3.02	-9.92	-53.59

Proposed Multi-Tower Residential Development
Novatech Project No. 121302
REQUIRED STORAGE - 1:5 YEAR EVENT
AREA OS-2 Off-Site Tributary Area OS-2 (South)

OTTAWA IDF CURVE

Area =	0.069	ha	Qallow =	17.6	L/s
C =	0.88		Vol(max) =	-	m^3

Time (min)	Intensity (mm/hr)	Q (L/s)	Qnet (L/s)	Vol (m^3)
5	141.18	23.88	10.94	3.28
10	104.19	17.62	4.68	2.81
15	83.56	14.13	1.19	1.07
20	70.25	11.88	-1.06	-1.27
25	60.90	10.30	-2.64	-3.96
30	53.93	9.12	-3.82	-6.88
35	48.52	8.21	-4.74	-9.94
40	44.18	7.47	-5.47	-13.12
45	40.63	6.87	-6.07	-16.39
50	37.65	6.37	-6.57	-19.72
55	35.12	5.94	-7.00	-23.10
60	32.94	5.57	-7.37	-26.53
65	31.04	5.25	-7.69	-29.99
70	29.37	4.97	-7.97	-33.49
75	27.89	4.72	-8.22	-37.01
80	26.56	4.49	-8.45	-40.56
85	25.37	4.29	-8.65	-44.12
90	24.29	4.11	-8.83	-47.70

Proposed Multi-Tower Residential Development
Novatech Project No. 121302
REQUIRED STORAGE - 1:100 YEAR EVENT
AREA OS-2 Off-Site Tributary Area OS-2 (South)

OTTAWA IDF CURVE

Area =	0.069	ha	Qallow =	33.6	L/s
C =	0.98		Vol(max) =	-	m^3

Time (min)	Intensity (mm/hr)	Q (L/s)	Qnet (L/s)	Vol (m^3)
5	242.70	45.64	12.06	3.62
10	178.56	33.58	0.00	0.00
15	142.89	26.87	-6.71	-6.04
20	119.95	22.56	-11.02	-13.23
25	103.85	19.53	-14.05	-21.08
30	91.87	17.28	-16.30	-29.35
35	82.58	15.53	-18.05	-37.91
40	75.15	14.13	-19.45	-46.68
45	69.05	12.99	-20.59	-55.61
50	63.95	12.03	-21.55	-64.66
55	59.62	11.21	-22.37	-73.81
60	55.89	10.51	-23.07	-83.05
65	52.65	9.90	-23.68	-92.35
70	49.79	9.36	-24.22	-101.71
75	47.26	8.89	-24.69	-111.12
80	44.99	8.46	-25.12	-120.57
85	42.95	8.08	-25.50	-130.06
90	41.11	7.73	-25.85	-139.59

Proposed Multi-Tower Residential Development
Novatech Project No. 121302
REQUIRED STORAGE - 1:100 YR + 20% IDF Increase
AREA OS-2 Off-Site Tributary Area OS-2 (South)

OTTAWA IDF CURVE

Area =	0.069	ha	Qallow =	40.3	L/s
C =	0.98		Vol(max) =	-	m^3

Time (min)	Intensity (mm/hr)	Q (L/s)	Qnet (L/s)	Vol (m^3)
5	291.24	54.77	21.19	6.36
10	214.27	40.30	6.72	4.03
15	171.47	32.25	-1.33	-1.20
20	143.94	27.07	-6.51	-7.81
25	124.62	23.44	-10.14	-15.22
30	110.24	20.73	-12.85	-23.13
35	99.09	18.64	-14.94	-31.38
40	90.17	16.96	-16.62	-39.89
45	82.86	15.58	-18.00	-48.59
50	76.74	14.43	-19.15	-57.44
55	71.55	13.46	-20.13	-66.41
60	67.07	12.61	-20.97	-75.48
65	63.18	11.88	-21.70	-84.63
70	59.75	11.24	-22.34	-93.85
75	56.71	10.66	-22.92	-103.12
80	53.99	10.15	-23.43	-112.45
85	51.54	9.69	-23.89	-121.82
90	49.33	9.28	-24.30	-131.24

Proposed Multi-Tower Residential Development
Novatech Project No. 121302
REQUIRED STORAGE - 1:2 YEAR EVENT
AREA A-1 Direct Runoff

OTTAWA IDF CURVE

Area =	0.033	ha	Qallow =	5.6	L/s
C =	0.80		Vol(max) =	-	m^3

Time (min)	Intensity (mm/hr)	Q (L/s)	Qnet (L/s)	Vol (m^3)
5	103.68	7.57	1.98	0.59
10	76.52	5.58	0.00	0.00
15	61.36	4.48	-1.11	-1.00
20	51.59	3.76	-1.82	-2.18
25	44.72	3.26	-2.32	-3.48
30	39.60	2.89	-2.69	-4.85
35	35.63	0.03	-5.55	-11.66
40	32.45	2.37	-3.22	-7.72
45	29.84	0.56	-5.03	-13.58
50	27.65	2.02	-3.57	-10.70
55	25.79	1.88	-3.70	-12.21
60	24.19	1.77	-3.82	-13.74
65	22.80	1.66	-3.92	-15.29
70	21.57	1.57	-4.01	-16.84
75	20.48	1.49	-4.09	-18.40
80	19.51	1.42	-4.16	-19.97
85	18.63	1.36	-4.22	-21.54
90	17.84	1.30	-4.28	-23.12

Proposed Multi-Tower Residential Development
Novatech Project No. 121302
REQUIRED STORAGE - 1:5 YEAR EVENT
AREA A-1 Direct Runoff

OTTAWA IDF CURVE

Area =	0.033	ha	Qallow =	7.6	L/s
C =	0.80		Vol(max) =	-	m^3

Time (min)	Intensity (mm/hr)	Q (L/s)	Qnet (L/s)	Vol (m^3)
5	141.18	10.30	4.72	1.42
10	104.19	7.60	2.02	1.21
15	83.56	6.10	0.51	0.46
20	70.25	5.13	-0.46	-0.55
25	60.90	4.44	-1.14	-1.71
30	53.93	3.93	-1.65	-2.97
35	48.52	3.54	-2.04	-4.29
40	44.18	3.22	-2.36	-5.66
45	40.63	2.96	-2.62	-7.07
50	37.65	2.75	-2.84	-8.51
55	35.12	2.56	-3.02	-9.97
60	32.94	2.40	-3.18	-11.45
65	31.04	2.27	-3.32	-12.94
70	29.37	2.14	-3.44	-14.45
75	27.89	2.03	-3.55	-15.97
80	26.56	1.94	-3.65	-17.50
85	25.37	1.85	-3.73	-19.03
90	24.29	1.77	-3.81	-20.58

Proposed Multi-Tower Residential Development
Novatech Project No. 121302
REQUIRED STORAGE - 1:100 YEAR EVENT
AREA A-1 Direct Runoff

OTTAWA IDF CURVE

Area =	0.033	ha	Qallow =	14.8	L/s
C =	0.91		Vol(max) =	-	m^3

Time (min)	Intensity (mm/hr)	Q (L/s)	Qnet (L/s)	Vol (m^3)
5	242.70	20.18	5.33	1.60
10	178.56	14.85	0.00	0.00
15	142.89	11.88	-2.97	-2.67
20	119.95	9.97	-4.87	-5.85
25	103.85	8.64	-6.21	-9.32
30	91.87	7.64	-7.21	-12.98
35	82.58	6.87	-7.98	-16.76
40	75.15	6.25	-8.60	-20.64
45	69.05	5.74	-9.11	-24.59
50	63.95	5.32	-9.53	-28.59
55	59.62	4.96	-9.89	-32.64
60	55.89	4.65	-10.20	-36.72
65	52.65	4.38	-10.47	-40.83
70	49.79	4.14	-10.71	-44.97
75	47.26	3.93	-10.92	-49.13
80	44.99	3.74	-11.11	-53.31
85	42.95	3.57	-11.28	-57.51
90	41.11	3.42	-11.43	-61.72

Proposed Multi-Tower Residential Development
Novatech Project No. 121302
REQUIRED STORAGE - 1:100 YR + 20% IDF Increase
AREA A-1 Direct Runoff

OTTAWA IDF CURVE

Area =	0.033	ha	Qallow =	17.8	L/s
C =	0.91		Vol(max) =	-	m^3

Time (min)	Intensity (mm/hr)	Q (L/s)	Qnet (L/s)	Vol (m^3)
5	291.24	24.22	9.37	2.81
10	214.27	17.82	2.97	1.78
15	171.47	14.26	-0.59	-0.53
20	143.94	11.97	-2.88	-3.45
25	124.62	10.36	-4.49	-6.73
30	110.24	9.17	-5.68	-10.23
35	99.09	8.24	-6.61	-13.88
40	90.17	7.50	-7.35	-17.64
45	82.86	6.89	-7.96	-21.49
50	76.74	6.38	-8.47	-25.40
55	71.55	5.95	-8.90	-29.36
60	67.07	5.58	-9.27	-33.37
65	63.18	5.25	-9.59	-37.42
70	59.75	4.97	-9.88	-41.49
75	56.71	4.72	-10.13	-45.60
80	53.99	4.49	-10.36	-49.72
85	51.54	4.29	-10.56	-53.86
90	49.33	4.10	-10.75	-58.03

Proposed Multi-Tower Residential Development
Novatech Project No. 121302
REQUIRED STORAGE - 1:2 YEAR EVENT
AREA A-3 Controlled Site Flow

OTTAWA IDF CURVE

Area =	0.555	ha	Qallow =	31.5	L/s
C =	0.82		Vol(max) =	41.6	m^3

Time (min)	Intensity (mm/hr)	Q (L/s)	Qnet (L/s)	Vol (m^3)
5	103.68	131.29	99.79	29.94
10	76.52	96.89	65.39	39.24
15	61.36	77.70	46.20	41.58
20	51.59	65.33	33.83	40.60
25	44.72	56.63	25.13	37.70
30	39.60	50.15	18.65	33.57
35	35.63	0.03	-31.47	-66.08
40	32.45	41.09	9.59	23.01
45	29.84	0.56	-30.95	-83.55
50	27.65	35.02	3.52	10.55
55	25.79	32.66	1.16	3.84
60	24.19	30.64	-0.86	-3.11
65	22.80	28.87	-2.63	-10.26
70	21.57	27.31	-4.19	-17.58
75	20.48	25.93	-5.57	-25.04
80	19.51	24.70	-6.80	-32.63
85	18.63	23.59	-7.91	-40.33
90	17.84	22.59	-8.91	-48.13

Proposed Multi-Tower Residential Development
Novatech Project No. 121302
REQUIRED STORAGE - 1:5 YEAR EVENT
AREA A-3 Controlled Site Flow

OTTAWA IDF CURVE

Area =	0.555	ha	Qallow =	31.5	L/s
C =	0.82		Vol(max) =	69.0	m^3

Time (min)	Intensity (mm/hr)	Q (L/s)	Qnet (L/s)	Vol (m^3)
5	141.18	178.78	147.28	44.18
10	104.19	131.94	100.44	60.27
15	83.56	105.81	74.31	66.88
20	70.25	88.96	57.46	68.95
25	60.90	77.11	45.61	68.42
30	53.93	68.29	36.79	66.22
35	48.52	61.44	29.94	62.87
40	44.18	55.95	24.45	58.69
45	40.63	51.45	19.95	53.86
50	37.65	47.68	16.18	48.54
55	35.12	44.48	12.98	42.83
60	32.94	41.72	10.22	36.78
65	31.04	39.31	7.81	30.47
70	29.37	37.19	5.69	23.92
75	27.89	35.32	3.82	17.17
80	26.56	33.64	2.14	10.25
85	25.37	32.13	0.63	3.19
90	24.29	30.76	-0.74	-4.01

Proposed Multi-Tower Residential Development
Novatech Project No. 121302
REQUIRED STORAGE - 1:100 YEAR EVENT
AREA A-3 Controlled Site Flow

OTTAWA IDF CURVE

Area =	0.555	ha	Qallow =	31.5	L/s
C =	0.92		Vol(max) =	181.7	m^3

Time (min)	Intensity (mm/hr)	Q (L/s)	Qnet (L/s)	Vol (m^3)
5	242.70	346.25	314.75	94.42
10	178.56	254.74	223.24	133.94
15	142.89	203.86	172.36	155.12
20	119.95	171.12	139.62	167.55
25	103.85	148.15	116.65	174.98
30	91.87	131.06	99.56	179.21
35	82.58	117.81	86.31	181.25
40	75.15	107.20	75.70	181.69
45	69.05	98.51	67.01	180.92
50	63.95	91.24	59.74	179.21
55	59.62	85.06	53.56	176.75
60	55.89	79.74	48.24	173.67
65	52.65	75.11	43.61	170.07
70	49.79	71.03	39.53	166.03
75	47.26	67.42	35.92	161.62
80	44.99	64.18	32.68	156.89
85	42.95	61.28	29.78	151.87
90	41.11	58.65	27.15	146.61

Proposed Multi-Tower Residential Development
Novatech Project No. 121302
REQUIRED STORAGE - 1:100 YR + 20% IDF Increase
AREA A-3 Controlled Site Flow

OTTAWA IDF CURVE

Area =	0.555	ha	Qallow =	31.5	L/s
C =	0.92		Vol(max) =	234.1	m^3

Time (min)	Intensity (mm/hr)	Q (L/s)	Qnet (L/s)	Vol (m^3)
5	291.24	415.50	384.00	115.20
10	214.27	305.68	274.18	164.51
15	171.47	244.63	213.13	191.81
20	143.94	205.35	173.85	208.62
25	124.62	177.78	146.28	219.42
30	110.24	157.27	125.77	226.39
35	99.09	141.37	109.87	230.73
40	90.17	128.64	97.14	233.15
45	82.86	118.21	86.71	234.12
50	76.74	109.49	77.99	233.96
55	71.55	102.07	70.57	232.89
60	67.07	95.69	64.19	231.08
65	63.18	90.13	58.63	228.65
70	59.75	85.24	53.74	225.70
75	56.71	80.90	49.40	222.29
80	53.99	77.02	45.52	218.51
85	51.54	73.53	42.03	214.38
90	49.33	70.38	38.88	209.95

Proposed Multi-Tower Residential Development
Novatech Project No. 121302
REQUIRED STORAGE - 1:2 YEAR EVENT
AREA A-2 Uncontrolled Flow + OS-1

OTTAWA IDF CURVE

Area =	0.110	ha	Qallow =	10.0	L/s
C =	0.43		Vol(max) =	1.1	m^3

Time (min)	Intensity (mm/hr)	Q (L/s)	Qnet (L/s)	Vol (m^3)
5	103.68	13.57	3.55	1.07
10	76.52	10.01	0.00	0.00
15	61.36	8.03	-1.98	-1.79
20	51.59	6.75	-3.26	-3.91
25	44.72	5.85	-4.16	-6.24
30	39.60	5.18	-4.83	-8.70
35	35.63	0.03	-9.98	-20.96
40	32.45	4.25	-5.77	-13.84
45	29.84	0.56	-9.46	-25.54
50	27.65	3.62	-6.40	-19.19
55	25.79	3.38	-6.64	-21.91
60	24.19	3.17	-6.85	-24.65
65	22.80	2.98	-7.03	-27.42
70	21.57	2.82	-7.19	-30.20
75	20.48	2.68	-7.33	-33.00
80	19.51	2.55	-7.46	-35.82
85	18.63	2.44	-7.58	-38.64
90	17.84	2.33	-7.68	-41.47

Proposed Multi-Tower Residential Development
Novatech Project No. 121302
REQUIRED STORAGE - 1:5 YEAR EVENT
AREA A-2 Uncontrolled Flow + OS-1

OTTAWA IDF CURVE

Area =	0.110	ha	Qallow =	13.6	L/s
C =	0.43		Vol(max) =	2.5	m^3

Time (min)	Intensity (mm/hr)	Q (L/s)	Qnet (L/s)	Vol (m^3)
5	141.18	18.48	8.46	2.54
10	104.19	13.64	3.62	2.17
15	83.56	10.94	0.92	0.83
20	70.25	9.19	-0.82	-0.98
25	60.90	7.97	-2.04	-3.07
30	53.93	7.06	-2.96	-5.32
35	48.52	6.35	-3.66	-7.70
40	44.18	5.78	-4.23	-10.16
45	40.63	5.32	-4.70	-12.68
50	37.65	4.93	-5.09	-15.26
55	35.12	4.60	-5.42	-17.88
60	32.94	4.31	-5.70	-20.53
65	31.04	4.06	-5.95	-23.21
70	29.37	3.84	-6.17	-25.92
75	27.89	3.65	-6.36	-28.64
80	26.56	3.48	-6.54	-31.38
85	25.37	3.32	-6.69	-34.14
90	24.29	3.18	-6.84	-36.91

Proposed Multi-Tower Residential Development
Novatech Project No. 121302
REQUIRED STORAGE - 1:100 YEAR EVENT
AREA A-2 Uncontrolled Flow + OS-1

OTTAWA IDF CURVE

Area =	0.110	ha	Qallow =	27.0	L/s
C =	0.49		Vol(max) =	2.9	m^3

Time (min)	Intensity (mm/hr)	Q (L/s)	Qnet (L/s)	Vol (m^3)
5	242.70	36.69	9.70	2.91
10	178.56	26.99	0.00	0.00
15	142.89	21.60	-5.39	-4.85
20	119.95	18.13	-8.86	-10.63
25	103.85	15.70	-11.29	-16.94
30	91.87	13.89	-13.10	-23.59
35	82.58	12.48	-14.51	-30.47
40	75.15	11.36	-15.63	-37.52
45	69.05	10.44	-16.55	-44.70
50	63.95	9.67	-17.32	-51.97
55	59.62	9.01	-17.98	-59.33
60	55.89	8.45	-18.54	-66.75
65	52.65	7.96	-19.03	-74.23
70	49.79	7.53	-19.47	-81.76
75	47.26	7.14	-19.85	-89.32
80	44.99	6.80	-20.19	-96.92
85	42.95	6.49	-20.50	-104.54
90	41.11	6.21	-20.78	-112.20

Proposed Multi-Tower Residential Development
Novatech Project No. 121302
REQUIRED STORAGE - 1:100 YR + 20% IDF Increase
AREA A-2 Uncontrolled Flow + OS-1

OTTAWA IDF CURVE

Area =	0.110	ha	Qallow =	32.4	L/s
C =	0.49		Vol(max) =	5.1	m^3

Time (min)	Intensity (mm/hr)	Q (L/s)	Qnet (L/s)	Vol (m^3)
5	291.24	44.03	17.03	5.11
10	214.27	32.39	5.40	3.24
15	171.47	25.92	-1.07	-0.96
20	143.94	21.76	-5.23	-6.28
25	124.62	18.84	-8.15	-12.23
30	110.24	16.66	-10.33	-18.59
35	99.09	14.98	-12.01	-25.23
40	90.17	13.63	-13.36	-32.07
45	82.86	12.53	-14.47	-39.06
50	76.74	11.60	-15.39	-46.17
55	71.55	10.82	-16.18	-53.38
60	67.07	10.14	-16.85	-60.67
65	63.18	9.55	-17.44	-68.02
70	59.75	9.03	-17.96	-75.43
75	56.71	8.57	-18.42	-82.89
80	53.99	8.16	-18.83	-90.39
85	51.54	7.79	-19.20	-97.92
90	49.33	7.46	-19.53	-105.49

Proposed Multi-Tower Residential Development
Novatech Project No. 121302
REQUIRED STORAGE - 1:5 YEAR EVENT
AREA A-4 Uncontrolled Site Flow (West)

OTTAWA IDF CURVE

Area =	0.004	ha	Qallow =	0.8	L/s
C =	0.90		Vol(max) =	0.1	m^3

Time (min)	Intensity (mm/hr)	Q (L/s)	Qnet (L/s)	Vol (m^3)
5	103.68	1.14	0.30	0.09
10	76.52	0.84	0.00	0.00
15	61.36	0.68	-0.17	-0.15
20	51.59	0.57	-0.27	-0.33
25	44.72	0.49	-0.35	-0.53
30	39.60	0.44	-0.41	-0.73
35	35.63	0.03	-0.81	-1.70
40	32.45	0.36	-0.49	-1.16
45	29.84	0.56	-0.29	-0.78
50	27.65	0.30	-0.54	-1.61
55	25.79	0.28	-0.56	-1.84
60	24.19	0.27	-0.58	-2.07
65	22.80	0.25	-0.59	-2.31
70	21.57	0.24	-0.60	-2.54
75	20.48	0.23	-0.62	-2.78
80	19.51	0.21	-0.63	-3.01
85	18.63	0.21	-0.64	-3.25
90	17.84	0.20	-0.65	-3.49

Proposed Multi-Tower Residential Development
Novatech Project No. 121302
REQUIRED STORAGE - 1:5 YEAR EVENT
AREA A-4 Uncontrolled Site Flow (West)

OTTAWA IDF CURVE

Area =	0.004	ha	Qallow =	1.1	L/s
C =	0.90		Vol(max) =	0.2	m^3

Time (min)	Intensity (mm/hr)	Q (L/s)	Qnet (L/s)	Vol (m^3)
5	141.18	1.55	0.71	0.21
10	104.19	1.15	0.30	0.18
15	83.56	0.92	0.08	0.07
20	70.25	0.77	-0.07	-0.08
25	60.90	0.67	-0.17	-0.26
30	53.93	0.59	-0.25	-0.45
35	48.52	0.53	-0.31	-0.65
40	44.18	0.49	-0.36	-0.85
45	40.63	0.45	-0.40	-1.07
50	37.65	0.41	-0.43	-1.28
55	35.12	0.39	-0.46	-1.50
60	32.94	0.36	-0.48	-1.73
65	31.04	0.34	-0.50	-1.95
70	29.37	0.32	-0.52	-2.18
75	27.89	0.31	-0.54	-2.41
80	26.56	0.29	-0.55	-2.64
85	25.37	0.28	-0.56	-2.87
90	24.29	0.27	-0.57	-3.10

Proposed Multi-Tower Residential Development
Novatech Project No. 121302
REQUIRED STORAGE - 1:100 YEAR EVENT
AREA A-4 Uncontrolled Site Flow (West)

OTTAWA IDF CURVE

Area =	0.004	ha	Qallow =	2.2	L/s
C =	1.00		Vol(max) =	0.2	m^3

Time (min)	Intensity (mm/hr)	Q (L/s)	Qnet (L/s)	Vol (m^3)
5	242.70	2.97	0.78	0.24
10	178.56	2.18	0.00	0.00
15	142.89	1.75	-0.44	-0.39
20	119.95	1.47	-0.72	-0.86
25	103.85	1.27	-0.91	-1.37
30	91.87	1.12	-1.06	-1.91
35	82.58	1.01	-1.17	-2.47
40	75.15	0.92	-1.26	-3.04
45	69.05	0.84	-1.34	-3.62
50	63.95	0.78	-1.40	-4.21
55	59.62	0.73	-1.45	-4.80
60	55.89	0.68	-1.50	-5.40
65	52.65	0.64	-1.54	-6.01
70	49.79	0.61	-1.58	-6.62
75	47.26	0.58	-1.61	-7.23
80	44.99	0.55	-1.63	-7.84
85	42.95	0.53	-1.66	-8.46
90	41.11	0.50	-1.68	-9.08

Proposed Multi-Tower Residential Development
Novatech Project No. 121302
REQUIRED STORAGE - 1:100 YR + 20% IDF Increase
AREA A-4 Uncontrolled Site Flow (West)

OTTAWA IDF CURVE

Area =	0.004	ha	Qallow =	2.6	L/s
C =	1.00		Vol(max) =	0.4	m^3

Time (min)	Intensity (mm/hr)	Q (L/s)	Qnet (L/s)	Vol (m^3)
5	291.24	3.56	1.38	0.41
10	214.27	2.62	0.44	0.26
15	171.47	2.10	-0.09	-0.08
20	143.94	1.76	-0.42	-0.51
25	124.62	1.52	-0.66	-0.99
30	110.24	1.35	-0.84	-1.50
35	99.09	1.21	-0.97	-2.04
40	90.17	1.10	-1.08	-2.59
45	82.86	1.01	-1.17	-3.16
50	76.74	0.94	-1.25	-3.74
55	71.55	0.88	-1.31	-4.32
60	67.07	0.82	-1.36	-4.91
65	63.18	0.77	-1.41	-5.50
70	59.75	0.73	-1.45	-6.10
75	56.71	0.69	-1.49	-6.71
80	53.99	0.66	-1.52	-7.31
85	51.54	0.63	-1.55	-7.92
90	49.33	0.60	-1.58	-8.54

Proposed Multi-Tower Residential Development
Novatech Project No. 121302
REQUIRED STORAGE - 1:2 YEAR EVENT
AREA A-5 Dedicated Parkland +OS-2

OTTAWA IDF CURVE

Area =	0.135	ha	Qallow =	5.5	L/s
C =	0.37		Vol(max) =	3.1	m^3

Time (min)	Intensity (mm/hr)	Q (L/s)	Qnet (L/s)	Vol (m^3)
5	103.68	14.44	8.94	2.68
10	76.52	10.66	5.16	3.09
15	61.36	8.55	3.05	2.74
20	51.59	7.19	1.69	2.02
25	44.72	6.23	0.73	1.09
30	39.60	5.52	0.02	0.03
35	35.63	0.03	-5.47	-11.48
40	32.45	4.52	-0.98	-2.35
45	29.84	0.56	-4.95	-13.35
50	27.65	3.85	-1.65	-4.95
55	25.79	3.59	-1.91	-6.29
60	24.19	3.37	-2.13	-7.67
65	22.80	3.18	-2.32	-9.07
70	21.57	3.00	-2.50	-10.48
75	20.48	2.85	-2.65	-11.91
80	19.51	2.72	-2.78	-13.36
85	18.63	2.59	-2.91	-14.82
90	17.84	2.48	-3.02	-16.29

Proposed Multi-Tower Residential Development
Novatech Project No. 121302
REQUIRED STORAGE - 1:5 YEAR EVENT
AREA A-5 Dedicated Parkland +OS-2

OTTAWA IDF CURVE

Area =	0.135	ha	Qallow =	5.5	L/s
C =	0.37		Vol(max) =	5.5	m^3

Time (min)	Intensity (mm/hr)	Q (L/s)	Qnet (L/s)	Vol (m^3)
5	141.18	19.66	14.16	4.25
10	104.19	14.51	9.01	5.41
15	83.56	11.64	6.14	5.52
20	70.25	9.78	4.28	5.14
25	60.90	8.48	2.98	4.47
30	53.93	7.51	2.01	3.62
35	48.52	6.76	1.26	2.64
40	44.18	6.15	0.65	1.57
45	40.63	5.66	0.16	0.43
50	37.65	5.24	-0.26	-0.77
55	35.12	4.89	-0.61	-2.01
60	32.94	4.59	-0.91	-3.28
65	31.04	4.32	-1.18	-4.59
70	29.37	4.09	-1.41	-5.92
75	27.89	3.88	-1.62	-7.27
80	26.56	3.70	-1.80	-8.64
85	25.37	3.53	-1.97	-10.03
90	24.29	3.38	-2.12	-11.43

Proposed Multi-Tower Residential Development
Novatech Project No. 121302
REQUIRED STORAGE - 1:100 YEAR EVENT
AREA A-5 Dedicated Parkland +OS-2

OTTAWA IDF CURVE

Area =	0.135	ha	Qallow =	6.0	L/s
C =	0.43		Vol(max) =	16.3	m^3

Time (min)	Intensity (mm/hr)	Q (L/s)	Qnet (L/s)	Vol (m^3)
5	242.70	39.47	33.47	10.04
10	178.56	29.04	23.04	13.82
15	142.89	23.24	17.24	15.51
20	119.95	19.51	13.51	16.21
25	103.85	16.89	10.89	16.33
30	91.87	14.94	8.94	16.09
35	82.58	13.43	7.43	15.60
40	75.15	12.22	6.22	14.93
45	69.05	11.23	5.23	14.12
50	63.95	10.40	4.40	13.20
55	59.62	9.70	3.70	12.20
60	55.89	9.09	3.09	11.12
65	52.65	8.56	2.56	9.99
70	49.79	8.10	2.10	8.81
75	47.26	7.69	1.69	7.58
80	44.99	7.32	1.32	6.32
85	42.95	6.99	0.99	5.03
90	41.11	6.69	0.69	3.70

Proposed Multi-Tower Residential Development
Novatech Project No. 121302
REQUIRED STORAGE - 1:100 YR + 20% IDF Increase
AREA A-5 Dedicated Parkland +OS-2

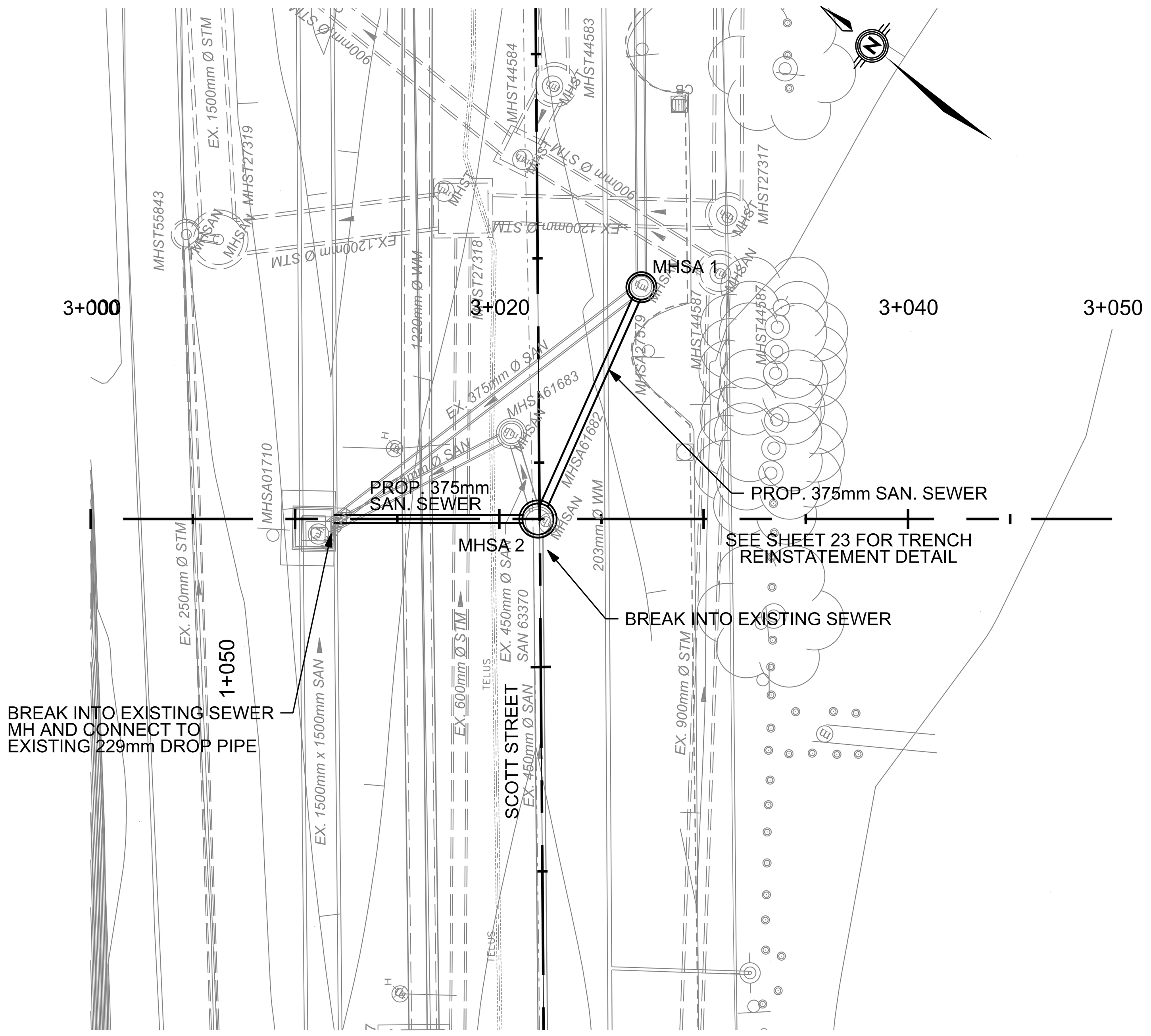
OTTAWA IDF CURVE

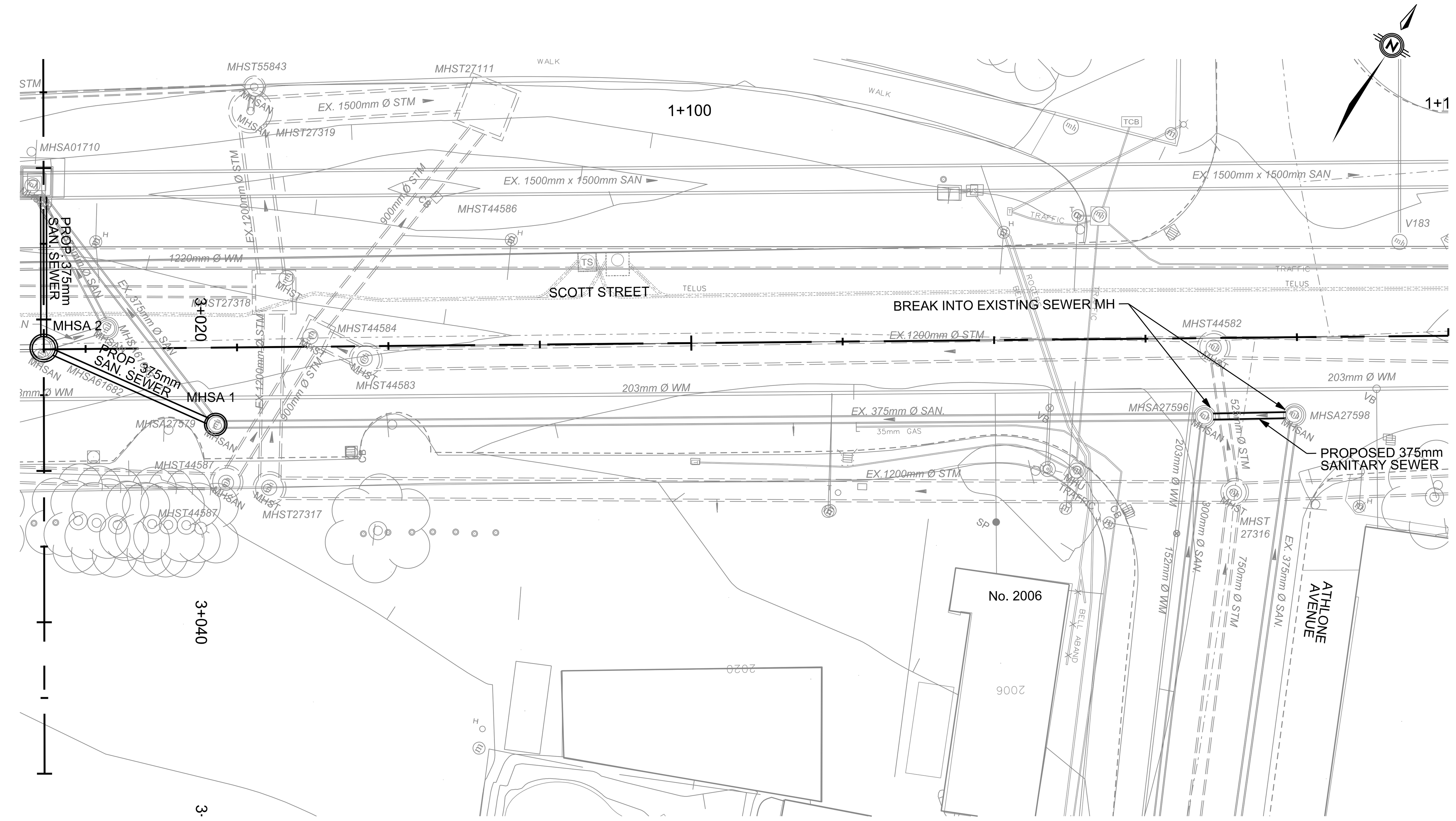
Area =	0.135	ha	Qallow =	6.0	L/s
C =	0.43		Vol(max) =	21.5	m^3

Time (min)	Intensity (mm/hr)	Q (L/s)	Qnet (L/s)	Vol (m^3)
5	291.24	47.37	41.37	12.41
10	214.27	34.85	28.85	17.31
15	171.47	27.89	21.89	19.70
20	143.94	23.41	17.41	20.89
25	124.62	20.27	14.27	21.40
30	110.24	17.93	11.93	21.47
35	99.09	16.12	10.12	21.24
40	90.17	14.67	8.67	20.80
45	82.86	13.48	7.48	20.18
50	76.74	12.48	6.48	19.44
55	71.55	11.64	5.64	18.60
60	67.07	10.91	4.91	17.67
65	63.18	10.27	4.27	16.67
70	59.75	9.72	3.72	15.61
75	56.71	9.22	3.22	14.50
80	53.99	8.78	2.78	13.35
85	51.54	8.38	2.38	12.15
90	49.33	8.02	2.02	10.92

APPENDIX F

City As-Built Drawings





SCOTT STREET SEWER AND WATERMAIN REHABILITATION

SEWER REHABILITATION MHSA01710 TO MHSA27579 MHSA27596 TO MHSA27598

Ottawa

Contract No. CP-000362 | Dwg. No. 010 | Sheet 10 of 47

Asset No.

Asset Group

CARINA DUCLOS, P.Eng. Acting Director

P. CHAMNEY, P.Eng. Project Manager

PARSONS

Des.	Chk'd.
PJH	RT

Dwn.	Chk'd.
PJH	RT

Utility Circ. No.

Index No. XXXX

Const. Inspector

Scale: HORIZONTAL 0m 2.5 5 10; VERTICAL 0m 1 2

LICENSED PROFESSIONAL ENGINEER R. J. TREMBLAY ... PROVINCE OF ONTARIO 14/07/2020

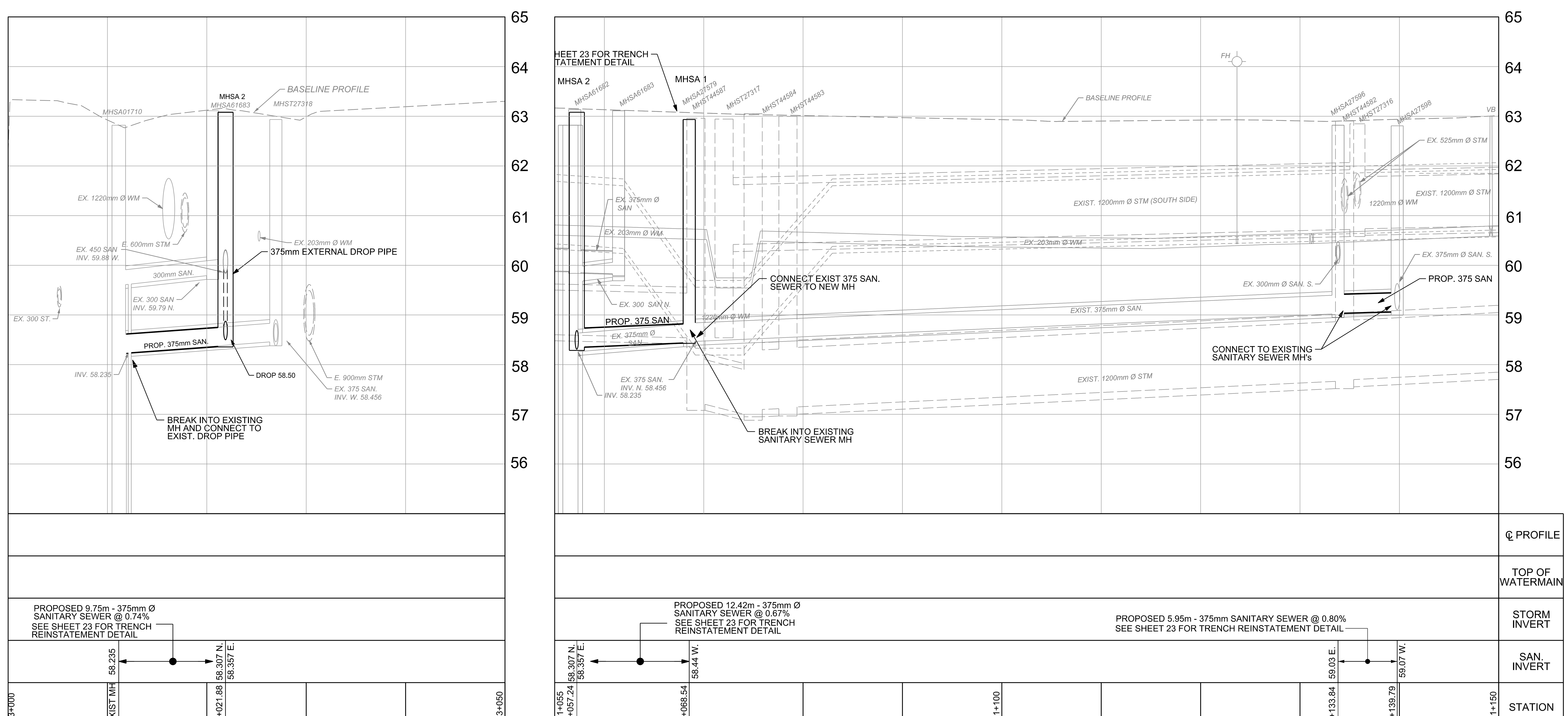
LICENSED PROFESSIONAL ENGINEER K. P. McCAMBLEY 14/07/2020 PROVINCE OF ONTARIO

NOTE: The location of utilities is approximate only, 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.

REVISIONS

No.	Description	By	Date (dd/mm/yy)
1	ISSUED FOR CONSTRUCTION	RT	14/07/20

CONTRACTOR IS TO ASSUME THAT EACH MUNICIPAL ADDRESS IS SERVICED BY INDIVIDUAL UTILITY SERVICES, SUCH AS HYDRO, GAS, BELL/ROGERS.



SANITARY MAINTENANCE HOLE DATA

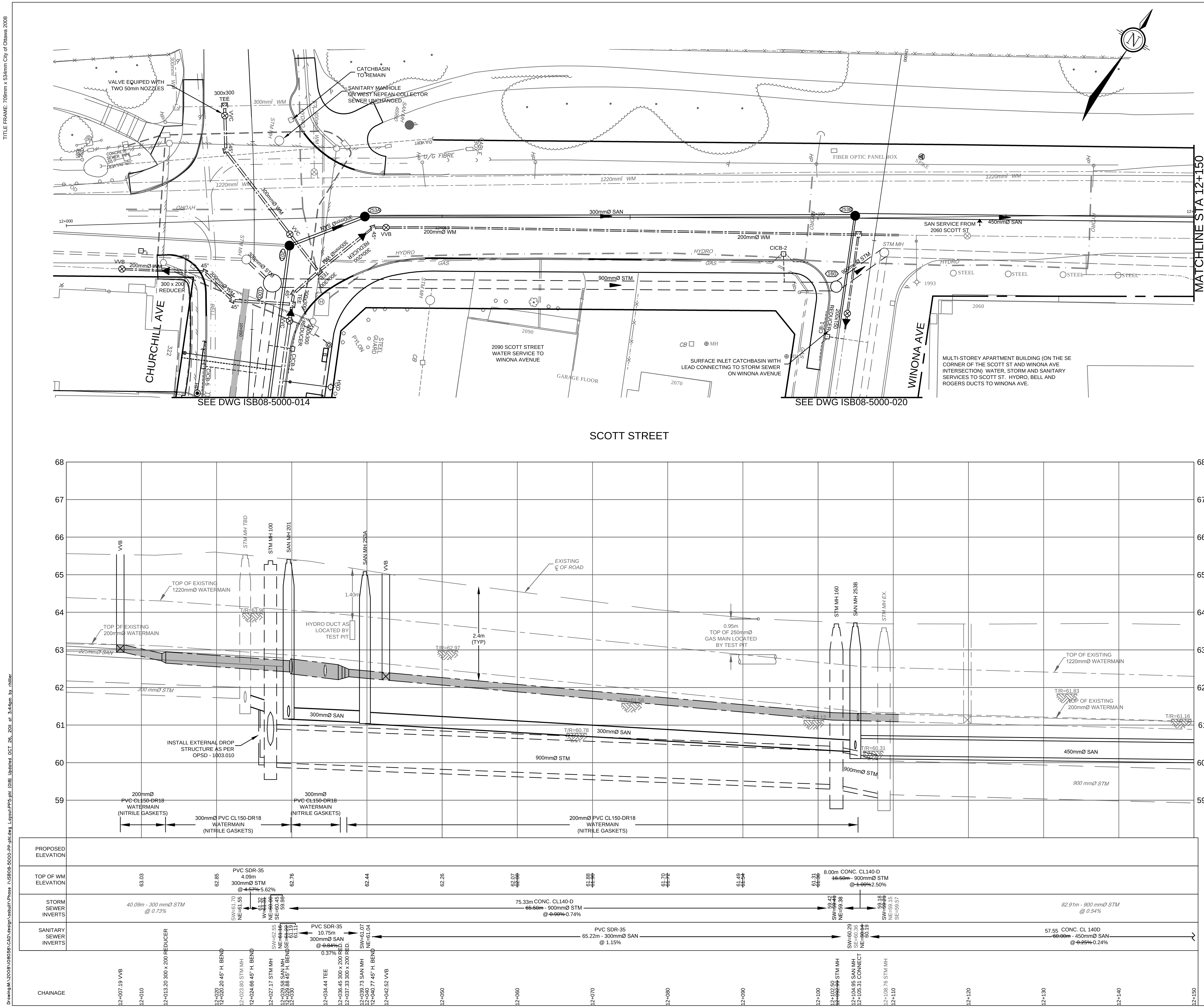
NO.	STATION	OFFSET	COVER	STRUCTURE	ELEVATION T/GRATE	ELEVATION LOW/INV.
MHSA 1	1+068.54	5.07 RT	S24/S25	OPSD 701.010	62.93	58.44
MHSA 2	1+057.24	0.00	S24/S25	OPSD 701.011	63.15	58.307

- OFFSETS ARE FROM CONTROL LINE TO CENTRE OF STRUCTURE
- SLF DENOTES SELF LEVEL FRAME

Plot Date: 7/9/2020 12:48:41 PM

Last Saved: 7/9/2020 12:38:35 PM

Consultant's Information: C:\Users\P005155b\Onedrive - Parsons Corp\Documents\Scott St\Issued For Construction\10-CP000362-GRD-01.Dgn



CHURCHILL AVENUE

REHABILITATION
SCOTT STREET TO BYRON AVENUE

SCOTT
PLAN AND PROFILE
12+000 TO 12+150

BRUCE MASON, P.Eng. — *Manager - Division*

TODD PENFOUND, C.E.T. — *Project Manager*

Ottawa

Contract No. ISB08-5000 | Dwg. No. 018

Sheet 18 of 55

Asset No.

Asset Group: ISB

Des: NTQ | Chk'd: ERD

Dwn: RCH | Chk'd: DHI

Utility Circ. No.:

Const. Inspector:

Scale: HORIZONTAL 0m 5 10 / 0m 1 2 VERTICAL

NOTE:
The location of utilities is approximate only, 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.

NOVATECH ENGINEERING CONSULTANTS LTD. ENGINEERS & PLANNERS — Suite 200, 240 Michael Cowpland Drive Kanata, Ontario, Canada K2M 1P6 Telephone (613) 254-9643 Facsimile (613) 254-5867 Email: novainfo@novatech-eng.com

REVISIONS

No.	Description	By	Date
1.	ISSUED FOR PRELIMINARY DESIGN CIRCULATION	ERD	07/10/09
2.	ISSUED FOR MOE APPROVAL	ERD	07/24/09
3.	ISSUED FOR TENDER	ERD	11/06/09
4.	ISSUED FOR DESIGN CIRCULATION	ERD	11/06/09
5.	ISSUED FOR CONSTRUCTION	ERD	03/09/10
6.	AS-BUILT	ERD	04/12/12

CATCH BASIN DATA

NO.	STATION	OFFSET	COVER	STRUCTURE	ELEVATION	
					GUTTER	LOW/INV.
CB02 ~~CICB 02~~	12+096.14	5.50 RT	S22/S23	OPSD 705.010	63.61	62.21

OFFSETS ARE FROM CONTROL LINE TO FACE OF CURB FOR ALL CATCH BASINS

CATCH BASIN CONNECTION

LOCATION	DIA. (mm)	TYPE	LENGTH (m)	INVERT ELEVATIONS	
				UPSTR.	DOWNSTR.*
CB02 ~~CICB 02~~ - PIPE	200	PVC SDR35	3.60 ~~2.14~~	62.21	60.25

* DOWNSTREAM ELEVATIONS SHOWN ARE AT THE OBVERT OF THE STORM SEWER (MIN. GRADE 1% FOR ALL STORM SEWER CONNECTIONS)

SANITARY MAINTENANCE HOLE DATA

NO.	STATION	OFFSET	COVER	STRUCTURE	ELEVATION	
					T/GRATE	LOW/INV.
SAN MH253A	12+039.73	0.00	*S24	OPSD 701.010	65.08	61.04
SAN MH253B	12+104.96	0.30 LT	*S24	OPSD 701.010	63.72	~~60.14~~ 60.19

OFFSETS ARE FROM CONTROL LINE TO CENTRE OF STRUCTURE
STATIONS AND T/GRATE ELEVATIONS ARE FROM THE CENTRE OF STRUCTURE
* FRAME TO BE SELF-LEVELING BY MEULLER AJ745 OR BIBBY C54M

STORM MAINTENANCE HOLE DATA

NO.	STATION	OFFSET	COVER	STRUCTURE	ELEVATION	
					T/GRATE	LOW/INV.
STM MH160	12+102.50 ~~12+092.99~~	9.05 RT	*S24.1	OPSD 701.011	63.48	59.38
~~STM MH162~~	~~12+108.77~~	~~4.64 RT~~	~~*S24.1~~	~~M5 1524x1829~~	~~63.59~~	~~59.15~~

OFFSETS ARE FROM CONTROL LINE TO CENTRE OF STRUCTURE
STATIONS AND T/GRATE ELEVATIONS ARE FROM THE CENTRE OF STRUCTURE
* FRAME TO BE SELF-LEVELING BY MEULLER AJ745 OR BIBBY C54M

SANITARY SEWER DATA

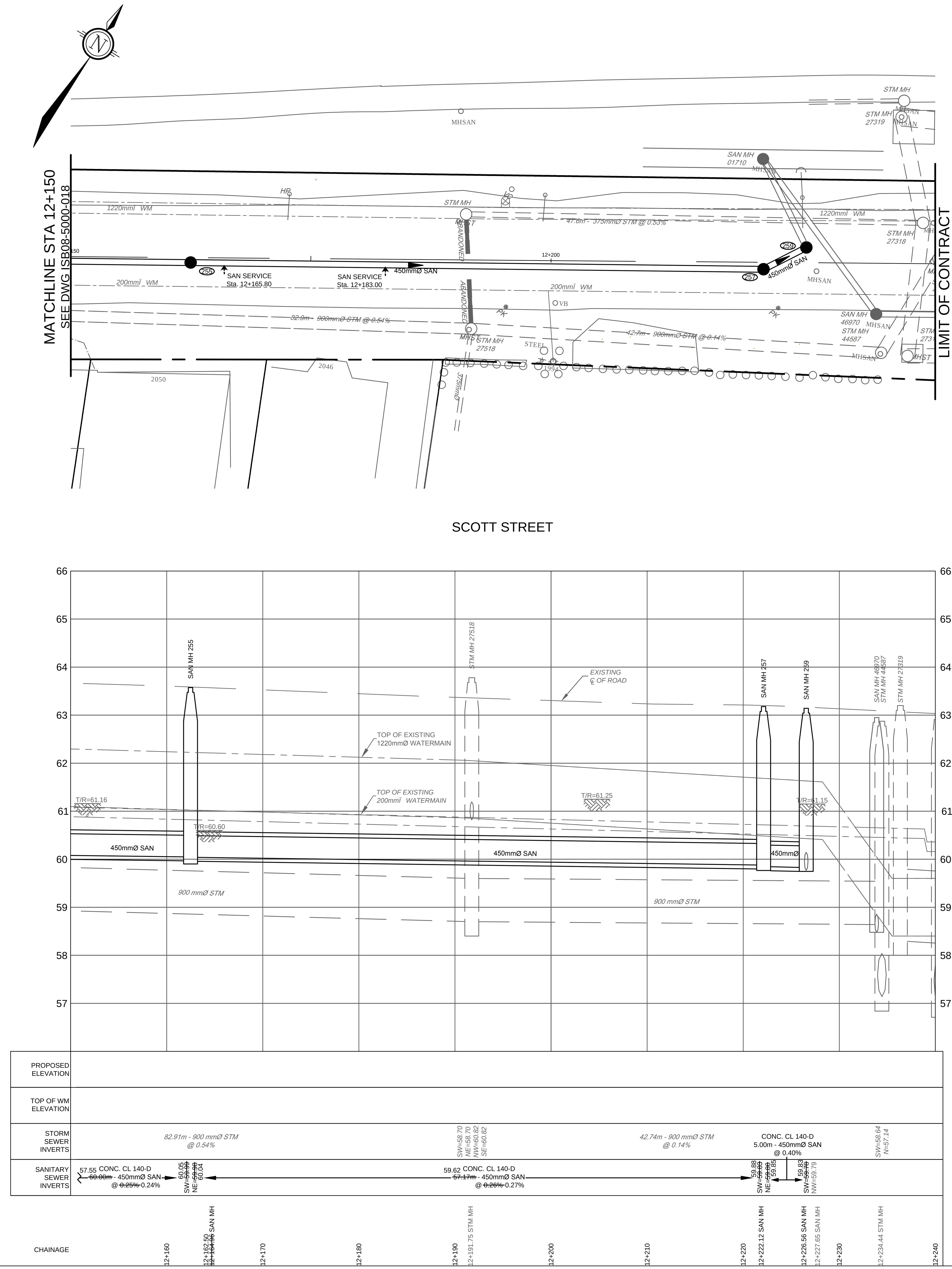
SEWER FROM	SEWER TO	DIA.	LENGTH	TYPE	INVERT ELEVATIONS UP STR.	INVERT ELEVATIONS DOWN STR.
SAN 201	SAN 253A	300	10.75	PVC SDR-35	~~61.16~~ 61.11	61.07
SAN 253A	SAN 253B	300	65.22	PVC SDR-35	61.04	60.29
SAN 253B	SAN 255	450	60.00	CONC. CL 140-D	~~60.14~~ 60.19	~~59.99~~ 60.05

STORM SEWER DATA

SEWER FROM	SEWER TO	DIA.	LENGTH (m)	TYPE	INVERT ELEVATIONS UP STR.	INVERT ELEVATIONS DOWN STR.
STM 100	STM 160	900	~~65.50~~ 75.33	CONC CL 140-D	~~60.00~~ 59.98	~~59.41~~ 59.42
STM 160	STM 162	900	~~16.5~~ 8.00m	CONC CL 140-D	59.38	~~59.21~~ 59.18

Notes

1. ADDITIONAL BOREHOLE INFORMATION FROM:
   RMOC-200mmØ WATERMAIN "AS-BUILT" DRAWINGS - WINONA AVE TO CLIFTON AVE (1996)



CHURCHILL AVENUE
REHABILITATION
SCOTT STREET TO BYRON AVENUE

SCOTT
PLAN AND PROFILE
12+150 TO 12+240

BRUCE MASON, P.Eng. — *Manager - Division*
TODD PENFOUND, C.E.T. — *Project Manager*

Ottawa

Contract No. ISB08-5000 | Dwg. No. 019
Sheet 19 of 55
Asset No.
Asset Group: ISB
Des: NTQ | Chk'd: ERD
Dwn: RCH | Chk'd: DHI
Utility Circ. No.:
Const. Inspector:
Scale: HORIZONTAL 0m 5 10; VERTICAL 0m 1 2

NOVATECH ENGINEERING

NOTE:
The location of utilities is approximate only, 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.

REVISIONS

No.	Description	By	Date
1.	ISSUED FOR PRELIMINARY DESIGN CIRCULATION	ERD	07/10/09
2.	ISSUED FOR MOE APPROVAL	ERD	07/24/09
3.	ISSUED FOR TENDER	ERD	11/06/09
4.	ISSUED FOR DESIGN CIRCULATION	ERD	11/06/09
5.	ISSUED FOR CONSTRUCTION	ERD	03/09/10
6.	AS-BUILT	ERD	04/12/12

SANITARY MAINTENANCE HOLE DATA

NO.	STATION	OFFSET	COVER	STRUCTURE	ELEVATION T/GRATE	ELEVATION LOW/INV.	
SAN MH255	~~12+164.96~~ 12+162.50	0.52 RT	*S24	OPSD 701.010	63.55	~~59.98~~	60.04
SAN MH257	12+222.12	0.72 RT	*S24	OPSD 701.010	63.18	~~59.80~~	59.85
SAN MH259	12+226.56	1.58 LT	*S24	OPSD 701.010	63.14	~~59.74~~	59.79

* DOWNSTREAM ELEVATIONS SHOWN ARE AT THE OBVERT OF THE STORM SEWER
(MIN. GRADE 1% FOR ALL STORM SEWER CONNECTIONS)

SANITARY SEWER DATA

SEWER FROM	SEWER TO	DIA.	LENGTH	TYPE	INVERT ELEVATIONS UP STR.	INVERT ELEVATIONS DOWN STR.	
SAN 253B	SAN 255	450	60.00	CONC. CL 140-D	60.14	~~59.99~~	60.05
SAN 255	SAN 257	450	~~57.17~~ 59.62	CONC. CL 140-D	~~59.98~~ 60.04	~~59.83~~	59.88
SAN 257	SAN 259	450	5.00	CONC. CL 140-D	~~59.80~~ 59.85	~~59.78~~	59.83

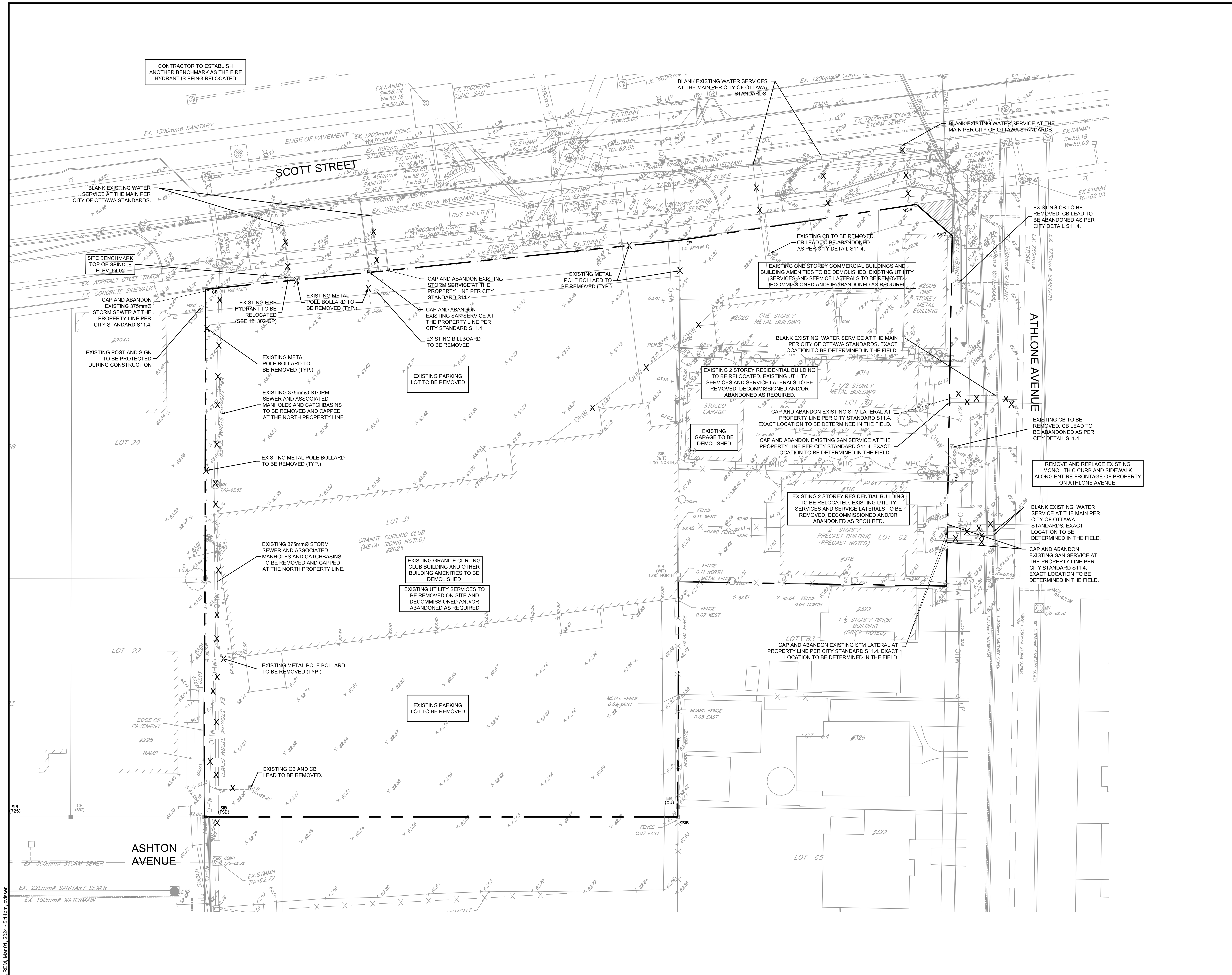
OFFSETS ARE FROM CONTROL LINE TO CENTRE OF STRUCTURE
STATIONS AND T/GRATE ELEVATIONS ARE FROM THE CENTRE OF STRUCTURE
* FRAME TO BE SELF-LEVELING BY MEULLER AJ745 OR BIBBY C54M

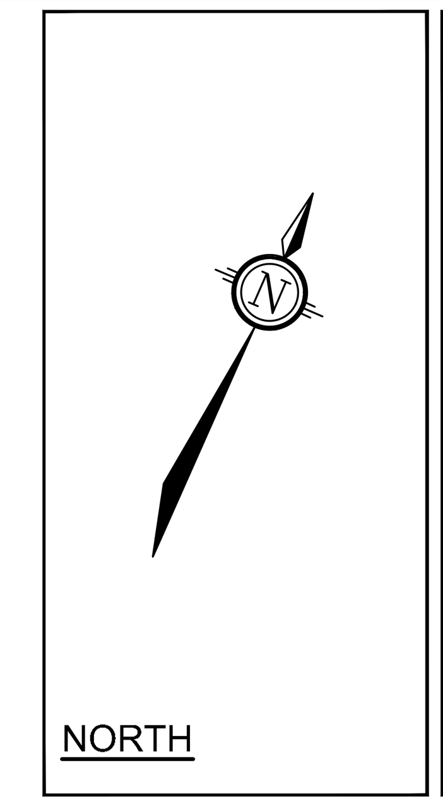
Notes

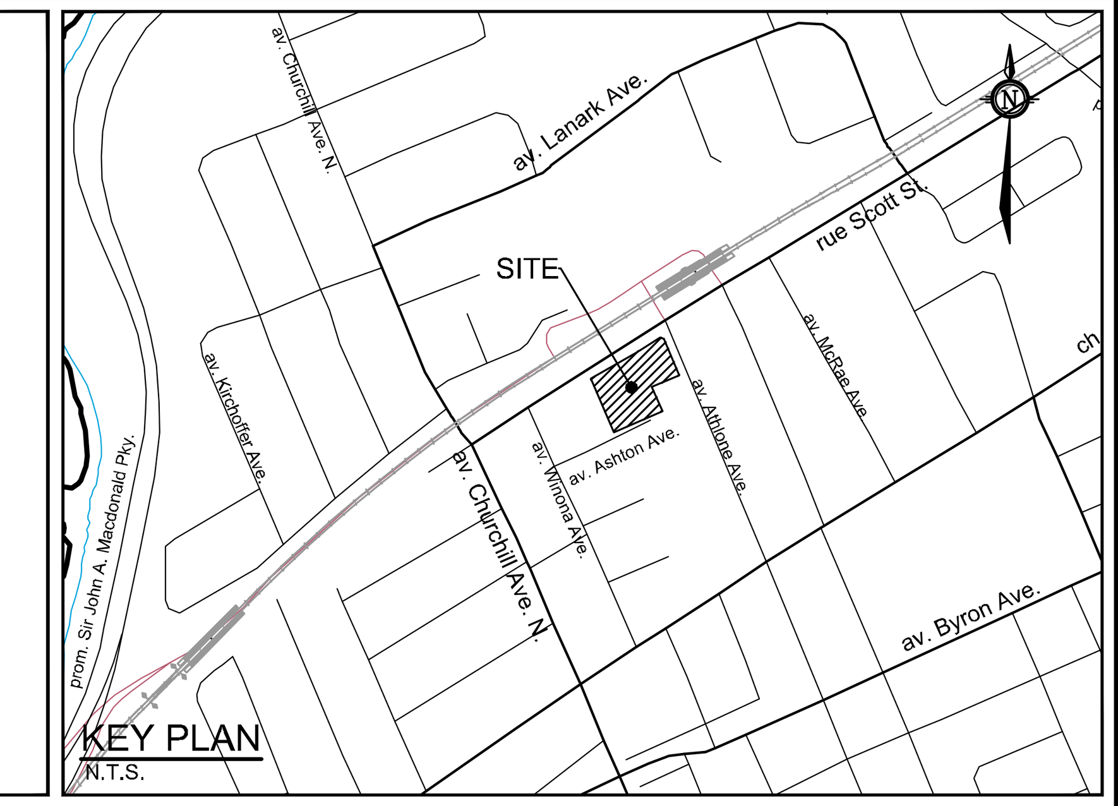
1. ADDITIONAL BOREHOLE INFORMATION FROM:
   RMOC-200mmØ WATERMAIN "AS-BUILT" DRAWINGS - WINONA AVE TO CLIFTON AVE (1996)

APPENDIX G

Engineering Drawings







LEGEND

X	REMOVALS
	EXISTING CONCRETE CURB
V&VB	EXISTING VALVE & VALVE BOX
SP	EXISTING SERVICE POST
HYD	EXISTING HYDRANT
CBMH	EXISTING CATCHBASIN
CB	EXISTING CATCHBASIN MH
EX UP	EXISTING UTILITY POLE C/W GUY WIRES
	EXISTING TREES / VEGETATION

GENERAL NOTES:

1. COORDINATE AND SCHEDULE ALL WORK WITH OTHER TRADES AND CONTRACTORS.
2. DETERMINE THE EXACT LOCATION, SIZE, MATERIAL AND ELEVATION OF ALL EXISTING UTILITIES PRIOR TO COMMENCING CONSTRUCTION. PROTECT AND ASSUME RESPONSIBILITY FOR ALL EXISTING UTILITIES WHETHER OR NOT SHOWN ON THIS DRAWING.
3. ALL ELEVATIONS ARE GEODETIC.

BENCHMARK NOTES:

1. ELEVATIONS SHOWN ARE GEODETIC AND ARE REFERRED TO THE CGVD28 GEODETIC DATUM, DERIVED ARE DERIVED FROM A SITE BENCHMARK AS SHOWN ON P6 HAVING AN ELEVATION OF 64.02.
2. IT IS THE RESPONSIBILITY OF THE USER OF THIS INFORMATION TO VERIFY THAT THE JOB BENCHMARK HAS NOT BEEN ALTERED OR DISTURBED AND THAT IT'S RELATIVE ELEVATION AND DESCRIPTION AGREES WITH THE INFORMATION SHOWN ON THIS DRAWING.
3. BENCHMARK WAS PROVIDED ON PLAN OF SURVEY OF PART OF LOT 60 AND ALL OF LOTS 61 & 62, REGISTERED PLAN 263 AND PART OF LOT 31,CONCESSION 1 (OTTAWA FRONT), SURVEYED BY STANTEC GEOMATICS LTD.
4. NEW BENCHMARK TO BE ESTABLISHED BY SURVEYOR PRIOR TO CONSTRUCTION TO REPLACE EXISTING BENCHMARK ON FIRE HYDRANT THAT WILL BE RELOCATED.

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NOTE:
THE POSITION OF ALL POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, DETERMINE THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

OWNER INFORMATION
HOPPNER HOLDINGS INC.
1818 BRADLEY SIDE ROAD,
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No.	REVISION	DATE	BY
3.	REVISED PER CITY COMMENTS	MAR 5/24	FST
2.	REVISED PER CITY COMMENTS	OCT 16/23	FST
1.	ISSUED FOR SPC APPLICATION	FEB 22/23	FST

SCALE 1:250

1:250 — 0 2 4 6 8 10

DESIGN CV · CHECKED FST · DRAWN CV · CHECKED FST · APPROVED FST

FOR REVIEW ONLY

LICENSED PROFESSIONAL ENGINEER
F.S. THAUVETTE
100041399
March 5, 2024
PROVINCE OF ONTARIO

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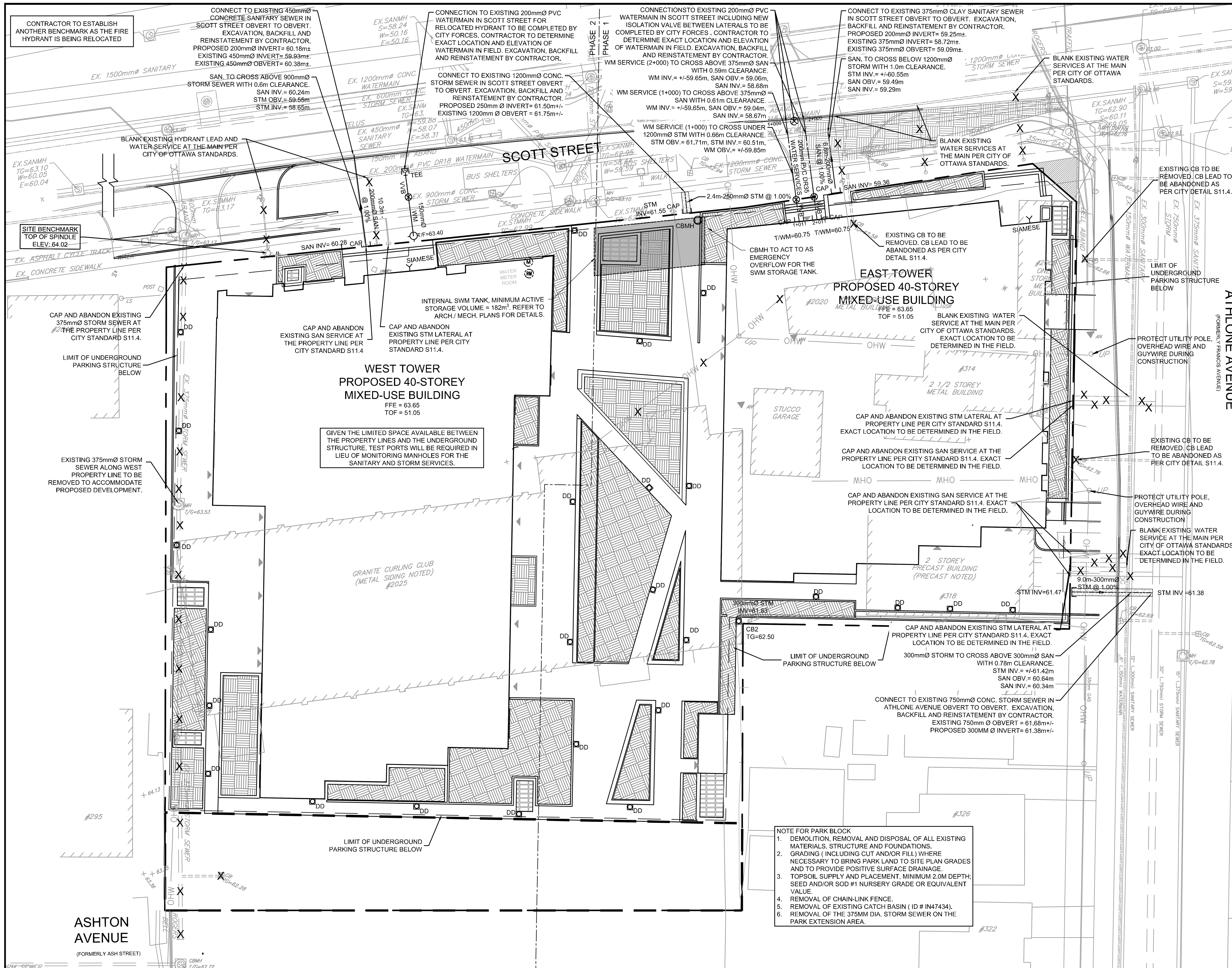
LOCATION
CITY OF OTTAWA
2026 SCOTT STREET

DRAWING NAME
EXISTING CONDITIONS AND REMOVALS PLAN

PROJECT No. 121302
REV REV # 3
DRAWING No. 121302-REM

D07-12-23-0019

PLAN24x36.DWG - 914.4mmx609.6mm
PLAN #18976



NOTE FOR PARK BLOCK

1. DEMOLITION, REMOVAL AND DISPOSAL OF ALL EXISTING MATERIALS, STRUCTURE AND FOUNDATIONS.
2. GRADING (INCLUDING CUT AND/OR FILL) WHERE NECESSARY TO BRING PARK LAND TO SITE PLAN GRADES AND TO PROVIDE POSITIVE SURFACE DRAINAGE.
3. TOPSOIL SUPPLY AND PLACEMENT, MINIMUM 2.0M DEPTH; SEED AND/OR SOD #1 NURSERY GRADE OR EQUIVALENT VALUE.
4. REMOVAL OF CHAIN-LINK FENCE.
5. REMOVAL OF EXISTING CATCH BASIN (ID # IN47434).
6. REMOVAL OF THE 375MM DIA. STORM SEWER ON THE PARK EXTENSION AREA.

PROPOSED WATER SERVICE TABLE			
Station	F/G ELEVATION	TOP OF WATERMAIN	DESCRIPTION
1+000.00	62.93	60.79 *	ROLLED 200mmØ WM TEE CONNECTION TO EX. 200mmØ PVC WM
1+000.94	62.95	59.85	45° VERTICAL BEND
1+001.57	62.95	59.85	WM TO CROSS ABOVE EX. 375mmØ SAN. SEWER (CLEARANCE=0.61m)
1+005.89	62.94	59.85	WM TO CROSS BELOW EX. 1200mmØ STORM SEWER (CLEARANCE=0.67m)
1+007.59	62.96	59.85	45° VERTICAL BEND
1+008.30	62.97	60.56	45° VERTICAL BEND
1+008.69	62.96	60.56	VALVE AND VALVE BOX AT PROPERTY LINE
1+011.15	63.65	60.56	CAP AT 1.0m FROM FOUNDATION WALL

PROPOSED WATER SERVICE TABLE			
Station	F/G ELEVATION	TOP OF WATERMAIN	DESCRIPTION
1+000.00	62.93	60.79 *	ROLLED 200mmØ WM TEE CONNECTION TO EX. 200mmØ PVC WM
1+000.94	62.95	59.85	45° VERTICAL BEND
1+001.57	62.95	59.85	WM TO CROSS ABOVE EX. 375mmØ SAN. SEWER (CLEARANCE=0.61m)
1+005.89	62.94	59.85	WM TO CROSS BELOW EX. 1200mmØ STORM SEWER (CLEARANCE=0.67m)
1+007.59	62.96	59.85	45° VERTICAL BEND
1+008.30	62.97	60.56	45° VERTICAL BEND
1+008.69	62.96	60.56	VALVE AND VALVE BOX AT PROPERTY LINE
1+011.15	63.65	60.56	CAP AT 1.0m FROM FOUNDATION WALL

* CONNECTION TO EXISTING 200mmØ PVC WATERMAIN. EXACT ELEVATION TO BE FIELD DETERMINED.
** PROVIDE THERMAL INSULATION AS PER CITY OF OTTAWA DETAIL W22 IN SHALLOW TRENCHES AND/OR CITY OF OTTAWA W23 ADJACENT TO OPEN STRUCTURES.

INTERNAL SWM STORAGE SYSTEM			
DESIGN EVENT	STORAGE SYSTEM CONTROLLED FLOW	STORAGE VOLUMES	
		REQUIRED	PROVIDED
1:2 YR	PUMPED FLOW RATE = 31.5 L/s	41.6 m³	>182 m³
1:5 YR		69.0 m³	
1:100 YR		181.7 m³	

NOTES:

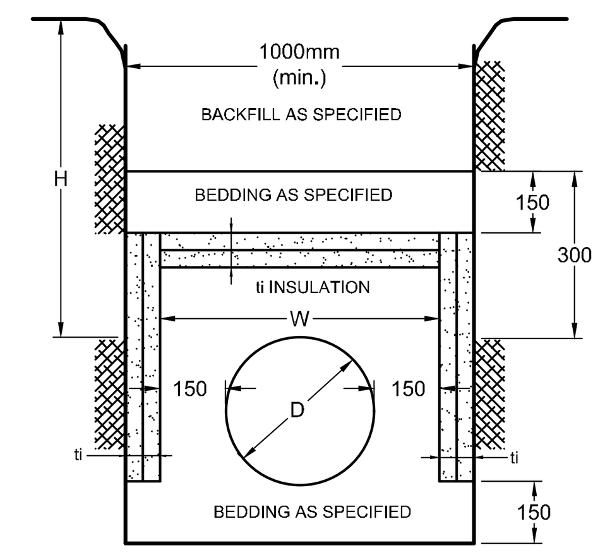
1. ALL DRAINAGE FROM AREA A-3 (PROPOSED AMENITY AREA DECK DRAINS AND ALL ROOF DRAINS) TO BE DIRECTED TO THE INTERNAL STORMWATER STORAGE SYSTEM. REFER TO ARCHITECTURAL AND MECHANICAL PLANS FOR DETAILS.
2. REFER TO ARCHITECTURAL AND STRUCTURAL PLANS FOR EXACT SIZE AND DETAILS OF INTERNAL STORMWATER STORAGE SYSTEM.
3. REFER TO ARCHITECTURAL AND MECHANICAL PLANS FOR LOCATION AND CONNECTIONS AND DETAILS OF THE INTERNAL STORMWATER STORAGE SYSTEM AND EMERGENCY OVERFLOW PIPING.

LEGEND

	PROPERTY LINE
SAN MH 201	PROPOSED SANITARY MH & SEWER
CBMH 102	PROPOSED CATCHBASIN MH & SEWER
STMMH 101	PROPOSED STORM MH & SEWER
DD	MECHANICAL DECK DRAIN
HYD VB	PROPOSED HYDRANT c/w VALVE & VALVE BOX
M RM	PROPOSED WATER METER AND REMOTE METER
	PROPOSED BARRIER CURB
DC	PROPOSED DEPRESSED CURB
150mmØ	PROPOSED WATER SERVICE AND DIAMETER
VB	PROPOSED VALVE & VALVE BOX
BEND	PROPOSED BEND AND THRUSTBLOCK 11.25°, 22.5°, 45° or TEE
	PROPOSED CAP
	PROPOSED BUILDING ENTRANCE
	THERMAL INSULATION FOR SHALLOW SEWERS
	PROPOSED LANDSCAPE AREA
X	REMOVALS
FFE	FINISHED FLOOR ELEVATION
TOF	TOP OF FOOTING ELEVATION
	EXISTING CONCRETE CURB
SANMH	EXISTING SANITARY MANHOLE & SEWER
CBMH	EXISTING CATCHBASIN MANHOLE
STMMH	EXISTING STORM MANHOLE & SEWER
CB	EXISTING CATCHBASIN C/W CATCHBASIN LEAD
300mmØ WM	EXISTING WATERMAIN
HYD	EXISTING HYDRANT C/W VALVE & LEAD
	EXISTING TREES / VEGETATION
EX UP	EXISTING UTILITY POLE
	EXISTING OVERHEAD UTILITY WIRES

BENCHMARK NOTES:

1. ELEVATIONS SHOWN ARE GEODETIC AND ARE REFERRED TO THE CGVD28 GEODETIC DATUM, DERIVED ARE DERIVED FROM A SITE BENCHMARK AS SHOWN ON P6 HAVING AN ELEVATION OF 64.02.
2. IT IS THE RESPONSIBILITY OF THE USER OF THIS INFORMATION TO VERIFY THAT THE JOB BENCHMARK HAS NOT BEEN ALTERED OR DISTURBED AND THAT IT'S RELATIVE ELEVATION AND DESCRIPTION AGREES WITH THE INFORMATION SHOWN ON THIS DRAWING.
3. BENCHMARK WAS PROVIDED ON PLAN OF SURVEY OF PART OF LOT 60 AND ALL OF LOTS 61 & 62, REGISTERED PLAN 263 AND PART OF LOT 31,CONCESSION 1 (OTTAWA FRONT), SURVEYED BY STANTEC GEOMATICS LTD.
4. NEW BENCHMARK TO BE ESTABLISHED BY SURVEYOR PRIOR TO CONSTRUCTION TO REPLACE EXISTING BENCHMARK ON FIRE HYDRANT THAT WILL BE RELOCATED.



INSULATION NOTES:

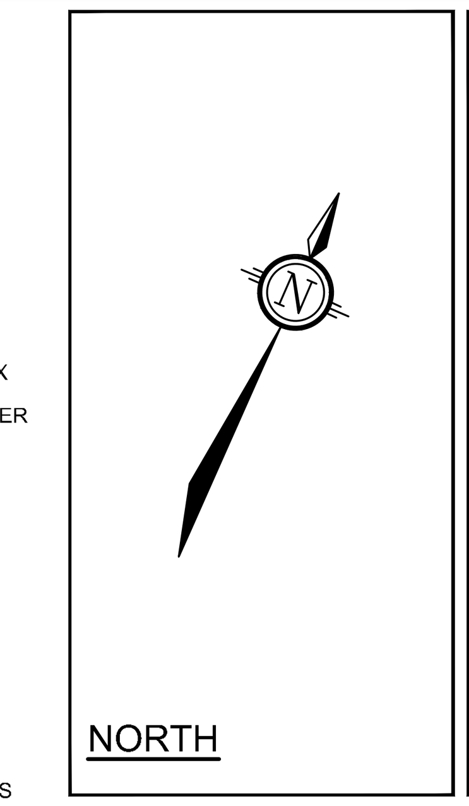
1. THE THICKNESS OF SEWER INSULATION SHALL BE THE EQUIVALENT OF 25mm FOR EVERY 300mm REDUCTION IN THE REQUIRED DEPTH OF COVER LESS THAN 1800mm (SEE TABLE)

ti = THICKNESS OF INSULATION (mm)
h = DEPTH OF COVER
W = D + 300 (1000 min.)
W = WIDTH OF INSULATION (mm)
D = O.D OF PIPE (mm)

COVER (mm)	INSULATION THICKNESS (mm)
1800-1500	50
1500-1200	75
1200-900	100
900-600	125

INSULATION DETAIL FOR SHALLOW SEWERS

NOT TO SCALE


NORTH

KEY PLAN
N.T.S.

GENERAL NOTES:

1. COORDINATE AND SCHEDULE ALL WORK WITH OTHER TRADES AND CONTRACTORS.
2. DETERMINE THE EXACT LOCATION, SIZE, MATERIAL AND ELEVATION OF ALL EXISTING UTILITIES PRIOR TO COMMENCING CONSTRUCTION. PROTECT AND ASSUME RESPONSIBILITY FOR ALL EXISTING UTILITIES WHETHER OR NOT SHOWN ON THIS DRAWING.
3. OBTAIN ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF OTTAWA BEFORE COMMENCING CONSTRUCTION.
4. BEFORE COMMENCING CONSTRUCTION OBTAIN AND PROVIDE PROOF OF COMPREHENSIVE, ALL RISK AND OPERATIONAL LIABILITY INSURANCE FOR $5,000,000.00. INSURANCE POLICY TO NAME OWNERS, ENGINEERS AND ARCHITECTS AS CO-INSURED.
5. COMPLETE ALL WORKS IN ACCORDANCE WITH THE MOST CURRENT CITY OF OTTAWA STANDARDS AND SPECIFICATIONS USING THE CURRENT GUIDELINES, BYLAWS AND STANDARDS INCLUDING MATERIALS OF CONSTRUCTION, DISINFECTION AND ALL RELEVANT REFERENCES TO OPSS, OPSD & AWWA GUIDELINES - ALL CURRENT VERSIONS AND 'AS AMENDED'.
6. RESTORE ALL DISTURBED AREAS ON-SITE AND OFF-SITE, INCLUDING TRENCHES AND SURFACES ON PUBLIC ROAD ALLOWANCES TO EXISTING CONDITIONS OR BETTER TO THE SATISFACTION OF THE CITY OF OTTAWA AND ENGINEER.
7. REMOVE FROM SITE ALL EXCESS EXCAVATED MATERIAL, ORGANIC MATERIAL AND DEBRIS UNLESS OTHERWISE INSTRUCTED BY ENGINEER. EXCAVATE AND REMOVE FROM SITE ANY CONTAMINATED MATERIAL. ALL CONTAMINATED MATERIAL SHALL BE DISPOSED OF AT A LICENSED LANDFILL FACILITY.
8. ALL ELEVATIONS ARE GEODETIC.
9. REFER TO GEOTECHNICAL REPORT (PG5829-1, DATED JUNE 7, 2021), PREPARED BY PATERSON GROUP INC., FOR SUBSURFACE CONDITIONS, CONSTRUCTION RECOMMENDATIONS, AND GEOTECHNICAL INSPECTION REQUIREMENTS. THE GEOTECHNICAL CONSULTANT IS TO REVIEW ON-SITE CONDITIONS AFTER EXCAVATION PRIOR TO PLACEMENT OF THE GRANULAR MATERIAL.
10. REFER TO ARCHITECT'S AND LANDSCAPE ARCHITECT'S DRAWINGS FOR BUILDING AND HARD SURFACE AREAS AND DIMENSIONS.
11. REFER TO THE DEVELOPMENT SERVICING STUDY & STORMWATER MANAGEMENT REPORT (R-2023-003) PREPARED BY NOVATECH.
12. SAW CUT AND KEY GRIND ASPHALT AT ALL ROAD CUTS AND ASPHALT TIE IN POINTS AS PER CITY OF OTTAWA STANDARDS (R10).
13. PROVIDE LINE / PARKING PAINTING AS REQUIRED PER THE ARCHITECTURAL SITE PLAN.

SEWER NOTES:

1. SUPPLY AND CONSTRUCT ALL SEWERS AND APPURTENANCES IN ACCORDANCE WITH THE MOST CURRENT CITY OF OTTAWA STANDARDS AND SPECIFICATIONS - ALL CURRENT VERSIONS AND 'AS AMENDED'.
2. SPECIFICATIONS:

ITEM	SPEC. No.	REFERENCE
CATCHBASIN (600x600mm)	705.010	OPSD
STORM / SANITARY MANHOLE (1200mmØ)	701.010	OPSD
CB, FRAME & COVER	400.020	OPSD
SANITARY MH FRAME & COVER	401.010 - TYPE "A"	OPSD
STORM / CBMH MANHOLE FRAME AND COVER	401.010 - TYPE "B"	OPSD
WATERTIGHT MH FRAME AND COVER	401.030	OPSD
LANDSCAPE DRAIN (ELBOW, COVER & PIPE)	S29 / S31	CITY OF OTTAWA
SEWER TRENCH	S6	CITY OF OTTAWA

STORM SEWER	PVC DR 35
SANITARY SEWER	PVC DR 35
CATCHBASIN LEAD	PVC DR 35

3. ALL STORM AND SANITARY SERVICE LATERALS SHALL BE EQUIPPED WITH BACKFLOW PREVENTION DEVICES AS PER THE CITY OF OTTAWA STANDARD DETAILS S14 AND S14.1 OR S14.2.
4. INSULATE ALL PIPES (SAN/STM) THAT HAVE LESS THAN 1.8m COVER WITH HI-40 INSULATION PER INSULATION DETAIL FOR SHALLOW SEWERS. PROVIDE 150mm CLEARANCE BETWEEN PIPE AND INSULATION.
5. SERVICES ARE TO BE CONSTRUCTED TO 1.0m FROM FACE OF BUILDING AT A MINIMUM SLOPE OF 1.0%.
6. PIPE BEDDING, COVER AND BACKFILL ARE TO BE COMPACTED TO AT LEAST 95% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY. THE USE OF CLEAR CRUSHED STONE AS A BEDDING LAYER SHALL NOT BE PERMITTED.
7. FLEXIBLE CONNECTIONS ARE REQUIRED FOR CONNECTING PIPES TO MANHOLES (FOR EXAMPLE KOR-N-SEAL, PSX: POSITIVE SEAL AND DURASEAL). THE CONCRETE CRADLE FOR THE PIPE CAN BE ELIMINATED.
8. THE OWNER SHALL REQUIRE THAT THE SITE SERVICING CONTRACTOR PERFORM FIELD TESTS FOR QUALITY CONTROL OF ALL SANITARY SEWERS. LEAKAGE TESTING SHALL BE COMPLETED IN ACCORDANCE WITH OPSS 410.07.16, 410.07.16.04 AND 407.07.24. DYE TESTING IS TO BE COMPLETED ON ALL SANITARY SERVICES TO CONFIRM PROPER CONNECTION TO THE SANITARY SEWER MAIN. THE FIELD TESTS SHALL BE PERFORMED IN THE PRESENCE OF A CERTIFIED PROFESSIONAL ENGINEER WHO SHALL SUBMIT A CERTIFIED COPY OF THE TEST RESULTS.
9. ALL STORM MANHOLES AND CATCHBASIN MANHOLES ARE TO HAVE 300mm SUMPS UNLESS OTHERWISE INDICATED. ALL CATCHBASINS ARE TO HAVE 600mm SUMPS.
10. ALL CATCHBASINS, MANHOLES AND/OR CATCHBASIN MANHOLES THAT ARE TO HAVE ICD'S INSTALLED WITHIN THEM ARE TO HAVE 600mm SUMPS.
11. ALL WEEPING TILE SYSTEMS ARE TO BE PUMPED TO THE SURFACE AS INDICATED ON THE GENERAL PLAN OF SERVICES DRAWING. REFER TO MECHANICAL PLANS FOR DETAILS.
12. CONTRACTOR TO TELEVISE (CCTV) ALL PROPOSED SEWERS, 200mmØ OR GREATER PRIOR TO BASE COURSE ASPHALT. UPON COMPLETION OF CONTRACT, THE CONTRACTOR IS RESPONSIBLE TO FLUSH AND CLEAN ALL SEWERS & APPURTENANCES.
13. CONTRACTOR TO PROVIDE THE CONSULTANT WITH A GENERAL PLAN OF SERVICES INDICATING ALL SERVICING AS-BUILT INFORMATION SHOWN ON THIS PLAN. AS-BUILT INFORMATION MUST INCLUDE: PIPE MATERIAL, SIZES, LENGTHS, SLOPES, INVERT AND T/G ELEVATIONS, STRUCTURE LOCATIONS, VALVE AND HYDRANT LOCATIONS, T/WM ELEVATIONS AND ANY ALIGNMENT CHANGES, ETC.

WATERMAIN NOTES:

1. SUPPLY AND CONSTRUCT ALL WATERMAINS AND APPURTENANCES IN ACCORDANCE WITH THE CITY OF OTTAWA STANDARDS AND SPECIFICATIONS - ALL CURRENT VERSIONS AND 'AS AMENDED'. EXCAVATION, INSTALLATION, BACKFILL AND RESTORATION OF ALL WATERMAINS BY THE CONTRACTOR. CONNECTIONS AND SHUT-OFFS AT THE MAIN AND CHLORINATION OF THE WATER SYSTEM SHALL BE PERFORMED BY THE CONTRACTOR IN THE PRESENCE CITY OF OTTAWA FORCES.
2. SPECIFICATIONS:

ITEM	SPEC. No.	REFERENCE
WATERMAIN TRENCHING	W17	CITY OF OTTAWA
HYDRANT INSTALLATION	W19	CITY OF OTTAWA
THERMAL INSULATION IN SHALLOW TRENCHES	W22	CITY OF OTTAWA
THERMAL INSULATION AT OPEN STRUCTURES	W23	CITY OF OTTAWA
VALVE BOX ASSEMBLY	W24	CITY OF OTTAWA
WATERMAIN CROSSING BELOW SEWER	W25	CITY OF OTTAWA
WATERMAIN CROSSING OVER SEWER	W25.2	CITY OF OTTAWA
WATERMAIN	PVC DR 18	

3. WATERMAIN SHALL BE MINIMUM 2.4m DEPTH BELOW GRADE, UNLESS OTHERWISE INDICATED.
4. PROVIDE MINIMUM 0.5m CLEARANCE BETWEEN OUTSIDE OF PIPES AT ALL CROSSINGS, UNLESS OTHERWISE INDICATED.
5. WATER SERVICE IS TO BE CONSTRUCTED TO WITHIN 1.0m OF FOUNDATION WALL AND CAPPED.

NOTE:
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LICENSED PROFESSIONAL ENGINEER F.S. THAUVETTE 100041390 March 5, 2024 PROVINCE OF ONTARIO

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LOCATION
CITY OF OTTAWA
2026 SCOTT STREET

DRAWING NAME
GENERAL PLAN OF SERVICES

PROJECT No. 121302
REV REV # 3
DRAWING No. 121302-GP

D07-12-23-0019

PLAN #18976

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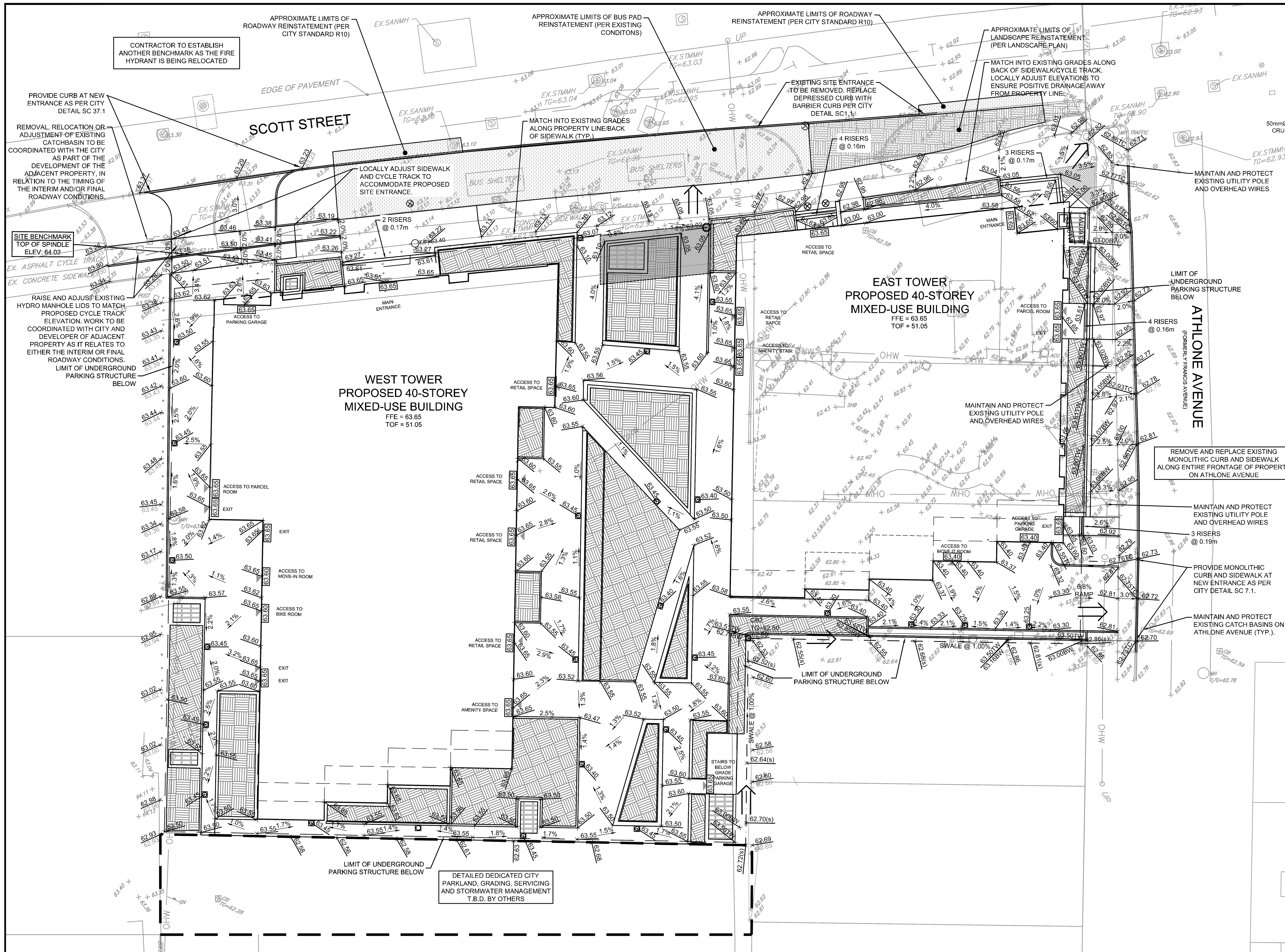
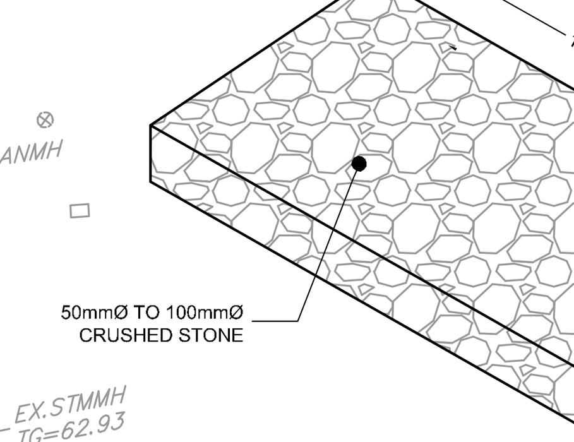
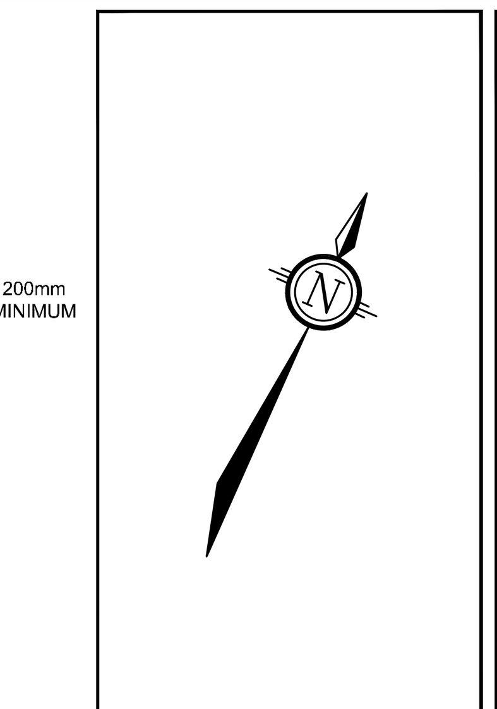


NOTE FOR PARK BLOCK
1. DEMOLITION, REMOVAL AND DISPOSAL OF ALL EXISTING MATERIALS, STRUCTURE AND FOUNDATIONS.
2. GRADING (INCLUDING CUT AND/OR FILL) WHERE NECESSARY TO BRING PARK LAND TO SITE PLAN GRADES AND TO PROVIDE POSITIVE SURFACE DRAINAGE.
3. TOPSOIL SUPPLY AND PLACEMENT, MINIMUM 2.0M DEPTH; SEED AND/OR SOD #1 NURSERY GRADE OR EQUIVALENT VALUE.
4. REMOVAL OF CHAIN-LINK FENCE.
5. REMOVAL OF EXISTING CATCH BASIN (ID # IN47434).
6. REMOVAL OF THE 375MM DIA. STORM SEWER ON THE PARK EXTENSION AREA.



MUD MAT DETAIL
N.T.S.



NORTH

KEY PLAN
N.T.S.

LEGEND

- PROPOSED ELEVATION
- PROPOSED TOP OF CURB ELEVATION
- PROPOSED TOP OF WALL ELEVATION
- MATCH INTO EXISTING GRADES
- EXISTING ELEVATION
- GRADE AND DIRECTION
- MAXIMUM 3:1 SIDESLOPE
- PROPOSED TERRACE ELEVATION
- PROPOSED SILT FENCING (OPSD 219.110)
- PROPERTY LINE
- FFE — FINISHED FLOOR ELEVATION
- TOF — TOP OF FOOTING ELEVATION
- SAN MH 01 — PROPOSED SANITARY MANHOLE
- STM MH 03 — PROPOSED STORM MANHOLE
- CBMH 01 — PROPOSED CATCHBASIN MANHOLE
- AD — UNDERGROUND MECHANICAL AREA DRAINS
- DD — UNDERGROUND MECHANICAL DECK DRAINS
- PROPOSED FILTER BAG
- EMERGENCY OVERLAND FLOW ROUTE
- BUILDING ENTRANCE / EXIT
- REMOVALS
- LIMIT OF REINSTATEMENT AREA
- PROPOSED LANDSCAPE AREA
- EXISTING VALVE & VALVE BOX
- EXISTING SERVICE POST
- EXISTING HYDRANT
- EXISTING CONCRETE CURB
- EXISTING CATCHBASIN
- EXISTING CATCHBASIN MH
- EXISTING UTILITY POLE C/W GUY WIRES
- EXISTING FENCE
- EXISTING OVERHEAD WIRES

GENERAL NOTES:

1. COORDINATE AND SCHEDULE ALL WORK WITH OTHER TRADES AND CONTRACTORS.
2. DETERMINE THE EXACT LOCATION, SIZE, MATERIAL AND ELEVATION OF ALL EXISTING UTILITIES PRIOR TO COMMENCING CONSTRUCTION. PROTECT AND ASSUME RESPONSIBILITY FOR ALL EXISTING UTILITIES WHETHER OR NOT SHOWN ON THIS DRAWING.
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4. BEFORE COMMENCING CONSTRUCTION OBTAIN AND PROVIDE PROOF OF COMPREHENSIVE, ALL RISK AND OPERATIONAL LIABILITY INSURANCE FOR $5,000,000.00. INSURANCE POLICY TO NAME OWNERS, ENGINEERS AND ARCHITECTS AS CO-INSURED.
5. COMPLETE ALL WORKS IN ACCORDANCE WITH THE MOST CURRENT CITY OF OTTAWA STANDARDS AND SPECIFICATIONS USING THE CURRENT GUIDELINES, BYLAWS AND STANDARDS INCLUDING MATERIALS OF CONSTRUCTION, DISINFECTION AND ALL RELEVANT REFERENCES TO OPSS, OPSD & AWWA GUIDELINES - ALL CURRENT VERSIONS AND 'AS AMENDED.
6. RESTORE ALL DISTURBED AREAS ON-SITE AND OFF-SITE, INCLUDING TRENCHES AND SURFACES ON PUBLIC ROAD ALLOWANCES TO EXISTING CONDITIONS OR BETTER TO THE SATISFACTION OF THE CITY OF OTTAWA AND THE ENGINEER.
7. REMOVE FROM SITE ALL EXCESS EXCAVATED MATERIAL, ORGANIC MATERIAL AND DEBRIS UNLESS OTHERWISE INSTRUCTED BY ENGINEER. EXCAVATE AND REMOVE FROM SITE ANY CONTAMINATED MATERIAL. ALL CONTAMINATED MATERIAL SHALL BE DISPOSED OF AT A LICENSED LANDFILL FACILITY.
8. ALL ELEVATIONS ARE GEODETIC.
9. REFER TO GEOTECHNICAL INVESTIGATION REPORT (PG5829-1, DATED JUNE 7, 2021), PREPARED BY PATERSON GROUP INC., FOR SUBSURFACE CONDITIONS, CONSTRUCTION RECOMMENDATIONS, AND GEOTECHNICAL INSPECTION REQUIREMENTS. THE GEOTECHNICAL CONSULTANT IS TO REVIEW ON-SITE CONDITIONS AFTER EXCAVATION PRIOR TO PLACEMENT OF THE GRANULAR MATERIAL.
10. REFER TO ARCHITECT'S AND LANDSCAPE ARCHITECT'S DRAWINGS FOR BUILDING AND HARDSURFACE AREAS AND DIMENSIONS.
11. REFER TO THE DEVELOPMENT SERVICING STUDY AND STORMWATER MANAGEMENT REPORT(R-2023-003) PREPARED BY NOVATECH.
12. SAW CUT AND KEY GRIND ASPHALT AT ALL ROAD CUTS AND ASPHALT TIE IN POINTS AS PER CITY OF OTTAWA STANDARDS (R10).

GRADING NOTES:

1. ALL TOPSOIL, ORGANIC OR DELETERIOUS MATERIAL MUST BE ENTIRELY REMOVED FROM BENEATH THE PROPOSED PAVED AREAS AS DIRECTED BY THE SITE ENGINEER OR GEOTECHNICAL ENGINEER.
2. EXPOSED SUBGRADES IN PROPOSED PAVED AREAS SHOULD BE PROOF ROLLED WITH A LARGE STEEL DRUM ROLLER AND INSPECTED BY THE GEOTECHNICAL ENGINEER PRIOR TO THE PLACEMENT OF GRANULARS.
3. ANY SOFT AREAS EVIDENT FROM THE PROOF ROLLING SHOULD BE SUB-EXCAVATED AND REPLACED WITH SUITABLE MATERIAL THAT IS FROST COMPATIBLE WITH THE EXISTING SOILS AS RECOMMENDED BY THE GEOTECHNICAL ENGINEER.
4. THE GRANULAR BASE SHOULD BE COMPACTED TO AT LEAST 99% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY VALUE. ANY ADDITIONAL GRANULAR FILL USED BELOW THE PROPOSED PAVEMENT SHOULD BE COMPACTED TO AT LEAST 95% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY VALUE.
5. MINIMUM OF 2% GRADE FOR ALL GRASS AREAS UNLESS OTHERWISE NOTED.
6. MAXIMUM TERRACING GRADE TO BE 3:1 UNLESS OTHERWISE NOTED.
7. ALL GRADES BY CURBS ARE EDGE OF PAVEMENT GRADES UNLESS OTHERWISE INDICATED.
8. ALL CURBS SHALL BE BARRIER CURB (150mm) UNLESS OTHERWISE NOTED AND CONSTRUCTED AS PER CITY OF OTTAWA STANDARDS (SC1.1).
9. REFER TO LANDSCAPE PLAN FOR PLANTING AND OTHER LANDSCAPE FEATURE DETAILS.
10. CONTRACTOR TO PROVIDE THE CONSULTANT WITH A GRADING PLAN INDICATING THE AS-BUILT ELEVATIONS OF ALL DESIGN GRADES SHOWN ON THIS PLAN.

EROSION AND SEDIMENT CONTROL NOTES :

1. ALL EROSION AND SEDIMENT CONTROLS ARE TO BE INSTALLED TO THE SATISFACTION OF THE ENGINEER AND THE CITY OF OTTAWA. THEY ARE TO BE APPROPRIATE TO THE SITE CONDITIONS, PRIOR TO UNDERTAKING ANY SITE ALTERATIONS (FILLING, GRADING, REMOVAL OF VEGETATION, ETC.) AND DURING ALL PHASES OF SITE PREPARATION AND CONSTRUCTION. THESE PRACTICES ARE TO BE IMPLEMENTED IN ACCORDANCE WITH THE CURRENT BEST MANAGEMENT PRACTICES FOR EROSION AND SEDIMENT CONTROL AND SHOULD INCLUDE AS A MINIMUM THOSE MEASURES INDICATED ON THE PLAN.
2. A LIGHT DUTY SILT FENCE BARRIER WILL ALSO BE INSTALLED AROUND THE CONSTRUCTION AREA (WHERE APPLICABLE). THESE CONTROL MEASURES WILL REMAIN IN PLACE UNTIL CONSTRUCTION IS COMPLETE.
3. TO PREVENT SURFACE EROSION FROM ENTERING ANY STORM SEWER SYSTEM DURING CONSTRUCTION, FILTER BAGS WILL BE PLACED UNDER GRATES OF NEARBY SURFACE CATCHBASINS AND MANHOLE STRUCTURES. TERRAFIX 8" ULTRA SILT SOCK (FILTER SOCK) IS TO BE USED AT THE OPENING OF ALL CURB INLET CATACHBASINS. A LIGHT DUTY SILT FENCE BARRIER WILL ALSO BE INSTALLED (PER OPSD 219.110) AROUND THE CONSTRUCTION AREA (WHERE APPLICABLE). IN AREAS WHERE SILT FENCING CANNOT BE INSTALLED PER OPSD 219.110 (i.e. HARD SURFACES), A FILTER SOCK SHALL BE SUBSTITUTED. THESE CONTROL MEASURES WILL REMAIN IN PLACE UNTIL CONSTRUCTION IS COMPLETE.
4. THE SEDIMENT CONTROL MEASURES SHALL ONLY BE REMOVED WHEN, IN THE OPINION OF THE ENGINEER, THE MEASURES ARE NO LONGER REQUIRED. NO CONTROL MEASURES MAY BE PERMANENTLY REMOVED WITHOUT PRIOR AUTHORIZATION FROM THE ENGINEER.
5. THE CONTRACTOR SHALL IMMEDIATELY REPORT TO THE ENGINEER ANY ACCIDENTAL DISCHARGES OF SEDIMENT MATERIAL INTO ANY STORM SEWER SYSTEM. APPROPRIATE RESPONSE MEASURES, INCLUDING ANY REPAIRS TO EXISTING CONTROL MEASURES OR THE IMPLEMENTATION OF ADDITIONAL CONTROL MEASURES, SHALL BE CARRIED OUT BY THE CONTRACTOR WITHOUT DELAY.
6. THE CONTRACTOR ACKNOWLEDGES THAT FAILURE TO IMPLEMENT EROSION AND SEDIMENT CONTROL MEASURES MAY BE SUBJECT TO PENALTIES IMPOSED BY ANY APPLICABLE REGULATORY AGENCY.
7. ROADWAYS ARE TO BE SWEPT AS REQUIRED OR AS DIRECTED BY THE ENGINEER AND/OR MUNICIPALITY.
8. THE CONTRACTOR SHALL ENSURE PROPER DUST CONTROL IS PROVIDED WITH THE APPLICATION OF WATER (AND IF REQUIRED, CALCIUM CHLORIDE) DURING DRY PERIODS.

BENCHMARK NOTES:

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2. IT IS THE RESPONSIBILITY OF THE USER OF THIS INFORMATION TO VERIFY THAT THE JOB BENCHMARK HAS NOT BEEN ALTERED OR DISTURBED AND THAT IT'S RELATIVE ELEVATION AND DESCRIPTION AGREES WITH THE INFORMATION SHOWN ON THIS DRAWING.
3. BENCHMARK WAS PROVIDED ON PLAN OF SURVEY OF PART OF LOT 60 AND ALL OF LOTS 61 & 62, REGISTERED PLAN 263 AND PART OF LOT 31,CONCESSION 1 (OTTAWA FRONT), SURVEYED BY STANTEC GEOMATICS LTD.
4. NEW BENCHMARK TO BE ESTABLISHED BY SURVEYOR PRIOR TO CONSTRUCTION TO REPLACE EXISTING BENCHMARK ON FIRE HYDRANT THAT WILL BE RELOCATED.

PAVEMENT STRUCTURE:

NEW LIGHT DUTY PAVEMENT
50mm SUPERPAVE 12.5
150mm GRANULAR "A"
300mm GRANULAR "B" TYPE II
ASPHALT GRADE PG 58-34

HEAVY DUTY PAVEMENT - ROADWAY RE-INSTATEMENT
MATCH EXISTING GRANULAR STRUCTURE OF ROADWAY
MATCH EXISTING ASPHALT THICKNESSES AS PER DETAIL R10.
NEW ASPHALT GRADE: PG 58-34

Erosion and Sediment Control Responsibilities:

				During Construction			After Construction Prior to Final Acceptance		After Final Acceptance
	ESC Measure	Symbol	Specification	Installation Responsibility	Inspection/Maintenance Responsibility	Inspection Frequency	Approval to Remove	Removal Responsibility	Inspection/Maintenance Responsibility
Temporary Measures	Silt Fence		OPSD 219.110	Developer's Contractor	Developer's Contractor	Weekly (as a minimum)	Consultant	Developer's Contractor	N/A
	Filter Fabric	Location as Indicated in ESC Note #3	Erosion and Sediment Control Notes	Developer's Contractor	Developer's Contractor	Weekly (as a minimum)	Consultant	Developer's Contractor	N/A
	Mud Mat		Drawing Details	Developer's Contractor	Developer's Contractor	Weekly (as a minimum)	Developer's Contractor	Developer's Contractor	N/A
	Dust Control	Location as Required Around Site	Erosion and Sediment Control Notes	Developer's Contractor	Developer's Contractor	Weekly (as a minimum)	Consultant	Developer's Contractor	N/A
	Stabilized Material Stockpiling	Location as Required by Contractor	Erosion and Sediment Control Notes	Developer's Contractor	Developer's Contractor	Weekly (as a minimum)	Developer's Contractor	Developer's Contractor	N/A
	Sediment Basin (for flows being pumped out of excavations)	Location as Required by Contractor	- - -	Developer's Contractor	Developer's Contractor	After Every Rainstorm	Developer's Contractor	Developer's Contractor	N/A

NOTE:
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OWNER INFORMATION
HOPPNER HOLDINGS INC.
1818 BRADLEY SIDE ROAD,
CARP, ONTARIO K0A 1L0
KEN HOPPNER
PHONE: 613-831-5490
khoppner@morleyhoppner.com

No.	REVISION	DATE	BY
3.	REVISED PER CITY COMMENTS	MAR 5/24	FST
2.	REVISED PER CITY COMMENTS	OCT 16/23	FST
1.	ISSUED FOR SPC APPLICATION	FEB 22/23	FST

SCALE
1:250
1:250
0 2 4 6 8 10

DESIGN CV
CHECKED FST
DRAWN CV
CHECKED FST
APPROVED FST

FOR REVIEW ONLY

LICENSED PROFESSIONAL ENGINEER
F.S. THAUVETTE
100041399
March 5, 2024
PROVINCE OF ONTARIO

NOVATECH
Engineers, Planners & Landscape Architects
Suite 200, 240 Michael Cowpland Drive
Ottawa, Ontario, Canada K2M 1P6
Telephone (613) 254-9643
Facsimile (613) 254-5867
Website www.novatech-eng.com

LOCATION
CITY OF OTTAWA
2026 SCOTT STREET

DRAWING NAME
GRADING AND EROSION AND SEDIMENT CONTROL PLAN

PROJECT No. 121302
REV: REV # 3
DRAWING No. 121302-GR

D07-12-23-0019

PLAN24x36.DWG - 914.4mmx609.6mm
PLAN #18976

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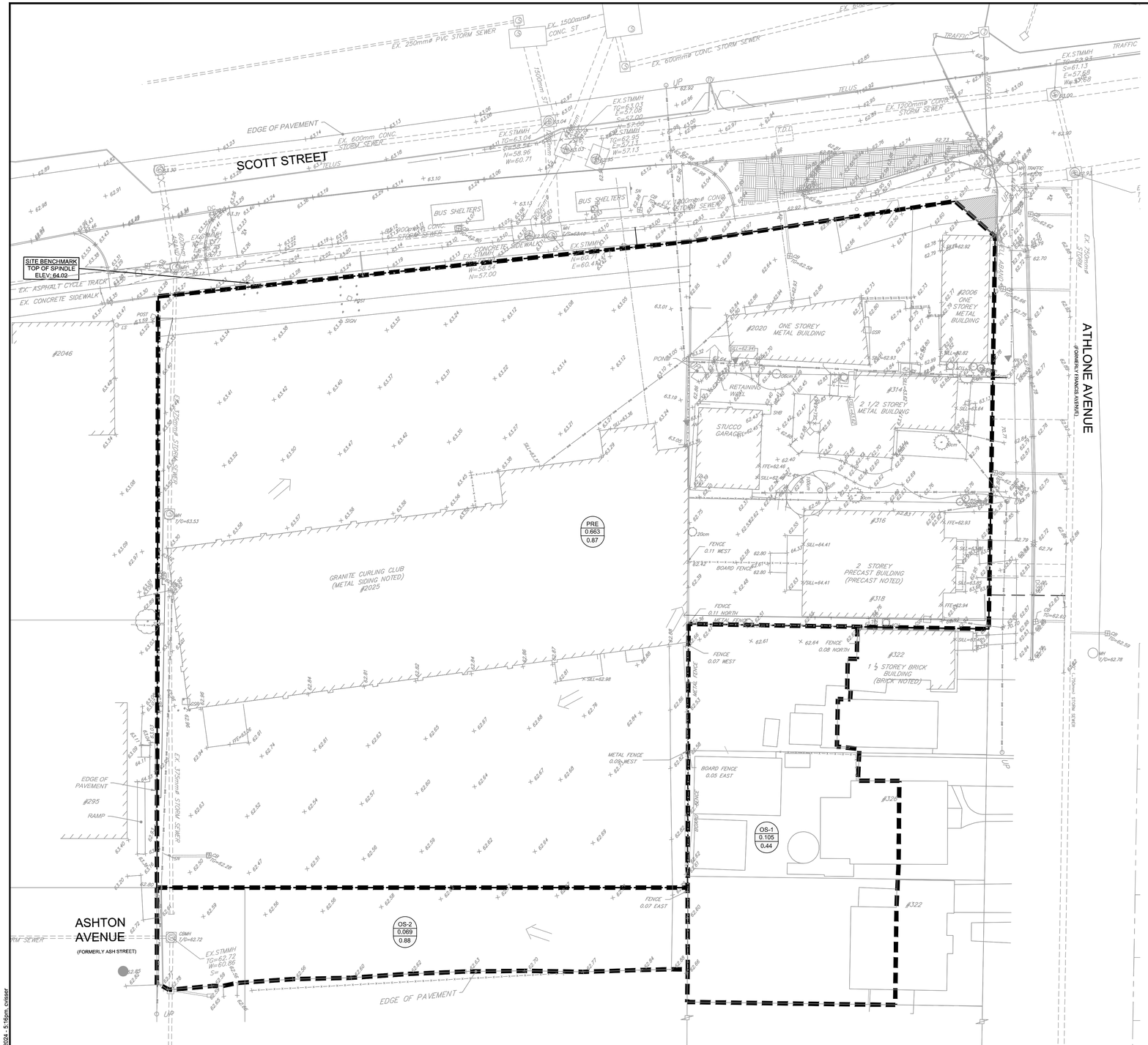

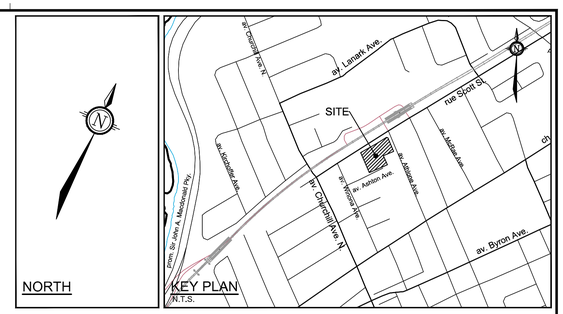

LEGEND

- DRAINAGE AREA LIMITS
- PRE-DEVELOPMENT AREA ID
- PRE-DEVELOPMENT DRAINAGE AREA (ha)
- 1:5 YEAR WEIGHTED RUNOFF COEFICIENT
- EXISTING CONCRETE CURB
- VAVB — EXISTING VALVE & VALVE BOX
- SP — EXISTING SERVICE POST
- HYD — EXISTING HYDRANT
- CBMH — EXISTING CATCHBASIN
- CB — EXISTING CATCHBASIN MH
- EX UP — EXISTING UTILITY POLE C/W GUY WIRES
- EXISTING DRAINAGE DIRECTION ARROWS
- EXISTING OVERLAND FLOW

BENCHMARK NOTES:

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SCALE 1:250 (1:250, 0 2 4 6 8 10)

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LICENSED PROFESSIONAL ENGINEER — F.S. THAUVETTE — 100041299 — March 5, 2024 — PROVINCE OF ONTARIO

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LOCATION
CITY OF OTTAWA
2026 SCOTT STREET

DRAWING NAME
PRE-DEVELOPMENT
STORM DRAINAGE AREA PLAN

PROJECT No. 121302
REV REV # 3
DRAWING No. 121302-SWM1

PLAN #18976

D07-12-23-0019

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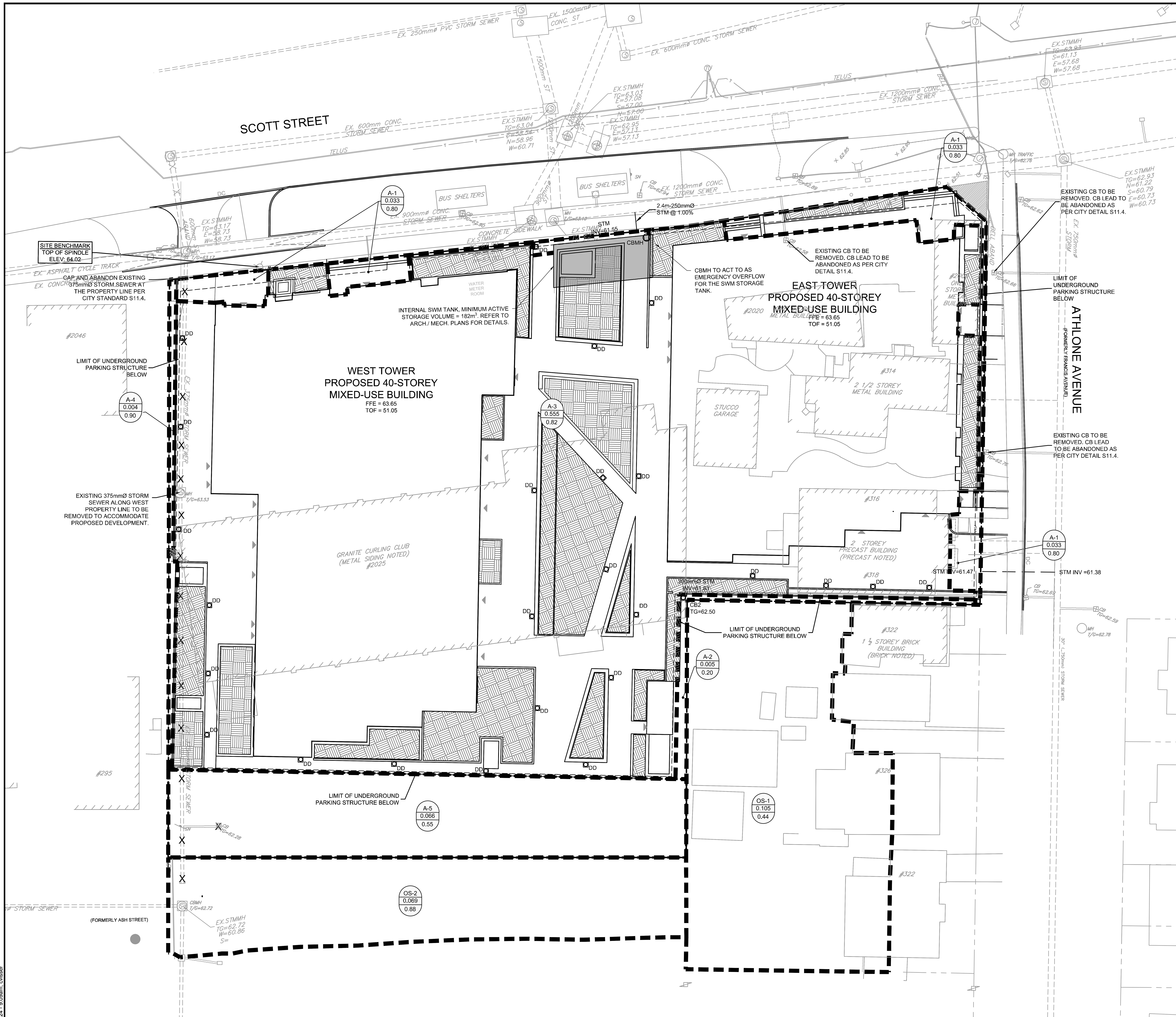

LEGEND

PROPOSED BARRIER CURB

DC — PROPOSED DEPRESSED CURB

DRAINAGE AREA LIMITS

A-1 — POST-DEVELOPMENT AREA ID

0.072 — POST-DEVELOPMENT DRAINAGE AREA (ha)

0.24 — 1:5 YEAR WEIGHTED RUNOFF COEFICIENT

EXISTING CONCRETE CURB

VALVE — EXISTING VALVE & VALVE BOX

SP — EXISTING SERVICE POST

HYD — EXISTING HYDRANT

CBMH — EXISTING CATCHBASIN

CB — EXISTING CATCHBASIN MH

EX UP — EXISTING UTILITY POLE C/W GUY WIRES

GENERAL NOTES:

1. COORDINATE AND SCHEDULE ALL WORK WITH OTHER TRADES AND CONTRACTORS.
2. DETERMINE THE EXACT LOCATION, SIZE, MATERIAL AND ELEVATION OF ALL EXISTING UTILITIES PRIOR TO COMMENCING CONSTRUCTION. PROTECT AND ASSUME RESPONSIBILITY FOR ALL EXISTING UTILITIES WHETHER OR NOT SHOWN ON THIS DRAWING.
3. OBTAIN ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF OTTAWA BEFORE COMMENCING CONSTRUCTION.
4. BEFORE COMMENCING CONSTRUCTION OBTAIN AND PROVIDE PROOF OF COMPREHENSIVE, ALL RISK AND OPERATIONAL LIABILITY INSURANCE FOR $5,000,000.00. INSURANCE POLICY TO NAME OWNERS, ENGINEERS AND ARCHITECTS AS CO-INSURED.
5. COMPLETE ALL WORKS IN ACCORDANCE WITH THE MOST CURRENT CITY OF OTTAWA STANDARDS AND SPECIFICATIONS USING THE CURRENT GUIDELINES, BYLAWS AND STANDARDS INCLUDING MATERIALS OF CONSTRUCTION, DISINFECTION AND ALL RELEVANT REFERENCES TO OPSS, OPSD & AWWA GUIDELINES - ALL CURRENT VERSIONS AND 'AS AMENDED'.
6. RESTORE ALL DISTURBED AREAS ON-SITE AND OFF-SITE, INCLUDING TRENCHES AND SURFACES ON PUBLIC ROAD ALLOWANCES TO EXISTING CONDITIONS OR BETTER TO THE SATISFACTION OF THE CITY OF OTTAWA AND ENGINEER.
7. REMOVE FROM SITE ALL EXCESS EXCAVATED MATERIAL, ORGANIC MATERIAL AND DEBRIS UNLESS OTHERWISE INSTRUCTED BY ENGINEER. EXCAVATE AND REMOVE FROM SITE ANY CONTAMINATED MATERIAL. ALL CONTAMINATED MATERIAL SHALL BE DISPOSED OF AT A LICENSED LANDFILL FACILITY.
8. ALL ELEVATIONS ARE GEODETIC.
9. REFER TO GEOTECHNICAL INVESTIGATION REPORT (PG5829-1, DATED JUNE 7, 2021), PREPARED BY PATERSON GROUP INC., FOR SUBSURFACE CONDITIONS, CONSTRUCTION RECOMMENDATIONS, AND GEOTECHNICAL INSPECTION REQUIREMENTS. THE GEOTECHNICAL CONSULTANT IS TO REVIEW ON-SITE CONDITIONS AFTER EXCAVATION PRIOR TO PLACEMENT OF THE GRANULAR MATERIAL.
10. REFER TO ARCHITECT'S AND LANDSCAPE ARCHITECT'S DRAWINGS FOR BUILDING AND HARD SURFACE AREAS AND DIMENSIONS.
11. REFER TO THE DEVELOPMENT SERVICING STUDY & STORMWATER MANAGEMENT REPORT (R-2023-003) PREPARED BY NOVATECH.
12. SAW CUT AND KEY GRIND ASPHALT AT ALL ROAD CUTS AND ASPHALT TIE IN POINTS AS PER CITY OF OTTAWA STANDARDS (R10).
13. PROVIDE LINE / PARKING PAINTING AS REQUIRED PER THE ARCHITECTURAL SITE PLAN.

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INTERNAL SWM STORAGE SYSTEM

DESIGN EVENT	STORAGE SYSTEM CONTROLLED FLOW	STORAGE VOLUMES	
		REQUIRED	PROVIDED
1:2 YR	PUMPED FLOW RATE = 31.5 L/s	41.6 m³	>182 m³
1:5 YR		69.0 m³	
1:100 YR		181.7 m³	

NOTES:

1. ALL DRAINAGE FROM AREA A-3 (PROPOSED AMENITY AREA DECK DRAINS AND ALL ROOF DRAINS) TO BE DIRECTED TO THE INTERNAL STORMWATER STORAGE SYSTEM. REFER TO ARCHITECTURAL AND MECHANICAL PLANS FOR DETAILS.
2. REFER TO ARCHITECTURAL AND STRUCTURAL PLANS FOR EXACT SIZE AND DETAILS OF INTERNAL STORMWATER STORAGE SYSTEM.
3. REFER TO ARCHITECTURAL AND MECHANICAL PLANS FOR LOCATION AND CONNECTIONS AND DETAILS OF THE INTERNAL STORMWATER STORAGE SYSTEM AND EMERGENCY OVERFLOW PIPING.

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121302-SWM2

D07-12-23-0019

PLAN #18976