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PROPOSED MIXED-USE DEVELOPMENT
12, 14, 16, 18, 20 & 24 HAWTHORNE AVENUE

DEVELOPMENT SERVICING STUDY AND STORMWATER MANAGEMENT REPORT

PROPOSED MIXED-USE DEVELOPMENT
12, 14, 16, 18, 20 and 24 HAWTHORNE AVENUE

DEVELOPMENT SERVICING STUDY AND STORMWATER MANAGEMENT REPORT

Prepared by:

NOVATECH
Suite 200, 240 Michael Cowpland Drive
Kanata, Ontario
K2M 1P6

April 12, 2023

Ref: R-2022-143
Novatech File No. 122152

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Engineers, Planners & Landscape Architects

April 12, 2023

JBPA Developments Inc.
107 Pretoria Avenue
Ottawa, Ontario. K1S 1W8

Attention: Mr. Kevin Fagan

Dear Sir:

Re: Development Servicing Study and Stormwater Management Report
Proposed Mixed-Use Development
12, 14, 16, 18, 20 and 24 Hawthorne Avenue,
Ottawa, ON
Novatech File No.: 122152

Enclosed is a copy of the 'Development Servicing Study and Stormwater Management Report' for the proposed mixed-use development located at 12, 14, 16, 18, 20 and 24 Hawthorne Avenue, in the City of Ottawa. This report addresses the approach to site servicing and stormwater management and is submitted in support of the Site Plan Control application.

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

Yours truly,

NOVATECH

François Thauvette, P. Eng.
Senior Project Manager

cc: Reza Bakhit (City of Ottawa)
Rob Verch (RLA)

Suite 200, 240 Michael Cowpland Drive, Ottawa ON K2M 1P6 Tel: 613.254.9643 www.novatech-eng.com

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1.0 INTRODUCTION

JBPA Developments Inc. is proposing a new 6-storey mixed-use building at 12, 14, 16, 18, 20 and 24 Hawthorne Avenue. Novatech has been retained to complete the detailed servicing, grading, and stormwater management design for this project. This report is being submitted in support of the Site Plan Control application.

1.1 Site Description and Location

The subject site is comprised of the properties located at 12, 14, 16, 18, 20 and 24 Hawthorne Avenue, in the City of Ottawa. The properties cover a combined area of approximately 0.141 hectares, based on the proposed road widening. The 12-18 Hawthorne Avenue site is currently occupied by residential buildings (four dwellings) while the residential buildings on the 20 and 24 Hawthorne Avenue sites have been recently demolished. The legal description of the subject site as indicated on the Topographical Plan of Survey prepared by Annis, O'Sullivan, Vollbekk Ltd. is designated as Lots 2, 3, 4, 5 and Part of Lot 6 on Registered Plan 220, City of Ottawa. Refer to **Figure 1** showing the existing site location.

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 March 24, 2022, 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, as all properties will be merged. Refer to **Appendix A** for a summary of the correspondence related to the proposed development.

1.3 Proposed Development

The proposed development will include a 6-storey mixed-use building with 2 levels of underground parking. The proposed building will be serviced by extending new laterals to the municipal sanitary sewer, storm sewer and watermain in Hawthorne Avenue. The aging municipal infrastructure (sanitary sewer, storm sewer and watermain) in the street is being removed and replaced with upsized pipes as part of the City of Ottawa Hawthorne Road Reconstruction project anticipated to begin in 2023. It is anticipated that the new infrastructure will be in place prior to the completion of the proposed mixed-use development.

1.4 Design Guidelines and Reference Material

The following design guidelines have been used to establish the servicing and stormwater management requirements for the proposed mixed-use development:

- Ottawa Sewer Design Guidelines (2012) and Technical Bulletins (2010-present)
- Ottawa Design Guidelines for Water Distribution (2010) & Tech. Bulletins (2010-present)
- Ministry of the Environment Design Guidelines for Sewage Works (2008)
- Ministry of the Environment Stormwater Management Planning and Design Manual (2003)
- Ministry of the Environment Design Guidelines for Drinking Water Systems (2008)
- Fire Underwriters Survey (FUS) Water Supply for Public Fire protection

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-2022-147), prepared by Novatech Engineering, dated March 8, 2023.

[2] The Geotechnical Investigation Report (Ref. No. 58-JBPA-RO), prepared by Yuri Mendez Engineering on August 4, 2022.

2.0 SITE SERVICING

The objective of the site servicing design is to provide proper sewage outlets, a suitable domestic water supply and to ensure that appropriate fire protection is provided 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. Refer to the enclosed General Plan of Services (122152-GP) and subsequent sections of the report for details.

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. Enclosed in **Appendix B** of the report is a completed checklist.

2.1 Sanitary Sewage

The existing properties are currently being serviced by the concrete 225mm dia. sanitary sewer in Hawthorne Avenue. As part of the City of Ottawa Roadway Reconstruction project, the existing pipe will be replaced with a new 250mm dia. PVC sanitary sewer. Under post-development conditions, the proposed development will be serviced by this new municipal

sanitary sewer in Hawthorne Avenue. The sanitary service lateral will enter the mechanical room on the north side of the building and will be equipped with a backflow preventer.

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 Use

- Residential Units (1-Bedroom or Studio): 1.4 people per unit
- Residential Units (2-Bedroom): 2.1 people per unit
- Average Daily Residential Sewage Flow: 280 L/person/day (ISTB-2018-01)
- Residential Peaking Factor = 3.76 (Harmon Equation)
- Average Commercial Sewage Flow: 2.8 L/m^2/day
- Commercial Peaking Factor = 1.5
- Infiltration Allowance: 0.33 L/s/ha x 0.141 ha site = 0.05 L/s (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

Residential & Commercial Use	Unit Count/ Site Area	Design Population	Average Flow (L/s)	Peaking Factor	Peak Flow (L/s)
1-Bedroom / Studio	36	51	0.17*	3.76	0.62
2-Bedroom	31	65	0.21		0.79
Commercial Space	284 m²	-	<0.01	1.5	0.01
Infiltration Allowance	0.141 ha	-	0.05	-	0.05
Total for Site	**67***	**116***	**0.43***	**-**	**1.47***

*Represents rounded values

A 200mm dia. PVC sanitary service lateral at a minimum slope of 1.0% has a full flow conveyance capacity of approximately 34.2 L/s and should have enough capacity to convey the theoretical sanitary flows from the proposed development. Refer to the enclosed **General Plan of Services** (122152-GP) and to **Appendix C** for detailed sanitary sewage calculations. As described in the Adequacy Report[1], the upgraded sanitary sewer being installed as part of the City of Ottawa Hawthorne Road Reconstruction project will have adequate capacity to accommodate the proposed development.

2.2 Water Supply for Domestic Use and Firefighting

The properties are currently being serviced by the existing 100mm dia. UCI watermain in Hawthorne Avenue. As part of the City of Ottawa Roadway Reconstruction project, the existing pipe will be replaced with a new 200mm dia. PVC watermain. Under post-development conditions, the proposed development will be serviced by the new municipal watermain in Hawthorne Avenue. Based on the calculations below, the anticipated average daily water demand will be less than 50m^3/day (0.58 L/s), therefore, the proposed building will only require a single service lateral. The building will be sprinklered and will include an internal water meter,

with a remote meter and fire department (siamese) connection on the exterior face of the building. A 1220mm dia. (backbone) watermain is also located within Hawthorne Avenue, however the development will not be allowed to connect into this large diameter feeder main. The subject site is located within the City of Ottawa 1W watermain pressure zone.

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. The fire flow requirements were calculated per the Fire Underwriters Survey (FUS) method 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 the Ottawa Design Guidelines – Water Distribution and subsequent Technical Bulletins:

- Residential Units (1-Bedroom or Studio): 1.4 people per unit
- Residential Units (2-Bedroom): 2.1 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**

Residential & Commercial Use	Unit Count/ Floor Area	Design Population	Avg. Day Demand (L/s)	Max. Day Demand (L/s)	Peak Hour Demand (L/s)	Fire Flow (L/s)
1-Bdrm/Studio	36	51	0.17*	0.41	0.90	217
2-Bdrm	31	65	0.21	0.53	1.17	
Commercial	284 m²	-	<0.01	0.01	0.02	
Total for Site	**67***	**116***	**0.38***	**0.95***	**2.09***	

*Represents rounded values

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.

The anticipated domestic water and fire flow demand calculations were provided to the City of Ottawa to obtain municipal watermain boundary conditions used to complete the watermain network analysis. Based on e-mail correspondence from the City of Ottawa, a multi-hydrant analysis was performed for the three existing hydrants located within 150m of the subject site. As anticipated, the total flow available from the existing 102mm dia. UCI watermain is less than the fire flow required for the proposed development (217 L/s). Consequently, the new development will be dependent on the proposed watermain upgrades in Hawthorne Avenue. Based on their internal simulation, the City indicated that the future municipal watermain should achieve the required fire flow demand of 217 L/s for the proposed development.

Table 2.1 summarizes the anticipated watermain pressures based on the proposed 200mm dia. upgraded watermain in Hawthorne Avenue, including the hydrants shown on the design drawings.

Table 2.1: **Hydraulic Boundary Conditions Provided by the City (New 200mm dia. WM)**

Municipal Watermain Boundary Condition	Boundary Condition Head of Water (m)	Normal Operating Pressure Range (psi)	Anticipated WM Pressure (psi)*
Connection to proposed upgraded 200mm dia. WM in Hawthorne Avenue			
Minimum HGL (Peak Hour Demand)	105.5	40 psi (min.)	~54 psi
Maximum HGL (Max Day Demand)	115.1	50-70 psi	~67 psi
HGL (Max Day + Fire Flow [217 L/s])	96.0	20 psi (min.)	~40 psi

* Based on an approximate roadway elevation of 67.7m in Hawthorne Avenue at the service connection. Design pressure = (HGL – watermain elevation) x 1.42197 PSI/m.

Based on the preliminary calculations, adequate water and system pressures will exist throughout the watermain network under the specified 'Max Day + Fire Flow' and 'Peak Hour' conditions, once the new watermain is installed in Hawthorne Avenue. However, booster pump(s) are anticipated to be required to provide adequate water pressure to the upper floors.

A multi-hydrant approach to firefighting will be required to supply the fire flow calculated above. Based on a review of the Hawthorne Road Reconstruction plans and the geoOttawa website, there will be two (2) new Class AA (blue bonnet) municipal fire hydrants on the south side of Hawthorne Avenue, and there are three (3) existing hydrants within 150m of the site along Colonel By Drive and Graham Avenue. Based on the City of Ottawa Technical Bulletin ISTB-2018-02, Class AA (blue bonnet) hydrants within 75m of the building should provide a maximum capacity 95 L/s each, while hydrants between 75m and 150m should provide a maximum of 63 L/s (at a pressure of 20 PSI). The combined maximum flow from these hydrants should 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 and is generally consistent with the results of the City's preliminary simulation using the upgraded watermain. **Table 2.2** summarizes the total theoretical combined fire flow available from the proposed hydrants and compares it to the fire flow demand based on FUS calculations.

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

Building Type	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)
Mixed-Use	**217**	2	3	**>217***

*Theoretical values exceed the FUS Fire Flow requirements and were therefore not confirmed by hydraulic analysis.

Refer to the enclosed **General Plan of Services** (122152-GP) and to **Appendix D** for detailed domestic water demands, FUS fire flow calculations, watermain boundary conditions and correspondence with the City of Ottawa. A sketch showing the existing and proposed fire hydrant locations and the dimensions confirming the appropriate site coverage is also provided.

2.3 Storm Drainage and Stormwater Management

The properties are currently being serviced by the existing 300mm dia. concrete storm sewer in Hawthorne Avenue. As part of the City of Ottawa Roadway Reconstruction project, the existing pipe will be replaced with a new 450mm/525mm dia. concrete storm sewer. Under post-development conditions, storm flows from the site will continue to be directed to the storm sewer in Hawthorne Avenue. On-site stormwater management (SWM) will be required to meet the requirements of the City of Ottawa. Storm flows will include both uncontrolled direct runoff and controlled site flows. The proposed storm drainage and stormwater management design for the site is discussed in the following sections of the report.

2.3.1 Stormwater Management Criteria and Objectives

The stormwater management (SWM) criteria have been provided during a pre-consultation meeting with the City of Ottawa. The SWM (quantity control) criteria and 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 from City of Ottawa IDF curves.
- 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 preliminary feedback from the RVCA, on-site stormwater quality control measures will not be required. Refer to **Appendix A** for correspondence from the City of Ottawa and RVCA.

2.3.2 Pre-Development Conditions and Allowable Release Rate

It is assumed that site flows are currently not being controlled prior to sheet draining off-site and/or being directed into the municipal storm sewer in Hawthorne Avenue. The uncontrolled pre-development flow from the subject site was calculated using the Rational Method to be approximately 17.3 L/s during a 2-year design event, 23.5 L/s during the 5-year design event

and 46.4 L/s during the 100-year design event. Refer to the Pre-Development Storm Drainage Plan (122152-STM1) and to **Appendix E** for detailed SWM calculations.

As specified by the City of Ottawa, the maximum allowable release rate from the subject site under post-development conditions 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 rate was calculated as follows:

T_c = 10 min C =0.50
I_{2yr} = 76.8 mm/hr A = 0.141 ha

Q_{allow} = 2.78 CIA
= 2.78 (0.50) (76.8) (0.141)
=15.1 L/s

2.3.3 Post-Development Conditions

The post-development conditions will include both uncontrolled direct runoff and controlled site flows. Flows from the building roof along with the area drains and deck drains located within the side and rear yard amenity space will be directed to an internal SWM storage tank and controlled/pumped prior to being discharged into the municipal storm sewer in Hawthorne Avenue. The area in the front of the proposed building will sheet drain uncontrolled towards the street, as there is no practical way to capture this drainage. Given the depth of the lowest UG parking level, the weeping tile will need to be pumped. The pumps will require appropriate back-up power and will also act as the backflow prevention.

2.3.3.1 Area A-1: Direct Runoff from Subject Site

The uncontrolled post-development flow from this sub-catchment area was calculated using the Rational Method to be approximately 1.5 L/s during a 2-year design event, 2.1 L/s during the 5-year design event and 4.0 L/s during the 100-year design event. Refer to the Post-Development Storm Drainage Plan (122152-STM2) and to **Appendix E** for detailed SWM calculations.

2.3.3.2 Area A-2: Controlled Site Flow

Stormwater runoff from the building roof, side and rear yard amenity spaces will be captured by the roof drains and ground level deck drains and area drains and directed to an internal stormwater storage tank. Stormwater collected within the storage tank will be pumped up to the proposed storm service and discharged into the municipal storm sewer in Hawthorne Avenue. A pump (designed by the mechanical consultant) is required to control flow from the tank to a maximum rate of 11.0 L/s (174 USGPM), which is less than the remaining allowable flow for this catchment area. A “stand-by” pump will be provided for emergency and/or maintenance purposes. An emergency power supply will also be provided. STM MH 1 will provide access to the underground SWM tank, while Area Drain 1 will act as an emergency overflow from the internal SWM storage tank during an extremely large storm event (greater than the 100-year + 20%) and/or during a power failure scenario. The top of grate of Area Drain 1 has been set at 67.60m, 0.3m below the finished floor elevation of the main building and 0.2m below the west side commercial units. Furthermore, 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-2 for the 2-year, 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)
2-Year	11.0 L/s	8.1 m^3	> 51 m^3
5-Year		14.1 m^3	
100-Year		38.9 m^3	
100-Year + 20% IDF increase		50.8 m^3	

As indicated in **Table 3**, the internal stormwater storage tank will provide sufficient storage for the 100-year design event, including an increased volume due to a 20% increase in rainfall intensity (stress test). Refer to **Appendix E** for detailed calculations.

2.3.3.3 Stormwater Flow Summary

Table 3.1 provides a summary of the total post-development flows from the site and compares them to the allowable release rate specified by the City of Ottawa.

Table 3.1: Stormwater Flows Comparison Table

Design Event	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)	Total Flow (L/s)	Reduction in Flow (L/s or %)*
2-Yr	17.3	15.1	1.5	11.0	12.5	4.8 or 28%
5-Yr	23.5		2.1		13.1	10.4 or 44%
100-Yr	46.4		4.0		15.0	31.4 or 68%

*Reduced flow compared to uncontrolled pre-development conditions.

As indicated in **Table 3.1**, the post-development flows from the site will be less than 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.

2.3.4 Stormwater Quality Control

As stated above, the subject site is located within the jurisdiction of the Rideau Valley Conservation Authority (RVCA). Based on preliminary feedback from the RVCA on-site stormwater quality control will not be required as parking will be provided underground. Landscaped areas and roof tops are considered clean for the purposes of water quality and aquatic habitat protection. Refer to **Appendix A** for correspondence from the RVCA.

3.0 SITE GRADING

The existing site is relatively flat, and generally slopes from back to front and east to west. The elevations vary from approximately 68.60m near the southeast property corner, 68.19m near the northeast corner, 67.92m near the southwest corner and slope down to approximately 67.62m near the northeast corner of the property. As part of the Hawthorne Avenue re-design, the proposed roadway grades will slightly differ from the existing grades and the roadway drops approximately 0.40m from east to west. Consequently, the finished floor elevation (FFE) of the east side commercial units (68.00m) will be set slightly higher than the main building ground floor elevation (67.90m), while the west side commercial units (67.80m) will be slightly lower. The grades around the perimeter of the site will generally be maintained. Refer to the enclosed **Grading and Erosion & Sediment Control Plan** (122152-GR) for details.

4.0 GEOTECHNICAL INVESTIGATIONS

A Geotechnical Investigation Report has been prepared by Yuri Mendez Engineering. 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:

- Catchbasin inserts (sediment sacks) will be placed under the grates of nearby catchbasins 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 mixed-use development located at 12, 14, 16, 18, 20 and 24 Hawthorne Avenue. The conclusions are as follows:

- The proposed development will be serviced by the municipal infrastructure in Hawthorne Avenue.
    - Sanitary flows will be directed to the new 250mm dia. municipal sanitary sewer in via a 200mm dia. sanitary service lateral. Based on feedback from the City of Ottawa, the municipal sanitary sewer system should have adequate capacity to accommodate the proposed development.
    - Storm flows from the roof, side and rear yard amenity space will be directed to an internal SWM tank, then pumped out to the new municipal 450mm dia. storm sewer via a 200mm dia. storm service lateral. Storm flows from the front of the proposed building will sheet drain uncontrolled towards the street.
    - A new 150mm dia. water service lateral will be connected to the new 200mm watermain in Hawthorne Avenue. Based on feedback from the City of Ottawa, Adequate water and system pressures are anticipated within the new watermain network under the specified 'Max Day + Fire Flow' and 'Peak Hour' conditions.
- The proposed building will be sprinklered and the new 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 will be approximately 13.1 L/s during the 5-year design event and 15.0 L/s during the 100-year event, both of which are less than the allowable release rate specified by the City of Ottawa.
- 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

Pre-Application Consultation Meeting Notes

12-20 Hawthorne Avenue, Ottawa
Meeting Date: Thursday, March 24, 2022
MS Teams

Attendees:

City of Ottawa:
Jessica Button, File Lead
Adrian van Wyk, Heritage Planner and Urban Designer
Reza Bakhit, Infrastructure Project Manager
Wally Dubyk, Transportation Project Manager
Parthvi Patel, Student Planner

Applicant Team:
Haris Khan, Fotenn, Planner
Brian Casagrande, Fotenn
Dylan Desjardins, TCU, Director of Real Estate
Roberto Campos, Figurr Architects
Melissa Du Plessis, Figurr Architects

Old Ottawa East Community Association:
Paul Goodkey
John Dance

Subject: Proposal for a Site Plan Control and Zoning By-law Amendment application to support a six-storey residential building at 12-20 Hawthorne Avenue

Proposal Details:

- Currently, 12-18 Hawthorne contains two-storey townhouses, and 20 Hawthorne is vacant, due to a recent demolition.
- The proposal seeks to combine both properties to develop a new six-storey residential building with a total of 66 units and an underground garage.
- The proposed development is seeking variance to increase building height from 14.5 meters to 20 meters.

Technical Comments – City Staff

Planning Comments – Jessica Button

- Application required
    - Zoning By-law Amendment, Site Plan Control – Complex (Manager Approval, Public Consultation)
- The property is designated “Traditional Mainstreet” in Schedule A of Old Ottawa East Secondary Plan.

  - No buildings will be allowed higher than six storeys and 20 metres
  - To reduce the impact on adjacent low-rise residential areas, within the Traditional Mainstreet designation, the City will require building setbacks from both the front and rear property lines and above the fourth floor of all new buildings.
  - In order to provide wider and more attractive sidewalks and to encourage pedestrian traffic along Main Street and Hawthorne Street the City will require new buildings to be set back from the street
  - Develop the south side of this corridor in accordance with the TM zoning. With lot depths ranging from 26 to 30 metres the stepped building envelope massing is important to achieve compatibility with the low-rise residential on Graham Street to the south.
- See the Old Ottawa East Secondary Plan for additional policy direction.
- The following City policies or guidelines are applicable to the site:
  - Tree Protection By-law
  - Urban Design Guidelines for Development along Traditional Mainstreets

The site includes the following zones:

- The site is zoned TM12[1839] H14.5
- A zoning by-law amendment is required to support height above 14.5m and nonresidential at grade uses as per 1839
- Consider including non-residential uses required in this zone.
- Addition transition is required to support this height. Heritage protection may assist in these goals.
- A tree protection plan will be required and should consider the protection of trees in the rear yard to assist in the transition to the Graham Street properties. This plan should consider the extent of excavation required for underground parking.
- If a parking reduction is proposed, bike parking is recommended at 1:1.
- A landscape plan should include tree plantings at the front and back of the development and will need to consider the extent of underground parking.
- Review and ensure compliance with Section 137 – Amenity Area
- Review and ensure compliance with Section 143 – Waste Management

Transportation Comments - Wally Dubyk

- How many parking spaces are being proposed?
- Road, Sewer, Water along Hawthorne Avenue is targeted to start this season.
- The Screening Form has indicated that the TIA Triggers have been met. Please proceed with the TIA Step 2 – Scoping report.
- During the Analysis, ensure that both TDM checklists are filled out and appropriate measures are taken to achieve the target modal shares. In the future, please contact Tim Wei (tim.wei@ottawa.ca) to obtain a local snapshot of the Long-Range Transportation model to help inform background growth rates.
- Hawthorne Avenue is designated as an Arterial road within the City's Official Plan with a ROW protection limit of 20.0 metres. The ROW protection limit and the offset distance (10.0 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.
- 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 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 concrete sidewalks should be 2.0 metres in width and be continuous and depressed through the proposed access.
- 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 https://ottawa.ca/en/living-ottawa/laws-licences-and-permits/laws/law-z/private-approach-law-no-2003-447 or as approved through the Site Plan control process.
- The proponent is to provide an access grade that does not exceed 2% within the private property for a minimum distance of 6.0 metres from the **ROW limits**. This is a critical safe distance to allow a driver to stop at the top of the ramp and have a good sight angle of pedestrians.
- The closure of an existing private approach shall reinstate the sidewalk, shoulder, curb, and boulevard to City standards.
- 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.
- A construction Traffic Management Plan is to be provided for approval by the Senior Engineer, Traffic Management, Transportation Services Dept.

Heritage Comments - Adrian van Wyk

- This property is listed on the City's Municipal Heritage Register. Heritage staff strongly recommend that the existing building be retained and incorporated into the proposed development. Policy 8 of the Old Ottawa East Secondary Plan provides:
    - "8) There are several properties within the secondary planning area that are currently protected from demolition and incompatible redevelopment because they are designated under the Ontario Heritage Act. In addition to that protection, development within the secondary planning area will also:
        - a) Recognize, support, and commemorate the presence of the existing institutions as part of the community in the redevelopment of these lands; and

    - b) Respect the built and cultural heritage value of heritage buildings in the design of all new development."
- In addition to preserving the heritage value of this building, retention may also aid the development in terms of compatibility with the surrounding establish neighbourhood, provide an effective transition in height and scale from Hawthorne Avenue and preserve the existing two-storey streetwall condition.
- Any proposal to demolish a listed heritage resource will need to comply with the notice requirements under Section 27(5) of the Ontario Heritage Act. Please see our website for more information.

Urban Design Comments – Adrian van Wyk

- An Urban Design Brief will be required as part of a complete application. Please see the attached Terms of Reference for requirements.
- Transition to neighbouring buildings and the street should be demonstrated through the use of angular planes.
- The applicant should demonstrate how the proposal fits within the future intended built form of the area by modelling surrounding potential redevelopment.
- This property is located in a Design Priority Area. The proposal will be subject to formal review by the Urban Design Review Panel. The applicant is encouraged to submit an application for informal review prior to the submission of Planning approval applications. Please see our website for more information.
- The proposal should address the Urban Design Guidelines for Development along Traditional Mainstreets.
- The applicant is encouraged to return for a second pre-consultation meeting once the proposal has been further developed.
- The existing street trees should be retained if possible.
- This property is located within 1km of two existing LRT stations (i.e., UOttawa and Lees Stations). The applicant is encouraged to explore the feasibility of a reduced parking rate for this proposal.
- Bicycle parking should be provided at a ratio of one space per unit.
- The applicant is *strongly encouraged to incorporate sustainable design features into the proposal.*

Engineer Comments – Reza Bakhit

General:

- It is the sole responsibility of the consultant to investigate the location of existing underground utilities in the proposed servicing area and submit a request for locates to avoid conflict(s). The location of existing utilities and services shall be documented on an **Existing Conditions Plan**.
- Any easements on the subject site shall be identified and respected by any development proposal and shall adhere to the conditions identified in the easement agreement. A **legal survey plan** shall be provided and all easements shall be shown on the engineering plans..

- An application to consolidate the parcels (12-20 Hawthorne) of land will be required otherwise the proposed stormwater works will be servicing more than one parcel of land and thus does not meet the exemption set out in O.Reg. 525/98. This would mean an **ECA would be required** regardless of who owns the parcels..
- A deep excavation and dewatering operations have the potential to cause damages to the neighboring adjacent buildings/ City infrastructure. Document that construction activities (excavation, dewatering, vibrations associated with construction, etc.) will not have an impact on any adjacent buildings and infrastructure.
- A **Record of Site Condition (RSC) in accordance with O.Reg.** 153/04 will be required to be filed and acknowledged by the Ministry prior to issuance of a building permit due to a change to a more sensitive property use.
- 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.

  Important Note: Water , Sanitary, and storm mains within the ROW on Hawthorne Ave will be upgraded during 2022. Therefore , the applicant's engineering team is responsible to coordinate with the City to obtain the latest engineering information or permits needed to design the service laterals for this site.

- Reference documents for information purposes :
  - Ottawa Sewer Design Guidelines (October 2012)
  - Technical Bulletin PIEDTB-2016-01
  - Technical Bulletins ISTB-2018-01, ISTB-2018-02 and ISTB-2018-03.
  - Ottawa Design Guidelines - Water Distribution (2010)
  - Technical Bulletin ISTB-2021-03
  - Geotechnical Investigation and Reporting Guidelines for Development Applications in the City of Ottawa (2007)
  - City of Ottawa Slope Stability Guidelines for Development Applications (revised 2012)
  - City of Ottawa Environmental Noise Control Guidelines (January 2016)
  - City of Ottawa Accessibility Design Standards (2012) (City recommends development be in accordance with these standards on private property)
  - Ottawa Standard Tender Documents (latest version)
  - Ontario Provincial Standards for Roads & Public Works (2013)
  - Record drawings and utility plans are also available for purchase from the City (Contact the City's Information Centre by email at InformationCentre@ottawa.ca or by phone at (613) 580-424 x.44455).

Please note that this is the applicant responsibility to refer to the latest applicable guidelines while preparing reports and studies.

Disclaimer:

The City of Ottawa does not guarantee the accuracy or completeness of the data and information contained on the above image(s) and does not assume any responsibility or liability with respect to any damage or loss arising from the use or interpretation of the image(s) provided. This image is for schematic purposes only.

Stormwater Management Criteria and Information:

- **Water Quantity Control:** In the absence of area specific SWM criteria please control post-development runoff from the subject site, up to and including the **100-year storm event**, to **a 2-year pre-development level.** The pre-development runoff coefficient will need to be determined **as per existing conditions** but in no case more than 0.5. [**If 0.5 applies it needs to be clearly demonstrated in the report that the pre-development runoff coefficient is greater than 0.5**]. The time of concentration (T_c) used to determine the pre-development condition should be calculated. *Tc should not be less than 10 min. since IDF curves become unrealistic at less than 10 min; T_c of 10 minutes shall be used for all post-development calculations*].
- Any storm events greater than the established **2-year allowable** release rate, up to and including the **100-year storm event**, shall be detained on-site. The SWM measures required to avoid impact on downstream sewer system will be subject to review.
- **Considering the size of the site, it would be acceptable to control the roof portion only (100-year storm event, to a 2-year pre-development level) and leave the remainder of the site uncontrol as long as the uncontrolled portion is directed towards the right of way. This approach should be discussed in the SWM report. Also, the grading plan should clearly demonstrate that the runoff from the uncontrolled portion of the site will be directed towards the ROW.**

- Please note that foundation drainage is to be independently connected to sewer main unless being pumped with appropriate back up power, sufficient sized pump and back flow prevention. **It is recommended that the foundation drainage system be drained by a sump pump connection to the storm sewer to minimize risk of basement flooding as it will provide the best protection from the uncontrolled sewer system compared to relying on the backwater valve.**
- **Water Quality Control:** Please consult with the local conservation authority (RVCA) regarding water quality criteria prior to submission of a Site Plan Control Proposal application to establish any water quality control restrictions, criteria and measures for the site. Correspondence and clearance shall be provided in the Appendix of the report.
- Please note that as per *Technical Bulletin PIEDTB-2016-01 section 8.3.11.1 (p.12 of 14)* **there shall be no surface ponding on private parking areas during the 2-year storm rainfall event**.
- **If Underground Storage proposed:** Please note that 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 equal to 50% of the peak allowable rate shall be applied 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.

  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?
  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.

- Please note that the minimum orifice dia. for a plug style **ICD is 83mm and the minimum flow rate from a vortex ICD is 6 L/s** in order to reduce the likelihood of plugging.
- Post-development site grading shall match existing property line grades in order to minimize disruption to the adjacent residential properties. A **topographical plan of survey** shall be provided as part of the submission and a note provided on the plans.
- Please provide a **Pre-Development Drainage Area Plan** to define the pre-development drainage areas/patterns. **Existing drainage patterns shall be maintained and discussed as part of the proposed SWM solution**.
- **If rooftop control and storage is proposed** as part of the SWM solutions sufficient details (Cl. 8.3.8.4) shall be discussed and document in the report and on the plans. Roof drains are to be connected downstream of any incorporated ICDs within the SWM system and not to the foundation drain system. Provide a **Roof Drain Plan** as part of the submission.
- 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.
- 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.

Storm Sewer:

The existing 300mm dia. CONC storm sewer within the ROW is being replaced /upgrade in 2022. The applicant's engineering team is responsible to coordinate with the City to obtain the latest engineering information needed to design the service laterals for this site.

Sanitary Sewer Maclaren St:

The existing 225 mm dia. CONC Sanitary sewer within the ROW is to replaced/upgrade in 2022. The applicant's engineering team is responsible to coordinate with the City to obtain the latest engineering information needed to design the service laterals for this site.

- Please provide the new Sanitary sewer discharge and we confirm if sanitary sewer main has the capacity. An analysis and demonstration that there is sufficient/adequate residual capacity to accommodate any increase in wastewater flows in the receiving and downstream wastewater system is required to be provided. Needs to be demonstrated that there is adequate capacity to support any increase in wastewater flow.
- Please apply the wastewater design flow parameters *in Technical Bulletin PIEDTB-2018-01.*

- Sanitary sewer monitoring maintenance hole is required to be installed at the property line (on the private side of the property) as per City of Ottawa Sewer-Use By-Law 2003-514 (14) *Monitoring Devices*.
- A backwater valve is required on the sanitary service for protection.

Water:

The existing 102mm watermain within the ROW is being replaced/upgrade in 2022. The applicant's engineering team is responsible to coordinate with the City to obtain the latest engineering information needed to design the service laterals for this site.

- Existing residential service to be blanked at the main.
- **Water Supply Redundancy:** Residential buildings with a basic day demand greater than 50m^3/day (0.57 L/s) are required to be connected to a minimum of two water services separated by an isolation valve to avoid a vulnerable service area as per the *Ottawa Design Guidelines - Water Distribution, WDG001, July 2010 Clause 4.3.1 Configuration.*
- Please **review Technical Bulletin ISTB-2018-0**, maximum fire flow hydrant capacity is provided in Section 3 Table 1 of Appendix I. A **hydrant coverage figure** shall be provided and **demonstrate there is adequate fire protection for the proposal**. Two or more public hydrants are anticipated to be required to handle fire flow.
- Boundary conditions are required to confirm that the require fire flows can be achieved as well as availability of the domestic water pressure on the City street in front of the development. Use Table 3-3 of the MOE Design Guidelines for Drinking-Water System to determine Maximum Day and Maximum Hour peaking factors for 0 to 500 persons and use Table 4.2 of the Ottawa Design Guidelines, Water Distribution for 501 to 3,000 persons. Please provide the following information to the City of Ottawa via email to request water distribution network boundary conditions for the subject site. Please note that once this information has been provided to the City of Ottawa it takes approximately 5-10 business days to receive boundary conditions.
    - Type of Development and Units
    - Site Address
    - A plan showing the proposed water service connection location.
    - **Average Daily Demand** (L/s)
    - **Maximum Daily Demand** (L/s)
    - **Peak Hour Demand** (L/s)
    - **Fire Flow** (L/min)

[*Fire flow demand requirements shall be based on **Fire Underwriters Survey (FUS)** Water Supply for Public Fire Protection 1999*]

[Fire flow demand requirements shall be based on ISTB-2021-03]

Note: The OBC method can be used if the fire demand for the private property is less than 9,000 L/min. If the OBC fire demand reaches 9000 L/min, then the FUS method is to be used.

Exposure separation distances shall be defined on a figure to support the FUS calculation and required fore flow (RFF).

- **Hydrant capacity shall be assessed to demonstrate the RFF can be achieved**. Please identify which hydrants are being considered to meet

the RFF on a fire hydrant coverage plan as part of the boundary conditions request.

Snow Storage:

- Any portion of the subject property which is intended to be used for permanent or temporary snow storage shall be as shown on the approved site plan and grading plan. Snow storage shall not interfere with approved grading and drainage patters or servicing. Snow storage areas shall be setback from the property lines, foundations, fencing or landscaping a minimum of 1.5m. Snow storage areas shall not occupy driveways, aisles, required parking spaces or any portion of a road allowance. If snow is to be removed from the site please indicate this on the plan(s).

Gas pressure regulating station

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.

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.

Required Engineering Plans and Studies:

PLANS:

- Existing Conditions and Removals Plan
- Site Servicing Plan
- Grade Control and Drainage Plan
- Erosion and Sediment Control Plan
- Roof Drainage Plan (If rooftop storage proposed)
- Topographical survey

REPORTS:

- Site Servicing and Stormwater Management Report (is required per section 4.7.1, policy 6 and section 4.7.1, policy 23 of the OP)
- Geotechnical Study/Investigation (including sensitive marine clays and unstable slopes) is required per section 10.1.4 of OP)
- Noise Control Study required as per section 10.2.1

- Phase I ESA 4) A Phase 1 and, where required, a Phase 2 ESA are required per section 10.1.6 OP
- Phase II ESA (Depending on recommendations of Phase I ESA)
- RSC (Record of the site Conditions)
- ECA (If the SWM system services two parcels)
- Site lighting certificate

Please refer to the **City of Ottawa Guide to Preparing Studies and Plans [Engineering]:**

Specific information has been incorporated into both the Guide to Preparing Studies and Plans for a site plan. The guide outlines the requirement for a statement to be provided on the plan about where the property boundaries have been derived from.

Added to the general information for servicing and grading plans is a note that an **O.L.S**. should be engaged when reporting on or relating information to property boundaries or existing conditions. The importance of engaging an **O.L.S**. for development projects is emphasized.

Phase One Environmental Site Assessment:

- A Phase I ESA is required to be completed in accordance with Ontario Regulation 153/04 in support of this development proposal to determine the potential for site contamination. Depending on the Phase I recommendations a Phase II ESA may be required.
- The Phase I ESA shall provide all the required Environmental Source Information as required by O. Reg. 153/04. ERIS records are available to public at a reasonable cost and need to be included in the ESA report to comply with O.Reg. 153/04 and the Official Plan. The City will not be in a position to approve the Phase I ESA without the inclusion of the ERIS reports.
- Official Plan Section 4.8.4:

https://ottawa.ca/en/city-hall/planning-and-development/official-plan-and-master-plans/official-plan/volume-1-official-plan/section-4-review-development-applications#4-8-protection-health-and-safety

RSC (Record of the site Conditions)

- A RSC is required when changing the land use (zoning) of a property to a more sensitive land use.

Submitting a record of site condition | Ontario.ca

Geotechnical Investigation:

- A Geotechnical Study/Investigation shall be prepared in support of this development proposal.
- Reducing the groundwater level in this area can lead to potential damages to surrounding structures due to excessive differential settlements of the ground. The impact of groundwater lowering on adjacent properties needs to be discussed and

investigated to ensure there will be no short term and long term damages associated with lowering the groundwater in this area.
- Geotechnical Study shall be consistent with the **Geotechnical Investigation and Reporting Guidelines for Development Applications**.

https://documents.ottawa.ca/sites/documents/files/geotech_report_en.pdf

Slope Stability Assessment Reports (If applicable)

- A report addressing the stability of slopes, prepared by a qualified geotechnical engineer licensed in the Province of Ontario, should be provided wherever a site has slopes (existing or proposed) steeper than 5 horizontal to 1 vertical (i.e., 11 degree inclination from horizontal) and/or more than 2 metres in height.
- A report is also required for sites having retaining walls greater than 1 metre high, that addresses the global stability of the proposed retaining walls. https://documents.ottawa.ca/en/document/slope-stability-guidelines-development-applications

Noise Study:

- A **Transportation Noise Assessment** is required as the subject development is located within 100m proximity of an Arterial Road
- A **Stationary Noise Assessment** is required in order to assess the noise impact of the proposed sources of stationary noise (mechanical HVAC system/equipment) of the development onto the surrounding residential area to ensure the noise levels do not exceed allowable limits specified in the City Environmental Noise Control Guidelines.

https://documents.ottawa.ca/sites/default/files/documents/enviro_noise_guide_en.pdf

Exterior Site Lighting:

- Any proposed light fixtures (both pole-mounted and wall mounted) must be part of the approved Site Plan. All external light fixtures must meet the criteria for Full Cut-off Classification as recognized by the Illuminating Engineering Society of North America (IESNA or IES), and must result in minimal light spillage onto adjacent properties (as a guideline, 0.5 fc is normally the maximum allowable spillage). In order to satisfy these criteria, the please provide the City with a **Certification (Statement) Letter** from an acceptable professional engineer stating that the design is compliant.

Fourth (4^{th}) Review Charge:

Please be advised that additional charges for each review, after the 3^{rd} 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 Site Plan process to determine the ability to construct site and copy **File Lead** on this request.

Please note that these comments are considered preliminary based on the information available to date and therefore maybe amended as additional details become available and presented to the city. It is the responsibility of the applicant to verify the above information. The applicant may contact me for follow-up questions related to engineering/infrastructure prior to submission of an application if necessary.

Infrastructure and Water Comments – Patrick Sammon

- We are preparing to tender the capital project shortly, and plan on performing a utility circulation in parallel to the tendering process. Note Hawthorne from Colonel By Drive to Main Street is within our project limits, with construction potentially starting as early as late June of this year.
- Although we feel we have the sewer and watermain set, release of the planned works drawings may be better deferred until we achieve the Utility Circulation or Tendering milestone drawing set.
- It is unclear what the timing of the development work is, but coordination for servicing should be done with our proposed mainline sewer / watermains and confirmed with the as-built information once available.
- As part of our work, burial of overhead hydro and communications lines will be conducted on this section of Hawthorne, which is likely already known.
- Please advise of the public awareness of this potential development as I am sure it will generate interest in the Old Ottawa East Community. I would like to know if this is known yet by the Councillor and the community, and how sensitive the information is at this stage.
- Below is the project link.
    - Greenfield Avenue, Main Street, Hawthorne Avenue et al. reconstruction project | City of Ottawa

Community Comments – Paul Goodkey, John Dance

- The community is opposed to the six-storey proposal.
    - Note: The four-storey height limit of 14.5 m on the south side of Hawthorne was the staff recommendation and Council's decision, per the zoning By-law 2015-59. That zoning by-law amendment followed from considerable public consultation with the OOECA, from early 2014 thru to enactment in 2015. Prior to 2015, the height limit was 20 m on both sides of Main and Hawthorne. That 20m height limit remains to be the case for the north side of Hawthorne and all of Main north of Clegg.
- Amenities for the neighbourhood are important – Exception 1839 talks about non-residential uses on the ground floor, we would like to see this on the entirety of the ground-floor, which is not addressed in this proposal.
    - Note that the zoning says, "When not a residential use listed in 198(12) and when located in the TM12 zone, residential uses are permitted to a maximum of

50% of the ground floor area of a building that faces Hawthorne Avenue and the non-residential uses on the ground floor must face Hawthorne Avenue."

- The front yard setback is important – the two-meter minimum and three-meter maximum would allow for wider sidewalks on private property, which is important to consider alongside the road widening allowance that will take place, with the two-meter on private property to be measured outside of the right-of-way widening.
- We are concerned about the treescape and street trees, we would like to see rear yard trees as well if possible.
- We believe that there are too many units being proposed – the Old Ottawa East Secondary Plan is looking for 150 dwelling units to be added along the entirety of Hawthorne, this site alone would cover 1/3rd of the target, which is too much.

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	ENGINEERING		S/A
S	**1. Site Servicing Plan**	2. Site Servicing Study / Assessment of Adequacy of Public Services	
S	**3. Grade Control and Drainage Plan**	**4. Geotechnical Study / Slope Stability Study**	S
	5. Composite Utility Plan	6. Groundwater Impact Study	
	7. Servicing Options Report	8. Wellhead Protection Study	
	9. Transportation Impact Assessment (TIA)	**10.Erosion and Sediment Control Plan / Brief**	S
S	**11.Storm water Management Report**	**12.Topographical Survey**	S
	13.Hydraulic Water main Analysis	**14.Noise Control Study**	S
S	**15.Roof Drainage Plan**	**16. Foundation Drainage System Detail (if applicable)**	S

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

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

S/A	ADDITIONAL REQUIREMENTS		S/A
S	**44. Applicant's Public Consultation Strategy (may be provided as part of the Planning Rationale)**	45.Site Lighting Plan	
A	**46. Site Lighting Certification Letter**	47.	

Meeting Date: March 24, 2022 Application Type: *Site Plan Control and Zoning By-law Amendment*

File Lead (Assigned Planner): Jessica Button Infrastructure Approvals Project Manager: Reza Bakhit

Site Address (Municipal Address): 12-20 Hawthorne Ave. *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, Real Estate 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, Real Estate and Economic Development Department.

Francois Thauvette

From: Eric Lalande <eric.lalande@rvca.ca>
Sent: Tuesday, August 23, 2022 10:30 AM
To: Francois Thauvette
Cc: Chris Visser
Subject: RE: 12-24 Hathorne Ave - Residential Development - RVCA Pre-Consultation

Hi Francois,

Based on the plan, and description, the RVCA has no on-site requirements for water quality protection. It is encouraged to implement best management practices into the design where possible.

Thank you,

Eric Lalande, MCIP, RPP
Planner, RVCA
613-692-3571 x1137

From: Francois Thauvette <f.thauvette@novatech-eng.com>
Sent: Monday, August 22, 2022 2:45 PM
To: Eric Lalande <eric.lalande@rvca.ca>
Cc: Chris Visser <c.visser@novatech-eng.com>
Subject: 12-24 Hathorne Ave - Residential Development - RVCA Pre-Consultation

Hi Eric,

We are working on a proposed residential development in the City of Ottawa (12-24 Hawthorne Ave). All existing properties will be merged. The site will include a 6-storey residential building with outdoor amenity space and 2 levels of UG parking (i.e., there will be no surface parking). See attached 3D rendering for details. Based on similar developments, we assume that on-site quality control measures will not be required. Please review and confirm if this assumption is correct.

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

Sanitary Sewage Calculations

12-24 Hawthorne Avenue - Proposed 6-Storey Mixed-Use Building
SANITARY SEWAGE ANALYSIS

Residential	**Post-Development**	
Number of 1-Bedroom/Studio Apartments	36	
Number of Persons per 1-Bdrm/Studio Apartment	1.4	
Number of 2-Bedroom Apartments (including Penthouse Loft Units)	31	
Number of Persons per 2-Bdrm Apartment	2.1	
Design Population	116	
Average Daily Flow per resident	280	L/c/day
Peak Factor (Harmon Formula)	3.76	
Peak Residential Flow	1.41	L/s
Commercial		
Commercial Space	284.0	m^2
Average Commercial Flow	2.8	$L/m^2/day$
Commercial Peaking Factor	1.5	
Peak Commercial Flow	**0.01**	**L/s**
Extraneous Flow		
Site Area	0.141	ha
Infiltration Allowance	0.33	L/s/ha
Peak Extraneous Flows	0.05	L/s
Total Peak Sanitary Flow	**1.47**	**L/s**

APPENDIX D

Water Demands, FUS Fire Flow Calculations, City of Ottawa Boundary Conditions and Hydrant Location Sketch

12-24 Hawthorne: 6 Storey Mixed-Use Building
WATER ANALYSIS

DOMESTIC WATER DEMANDS

Residential Use	Post-Development	
Number of 1-Bedroom/Studio Apartments	36	
Number of Persons per 1-Bdrm/Studio Apartment	1.4	
Number of 2-Bedroom Units	31	
Persons per 2-Bedroom Unit	2.1	
Total Number of Units	67	
Total Design Population	116	
Average Day Demand (280 L/c/day)	**0.38**	L/s/day
Maximum Day Demand (2.5 x avg. day)	**0.94**	**L/s**
Peak Hour Demand (2.2 x max. day)	**2.07**	**L/s**
Commercial/Amenity Use		
Commercial Space	284	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	**0.39**	**L/s**
Total Maximum Day Demand	**0.95**	**L/s**
Total Peak Hour Demand	**2.09**	**L/s**

BOUNDARY CONDITIONS

Maximum HGL =	105.5	m
Minimum HGL =	115.1	m
Max Day + Fire Flow =	96.0	m

PRESSURE TESTS

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

Average Ground Elevation 67.7 m

High Pressure Test = (Max HGL - Avg.Ground Elev.) x 1.42 PSI/m (should be between 50- 70 PSI)

High Pressure = **53.8** PSI

Low Pressure Test = (Min. HGL - Avg. Ground Elev.) x 1.42 PSI/m (should be > 40 PSI)

Low Pressure = **67.4** PSI

Max Day + Fire Flow Test = (Max Day + Fire Flow - Avg. Ground Elev.) x 1.42 PSI/m (should be > 20 PSI)

Max Day + Fire Flow Pressure = **40.2** PSI

FUS - Fire Flow Calculations

As per 2020 Fire Underwriter's Survey Guidelines

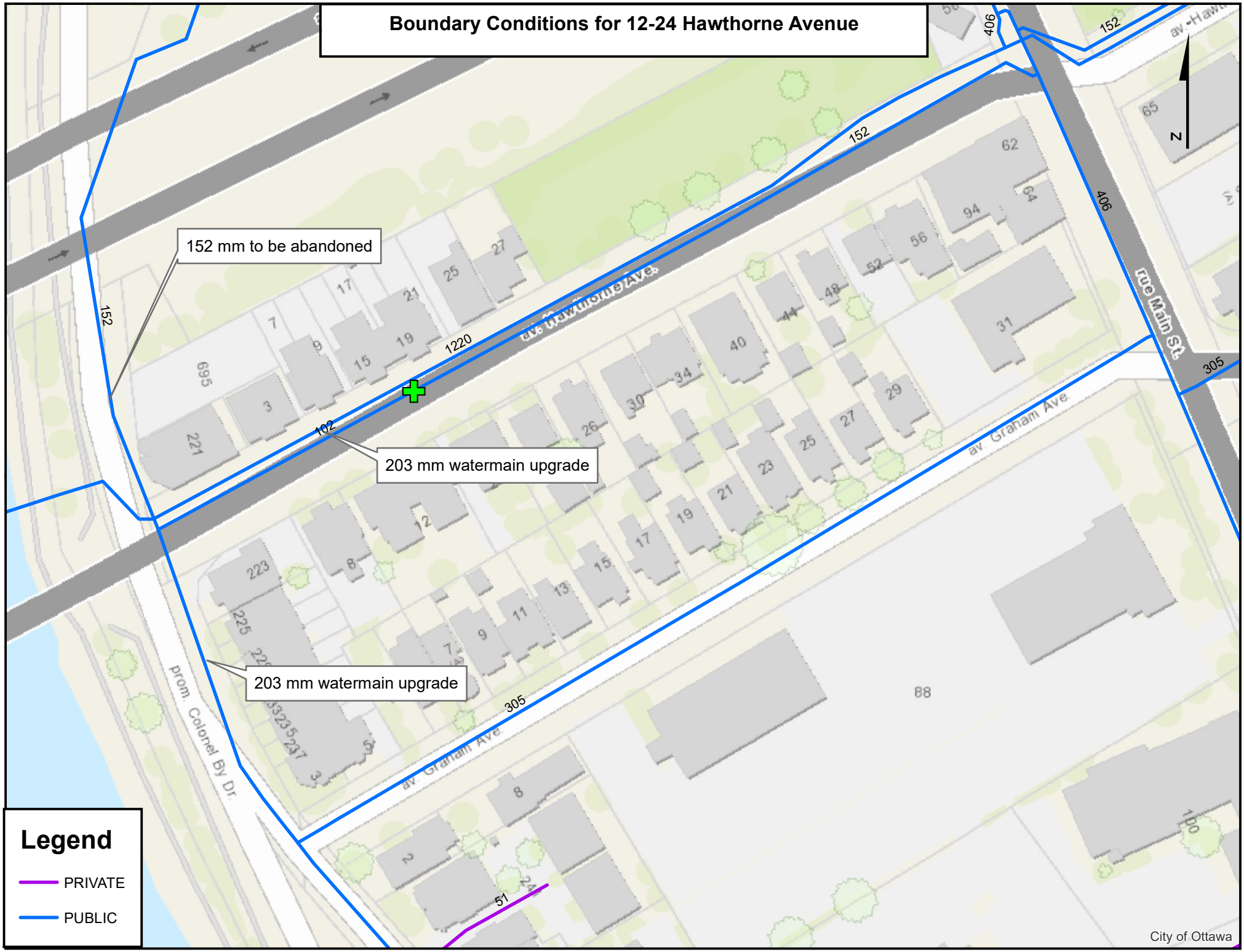
NOVATECH
Engineers, Planners & Landscape Architects

Novatech Project #: 122152
Project Name: 12-24 Hawthorne Avenue
Date: 9/13/2022
Input By: F. Thauvette
Reviewed By: F. Thauvette

Legend: Input by User; No Information or Input Required

Building Description: 6-Storey Residential Building
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	Building Footprint (m^2)	917			
		Number of Floors/Storeys	6			
		Protected Openings (1 hr)	No			
		Area of structure considered (m^2)			**3,668**	
	F	**Base fire flow without reductions**				**11,000**
		F = 220 **C** (**A**)$^{0.5}$				
Reductions or Surcharges						
3	**Occupancy hazard reduction or surcharge**			**Reduction/Surcharge**		
	(1)	Non-combustible		-25%	-15%	**9,350**
		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%	**-3,740**
		Standard Water Supply	Yes	-10%	-10%	
		Fully Supervised System		-10%		
				Cumulative Total	**-40%**	
5	**Exposure Surcharge (cumulative %, Maximum Exposure Adjustment Charge Used)**				**Surcharge**	
	(3)	North Side	20.1 - 30 m		10%	**7,013**
		East Side	0 - 3 m		25%	
		South Side	3.1 - 10 m		20%	
		West Side	0 - 3 m		25%	
				Cumulative Total	**75%**	
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


Boundary Conditions for 12-24 Hawthorne Avenue
152 mm to be abandoned
203 mm watermain upgrade
203 mm watermain upgrade
av. Hawthorne Ave.
av. Graham Ave.
rue Main St.
prom. Colonel By Dr.
152
406
305
102
1220
51
N
Legend
PRIVATE
PUBLIC
City of Ottawa

Chris Visser

From: Francois Thauvette
Sent: Wednesday, December 7, 2022 10:31 AM
To: Chris Visser
Subject: FW: 12-24 Hawthorne Ave - WM Boundary Conditions Request follow-up
Attachments: 12-24 Hawthorne Avenue REVISED December 2022 (2).pdf

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: Wu, John <John.Wu@ottawa.ca>
Sent: Wednesday, December 7, 2022 9:54 AM
To: Francois Thauvette <f.thauvette@novatech-eng.com>
Cc: Bakhit, Reza <reza.bakhit@ottawa.ca>
Subject: RE: 12-24 Hawthorne Ave - WM Boundary Conditions Request follow-up

Hi, Francois:

******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 12-24 Hawthorne Avenue (zone 1W) assumed to be connected to the upgraded 203 mm watermain on Hawthorne Avenue (see attached PDF for location).

Minimum HGL: 105.5 m

Maximum HGL: 115.1 m

Max Day + FF (217 L/s): 96.0 m

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.

John

From: Francois Thauvette <f.thauvette@novatech-eng.com>
Sent: November 29, 2022 10:27 AM
To: Wu, John <John.Wu@ottawa.ca>
Cc: Bakhit, Reza <reza.bakhit@ottawa.ca>; Kevin Fagan <kfagan@jbpa.ca>; Cara Ruddle <c.ruddle@novatech-eng.com>
Subject: RE: 12-24 Hawthorne Ave - WM Boundary Conditions Request follow-up

Did the modelling group give you an indication as to when they might provide the modelling results for our use?

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: Wu, John <John.Wu@ottawa.ca>
Sent: Tuesday, November 29, 2022 10:01 AM
To: Francois Thauvette <f.thauvette@novatech-eng.com>
Cc: Bakhit, Reza <reza.bakhit@ottawa.ca>
Subject: RE: 12-24 Hawthorne Ave - WM Boundary Conditions Request follow-up

Hi, Francois:

I had a meeting with them yesterday, they will provide point load for the BC at future infrastructures, not the three hydrants together. This will be future models for ant upgrades.
Please wait for the result.

If 217L/S can't meet, you need to lower the fire flow, 217 is really high for fire flow request.

Thanks.

John

From: Francois Thauvette <f.thauvette@novatech-eng.com>
Sent: November 29, 2022 9:56 AM
To: Wu, John <John.Wu@ottawa.ca>; Bakhit, Reza <reza.bakhit@ottawa.ca>
Cc: Kevin Fagan <kfagan@jbpa.ca>; Cara Ruddle <c.ruddle@novatech-eng.com>
Subject: RE: 12-24 Hawthorne Ave - WM Boundary Conditions Request follow-up

We are following-up on previous discussions and our August 23/22 request for municipal watermain boundary conditions (based on the proposed Hawthorne Ave. watermain upgrades). Based on your internal discussions, is the City's modeling group willing to provide the boundary conditions? They are required to finalize our servicing report in support of the SPC submission related to the proposed redevelopment of the subject site.

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: Bakhit, Reza <reza.bakhit@ottawa.ca>
Sent: Friday, November 18, 2022 6:59 AM
To: Francois Thauvette <f.thauvette@novatech-eng.com>
Cc: Wu, John <John.Wu@ottawa.ca>
Subject: RE: 18 Hawthorne - Update

Hi Francois,

The following are boundary conditions, HGL, for hydraulic analysis at 12-24 Hawthorne Avenue (zone 1W) assumed to be connected to the existing 102 mm watermain on Hawthorne Avenue (see attached PDF for location).

Minimum HGL: 105.3 m

Maximum HGL: 114.2 m

A multi hydrant analysis was performed for the three hydrants located within 150 m of the subject site. The total available flow is less than the required fire flow of 217 L/s.

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

Regards,

Reza Bakhit, P.Eng, C.E.T

Project Manager
Planning, Real Estate and Economic Development Department / Direction générale de la planification, des biens immobiliers et du développement économique
Development Review - Centeral Branch
City of Ottawa | Ville d'Ottawa
110 Laurier Avenue West Ottawa, ON | 110, avenue. Laurier Ouest. Ottawa (Ontario) K1P 1J1
613.580.2424 ext./poste 19346, reza.bakhit@ottawa.ca
Please note: Given the current pandemic, I will be working from home until further notice; reaching me by email is the easiest. I will be checking my voicemail, just not as frequently as I normally would be.

From: Francois Thauvette <f.thauvette@novatech-eng.com>
Sent: Wednesday, November 16, 2022 12:50 PM
To: Bakhit, Reza <reza.bakhit@ottawa.ca>
Subject: RE: 18 Hawthorne - Update

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: Bakhit, Reza <reza.bakhit@ottawa.ca>
Sent: Wednesday, November 16, 2022 12:50 PM
To: Francois Thauvette <f.thauvette@novatech-eng.com>
Cc: John Bassi <john@jbpa.ca>; Scott Alain <alain@fotenn.com>; Kevin Fagan <kfagan@jbpa.ca>; Cara Ruddle <c.ruddle@novatech-eng.com>
Subject: RE: 18 Hawthorne - Update

Hi Francois,

I just follow up with the modeling team to give this one priority.

Thanks,

Reza Bakhit, P.Eng, C.E.T
Project Manager
Planning, Real Estate and Economic Development Department / Direction générale de la planification, des biens immobiliers et du développement économique
Development Review - Centeral Branch
City of Ottawa | Ville d'Ottawa
110 Laurier Avenue West Ottawa, ON | 110, avenue. Laurier Ouest. Ottawa (Ontario) K1P 1J1
613.580.2424 ext./poste 19346, reza.bakhit@ottawa.ca
Please note: Given the current pandemic, I will be working from home until further notice; reaching me by email is the easiest. I will be checking my voicemail, just not as frequently as I normally would be.

From: Francois Thauvette <f.thauvette@novatech-eng.com>
Sent: Wednesday, November 16, 2022 12:42 PM
To: Bakhit, Reza <reza.bakhit@ottawa.ca>
Cc: John Bassi <john@jbpa.ca>; Scott Alain <alain@fotenn.com>; Kevin Fagan <kfagan@jbpa.ca>; Cara Ruddle <c.ruddle@novatech-eng.com>
Subject: RE: 18 Hawthorne - Update

Anything you can do to expedite the watermain boundary conditions would be greatly appreciated. As indicated below, Nader will deem our application complete and circulate if we can provide an updated report (incl. watermain boundary conditions) by Nov. 22, 2022.

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: Scott Alain <alain@fotenn.com>
Sent: Wednesday, November 16, 2022 12:17 PM
To: Kevin Fagan <kfagan@jbpa.ca>
Cc: John Bassi <john@jbpa.ca>; Francois Thauvette <f.thauvette@novatech-eng.com>
Subject: 18 Hawthorne - Update

Hi all,

I just spoke with Nader at the City and he let me know the following:

- We will still need the servicing report updated to include the boundary conditions, but that's the only outstanding element
- If we can get this to Nader on or before Nov. 22 (Tuesday), he can deem the application complete
- If we are unable to meet this deadline, he will have to deem the application incomplete until we have this ready
- Even if the servicing report update confirms existing services are inadequate, the application will still be considered complete and this is something that can be dealt with through the normal application process (i.e. a holding symbol) and should not hold up the process otherwise
- He will be ready to circulate the application as soon as we get in the above report.

Francois, is this timeline feasible on your end?

Thanks,

Scott Alain, RPP, MCIP (he/him)
Senior Planner

FOTENN

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Ottawa, ON K2P 2H7
T 613.730.5709 ext. 231
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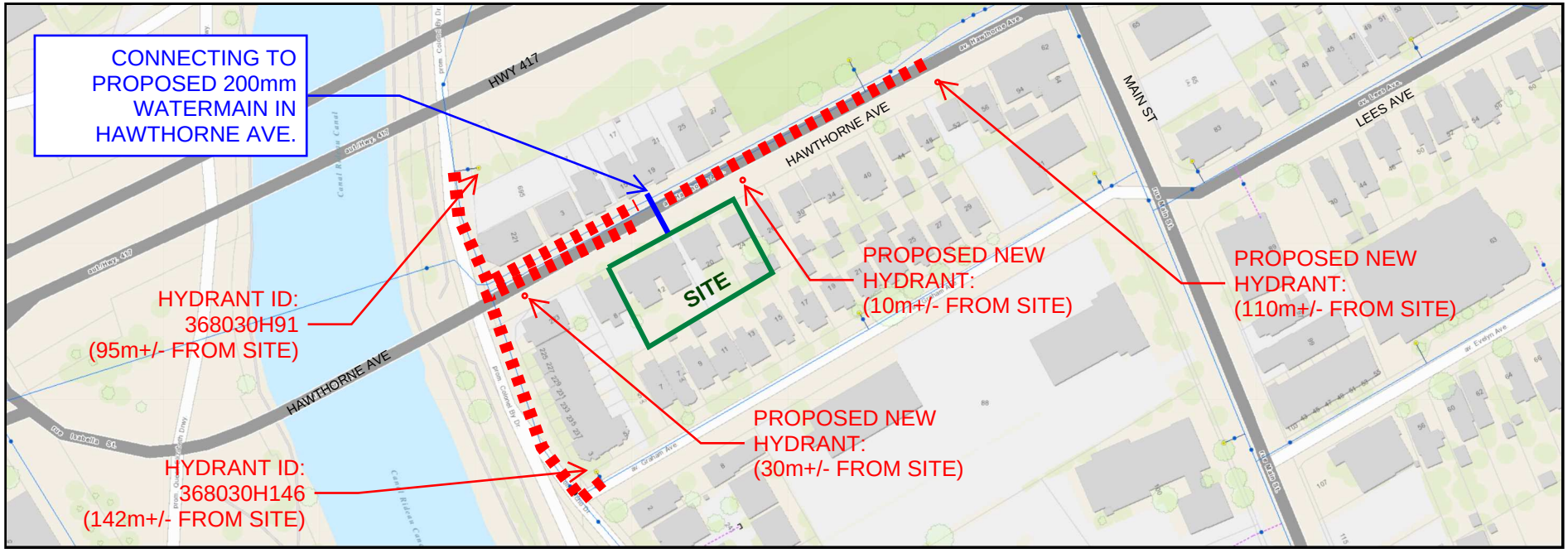
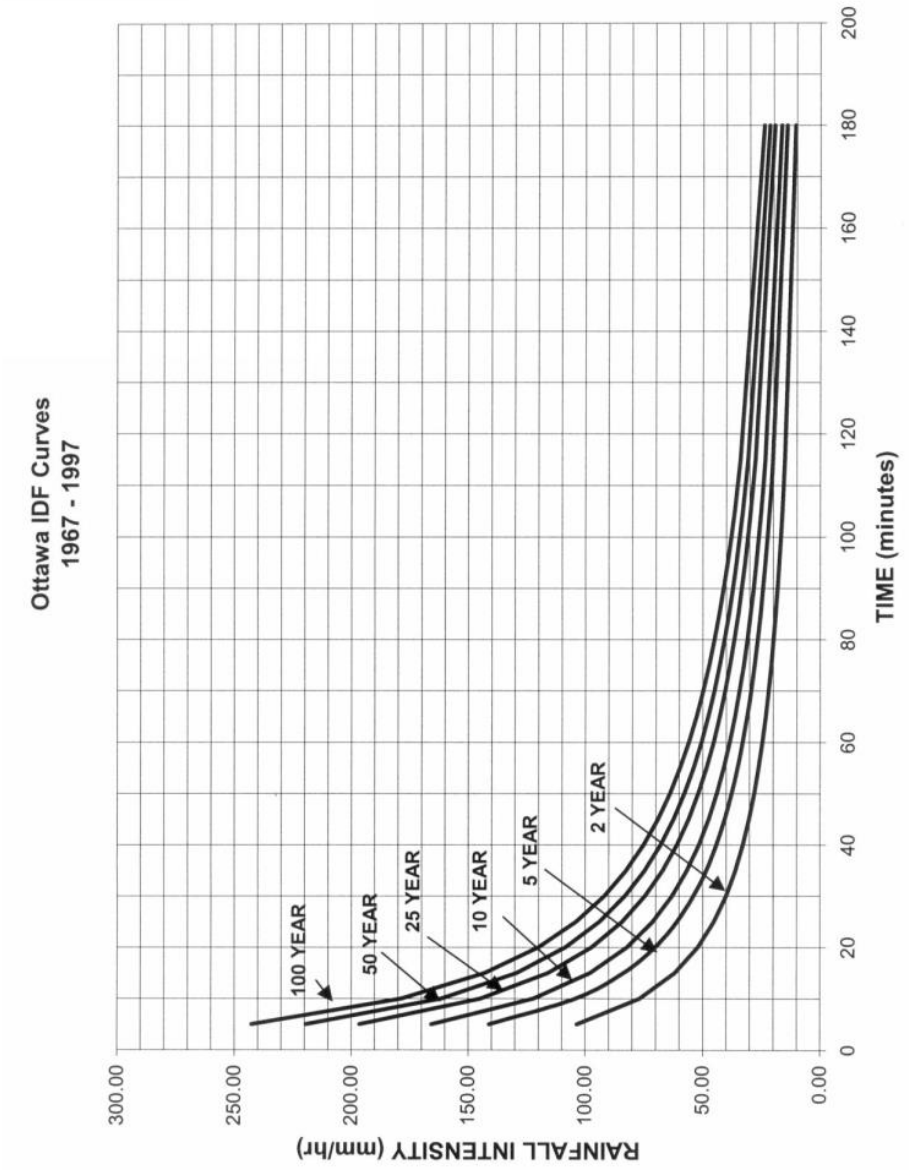
FIRE HYDRANT SKETCH AND WATER INFRASTRUCTURE



APPENDIX E

IDF Curves and SWM Calculations

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



Proposed 6-Storey Mixed-Use Building
12-24 Hawthorne Avenue

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_{w2} , C_{w5}	Weighted C_{w100}	2-Year Flow (L/s)	5-Year Flow (L/s)	100-Year Flow (L/s)	Allowable C_{value}	Allowable Flow 2-year (L/s)
Subject Site	0.141	0.063	0.022	0.056	0.58	0.66	17.3	23.5	46.4	0.5	15.1

T_c = 10mins

Post - Development : Sub-Catchment Areas and Weighted Runoff Coefficients						
Area	Description	Area (ha)	A_{imp} (ha) C=0.9	A_{perv} (ha) C=0.2	Weighted C_{w2} , C_{w5}	Weighted C_{w100}
A-1	Direct Runoff from Site	0.008	0.008	0.000	0.90	1.00
A-2	Controlled Internal SWM Tank	0.133	0.126	0.007	0.86	0.96
	Summed Area Check:	0.141				

Post - Development : Flows								
Area	Description	Peak Design Flow (L/s)			Storage Required (m^3)			Provided (m^3)
		2-year	5-year	100-year	2-year	5-year	100-year	
A-1	Direct Runoff from Site	1.5	2.1	4.0	-	-	-	-
A-2	Controlled Internal SWM Tank	11.0	11.0	11.0	8.1	14.1	38.9	> 51
	Totals :	**12.5**	**13.1**	**15.0**	**8.1**	**14.1**	**38.9**	**> 51**
	Over Controlled:	2.5	2.0	0.1				

Proposed 6-Storey Mixed-Use Building
Novatech Project No. 122152
Uncontrolled Runoff - 1:2 YEAR EVENT
AREA A-1 Direct Runoff from Site

OTTAWA IDF CURVE

Area = 0.008 ha Qallow = 1.5 L/s
C = 0.90 Vol(max) = 0.0 m3

Time (min)	Intensity (mm/hr)	Q (L/s)	Qnet (L/s)	Vol (m3)
5	103.57	2.07	0.54	0.16
10	76.81	1.54	0.00	0.00
15	61.77	1.24	-0.30	-0.27
20	52.03	1.04	-0.50	-0.60
25	45.17	0.90	-0.63	-0.95
30	40.04	0.80	-0.74	-1.32
35	36.06	0.72	-0.82	-1.71
40	32.86	0.66	-0.88	-2.11
45	30.24	0.61	-0.93	-2.52
50	28.04	0.56	-0.98	-2.93
55	26.17	0.52	-1.01	-3.34
60	24.56	0.49	-1.05	-3.76
65	23.15	0.46	-1.07	-4.19
70	21.91	0.44	-1.10	-4.61
75	20.81	0.42	-1.12	-5.04
90	18.14	0.36	-1.17	-6.34
105	16.13	0.32	-1.21	-7.65
120	14.56	0.29	-1.25	-8.97
135	13.30	0.27	-1.27	-10.30
150	12.25	0.25	-1.29	-11.63

Proposed 6-Storey Mixed-Use Building
Novatech Project No. 122152
Uncontrolled Runoff - 1:5 YEAR EVENT
AREA A-1 Direct Runoff from Site

OTTAWA IDF CURVE

Area = 0.008 ha Qallow = 2.1 L/s
C = 0.90 Vol(max) = 0.0 m3

Time (min)	Intensity (mm/hr)	Q (L/s)	Qnet (L/s)	Vol (m3)
5	141.18	2.83	0.74	0.22
10	104.19	2.09	0.00	0.00
15	83.56	1.67	-0.41	-0.37
20	70.25	1.41	-0.68	-0.82
25	60.90	1.22	-0.87	-1.30
30	53.93	1.08	-1.01	-1.81
35	48.52	0.97	-1.11	-2.34
40	44.18	0.88	-1.20	-2.88
45	40.63	0.81	-1.27	-3.44
50	37.65	0.75	-1.33	-4.00
55	35.12	0.70	-1.38	-4.56
60	32.94	0.66	-1.43	-5.13
65	31.04	0.62	-1.46	-5.71
70	29.37	0.59	-1.50	-6.29
75	27.89	0.56	-1.53	-6.87
90	24.29	0.49	-1.60	-8.64
105	21.58	0.43	-1.65	-10.42
120	19.47	0.39	-1.70	-12.21
135	17.76	0.36	-1.73	-14.01
150	16.36	0.33	-1.76	-15.82

Proposed 6-Storey Mixed-Use Building
Novatech Project No. 122152
Uncontrolled Runoff - 1:100 YEAR EVENT
AREA A-1 Direct Runoff from Site

OTTAWA IDF CURVE

Area = 0.008 ha Qallow = 4.0 L/s
C = 1.00 Vol(max) = 0.0 m3

Time (min)	Intensity (mm/hr)	Q (L/s)	Qnet (L/s)	Vol (m3)
5	242.70	5.40	1.43	0.43
10	178.56	3.97	0.00	0.00
15	142.89	3.18	-0.79	-0.71
20	119.95	2.67	-1.30	-1.56
25	103.85	2.31	-1.66	-2.49
30	91.87	2.04	-1.93	-3.47
35	82.58	1.84	-2.13	-4.48
40	75.15	1.67	-2.30	-5.52
45	69.05	1.54	-2.44	-6.58
50	63.95	1.42	-2.55	-7.65
55	59.62	1.33	-2.65	-8.73
60	55.89	1.24	-2.73	-9.82
65	52.65	1.17	-2.80	-10.92
70	49.79	1.11	-2.86	-12.03
75	47.26	1.05	-2.92	-13.14
90	41.11	0.91	-3.06	-16.51
105	36.50	0.81	-3.16	-19.90
120	32.89	0.73	-3.24	-23.32
135	30.00	0.67	-3.30	-26.76
150	27.61	0.61	-3.36	-30.21

Proposed 6-Storey Mixed-Use Building
Novatech Project No. 122152
Uncontrolled Runoff - 1:100 YR + 20% IDF Increase
AREA A-1 Direct Runoff from Site

OTTAWA IDF CURVE

Area = 0.008 ha Qallow = 4.8 L/s
C = 1.00 Vol(max) = 0.0 m3

Time (min)	Intensity (mm/hr)	Q (L/s)	Qnet (L/s)	Vol (m3)
5	291.24	6.48	1.71	0.51
10	214.27	4.77	0.00	0.00
15	171.47	3.81	-0.95	-0.86
20	143.94	3.20	-1.56	-1.88
25	124.62	2.77	-1.99	-2.99
30	110.24	2.45	-2.31	-4.16
35	99.09	2.20	-2.56	-5.38
40	90.17	2.01	-2.76	-6.62
45	82.86	1.84	-2.92	-7.89
50	76.74	1.71	-3.06	-9.18
55	71.55	1.59	-3.17	-10.47
60	67.07	1.49	-3.27	-11.79
65	63.18	1.41	-3.36	-13.11
70	59.75	1.33	-3.44	-14.43
75	56.71	1.26	-3.50	-15.77
90	49.33	1.10	-3.67	-19.81
105	43.80	0.97	-3.79	-23.89
120	39.47	0.88	-3.89	-27.99
135	36.00	0.80	-3.96	-32.12
150	33.13	0.74	-4.03	-36.26

Proposed 6-Storey Mixed-Use Building
Novatech Project No. 122152
REQUIRED STORAGE - 1:2 YEAR EVENT
AREA A-2 Controlled Internal SWM Tank

OTTAWA IDF CURVE

Area = 0.133 ha Qallow = 11.00 L/s
C = 0.86 Vol(max) = 8.1 m3

Time (min)	Intensity (mm/hr)	Q (L/s)	Qnet (L/s)	Vol (m3)
5	103.57	33.05	22.05	6.62
10	76.81	24.51	13.51	8.11
15	61.77	19.71	8.71	7.84
20	52.03	16.61	5.61	6.73
25	45.17	14.41	3.41	5.12
30	40.04	12.78	1.78	3.20
35	36.06	11.51	0.51	1.07
40	32.86	10.49	-0.51	-1.23
45	30.24	9.65	-1.35	-3.64
50	28.04	8.95	-2.05	-6.15
55	26.17	8.35	-2.65	-8.74
60	24.56	7.84	-3.16	-11.39
65	23.15	7.39	-3.61	-14.08
75	20.81	6.64	-4.36	-19.61
90	18.14	5.79	-5.21	-28.13
120	14.56	4.65	-6.35	-45.74
150	12.25	3.91	-7.09	-63.81
180	10.63	3.39	-7.61	-82.17
210	9.42	3.00	-8.00	-100.74
240	8.47	2.70	-8.30	-119.45

Proposed 6-Storey Mixed-Use Building
Novatech Project No. 122152
REQUIRED STORAGE - 1:5 YEAR EVENT
AREA A-2 Controlled Internal SWM Tank

OTTAWA IDF CURVE

Area = 0.133 ha Qallow = 11.00 L/s
C = 0.86 Vol(max) = 14.1 m3

Time (min)	Intensity (mm/hr)	Q (L/s)	Qnet (L/s)	Vol (m3)
5	141.18	45.06	34.06	10.22
10	104.19	33.25	22.25	13.35
15	83.56	26.67	15.67	14.10
20	70.25	22.42	11.42	13.70
25	60.90	19.43	8.43	12.65
30	53.93	17.21	6.21	11.18
35	48.52	15.48	4.48	9.42
40	44.18	14.10	3.10	7.44
45	40.63	12.97	1.97	5.31
50	37.65	12.02	1.02	3.05
55	35.12	11.21	0.21	0.69
60	32.94	10.51	-0.49	-1.75
65	31.04	9.91	-1.09	-4.26
75	27.89	8.90	-2.10	-9.45
90	24.29	7.75	-3.25	-17.54
120	19.47	6.21	-4.79	-34.47
150	16.36	5.22	-5.78	-52.00
180	14.18	4.53	-6.47	-69.92
210	12.56	4.01	-6.99	-88.11
240	11.29	3.60	-7.40	-106.49

Proposed 6-Storey Mixed-Use Building
Novatech Project No. 122152
REQUIRED STORAGE - 1:100 YEAR EVENT
AREA A-2 Controlled Internal SWM Tank

OTTAWA IDF CURVE

Area = 0.133 ha Qallow = 11.00 L/s
C = 0.96 Vol(max) = 38.9 m3

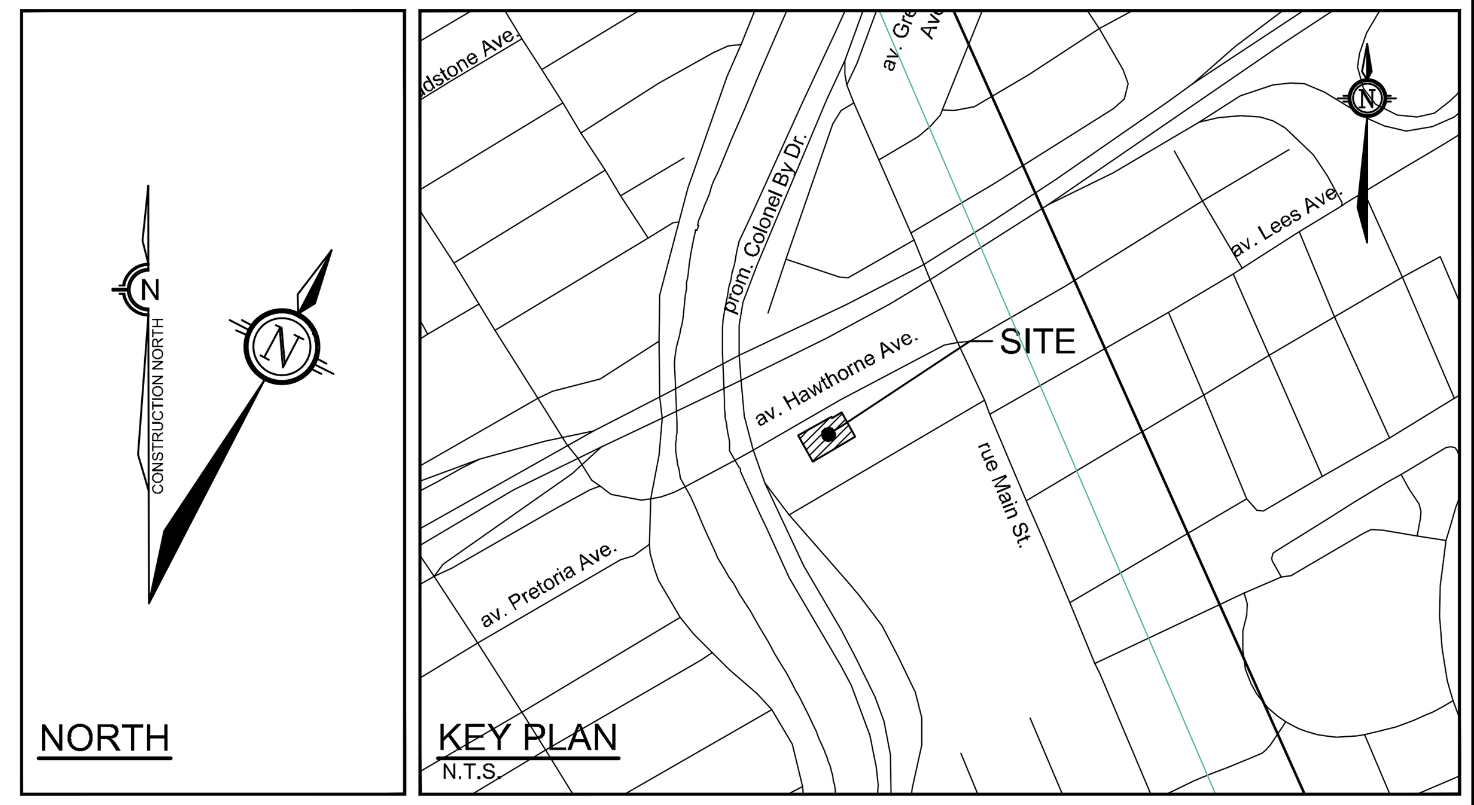
Time (min)	Intensity (mm/hr)	Q (L/s)	Qnet (L/s)	Vol (m3)
5	242.70	86.20	75.20	22.56
10	178.56	63.41	52.41	31.45
15	142.89	50.75	39.75	35.77
20	119.95	42.60	31.60	37.92
25	103.85	36.88	25.88	38.82
30	91.87	32.63	21.63	38.93
35	82.58	29.33	18.33	38.49
40	75.15	26.69	15.69	37.65
45	69.05	24.52	13.52	36.51
50	63.95	22.71	11.71	35.14
55	59.62	21.18	10.18	33.58
60	55.89	19.85	8.85	31.86
65	52.65	18.70	7.70	30.02
75	47.26	16.78	5.78	26.02
90	41.11	14.60	3.60	19.44
120	32.89	11.68	0.68	4.91
150	27.61	9.81	-1.19	-10.75
180	23.90	8.49	-2.51	-27.12
210	21.14	7.51	-3.49	-43.98
240	19.01	6.75	-4.25	-61.20

Proposed 6-Storey Mixed-Use Building
Novatech Project No. 122152
REQUIRED STORAGE - 1:100 YR + 20% IDF Increase
AREA A-2 Controlled Internal SWM Tank

OTTAWA IDF CURVE

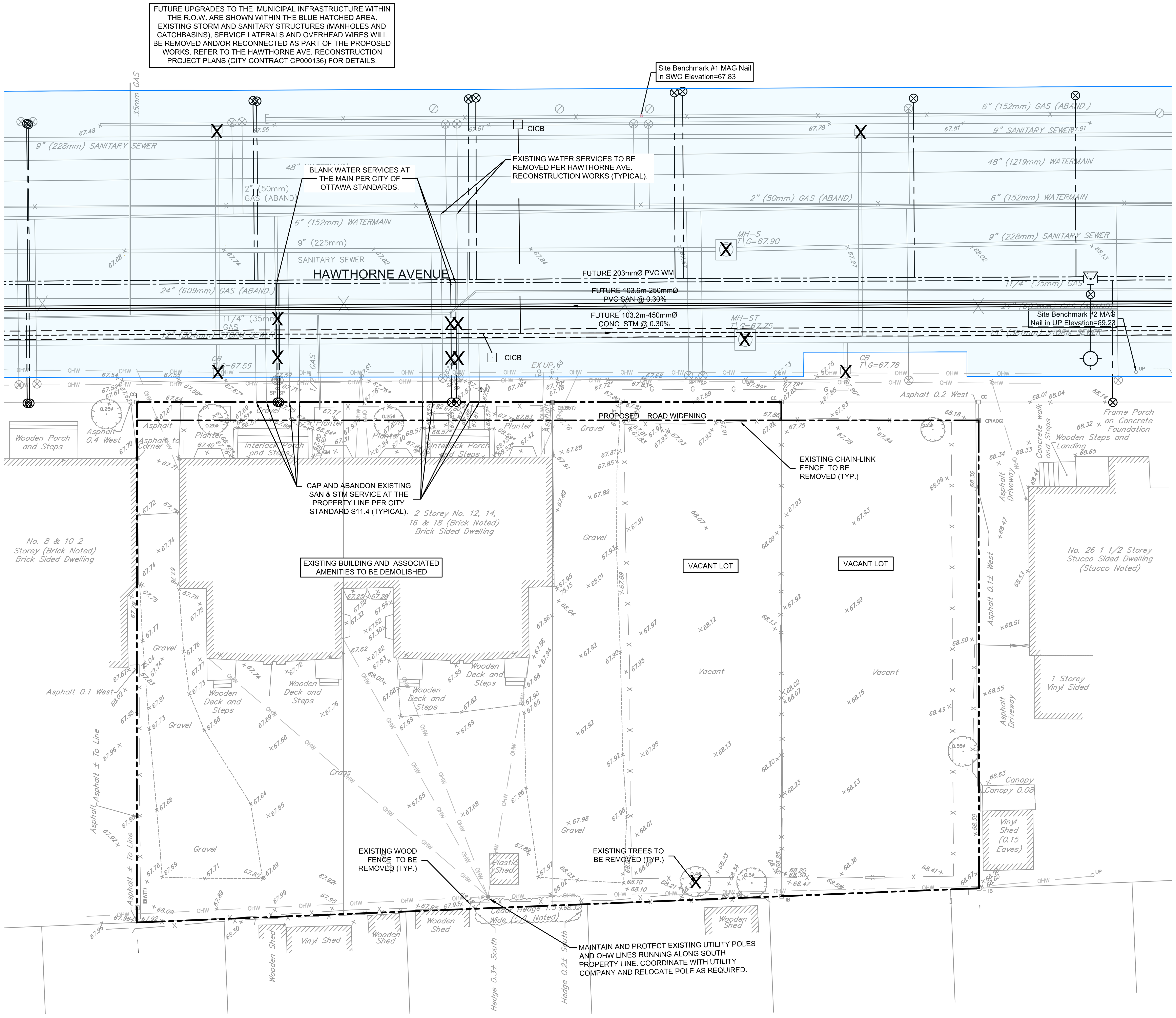
Area = 0.133 ha Qallow = 11.00 L/s
C = 0.96 Vol(max) = 50.8 m3

Time (min)	Intensity (mm/hr)	Q (L/s)	Qnet (L/s)	Vol (m3)
5	291.24	103.43	92.43	27.73
10	214.27	76.10	65.10	39.06
15	171.47	60.90	49.90	44.91
20	143.94	51.12	40.12	48.14
25	124.62	44.26	33.26	49.89
30	110.24	39.15	28.15	50.67
35	99.09	35.19	24.19	50.80
40	90.17	32.02	21.02	50.46
45	82.86	29.43	18.43	49.75
50	76.74	27.26	16.26	48.77
55	71.55	25.41	14.41	47.55
60	67.07	23.82	12.82	46.16
65	63.18	22.44	11.44	44.60
75	56.71	20.14	9.14	41.13
90	49.33	17.52	6.52	35.21
120	39.47	14.02	3.02	21.74
150	33.13	11.77	0.77	6.90
180	28.68	10.19	-0.81	-8.78
210	25.37	9.01	-1.99	-25.06
240	22.81	8.10	-2.90	-41.76



LEGEND

- X — REMOVALS
- FUTURE 203mmØ PVC WM — PROPOSED WATERMAIN (PER HAWTHORNE RECONSTRUCTION PROJECT)
- HYD, VB — PROPOSED HYDRANT c/w LEAD & VALVE & VALVE BOX (PER HAWTHORNE RECONSTRUCTION PROJECT)
- FUTURE 103.9m-150mmØ PVC SAN @ 0.30% — PROPOSED SANITARY SEWER (PER HAWTHORNE RECONSTRUCTION PROJECT)
- CICB — PROPOSED CATCHBASIN C/W LEAD (PER HAWTHORNE RECONSTRUCTION PROJECT)
- FUTURE 103.2m-450mmØ CONC. STM @ 0.30% — PROPOSED STORM SEWER (PER HAWTHORNE RECONSTRUCTION PROJECT)
- EXISTING CONCRETE CURB
- V&VB — EXISTING VALVE & VALVE BOX
- EX UP — EXISTING UTILITY POLE
- EXISTING TREES / VEGETATION
- MH-ST — EXISTING STORM MANHOLE & SEWER
- CB — EXISTING CATCHBASIN C/W CATCHBASIN LEAD
- MH-S — EXISTING SANITARY MANHOLE & SEWER



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, AND ARE REFERRED TO CITY OF OTTAWA BENCHMARK OTT 25, HAVING AN ELEVATION OF 69.613.
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. TEMPORARY JOB BENCHMARK #1 DESCRIPTION IS LOCATED ON MAG NAIL IN CONCRETE SIDEWALK LOCATED APPROXIMATELY 18m NORTH OF THE NORTH PROPERTY BOUNDARY ALONG HAWTHORNE AVE. TEMPORARY BENCHMARK #2 DESCRIPTION IS MAG NAIL IN UTILITY POLE LOCATED ON BOULEVARD APPROXIMATELY 10m EAST FROM EAST PROPERTY BOUNDARY ALONG HAWTHORNE AVE. SEE TOPOGRAPHICAL PLAN OF SURVEY OF LOTS 2, 3, 4, 5 AND PART OF LOT 6, REGISTERED PLAN 220, CITY OF OTTAWA, SURVEYED BY ANNIS, O'SULLIVAN, VOLLEBEKK LTD.
4. A NEW TEMPORARY BENCHMARK MAY BE REQUIRED IF EXISTING BENCHMARKS ARE DISTURBED DURING THE HAWTHORNE AVE. RECONSTRUCTION PROJECT. ALTERNATIVELY, CONTRACTOR MAY NEED TO USE HAWTHORNE AVENUE RECONSTRUCTION PROJECT BENCHMARKS.

M:\2022\122152\CAD\Civil\122152-REM.dwg, REM, Apr 12, 2023 - 12:24pm, zali

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
JBPA Developments Inc.
107 Pretoria Avenue
Ottawa, ON, K1S 1W8

CONTACT: KEVIN FAGAN
Tel: (613) 695-6767
EMAIL: kfagan@jbpa.ca

No.	REVISION	DATE	BY
1.	ISSUED FOR SITE PLAN CONTROL APPROVAL	APRIL 12/23	FST

SCALE 1:150

DESIGN	CV/ZA
CHECKED	FST
DRAWN	ZA
CHECKED	FST
APPROVED	FST

FOR REVIEW ONLY

LICENSED PROFESSIONAL ENGINEER
F.S. THAUVETTE
100041399
APR 12, 2023
PROVINCE OF ONTARIO

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Telephone (613) 254-9643
Facsimile (613) 254-5867
Website www.novatech-eng.com

LOCATION
CITY OF OTTAWA
12-24 HAWTHORNE AVENUE

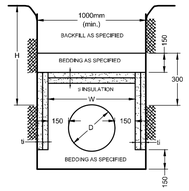
DRAWING NAME
EXISTING CONDITIONS AND REMOVALS PLAN

PROJECT No. 122152
REV # 1
DRAWING No. 122152-REM

D07-12-22-____
PLAN #____

LEGEND

PROPERTY LINE	
200mmØ SAN @ 1.00%	PROPOSED SANITARY SERVICE
200mmØ STM @ 1.00%	PROPOSED STORM SERVICE
DD □	MECHANICAL DECK DRAIN ABOVE U/G PARKING
AD □	AREA DRAIN OUTSIDE OF U/G PARKING LIMITS
(M) (IM)	PROPOSED WATER METER AND REMOTE METER
	PROPOSED BARRIER CURB
DC	PROPOSED DEPRESSED CURB
FUTURE 103.9m-150mmØ PVC SAN @ 0.30%	PROPOSED SANITARY SEWER (PER HAWTHORNE RECONSTRUCTION PROJECT)
CICB □	PROPOSED CATCHBASIN C/W LEAD (PER HAWTHORNE RECONSTRUCTION PROJECT)
FUTURE 103.2m-450mmØ CONC. STM @ 0.30%	PROPOSED STORM SEWER (PER HAWTHORNE RECONSTRUCTION PROJECT)
HYD VB	PROPOSED HYDRANT c/w LEAD & VALVE & VALVE BOX (PER HAWTHORNE RECONSTRUCTION PROJECT)
FUTURE 203mmØ PVC WM	PROPOSED WATERMAIN (PER HAWTHORNE RECONSTRUCTION PROJECT)
	PROPOSED HYDRO DUCTS (PER HAWTHORNE RECONSTRUCTION PROJECT)
150mmØ VB	PROPOSED WATER SERVICE AND DIAMETER
	PROPOSED VALVE & VALVE BOX
	PROPOSED TEE C/W THRUSTBLOCK
	PROPOSED CAP
	PROPOSED BUILDING ENTRANCE
X	REMOVALS
Y	PROPOSED SIAMESE CONNECTION
LS ○	PROPOSED STREET LIGHT
FFE	FINISHED FLOOR ELEVATION
USF	UNDERSIDE OF FOOTING ELEVATION
MH-S	EXISTING CONCRETE CURB
MH-ST	EXISTING SANITARY MANHOLE & SEWER
CB	EXISTING STORM MANHOLE & SEWER
	EXISTING CATCHBASIN C/W CATCHBASIN LEAD
150mmØ WM	EXISTING WATERMAIN
EX UP	EXISTING TREES / VEGETATION
OHW	EXISTING UTILITY POLE
	EXISTING OVERHEAD UTILITY WIRES

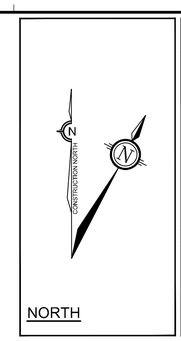


COVER (mm)	THICKNESS (mm)
1800-1500	50
1500-1200	75
1200-900	100
900-600	125

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

NOTES:
1. INSULATE ALL SEWER PIPES THAT ARE LESS THAN 600mmØ AND HAVE LESS THAN 1.8m COVER WITH EXPANDED POLYSTYRENE INSULATION AS SHOWN.
2. THE THICKNESS OF INSULATION SHALL BE THE EQUIVALENT OF 25mm FOR EVERY 300mm REDUCTION IN THE REQUIRED DEPTH OF COVER (SEE TABLE)

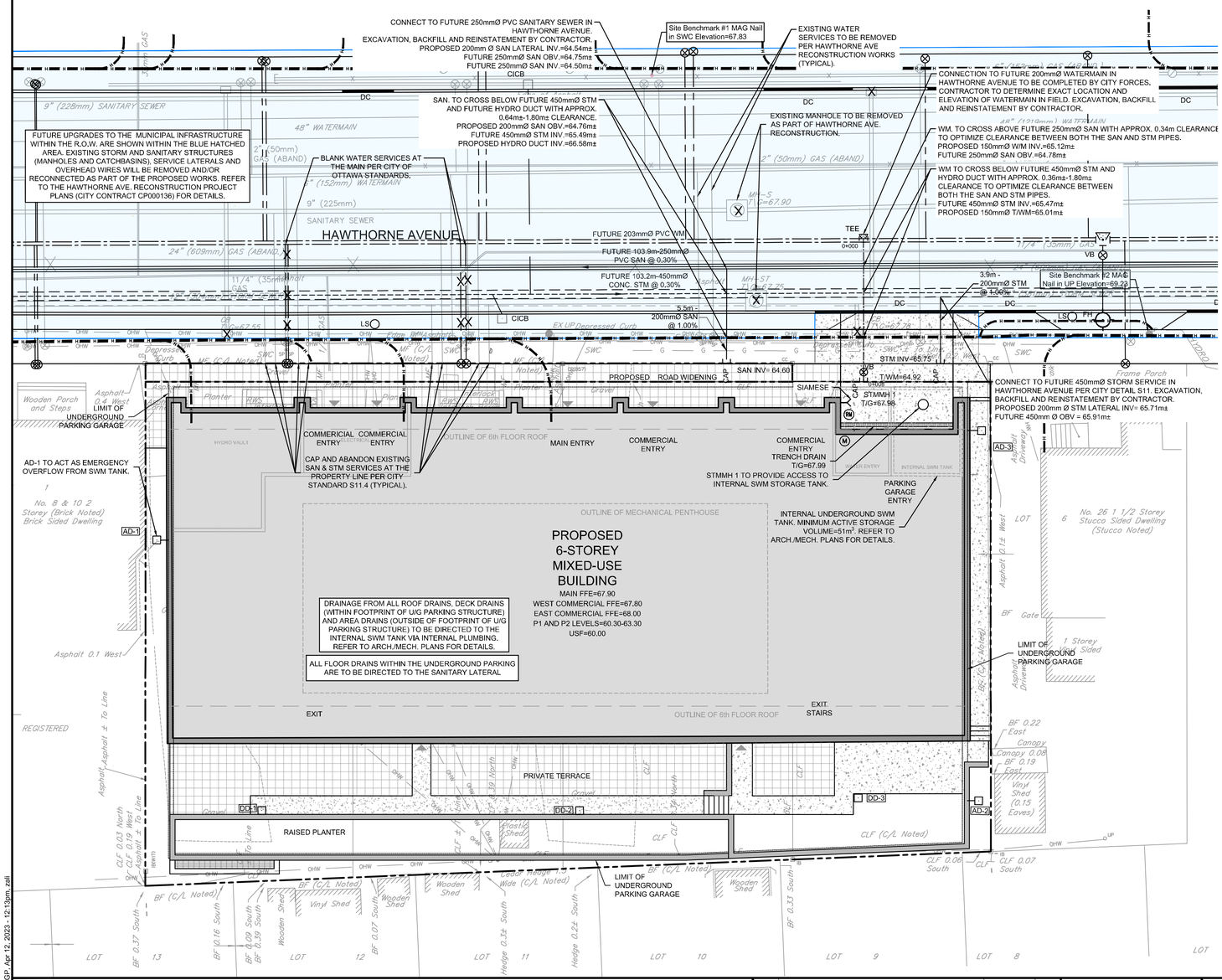
INSULATION DETAIL FOR SHALLOW SEWERS ONLY
NOT TO SCALE



INTERNAL SWM STORAGE TANK

DESIGN EVENT	STORAGE SYSTEM CONTROLLED FLOW	STORAGE VOLUMES	
		REQUIRED	PROVIDED
1:2 YR	PUMPED FLOW RATE = 11.0 L/s	8.1 m³	> 51 m³
1:5 YR		14.1 m³	
1:100 YR		38.9 m³	
1:100+20%		50.8 m³	

NOTES:
1. ALL DRAINAGE FROM AREA A-2 (PROPOSED AMENITY AREA DECK DRAINS/AREA 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.



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 MUNICIPAL AUTHORITIES.
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 (58-19PA-R0, DATED AUGUST 04, 2022), PREPARED BY YURI MENDEZ ENGINEERING); 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 SURFACED AREAS AND DIMENSIONS.
11. REFER TO THE 'DEVELOPMENT SERVICING STUDY AND STORMWATER MANAGEMENT REPORT' (R-2022-143) PREPARED BY NOVATECH.
12. SAW CUT AND KEYGRIND ASPHALT AT ALL ROAD CUTS AND ASPHALT TIE-IN POINTS AS PER CITY OF OTTAWA STANDARDS (R10).

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
STORM / SANITARY MANHOLE (1200Ø)	701.010	OPSD
SANITARY MANHOLE FRAME AND COVER	401.010 - TYPE 'A'	OPSD
STORM/CATCHBASIN MANHOLE (1800Ø)	701.012	OPSD
STORM/CBMH FRAME AND COVER	401.010 - TYPE 'B'	OPSD
WATERTIGHT MANHOLE FRAME AND COVER	401.030	OPSD
CATCHBASIN (600x600)	705.010	OPSD
CATCHBASIN FRAME & COVER	S19	CITY OF OTTAWA
SEWER TRENCH	S6	CITY OF OTTAWA
STORM SEWER	PVC DR 35 (450mmØ PIPE AND SMALLER)	
STORM SEWER	CONCRETE 65-D (600mmØ PIPE AND LARGER)	
SANITARY SEWER	PVC DR 35	

3. THE SANITARY SERVICE LATERAL SHALL BE EQUIPPED WITH BACKFLOW PREVENTERS WITHIN THE BUILDING FOOTPRINT AS PER CITY OF OTTAWA STANDARD DETAILS S14.1 OR S14.2. REFER TO MECHANICAL PLANS FOR DETAILS.
4. THE STORM SERVICE LATERAL SHALL BE EQUIPPED WITH A BACKFLOW PREVENTER WITHIN THE BUILDING FOOTPRINT AS PER CITY OF OTTAWA STANDARD DETAILS S14, REFER TO MECHANICAL PLANS FOR DETAILS.
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. INSULATE ALL PIPES (SAN / STM) THAT HAVE LESS THAN 1.8m COVER WITH H=40 INSULATION PER INSULATION DETAIL FOR SHALLOW SEWERS. PROVIDE 150mm CLEARANCE BETWEEN PIPE AND INSULATION.
8. CONCRETE MANHOLES ARE TO BE 1200mmØ STRUCTURES UNLESS OTHERWISE NOTED ON THE DRAWING. 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.
9. TYPICAL STORM MANHOLES AND CATCHBASIN MANHOLES ARE TO HAVE 300mm SUMPS UNLESS OTHERWISE INDICATED.
10. THE CONTRACTOR IS 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. PROVIDE A COPY OF ALL CCTV INSPECTION REPORTS TO THE ENGINEER FOR REVIEW.
11. CONTRACTOR TO PROVIDE THE CONSULTANT WITH A GENERAL PLAN OF SERVICES INDICATING ALL APPLICABLE 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 AND ANY ALIGNMENT CHANGES, ETC.
12. 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 410.07.15, 410.07.15.04 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.

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'.
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 BY OPEN STRUCTURES	W23	CITY OF OTTAWA
VALVE BOX ASSEMBLY	W24	CITY OF OTTAWA
WATERMAIN CROSSING BELOW SEWERS	W25	CITY OF OTTAWA
WATERMAIN CROSSING ABOVE SEWERS	W25.2	CITY OF OTTAWA
CATHODIC PROTECTION FOR PVC WATERMAINS	W40	CITY OF OTTAWA
WATERMAIN MATERIAL	PVC DR 18 (100mm AND LARGER)	

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

PROPOSED 150mmØ WATER SERVICE TABLE

Station	F/G ELEVATION	TOP OF WATERMAIN	DESCRIPTION
1+000.00	67.91	65.51 *	CONNECTION TO FUTURE 200mmØ WM
1+001.40	67.86	65.27	WATERMAIN CROSSING ABOVE SAN (0.34m CLEARANCE)
1+002.98	67.81	65.01	WATERMAIN CROSSING UNDER STORM (0.36m CLEARANCE)
1+004.53	67.84	64.77	11.25° VERTICAL BEND
1+005.56	67.87	64.81	WATERMAIN CROSSING UNDER HYDRO DUCT (1.8m CLEARANCE)
1+007.60	67.93	64.89	VALVE BOX (~3.0m DEPTH)
1+008.17	67.95	64.92	CAP

* CONNECTION TO FUTURE 200mmØ PVC WATERMAIN. EXACT ELEVATION TO BE FIELD DETERMINED.

BENCHMARK NOTES:

1. ELEVATIONS SHOWN ARE GEODETIC AND ARE REFERRED TO THE CGVD28 GEODETIC DATUM, AND ARE REFERRED TO CITY OF OTTAWA BENCHMARK OTT 25, HAVING AN ELEVATION OF 69.613.
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. TEMPORARY JOB BENCHMARK #1 DESCRIPTION IS LOCATED ON MAG NAIL IN CONCRETE SIDEWALK LOCATED APPROXIMATELY 18m NORTH OF THE NORTH PROPERTY BOUNDARY ALONG HAWTHORNE AVE. TEMPORARY BENCHMARK #2 DESCRIPTION IS MAG NAIL IN UTILITY POLE LOCATED ON BOULEVARD APPROXIMATELY 10m EAST FROM EAST PROPERTY BOUNDARY ALONG HAWTHORNE AVE. SEE TOPOGRAPHICAL PLAN OF SURVEY OF LOTS 2, 3, 4, 5 AND PART OF LOT 6, REGISTERED PLAN 220, CITY OF OTTAWA, SURVEYED BY ANNIS, O'SULLIVAN, VOLLEBEKK LTD.
4. A NEW TEMPORARY BENCHMARK MAY BE REQUIRED IF EXISTING BENCHMARKS ARE DISTURBED DURING THE HAWTHORNE AVE. RECONSTRUCTION PROJECT. ALTERNATIVELY, CONTRACTOR MAY NEED TO USE HAWTHORNE AVENUE RECONSTRUCTION PROJECT BENCHMARKS.

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
JBPA Developments Inc.
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Ottawa, ON, K1S 1W8

CONTACT: KEVIN FAGAN
Tel: (613) 695-6767
EMAIL: kfagan@jbpa.ca

No.	REVISION	DATE	BY
1.	ISSUED FOR SITE PLAN CONTROL APPROVAL	APRIL 12/23	FST

SCALE
1:150
1:150
0 2 4 6

DESIGN CV/ZA
CHECKED FST
DRAWN ZA
CHECKED FST
APPROVED FST

FOR REVIEW ONLY

PROFESSIONAL ENGINEER — F.S. THAUVETTE — 100041399 — APR 12, 2023 — 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
12-24 HAWTHORNE AVENUE

DRAWING NAME
GENERAL PLAN OF SERVICES

PROJECT No. 122152
REV REV # 1
DRAWING No. 122152-GP

D07-12-22-

PLAN #

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LEGEND

67.80 / 67.86 EXISTING ELEVATION	PROPOSED ELEVATION
× 67.60	EXISTING ELEVATION
67.80*	PROPOSED HAWTHORNE AVENUE RE-CONSTRUCTION DESIGN ELEVATION
T/W=68.50	PROPOSED TOP OF RETAINING WALL ELEVATION
68.00	PROPOSED TERRACE/FLOOR ELEVATION
2.0%	GRADE AND DIRECTION
	MAXIMUM 3:1 SIDESLOPE
	EMERGENCY OVERLAND FLOW ROUTE
CBMH 1	PROPOSED CATCHBASIN MANHOLE
VB	PROPOSED VALVE & VALVE BOX
	PROPOSED BARRIER CURB (PER SC1.1)
DC	PROPOSED DEPRESSED CURB (PER SC1.1)
CICB	PROPOSED CURB INLET CATCHBASIN (PER HAWTHORNE RECONSTRUCTION PROJECT)
HYD VB	PROPOSED HYDRANT c/w VALVE & VALVE BOX (PER HAWTHORNE RECONSTRUCTION PROJECT)
DD	MECHANICAL DECK DRAIN ABOVE U/G PARKING
AD	AREA DRAIN OUTSIDE OF U/G PARKING LIMITS
FFE	PROPOSED FINISHED FLOOR ELEVATION
USF	PROPOSED UNDERSIDE OF FOOTING ELEVATION
	BUILDING ENTRANCE / EXIT
X	REMOVALS
	PROPOSED SILT FENCING (OPSD 219.110)
M M	PROPOSED MUD MAT / CONSTRUCTION ENTRANCE
LS	PROPOSED STREET LIGHT
	EXISTING CONCRETE CURB
	EXISTING TREES / VEGETATION
UP	EXISTING UTILITY POLE C/W GUY WIRES
	EXISTING FENCE
	EXISTING LIGHT STANDARD
MH-S	EXISTING SANITARY MANHOLE & SEWER
MH-ST	EXISTING STORM MANHOLE & SEWER
CB	EXISTING CATCHBASIN C/W CATCHBASIN LEAD

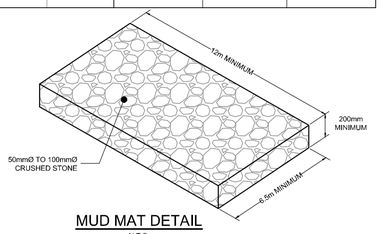
Erosion and Sediment Control Responsibilities:

				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	M M	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

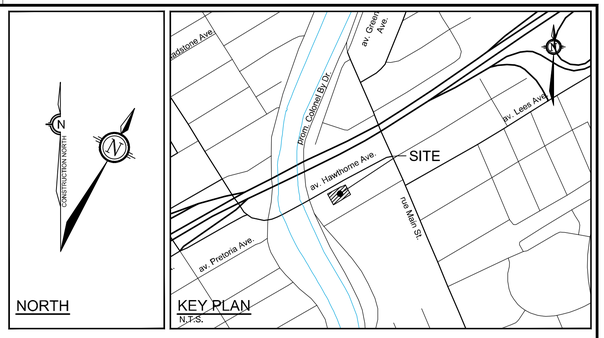
PAVEMENT STRUCTURE:

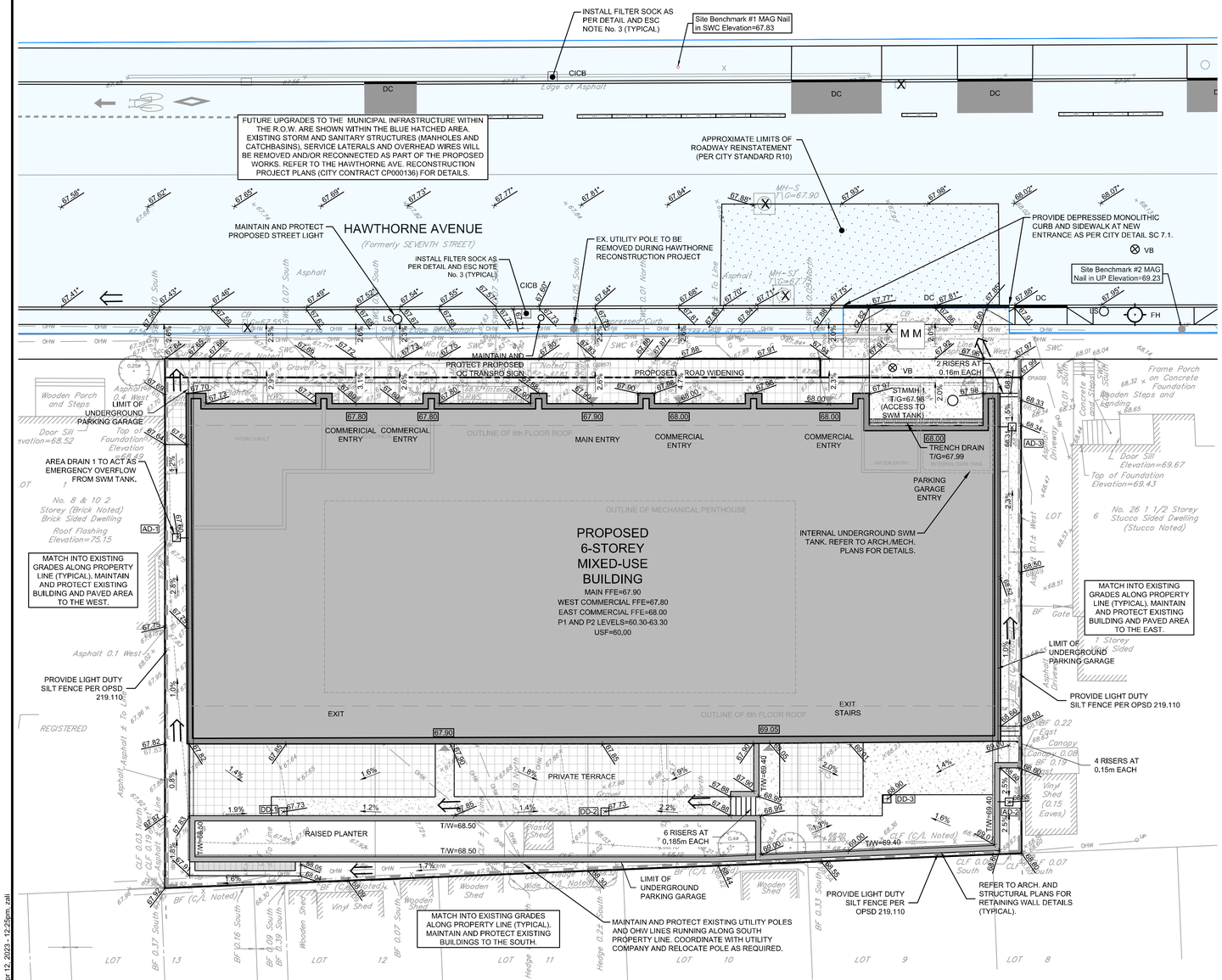
NEW LIGHT DUTY PAVEMENT
50mm SUPERPAVE 12.5mm
150mm GRANULAR "A"
300mm GRANULAR "B" TYPE II
ASPHALT GRADE PG 58-34

NEW HEAVY DUTY PAVEMENT (PER HAWTHORNE RECONSTRUCTION PROJECT)
60mm SUPERPAVE LEVEL D 12.5mm
60mm SUPERPAVE LEVEL D 19mm
150mm GRANULAR "A"
550mm GRANULAR "B" TYPE II
ASPHALT GRADE PG 64-34



MUD MAT DETAIL
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.
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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 (58-JBPA-R0, DATED AUGUST 04, 2022), PREPARED BY YURI MENDEZ ENGINEERING), 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-2022-143) 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 98% 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 (130mm) 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:

1. ELEVATIONS SHOWN ARE GEODETIC AND ARE REFERRED TO THE CGVD28 GEODETIC DATUM, AND ARE REFERRED TO CITY OF OTTAWA BENCHMARK OTT 25, HAVING AN ELEVATION OF 69.613.
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. TEMPORARY JOB BENCHMARK #1 DESCRIPTION IS LOCATED ON MAG NAIL IN CONCRETE SIDEWALK LOCATED APPROXIMATELY 18m NORTH OF THE NORTH PROPERTY BOUNDARY ALONG HAWTHORNE AVE. TEMPORARY BENCHMARK #2 DESCRIPTION IS MAG NAIL IN UTILITY POLE LOCATED ON BOULEVARD APPROXIMATELY 10m EAST FROM EAST PROPERTY BOUNDARY ALONG HAWTHORNE AVE. SEE TOPOGRAPHICAL PLAN OF SURVEY OF LOTS 2, 3, 4, 5 AND PART OF LOT 6, REGISTERED PLAN 220, CITY OF OTTAWA, SURVEYED BY ANNIS, O'SULLIVAN, VOLLEBEKK LTD.
4. A NEW TEMPORARY BENCHMARK MAY BE REQUIRED IF EXISTING BENCHMARKS ARE DISTURBED DURING THE HAWTHORNE AVE. RECONSTRUCTION PROJECT. ALTERNATIVELY, CONTRACTOR MAY NEED TO USE HAWTHORNE AVENUE RECONSTRUCTION PROJECT BENCHMARKS.

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
JBPA Developments Inc.
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Ottawa, ON, K1S 1W8

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No.	REVISION	DATE	BY
1.	ISSUED FOR SITE PLAN CONTROL APPROVAL	APRIL 12/23	FST

SCALE 1:150
1:150 0 2 4 6

DESIGN CV/ZA
CHECKED FST
DRAWN ZA
CHECKED FST
APPROVED FST

FOR REVIEW ONLY

LICENSED PROFESSIONAL ENGINEER F.S. THAUVETTE 100041299 APR 12, 2023 PROVINCE OF ONTARIO

NOVATECH
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LOCATION
CITY OF OTTAWA
12-24 HAWTHORNE AVENUE

DRAWING NAME
GRADING AND EROSION & SEDIMENT CONTROL PLAN

PROJECT No. 122152
REV REV # 1
DRAWING No. 122152-GR
PLAN #

D07-12-22-

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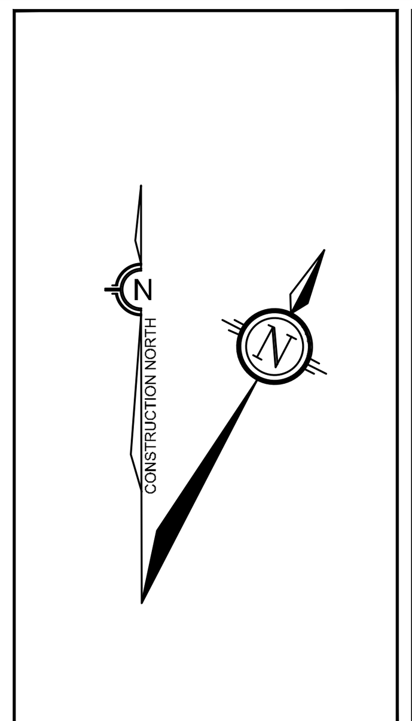
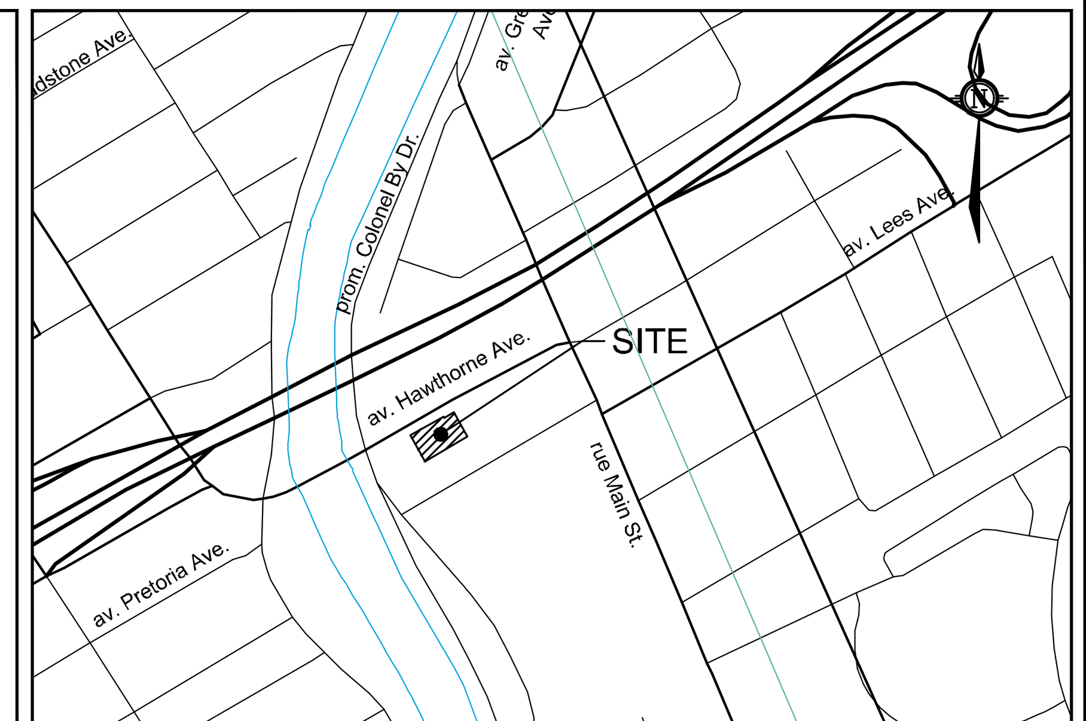


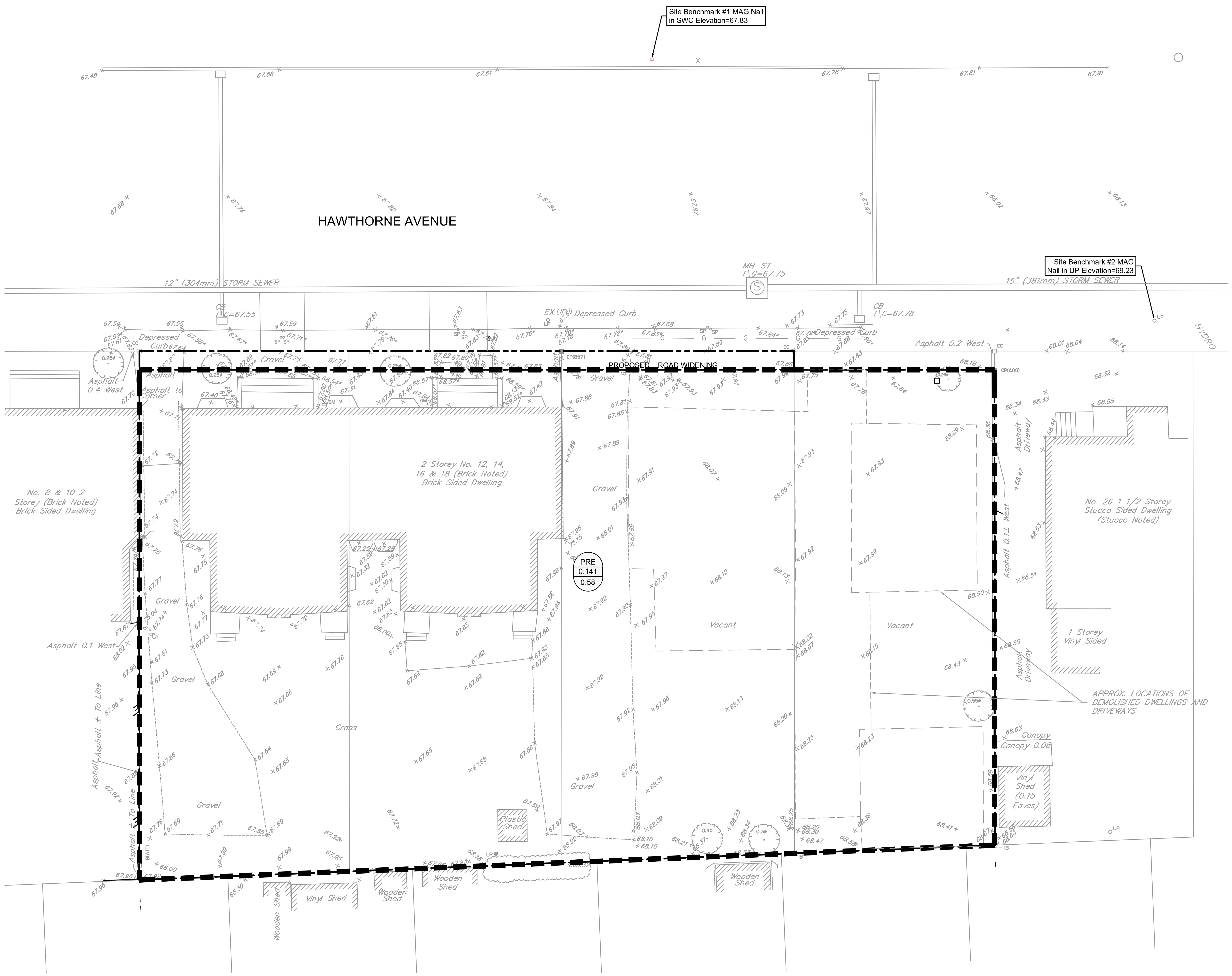
NORTH



KEY PLAN
N.T.S.

LEGEND

▬ ▬ ▬	DRAINAGE AREA LIMITS
PRE	PRE-DEVELOPMENT AREA ID
0.072	PRE-DEVELOPMENT DRAINAGE AREA (ha)
0.24	1:5 YEAR WEIGHTED RUNOFF COEFICIENT
	EXISTING CONCRETE CURB
CB	EXISTING CATCHBASIN c/w LEAD
EX UP	EXISTING UTILITY POLE
	EXISTING TREES / VEGETATION
OHW	EXISTING OVERHEAD UTILITY WIRES
MH-ST	EXISTING STORM MANHOLE & SEWER



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.
4. REFER TO GEOTECHNICAL INVESTIGATION REPORT (58-JBPA-R0, DATED AUGUST 04, 2022), PREPARED BY YURI MENDEZ ENGINEERING), 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.
5. REFER TO THE DEVELOPMENT SERVICING STUDY AND STORMWATER MANAGEMENT REPORT(R-2022-143) PREPARED BY NOVATECH.

BENCHMARK NOTES:

1. ELEVATIONS SHOWN ARE GEODETIC AND ARE REFERRED TO THE CGVD28 GEODETIC DATUM, AND ARE REFERRED TO CITY OF OTTAWA BENCHMARK OTT 25, HAVING AN ELEVATION OF 69.613.
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. TEMPORARY JOB BENCHMARK #1 DESCRIPTION IS LOCATED ON MAG NAIL IN CONCRETE SIDEWALK LOCATED APPROXIMATELY 18m NORTH OF THE NORTH PROPERTY BOUNDARY ALONG HAWTHORNE AVE. TEMPORARY BENCHMARK #2 DESCRIPTION IS MAG NAIL IN UTILITY POLE LOCATED ON BOULEVARD APPROXIMATELY 10m EAST FROM EAST PROPERTY BOUNDARY ALONG HAWTHORNE AVE. SEE TOPOGRAPHICAL PLAN OF SURVEY OF LOTS 2, 3, 4, 5 AND PART OF LOT 6, REGISTERED PLAN 220, CITY OF OTTAWA, SURVEYED BY ANNIS, O'SULLIVAN, VOLLEBEKK LTD.
4. A NEW TEMPORARY BENCHMARK MAY BE REQUIRED IF EXISTING BENCHMARKS ARE DISTURBED DURING THE HAWTHORNE AVE. RECONSTRUCTION PROJECT. ALTERNATIVELY, CONTRACTOR MAY NEED TO USE HAWTHORNE AVENUE RECONSTRUCTION PROJECT BENCHMARKS.

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NOTE:
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OWNER INFORMATION
JBPA Developments Inc.
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No.	REVISION	DATE	BY
1.	ISSUED FOR SITE PLAN CONTROL APPROVAL	APRIL 12/23	FST

SCALE 1:150

1:150
0 2 4 6

DESIGN	CV/ZA
CHECKED	FST
DRAWN	ZA
CHECKED	FST
APPROVED	FST

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CITY OF OTTAWA
12-24 HAWTHORNE AVENUE

DRAWING NAME
PRE-DEVELOPMENT
STORM DRAINAGE PLAN

PROJECT No. 122152
REV REV # 1
DRAWING No. 122152-STM1

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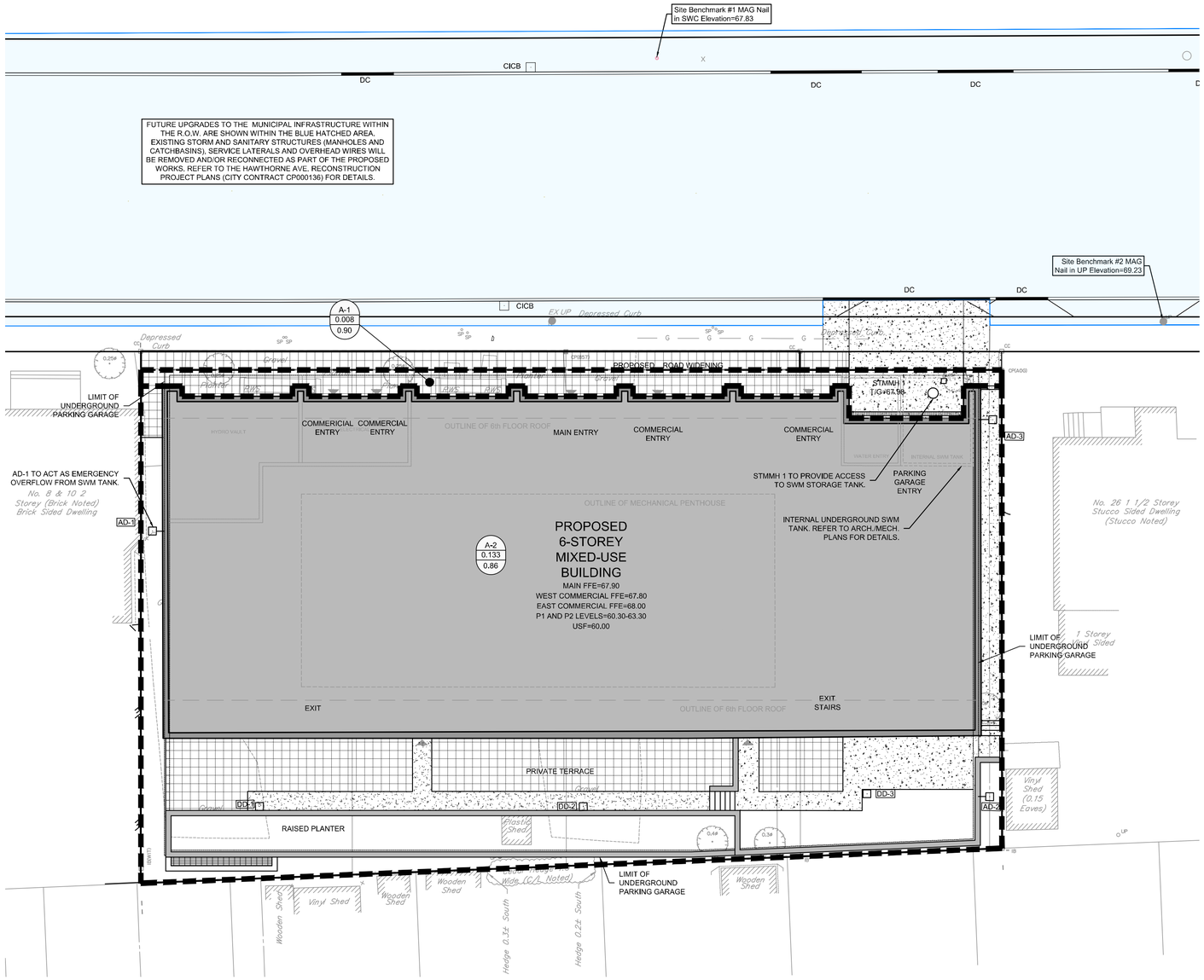
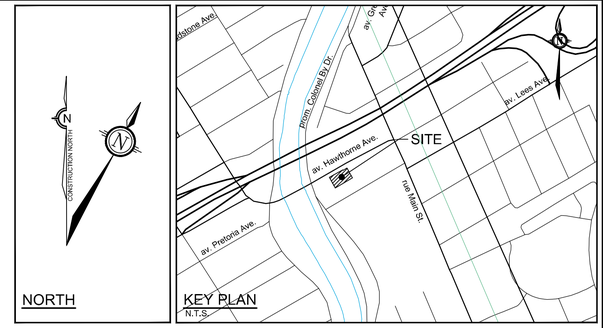
PLAN #_____

D07-12-22-____





LEGEND

- PROPOSED BARRIER CURB
- DC — PROPOSED DEPRESSED CURB
- DRAINAGE AREA LIMITS
- POST 0.072 0.24 — POST-DEVELOPMENT AREA ID / POST-DEVELOPMENT DRAINAGE AREA (ha) / 1:5 YEAR WEIGHTED RUNOFF COEFICIENT
- CICB — PROPOSED CURB INLET CATCHBASIN (PER HAWTHORNE RECONSTRUCTION PROJECT)
- EXISTING CONCRETE CURB
- CB — EXISTING CATCHBASIN
- EX.UP — EXISTING UTILITY POLE
- EXISTING TREES / VEGETATION
- OHW — EXISTING OVERHEAD UTILITY WIRES

GENERAL NOTES:

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INTERNAL SWM STORAGE TANK

DESIGN EVENT	STORAGE SYSTEM CONTROLLED FLOW	STORAGE VOLUMES REQUIRED	STORAGE VOLUMES PROVIDED
1:2 YR	PUMPED FLOW RATE = 11.00 L/s	8.1 m³	>51 m³
1:5 YR		14.1 m³	
1:100 YR		38.9 m³	
1:100+20%		50.8 m³	

NOTES:

1. ALL DRAINAGE FROM AREA A-2 (PROPOSED AMENITY AREA DECK DRAINS/AREA 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.

PROPOSED SITE FLOWS & STORMWATER MANAGEMENT TABLE

DESIGN EVENT	PRE-DEVELOPMENT CONDITIONS		POST-DEVELOPMENT CONDITIONS				
	UNCONTROLLED FLOWS (L/s)	ALLOWABLE RELEASE RATE (L/s)	A-1 FLOW (L/s)	A-2 FLOW (L/s)	TOTAL FLOW (L/s)	TOTAL REQUIRED STORAGE (m^3)	REDUCTION IN FLOW (L/s or %)*
1:2 YR	17.3	15.1	1.5	11.0	12.5	8.1	4.8 or 28 %
1:5 YR	23.5		2.1		13.1	14.1	10.4 or 44 %
1:100 YR	46.4		4.0		15.0	38.9	31.4 or 68%

*REDUCED FLOW COMPARED TO UNCONTROLLED PRE-DEVELOPMENT CONDITIONS FROM THE CURRENT 0.141 HA SITE AREA.

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12-24 HAWTHORNE AVENUE

DRAWING NAME
POST-DEVELOPMENT STORM DRAINAGE PLAN

PROJECT No. 122152
REV REV # 1
DRAWING No. 122152-STM2
PLAN # D07-12-22-

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