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39 Years

Proposed Residential Development

73, 79 & 83 STE-CÉCILE STREET

Servicing and Stormwater Management Report

Engineering excellence. Planning progress. Liveable landscapes.

73, 79 & 83 STE-CÉCILE STREET
PROPOSED 4-STOREY RESIDENTIAL DEVELOPMENT

OTTAWA, ONTARIO

SERVICING AND STORMWATER MANAGEMENT REPORT

Prepared by:

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

December 19, 2024
Revised February 21, 2025

Ref: R-2022-198
Novatech File: 122167

NOVATECH
Engineers, Planners & Landscape Architects

February 21, 2025

City of Ottawa
Planning and Growth Management Department
4th Floor
110 Laurier Avenue West
Ottawa, Ontario
K1P 1J1

Attention: Jean-Charles Renaud

Dear Mr. Renaud

Re: Servicing and Stormwater Management Report
Proposed 4-Storey Residential Development
73, 79 & 83 Ste-Cécile Street, Ottawa, ON
Novatech File No.: 122167

Please find enclosed the 'Servicing and Stormwater Management Report' for the above noted project. This report has been revised as per the City of Ottawa Comments and hereby resubmitted in support of a Zoning By-law Amendment and Site Plan Control Applications.

If you have any questions, please contact the undersigned.

Yours truly,

NOVATECH

Matthew Hrehoriak, P.Eng.
Project Manager, Land Development Engineering

cc: Murray Chown (Novatech)
Dean & Denis Michaud (Henry Investments)

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1.0. INTRODUCTION

Novatech has been retained to prepare a Servicing and Stormwater Management Report for the property located at 73, 79 & 83 Ste-Cécile Street within the City of Ottawa. This report will support the Zoning By-Law Amendment and Site Plan Application for the subject development. ***Figure 1*** is a Key Plan showing the site location.

2.0. EXISTING DEVELOPMENT

The existing three properties combine for a total site area of approximately 0.11 hectares in size. There is currently a single-detached residential dwelling on each of the three lots. The legal description of the property is identified as Lots 85, 86 and 87, Registered Plan M-27, City of Ottawa. The property is bound by Marquette Avenue to the North, Ste-Cécile Street to the South and adjacent residential dwellings to the east and west. The topography of the site slopes towards Ste-Cécile Street (North to South). ***Figure 2*** shows the existing site conditions.

3.0. PROPOSED DEVELOPMENT

It is proposed to develop a 4-storey, 41-unit residential apartment building which includes a landscaped amenity space at the rear of the building. The 41 units consists of 5 bachelor, 26 one-bedroom, 8 two-bedroom and 2 three-bedroom units. The at-grade ground floor level is the main entrance to the building which includes a lobby, bike room and garbage room. The proposed development will have pedestrian access only from Ste-Cécile Street at ground level, there is no surface or underground parking proposed. ***Figure 3*** shows the proposed development.

4.0. PRE-CONSULTATION INFORMATION

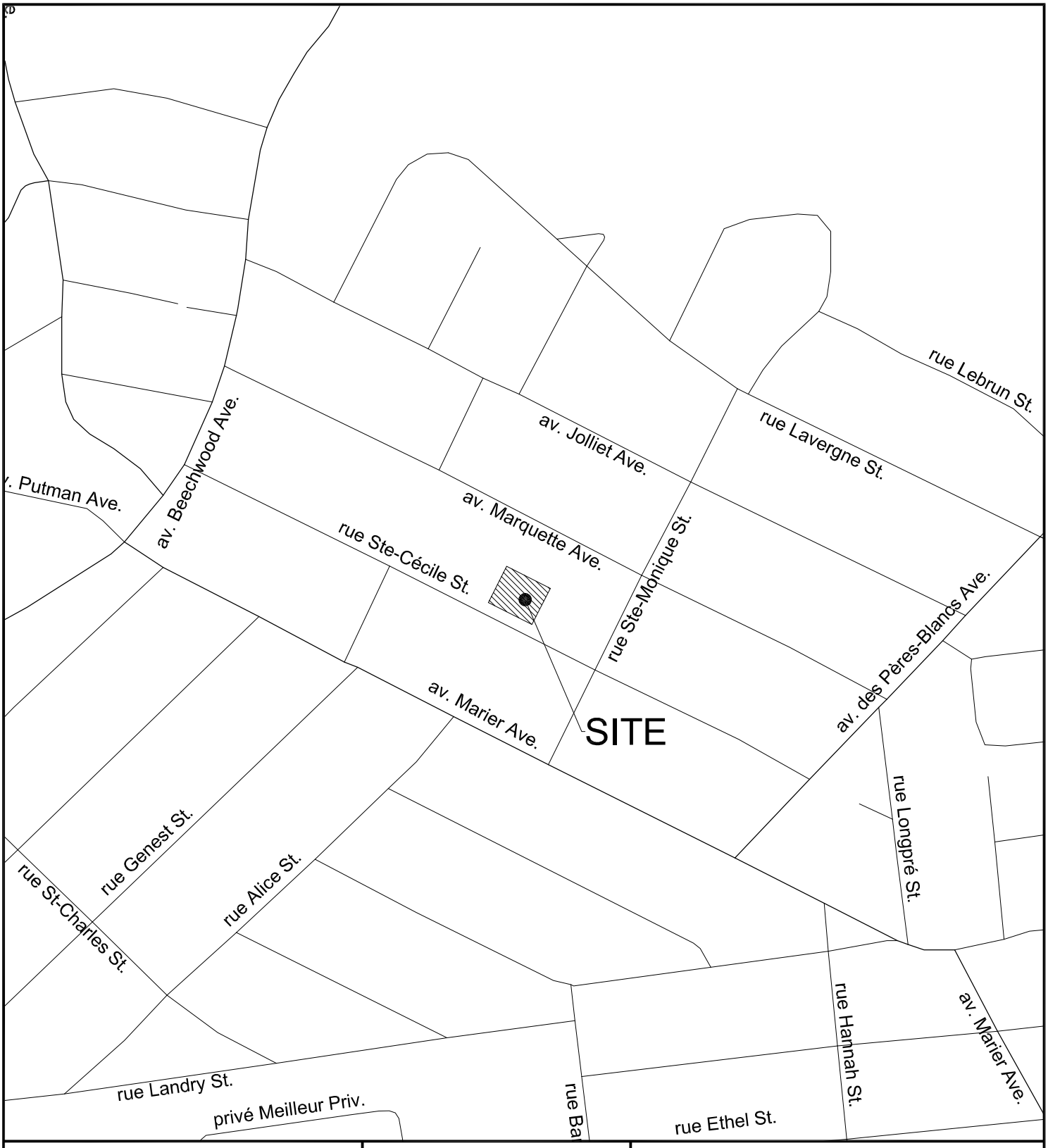
A pre-consultation meeting was held with the City of Ottawa on October 18, 2024, at which time the client was advised of the general submission requirements. Refer to **Appendix A** for a copy of the correspondence from the City of Ottawa.

The subject site is located within the jurisdiction of the Rideau Valley Conservation Authority (RVCA). Since the receiving downstream storm sewer outlet (Ottawa River) is approximately 2.6 kilometers, quality control is not expected for the subject site.

5.0. WATER SERVICING

There is an existing 200mm diameter PVC watermain located in the Ste-Cécile Street right-of-way which will provide service for the proposed development. The proposed 4-storey apartment building will be serviced by a new 150mm diameter water service with a connection to the existing 200mm diameter watermain in Ste-Cécile Street. The proposed water service will be sized to provide both the required domestic water demand and fire flow. A shut-off valve will be provided on the proposed service at the property line and a water meter and remote water meter will be provided. Refer to the General Plan of Services **(122167-GP)** for further details.

Water demand and fire flow calculations have been prepared based on the current development plan. The water demands were calculated using criteria from Section 4 of the City of Ottawa Design Guidelines for Water Distribution Systems and were based on a population of 66 people. The required fire flow demand was calculated using the 2020 Fire Underwriters Survey method.



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

73-83 STE. CECILE STREET

KEY PLAN

SCALE: N.T.S

DATE: NOV 2022 | JOB: 122167 | FIGURE: 1

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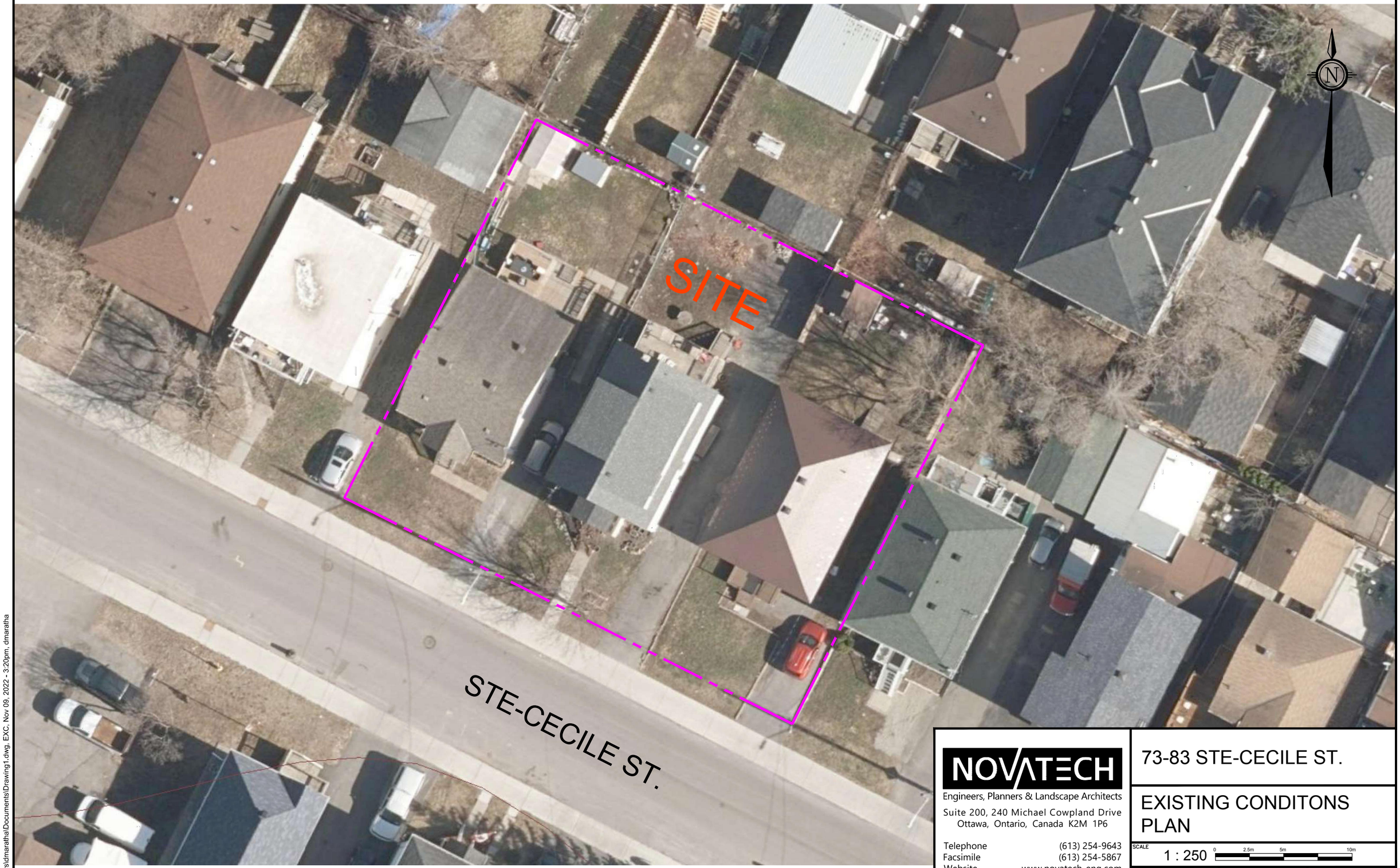

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73-83 STE-CECILE ST.

EXISTING CONDITONS PLAN

SCALE 1 : 250 (0, 2.5m, 5m, 10m)

DATE NOV 2022 | JOB 122167 | FIGURE 2

SHT11X17.DWG - 279mmX432mm

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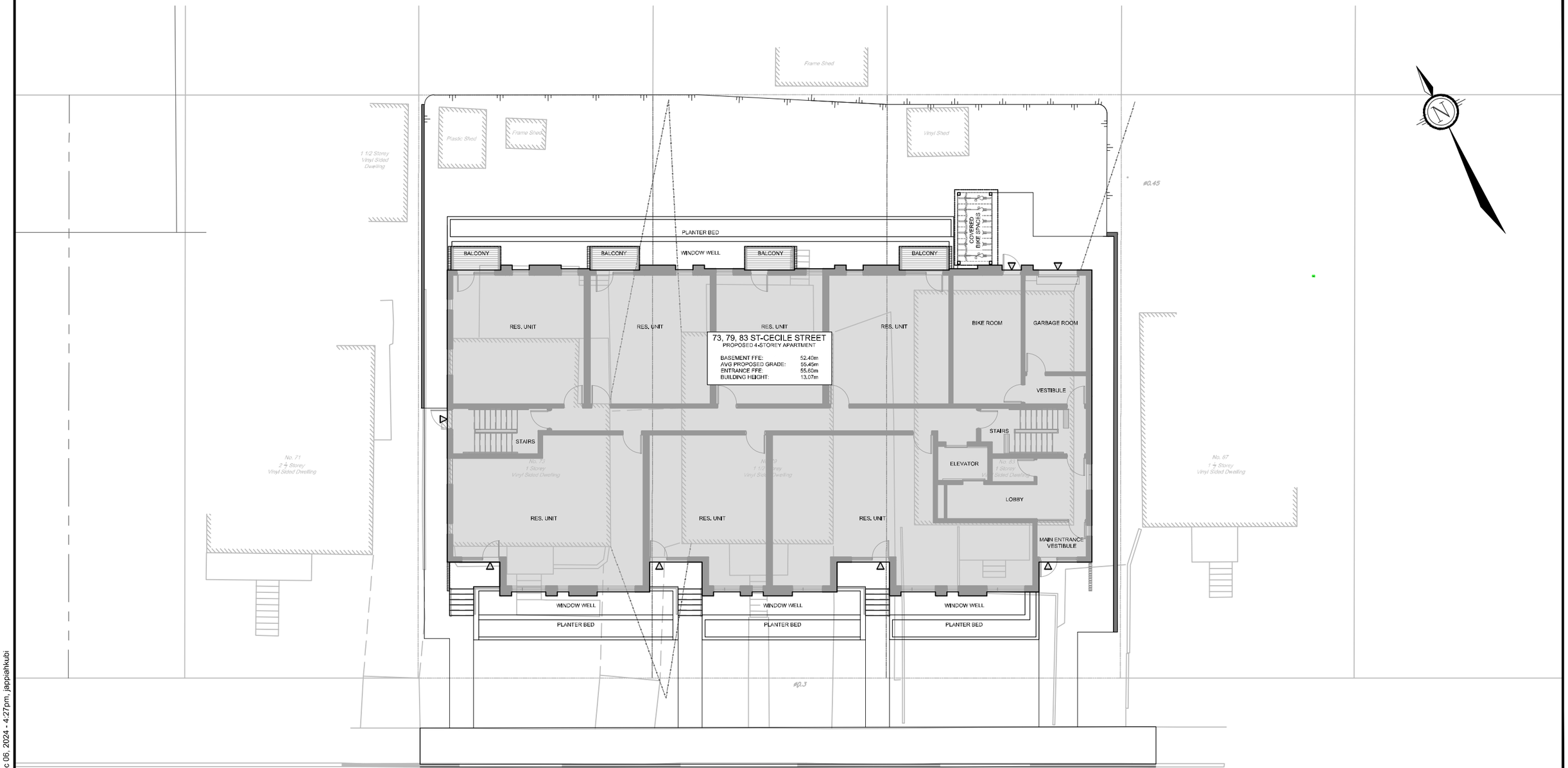

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73-83 STE-CECILE ST.

PROPOSED SITE PLAN

SCALE 1 : 200 (0 2 4 6 8)
DATE DEC 2024
JOB 122167
FIGURE 3

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The proposed building is to be sprinklered with the Siamese connection located by the main lobby entrance. Existing hydrants within the Ste-Cécile Street right-of-way will also provide fire protection for the proposed development. The required fire demand was calculated to be 2906USGPM (or 11,000 L/min). Detailed water demand and fire flow calculations are provided in **Appendix C** for reference. A summary of the water demand and fire flows are provided in **Table 5.1** below.

Table 5.1 Water Demand Summary

Use	Ave. Daily Demand (L/s)	Max. Daily Demand (L/s)	Peak Hour Demand (L/s)	Fire Flow (L/s)
Residential	0.21	0.53	1.18	183.53

This water demand information was submitted to the City of Ottawa for boundary conditions provided from the City's water model. The boundary conditions will determine whether the existing watermain infrastructure in Ste-Cécile Street has capacity for the proposed development. The boundary conditions are provided in **Table 5.2** below.

Table 5.2 Water Boundary Conditions

Ste Cecile Street Connection	
Criteria	**Head (m)**
Minimum HGL	109.4
Maximum HGL	118.4
Max Day + Fire Flow HGL (183L/s)	101.0

These boundary conditions were used to analyze the performance of the watermain for three theoretical conditions: 1) High Pressure check under Average Day conditions 2) Peak Hour demand 3) Maximum Day + Fire Flow demand. A summary of the results from the hydraulic water analysis are provided in **Table 5.3** below.

Table 5.3 Water Analysis Results Summary

Condition	Demand (L/s)	Min/Max Allowable Operating Pressures (psi)	Limits of Design Operating Pressures (psi)
High Pressure	0.21	80psi (Max)	89.3
Max Day + Fire Flow	183.53	20psi (Min)	64.6
Peak Hour	1.18	40psi (Min)	76.5

Based on the proceeding analysis it can be concluded that the watermain will provide adequate flow and pressures for the fire flow + maximum day demand and peak hour demand. The existing fire hydrants along Ste-Cécile Street will provide fire protection for the proposed development. A multi-hydrant approach to firefighting will be required to supply adequate fire flow to the proposed development. There are currently 2 Class AA (blue bonnet) municipal fire hydrants within 75m of the site and at least 1 additional Class AA (blue bonnet) hydrant within

150m of the site, on Ste Cecile Street. Refer to ***Figure 4*** Hydrant Coverage Plan for details. Based on the City of Ottawa Technical Bulletin ISTB-2018-02, Class AA (blue bonnet) hydrants within 75m of the building should provide ~95 L/s each (at pressure of 20 PSI) while Class AA (blue bonnet) hydrants between 75m and 150m should provide ~63 L/s (at a pressure of 20 PSI). Pressure reduction valves will be required as the High-Pressure Condition exceeds the allowable operating pressure. Refer to **Appendix C** for hydraulic calculations and City of Ottawa boundary conditions.

6.0. SANITARY SERVICING

There is an existing 375mm diameter PVC sanitary sewer located in the Ste-Cécile Street right-of-way which will service the proposed development. The existing 375mm diameter sanitary sewer flows to the west along Ste-Cécile Street where it connects into a 900mm diameter concrete sanitary trunk sewer at Genesis Street.

The proposed 4-storey apartment building will be serviced by a new 150mm diameter sanitary service with a connection to the existing 375mm diameter sewer in Ste-Cécile Street. Refer to the General Plan of Services **(122167-GP)** for further details. Sanitary flows for the proposed development were calculated based on the following criteria from Section 4 of the City of Ottawa Sewer Design Guidelines:

Residential Use

- Residential Bachelor Units: 1.4 people per unit
- Residential 1-Bedroom Units: 1.4 people per unit
- Residential 2-Bedroom Units: 2.1 people per unit
- Residential 3-Bedroom Units: 3.1 people per unit
- Average Daily Residential Sewage Flow: 280 L/person/day
- Residential Peaking Factor = 3.2 (Harmon Equation)
- Infiltration Allowance: 0.33 L/s/ha x 0.112 ha site = 0.04 L/s

The peak sanitary flow was calculated to be 0.56L/s based on a total population of 66 people from a total of 41 units. Detailed sanitary flow calculations are provided in **Appendix D** for reference.

The proposed 150mm dia. sanitary service at a slope of 2.0% has a full flow conveyance capacity of 21.5 L/s and will therefore have enough capacity to convey the theoretical sanitary flows from the proposed development. It is assumed that the receiving municipal sanitary sewer in Ste-Cécile Street has adequate capacity to service the proposed development.

7.0. STORM SERVICING & STORMWATER MANAGEMENT

7.1. Storm Servicing

There is an existing 450mm and 600mm diameter storm sewer in Ste-Cécile Street fronting the development which is the storm sewer outlet for the proposed development. The proposed 4-storey apartment will be serviced by a new 200mm diameter storm service that will connect directly to the existing 450mm dia. storm sewer pipe segment in Ste-Cécile Street. The landscaped amenity area at the rear of the building will be serviced by a 250mm dia. sewer that

will connect directly to the existing 600mm dia. storm sewer pipe segment in Ste-Cécile Street. Refer to the General Plan of Services **(122167-GP)** for further details.
The proposed storm sewers have been sized to convey the uncontrolled 2-year storm event using the Rational Method. The design criteria used in sizing the storm sewers is summarized in Table 7.1.

Table 7.1: Storm Sewer Design Parameters

Parameter	Design Criteria
Private Roads	2 Year Return Period
Storm Sewer Design	Rational Method
IDF Rainfall Data	Ottawa Sewer Design Guidelines
Initial Time of Concentration (Tc)	10 min
Minimum Velocity	0.8 m/s
Maximum Velocity	3.0 m/s
Minimum Diameter	200 mm

A storm sewer drainage area plan and design sheet for the proposed storm sewer system is provided in **Appendix E** for reference.

7.2. Stormwater management Objectives

The stormwater management criteria and objectives for the site are as follows:

- Maximize the use of on-site storage on the building roof and on the surface in the rear landscape area behind the building.
- Control the post-development flows from the site to the maximum allowable release rate specified by the City of Ottawa. Control post-development flows from the site for storms up to and including the 100-year design event.
- Ensure no surface ponding during the 2-year storm event.
- Minimize the impact on the existing storm sewer in Ste-Cécile Street by reducing the post-development storm flows from the site, when compared to current conditions.
- Provide guidelines to ensure that the site preparation and construction is in accordance with the current Best Management Practices for Erosion and Sediment Control.

7.3. Pre-development Conditions and Allowable Release Rate

The uncontrolled pre-development flows from the 0.112 ha site were calculated using the Rational Method to be 16.5 L/s during the 5-year storm event and 32.3 L/s during the 100-year storm event. Refer to **Appendix E** for detailed calculations.

As specified by the City of Ottawa, the maximum allowable release rate for the development is based on a 10-minute rainfall intensity, a 5-year return period (City of Ottawa IDF Curves) and a runoff coefficient no greater than C=0.50. The allowable release rate was calculated using the Ration Method to be 16.2 L/s.

T_c = 10 min C =0.50
I_{5yr} = 104.2 mm/hr A = 0.112 ha

Q_{allow} = 2.78 CIA
= 2.78 (0.50) (104.2) (0.112)
= 16.2 L/s

7.4. Post-development Conditions

As part of the stormwater management (SWM) strategy, stormwater runoff from the building roof will be attenuated using control flow roof drains, while storm flows from the rear landscape area will be attenuated using an inlet control device (ICD). Runoff from the remaining areas directly fronting onto Ste-Cécile Street will sheet drain uncontrolled directly towards the street. The window wells will infiltrate to the foundation drainage system but will not be directly connected, in accordance with Ontario Building Code requirements. The foundation drainage system will outlet to the storm service via a sump pit and pump. The storm service connection is to be protected by a backflow preventor. The proposed stormwater management approach meets the requirements of the City of Ottawa design guidelines.

The following sections outline the stormwater management strategy for each area of the proposed site, and provide post-development peak flow results. The site has been divided into 2 controlled and 1 uncontrolled drainage areas and are as follows:

Areas A-1: Uncontrolled Site Runoff

The walkways and landscaped areas directly fronting Ste-Cécile Street will drain uncontrolled to the catch basins in Ste-Cécile Street. The window wells and basement patios areas will drain uncontrolled to the building storm service. The uncontrolled post-development flows from sub-catchment area A-1 were calculated using the Rational Method to be 4.7 L/s and 9.1 L/s during the 5 and 100-year design events respectively. Refer to **Appendix E** for detailed calculations.

Area A-2: Controlled Flow from the Building Roof

The post-development flow from this sub-catchment area will be attenuated using three (3) Watts adjustable 'Accutrol' control flow roof drains (model number RD-100-A-ADJ) prior to being directed to the proposed on-site storm sewer system.

A summary of the post-development design flows and storage requirements from this sub-catchment area are provided in **Table 7.2** below.

Table 7.2: Roof Flow and Storage Summary

Roof Drain ID & Drainage Area (ha)	Number of Roof Drains	Watts Roof Drain Model ID (Weir Opening)	Controlled Flow (L/s)		Approximate Ponding Depth (m)		Storage Volume Required (m^3)		Maximum Storage Provided (m^3)
			5-Yr	100-Yr	5-Yr	100-Yr	5-Yr	100-Yr	
Total Roof (0.054 ha)	**3**	RD-100-A-ADJ (1/4 Open)	**3.1**	**3.5**	**0.11**	**0.14**	**8.2**	**19.6**	**20.5**

Refer to **Appendix E** for detailed SWM calculations and to **Appendix F** for roof drain manufacturer information. As indicated in the table above, the building roof will provide sufficient storage for both the 5 and 100-year design events.

Area A-3: Controlled Site Runoff

The maximum flow allotted to this sub-catchment area, during the 100-year design event, was calculated to be 3.6 L/s (16.2 – (9.1 + 3.5)). This value represents the maximum allowable release rate minus the sum of the flows from the other sub-catchment areas. The 100-year peak design flow has been set at 3.6 L/s, based on the storage available, and will be attenuated by an inlet control device (ICD) installed in the outlet pipe of CB 1.

The Modified Rational Method was used to determine the required storage volumes for the 2-year, 5-year and 100-year design events. As required by the City of Ottawa, due to the presence of underground storage, the storage volume calculations were completed using an assumed average release rate, equal to (or less than) 1/2 of the peak design flow. It is noted that this approach is considered conservative and is likely to overestimate the required storage volume and ponding elevations. The approximate ponding elevations calculated for the 2-year, 5-year and 100-year design storms were estimated based on these required storage volumes. The site has been designed to ensure that no stormwater will pond on the private surfaces (i.e. walkways and landscaped areas) during the 2-year storm event.

A summary of the post-development peak flows and storage requirements for this sub-catchment area are provided in **Table 7.3** below.

Table 7.3: Controlled Surface Flow and Storage Summary

Design Event	Sub-Catchment Area A-3					
	ICD Type	Allotted Peak Design Flow (L/s)	Less Than ½ Peak Design Flow (L/s)	Ponding Elevation (m)*	Storage Vol. Required (m^3)*	Maximum Storage Available (m^3)
2-Year	Tempest LMF 60	3.6 L/s	1.5 L/s	54.70 m	0.26 m^3	25.0 m^3
5-Year			1.7 L/s	55.05 m	0.45 m^3	
100-Year			1.8 L/s	55.17 m	1.89 m^3	

*Storage volumes and ponding elevations are based on the Less than ½ Peak Design Flow values

Refer to **Appendix E** for SWM calculations and **Appendix F** for ICD information. As indicated in the table above, this sub-catchment area will provide sufficient storage for the 2-year, 5-year and 100-year design events. Furthermore, no stormwater will pond on the private surfaces (i.e. walkways and landscaped areas) during the 2-year storm event.

Stormwater Flow Summary

A summary of the pre- and post-development flows are provided in **Table 7.4** below.

Table 7.4: Stormwater Management Flow Summary

Design Event	Pre-Development Conditions		Post-Development Conditions				
	Uncontrolled Flow (L/s)	Maximum Allowable Storm Flow (L/s)	A-1 Flow (L/s)	A-2 Flow (L/s)	A-3 Flow (L/s)	Total Flow (L/s)	Reduction in Flow (L/s or %)*
2-Yr	12.2	16.2	3.4	2.6	3.0	9.0	3.2 or 26%
5-Yr	16.5		4.7	3.1	3.4	11.2	5.3 or 32%
100-Yr	32.3		9.1	3.5	3.6	16.2	16.1 or 50%

*Reduced flow compared to uncontrolled pre-development conditions

As indicated in the table above, both the 5-year and 100-year post-development flows from the site will be less than the maximum allowable storm flow of 16.2 L/s. This also represents a reduction in total site flow rate, when compared to the pre-development conditions.

8.0. EROSION AND SEDIMENT CONTROL MEASURES

Temporary erosion and sediment control measures will be required on-site during construction in accordance with the Best Management Practices for Erosion and Sediment Control. This includes the following temporary measures:

- Filter bags will be placed under the grates of nearby catchbasins, manholes and 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.
- A mud mat will be installed at the site entrance off Ste-Cécile Street.
- 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.

The erosion and sediment control measures will be required 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. Refer to the Erosion and Sediment Control Plan **(122167-ESC).**

9.0. CONCLUSIONS AND RECOMMENDATIONS

The conclusions of this report are as follows:

- Water servicing will be provided by a single 150mm diameter service connection to the existing 200mm diameter watermain infrastructure within Ste-Cécile Street. Fire protection can be provided from the existing fire hydrants on Ste-Cecile.
- The proposed building will be serviced by a single 150mm diameter sanitary sewer which will connect to the existing 375mm diameter sanitary sewer in Ste-Cécile Street. The

sanitary flows from the building will be pumped to the proposed sanitary service and the existing sanitary sewer has adequate capacity for the proposed development.

- The proposed building will be serviced by a 200mm diameter storm service which will connect to the existing 450mm diameter storm sewer in Ste-Cécile Street. The rearyard landscaped amenity area will be serviced by a 250mm diameter storm sewer which will connect to the existing 600mm diameter storm sewer in Ste-Cécile Street.
- Quantity control of stormwater will be provided by flow-controlled roof drains to attenuate flows and surface storage with an inlet control device. The allowable release rate for the site is 16.2 L/s and the post-development stormwater release rates are 11.2 L/s and 16.2 L/s for the 5-year and 100-year events respectively.
- Quality control of stormwater is not expected for development.
- An overland flow route will be provided to Ste-Cécile Street.
- Erosion and sediment control measures will be required during construction.

The preceding report is respectfully submitted for review and approval. Please contact the undersigned should you have any questions or require additional information.

NOVATECH

Prepared by:

Matt Hrehoriak, P.Eng.
Project Manager
Land Development Engineering

Reviewed by:

J. Lee Sheets, C.E.T.
Director
Land Development Engineering

APPENDIX A
Correspondence

File No.: PC2024-0388

October 18, 2024

NOVATECH
C/A Simran Soor
Via email: s.soor@novatech-eng.com

Subject: Pre-Consultation: Meeting Feedback
Proposed Zoning By-Law Amendment and Site Plan Control Applications – 73, 79, 83 Ste-Cecile Street

Please find below information regarding next steps as well as consolidated comments from the above-noted pre-consultation meeting held on October 8, 2024.

Pre-Consultation Preliminary Assessment

1 ☐	**2** ☐	**3** ☐	**4** ☒	**5** ☐

One (1) indicates that considerable major revisions are required while five (5) suggests that the 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.

Next Steps

1. A review of the proposal and materials submitted for the above-noted pre-consultation has been undertaken. Please proceed to complete a Phase 2 / Phase 3 Pre-consultation Application Form and submit it together with the necessary studies and/or plans to planningcirculations@ottawa.ca.

2. In your subsequent pre-consultation submission, please ensure that all comments or issues detailed herein are addressed. A detailed cover letter stating how each issue has been addressed must be included with the submission materials. Please coordinate the numbering of your responses within the cover letter with the comment number(s) herein.

3. Please note, if your development proposal changes significantly in scope, design, or density before the Phase 3 pre-consultation, you may be required to complete or repeat the Phase 2 pre-consultation process.

Supporting Information and Material Requirements

1. The attached **Study and Plan Identification List** outlines the information and material that has been identified, during this phase of pre-consultation, as either required (R) or advised (A) as part of a future complete application submission.

a. The required plans and studies must meet the City's Terms of Reference (ToR) and/or Guidelines, as available on Ottawa.ca. These ToR and Guidelines outline the specific requirements that must be met for each plan or study to be deemed adequate.

Consultation with Technical Agencies

1. You are encouraged to consult with technical agencies early in the development process and throughout the development of your project concept. A list of technical agencies and their contact information is enclosed.

Planning

Comments:

1. Policy and Zoning

    a. Official Plan – Inner Urban Transect Policy Area, Neighbourhood Designation

    b. Zoning By-law – R4UA (Residential Fourth Density, Subzone UA)

2. Community Benefits Charge

    a. The former Section 37 regime has been replaced with a "Community Benefits Charge", By-law No. 2022-307, of 4% of the land value. This charge will be required for ALL buildings that are 5 or more storeys and 10 or more units and will be required at the time of building permit unless the development is subject to an existing registered Section 37 agreement. Questions regarding this change can be directed to Ranbir.Singh@ottawa.ca.

3. Staff notice that there is clear intent to move in the right direction since last iteration of the proposal. The removal of the parking area is appreciated, as is the addition of architectural elements and articulation at the front which gives the impression of three separate volumes, responding to the established rhythm along the street.

4. Staff have two main areas of concerns, being the combined effect of the proposed height and density. Below is an outline of the various Official Plan policies and Zoning provisions related to these concerns.

    a. Official Plan

        i. The Neighbourhood designation of the Inner Urban Policy Area contemplates heights of 2-3 storeys, and up to 4 storeys where appropriate. The designation does open the door to deviations in built form requirements and density thresholds, but does so for

areas of the desgniation that are affected by the Evolving overlay. This site is not within an Evolving Neighbourhood.

ii. The Neighbourhood designation seeks to have built forms be compatible with its low-rise, residential neighbours. It does, however, permit some increases in densities in areas close to transit and corridors.

iii. The Inner Urban Transect policies point to the Growth Management Framework policies of Section 3.2 which, under Table 3B, sets out density targets and unit-mix minimums:

- Density target for the inner urban transect: 60-80 units per hectare (proposed: 367)
- Minimum number of large-household dwellings (three bedrooms or equivalent) within the Neighbourhood designation on lots with a frontage generally 15 metres or wider: Target of 50 per cent for low-rise buildings. (proposed 5% 2 bedroom + den)

b. Zoning By-Law

i. The R4UA zone permits the least density out of the R4U zones.

ii. One of the main goals of the R4 study was to ensure that a site plan can meet functional goals such as garbage management, and ensure a reasonable degree of green space, amenity and context-sensitive design. We see that you are clearly striving to adhere to this.

iii. That being said, the lower-order R4U zones were established to put limits on maximum lot sizes in order to prevent excessive lot consolidation. The R4UD was put in place in areas where lot consolidation would not be an issue, which indicates there was clear intent to limit such consolitation in this area.

iv. In reading the R4 study staff report, it is clear that staff anticipated proposed increases in density in cases where some lot consolidation was proposed, but the expectation was that we would consider how many units would be allowed on the consolidated lot if it were instead developed as separate lots, which in this case would be 24 units.

c. General

i. While a site's appropriate density can typically be determined by starting with how the site's amenities are being provided (i.e.

parking, bike parking, waste management, amenity areas, etc.) as well as how the other performance standards can still be adhered to, this proposal appears to push the boudaries of what the property should accomodate, particuarly when considering the OP's density targets and unit mix minimums mentioned above, as well as the minimum density provisions of the R4UA zone.

ii. Staff would suggest considering moving towards allignment with the OP's large-household dwelling minimums. That, in combination with perhaps a slight reduction in height (perhaps 0.5 storey) to something more appropriate for the immediate context, may result in something more easily supportable by staff.

2. Other comments

   a. The provision of a secure bike room is greatly appreciated. Staff will continue to ask that bike parking be provided at a rate of one space per unit, particularly considering the requested relief in vehicular parking down to 0. Please also consider adding some bike racks at the front for visitors.

   b. Look for any and all opportunity for providing enhanced landscaping at the front of the property, including trees, both at the front of the building and in the rear yard.

   c. Look for opportunities at combining some of the pathways at the front of the property, namely the ones adjacent to the corner accesses. As currently proposed, the multiple pathways reduce the amount of soft landscaping, and creating these small grassed areas will likely result in them being walked over or paved over eventually.

Feel free to contact **Jean-Charles Renaud** or **Nastassia Pratt**, Planners, for follow-up questions.

Urban Design

Submission Requirements:

5. An Urban Design Brief is required. Please see attached customized Terms of Reference to guide the preparation of the submission.

   a. The Urban Design Brief should be structured by generally following the headings highlighted under **Section 3 – Contents of these Terms of Reference**..

6. Additional drawings and studies are required as shown on the SPIL. Please follow the terms of reference (Planning application submission information and materials | City of Ottawa) to prepare these drawings and studies. These include:

a. Elevations.

b. Landscape plan.

7. The following elements of the updated design remain a concern:

   a. Building height – To help mitigate the impact of the additional 2.6m in height, we recommend setting the top floor back by 1.5m from the front facade. In addition, removing the roof that covers the top floor balconies may assist in reducing the impact of the additional height and massing.

   b. Balconies and porches – The zoning by-law requires a balcony or porch for each unit that faces the street and these are required to have minimum area of $2m^2$. The drawings show balconies for the upper units. The applicant is requested to provide the dimensions of these balconies and to indicate how the zoning requirement is being met for the below grade units that face the street.

   c. Landscape requirements – The Zoning by-law requires 30% of the total lot to be landscaped and 40% of the front yard to have soft landscaping. It is unclear if these percentages are being met. The applicant is asked to provide a drawing which demonstrates that the provisions of the by-law have been met.

   d. The connections of front doors to the sidewalk are important elements to further break up the large mass into smaller elements to blend with the scale of the neighbourhood.

   e. Bike parking – All required bike parking/storage for residents should be located internal and/or in the rear yard where it is weather protected and hidden from the right-of-way. If bike parking is located in the front yard, it should be reserved for visitors only.

   f. Tree planting is required. The landscape plan should show 4 trees in the front yard and 3-4 trees in the rear yard.

<u>Other Comments</u>

This is an exciting project in an area full of potential. We look forward to helping you achieve its goals with the highest level of design resolution. We are happy to assist and answer any questions regarding the above. Good luck.

Feel free to contact **Christopher Moise**, Urban Designer, for follow-up questions.

Engineering

Comments:

8. The Stormwater Management Criteria, for the subject site, is to be based on the following:

    a. Application of the IDF information derived from the Meteorological Services of Canada rainfall data, taken from the MacDonald Cartier Airport, collected 1966 to 1997.

    b. For separated sewer systems built up until 2016, the design of the storm sewers were based on a 5-year storm; storm systems after such time are, generally, based on a 2-year level-of-service.

    c. Flows to the storm sewer in excess of the 2-year storm release rate, up to and including the 100-year storm event, must be detained on site.

    d. In separated areas, the pre-development runoff shall be the lower of the existing coefficient or a maximum equivalent 'C' of 0.5, whichever is less (§ 8.3.7.3).

    e. A calculated time of concentration (cannot be less than 10 minutes).

    f. Storm sewer outlets should not be submerged.

    g. The quantity control criteria (100-year post-development to 2-year pre-development **or** c = [##] **or** some other criteria).

9. Deep Services (Storm, Sanitary and/or Water Supply)

    a. Provide existing servicing information and the recommended location for the proposed connections. Services should ideally be grouped in a common trench to minimize the number of road cuts.

    b. Provide information on the monitoring manhole requirements – should be located in an accessible location on private property near the property line (ie. Not in a parking area).

    c. Review provision of a high-level sewer.

    d. CCTV sewer inspection of city infrastructure is required to record pre and post construction conditions and ensure there is no damage to City infrastructure.

    e. Sewer connections to be made above the springline of the sewermain as per:

i. Std Dwg S11.1 for flexible main sewers – connections made using approved tee or wye fittings.

ii. Std Dwg S11 (For rigid main sewers) – lateral must be less that 50% the diameter of the sewermain,

iii. Std Dwg S11.2 (for rigid main sewers using bell end insert method) – for larger diameter laterals where manufactured inserts are not available; lateral must be less that 50% the diameter of the sewermain,

iv. Connections to manholes permitted when the connection is to rigid main sewers where the lateral exceeds 50% the diameter of the sewermain. – Connect obvert to obvert with the outlet pipe unless pipes are a similar size.

10. Water

a. Capacity

b. Water Data Card (future requirement)

c. Water Boundary condition requests must include the location of the service (map or plan with connection location(s) indicated) and the expected loads required by the proposed development, including calculations. Please provide the following information:

i. Location of service

ii. Type of development

iii. The amount of fire flow required (per OBC or FUS).

iv. Average daily demand: ___ l/s.

v. Maximum daily demand: ___l/s.

vi. Maximum hourly daily demand: ___ l/s.

11. Available Services (STM, SAN and WTR)

a. A 450mm dia. Concrete STM Sewer (2017) is available within the ROW on Ste-Cecile Street.

b. A 375mm dia. PVC SAN Sewer (2017) is available within the ROW on Ste-Cecile Street.

c. A 200mm dia. PVC WTR main is available within the ROW on Ste-Cecile Street.

12. Grading

    a. Post-development site grading shall match existing property line grades 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.

13. Fire-fighting flow rate(s)

    a. Please review Technical Bulletin ISTB-2018-02, 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.

    b. Fire flow demand requirements shall be based on **ISTB-2021-03**.

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

    d. **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.

14. Geotechnical (including, where applicable, detailed sensitive marine clay 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. See the Studies Plans and Identification List for more information.

    If Sensitive marine clay soils are present in this area that are susceptible to soil shrinkage that can lead to foundation and building damages. All six (6) conditions listed in the Tree Planting in Sensitive Marine Clay Soils-2017 Guidelines are required to be satisfied. Note that if the plasticity index of the soil is determined to be less than 40% a minimum separation between a street tree and the proposed building foundations of 4.5m will need to be achieved. A memorandum addressing the Tree in Clay Soil Guidelines prepared by a geotechnical engineer is required to be provided to the City.

https://ottawa.ca/en/city-hall/planning-and-development/community-plans-and-design-guidelines/design-and-planning/completed-guidelines/tree-planting-sensitive-marine-clay-soils-2017-guidelines

Noise

Comments:

a. A Surface Transportation Noise Assessment/Study is required as the subject development is located within 100m proximity of Marquette Ave (existing Arterial Road).
b. A Stationary Noise Assessment is required 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.

Feel free to contact **Brett Hughes**, Infrastructure Project Manager, for follow-up questions.

Transportation

Comments:

15. Right-of-way protection.

    a. See Schedule C16 of the Official Plan.

    b. Any requests for exceptions to ROW protection requirements must be discussed with Transportation Planning and concurrence provided by Transportation Planning management.

16. The Screening Form has indicated that no TIA Triggers have been met. This development would not generate sufficient traffic to warrant a TIA report. The consultant is to address how they plan to enable and encourage travel by sustainable modes (i.e., to make walking, cycling, transit, carpooling and telework more convenient, accessible, safe, and comfortable). Please complete the City of Ottawa's *TDM Measures Checklist*.

17. Ste Cecile is classified as a Local Road. There are no additional protected ROW limits identified in the OP. Ensure that the development proposal complies with the Right-of-Way protection requirements of the Official Plan's Schedule C16.

18. The purchaser, tenant or sub-lessee acknowledges the unit being rented/sold is not provided with any on-site parking and should a tenant/purchaser have a vehicle for which they wish to have parking that alternative and lawful arrangements will need to be made to accommodate their parking need at an

alternative location. The Purchaser/Tenant also acknowledges that the availability and regulations governing on-street parking vary; that access to on-street parking, including through residential on-street parking permits issued by the City cannot be guaranteed now or in the future; and that a purchaser, tenant, or sub-lessee intending to rely on on-street parking for their vehicle or vehicles does so at their own risk.

19. 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.

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

21. 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.

22. 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.

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

Feel free to contact **Wally Dubyk**, Transportation Project Manager, for follow-up questions.

Forestry

Comments:

24. A Tree Conservation Report and Landscape Plan are submission requirements. If the ZBA is submitted before the SPC, a conceptual Landscape Plan should be provided.

25. Please confirm if the rear yard outside of the wood privacy fence/planters, roughly 6.75m, will be left as soft scaping? This would be a fantastic area for extensive tree planting. Large canopy, native species must be prioritized where feasible. This would align with Section 4.8.2 of the Official Plan policy 3 which requires developments to provide space and proper soil volume for trees.

26. Ensure there is enough space for tree planting along Ste-Cecile. The planters may need to be redesigned if more space/soil volume is needed. Design

walkways, utilities, services…etc. to have the least impact on future trees as possible. Street trees need to be incorporated along this frontage. Follow the requirements for planting in the right of way, shown below.

27. Retention of existing healthy trees over removal and replacement is a priority of the Official Plan (Section 4.8.2, policy 3d).

28. **Tree Conservation Report requirements. The following Tree Conservation Report (TCR) requirements have been adapted from the Schedule E of the Urban Tree Protection Guidelines – for more information on these requirements please contact hayley.murray@ottawa.ca**

- A Tree Conservation Report (TCR) must be supplied for review along with the suite of other plans/reports required by the City
- Any tree 10 cm in diameter or greater and City-owned trees of any diameter requires a tree permit issued under the Tree Protection Bylaw (Bylaw 2020 – 340); the permit will be based on an approved TCR and made available at or near plan approval.
- The TCR must contain 2 separate plans/maps:
    i. Plan/Map 1 - show existing conditions with tree cover information.
    ii. Plan/Map 2 - show proposed development with tree cover information.
- The TCR must list all trees on site, as well as off-site trees if the CRZ (critical root zone) extends into the developed area, by species, diameter, and health condition. Please note that averages can be used if there are forested areas.
- Please identify trees by ownership – private onsite, private on adjoining site, city owned, co-owned (trees on a property line)
- If trees are to be removed, the TCR must clearly show where they are, and document the reason they cannot be retained.
- The removal of trees on a property line will require the permission of both property owners.
- All retained trees must be shown, and all retained trees within the area impacted by the development process must be protected as per City guidelines available at Tree Protection Specification or by searching Ottawa.ca
- The city encourages the retention of healthy trees; if possible, please seek opportunities for retention of trees that will contribute to the design/function of the site.
- Removal of a City tree is not permitted unless justified. If justified, monetary compensation for the value of the tree must be paid before a tree removal permit is issued.

29. **Landscape Plan (LP) requirements.**

- Landscape Plan Terms of Reference must be adhered to for all tree planting: Click Here. For more information on these requirements please contact hayley.murray@ottawa.ca.

30. **Additional Elements for Tree Planting in the Right of Way:**

- Please ensure any retained trees are shown on the LP
- Sensitive Marine Clay - Please follow the City's 2017 Tree Planting in Sensitive Marine Clay guidelines.
- Soil Volume - Please demonstrate as per the Landscape Plan Terms of Reference that the available soil volumes for new plantings will meet or exceed the minimum soil volumes requested.
- The city requests that consideration be given to planting native species wherever there is a high probability of survival to maturity.
- Efforts shall be made to provide as much future canopy cover as possible at a site level, through tree planting and tree retention. The Landscape Plan shall show/document that the proposed tree planting and retention will contribute to the City's overall canopy cover over time. Please provide a projection of the future canopy cover for the site to 40 years

- Minimum Setbacks
    - Maintain 1.5m from sidewalk or MUP/cycle track or water service laterals.
    - Maintain 2.5m from curb
    - Coniferous species require a minimum 4.5m setback from curb, sidewalk, or MUP/cycle track/pathway.
    - Maintain 7.5m between large growing trees, and 4m between small growing trees. Park or open space planting should consider 10m spacing, except where otherwise approved in naturalization / afforestation areas.
    - Adhere to Ottawa Hydro's planting guidelines (species and setbacks) when planting around overhead primary conductors.

- Tree specifications
    - Minimum stock size: 50mm tree caliper for deciduous, 200cm height for coniferous.
    - Maximize the use of large deciduous species wherever possible to maximize future canopy coverage.
    - Tree planting on city property shall be in accordance with the City of Ottawa's Tree Planting Specification; and if possible, include watering and warranty as described in the specification.
    - No root barriers, dead-man anchor systems, or planters are permitted.

- No tree stakes unless necessary (and only 1 on the prevailing winds side of the tree)

- Hard surface planting
  - If there are hard surface plantings, a planting detail must be provided.
  - Curb style planters are highly recommended.
  - No grates are to be used and if guards are required, City of Ottawa standard (which can be provided) shall be used.
  - Trees are to be planted at grade.

Feel free to contact **Hayley Murray**, Planning Forester, for follow-up questions.

Parkland

Comments:

The parkland conveyance requirement will be in the form of cash-in-lieu calculated at a rate of 10% of the gross land area in accordance with the Parkland Dedication By-law, being By-law No. 2022-280, as amended.

Feel free to contact **Steve Gauthier**, Parks Planner, for follow-up questions.

Community issues

Vanier Community Association Comments:

31. The new R4 zones alread doubled density to 225 units per net hectare. This is well beyond this target. One way to counterbalance this would be to incorporate larger units (fewer units), especially in vicinity of school. Looking for more family accommodations in the area.

32. Rear massing impacts are common on low-rise neighbours, continues to be a concern for this project.

33. Fenestration and balconies are positive elements, adding eyes on the street.

34. The height compared to neighbouring buildings is massive in scale, and not successfully softened. The proposal goes well beyond the 60-100 units per net hectare for North Vanier

35. The lack of parking is a problem as it is not close to reliable transit.

Other

36. The High Performance Development Standard (HPDS) is a collection of voluntary and required standards that raise the performance of new building projects to achieve sustainable and resilient design and will be applicable to Site Plan Control and Plan of Subdivision applications.

    a. The HPDS was passed by Council on April 13, 2022, but is not in effect at this time, as Council has referred the 2023 HPDS Update Report back to staff with the direction to bring forward an updated report to Committee at a later date. Please be advised that this is expected to occur in Q3 2024.

    b. Please refer to the HPDS information at ottawa.ca/HPDS for more information.

37. Under the Affordable Housing Community Improvement Plan, a Tax Increment Equivalent Grant (TIEG) program was created to incentivize the development of affordable rental units. It provides a yearly fixed grant for 20 years. The grant helps offset the revenue loss housing providers experience when incorporating affordable units in their developments.

    a. To be eligible for the TIEG program you must meet the following criteria:

        i. the greater of five units OR 15 per cent of the total number of units within the development must be made affordable

        ii. provide a minimum of 15 per cent of each unit type in the development as affordable

        iii. enter into an agreement with the city to ensure the units maintain affordable for a minimum period of 20 years at or below the city-wide average market rent for the entire housing stock based on building form and unit type, as defined by the Canada Mortgage and Housing Corporation

        iv. must apply after a formal Site Plan Control submission, or Building Permit submission for projects not requiring Site Plan Control, and prior to Occupancy Permit issuance

    b. Please refer to the TIEG information *at Affordable housing community improvement plan / Plan d'améliorations communautaires pour le logement abordable for more details or contact the TIEG coordinator via email at affordablehousingcip@ottawa.ca.*

Submission Requirements and Fees

1. A Zoning By-law Amendment and Site Plan Control application will be required.
    a. Additional information regarding fees related to planning applications can be found here.
2. The attached **Study and Plan Identification List** outlines the information and material that has been identified as either required (R) or advised (A) as part of a future complete application submission.
    a. The required plans and studies must meet the City's Terms of Reference (ToR) and/or Guidelines, as available on Ottawa.ca. These ToR and Guidelines outline the specific requirements that must be met for each plan or study to be deemed adequate.
3. All of the above comments or issues should be addressed to ensure the effectiveness of the application submission review.

Should there be any questions, please do not hesitate to contact myself or the contact identified for the above areas / disciplines.

Yours Truly,
Jean-Charles Renaud (Planner III)

Encl. Study and Plan Identification List
List of Technical Agencies
Urban Design Brief
ADS Site Plan Checklist
HPDS Example Checklist
HPDS Overview for Applicants
Supplementary Development Information

c.c. Nastassia Pratt (Planner)
Brett Hughes (Infrastructure)
Farbod Azimi (Infrastructure)
Wally Dubyk (Transportation)
Christopher Moise (Urban Design)
Hayley Murray (Forestry)
Steve Gauthier (Parks)
Chris Greenshields (Vanier CA)

APPLICANT'S STUDY AND PLAN IDENTIFICATION LIST

Proposed Phase 1 Zone By-Law Amendment and Site Plan Control Applications – 73, 79, 83 Ste-Cecile Street – PC2024-0388

Legend: **R** = Required, the study or plan is required with application submission
A = Advised, the study or plan is advised to evaluate the application or satisfy a condition of approval/draft approval
1 - OPA, **2** - ZBA, **3** - Plan of Subdivision, **4** - Plan of Condominium, **5** - SPC

Core studies required for certain applications all the time (Remaining studies are site specific)

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

ENGINEERING										
R	**A**	**Study/ Plan Name**	**Description**	**When Required**					**Applicable Study Components & Other Comments**
				1	**2**	**3**	**4**	**5**	
☒	☐	1. Environmental Site Assessment (Phase 1 & Phase 2)	Ensures development only takes place on sites where the environmental conditions are suitable for the proposed use	☒	☒	☒	☒	☒	Record of Site Condition Yes ☐ No ☐ **RSC conditional on ESA Phase 1 or 2 findings.*
				Study Trigger Details: All cases					
☒	☐	2. Geotechnical Study	Geotechnical design requirements for the subsurface conditions	☒	☒	☒	☒	☒	
				Study Trigger Details: All cases					
☒	☐	3. Grading and Drainage Plan	Grading relationships between connecting (or abutting) properties and surface runoff control	☐	☐	☒	☐	☒	
				Study Trigger Details: All cases					
☐	☐	4. Hydrogeological and Terrain Analysis	A scientific study or evaluation that includes a description of the ground and surface hydrology, geology, terrain, affected landform and its susceptibility	☐	☐	☒	☒	☒	Reasonable Use Study Yes ☐ No ☐ Groundwater Impact Study Yes ☐ No ☐
				Study Trigger Details: When developing on private services or when urban development is in close proximity to existing private serviced development					
☒	☐	5. Noise Control Study	Potential impacts of noise on a development	☒	☒	☒	☒	☒	Vibration Study

				Study Trigger Details: See Terms of Reference for full details.					Yes ☐ No ☐
☐	☐	6. Rail Proximity Study	Development on land adjacent to all Protected Transportation Corridors and facilities shown on Schedule C2 of the Official Plan, to follow rail safety and risk mitigation best practices	☐	☒	☒	☒	☒	Rail Safety Report Yes ☐ No ☐ O-Train Network Proximity Study Yes ☐ No ☐
				Study Trigger Details: Within the Development Zone of Influence for existing and future rapid transit stations and corridors, as shown on Annex 2 of the OP OR on land adjacent to all Protected Transportation Corridors and facilities shown on Schedule C2 of the Official Plan					
☒	☐	7. Site Servicing Study	Provides servicing details based on proposed scale of development with an engineering overview taking into consideration surrounding developments and connections.	☐	☒	☒	☒	☒	Fluvial Geomorphological Report Yes ☐ No ☐ Assessment of Adequacy of Public Services Yes ☐ No ☐ Servicing Options Report Yes ☐ No ☐ Erosion and Sediment Control Plan / Brief Yes ☒ No ☐ Hydraulic Water Main Analysis Yes ☒ No ☐ Stormwater Management Report and Detailed Design Brief Yes ☒ No ☐
				Study Trigger Details: All cases					
☐	☐	8. Slope Stability Study	Assessment of slope stability and measures to provide safe set-back.	☐	☒	☒	☒	☒	Retrogressive Landslide Analysis Yes ☐ No ☐
				Study Trigger Details: Where the potential for Hazard Lands exists on a site.					
☐	☐	9. Transportation Impact Assessment		☐	☒	☒	☒	☒	Roadway Modification Functional Design

			Identify on and off-site measures to align a development with City transportation objectives.	Study Trigger Details: If the development generates 60 person-trips or more; or if the development is located in a Location Trigger; or if the development has a Safety Trigger.	Yes ☐ No ☐
☐	☐	10. Water Budget Assessment	Identify impact of land use changes on the hydrologic cycle and post-development mitigation targets.	☐ ☒ ☒ ☒ ☒ Study Trigger Details: May be required for site plan control applications for sites with private servicing and / or proximity to hydrogeologically-sensitive areas. Draft plans of subdivision are required to integrate water budget assessments into supporting stormwater management plans and analysis for the study area.	
☐	☐	11. Wellhead Protection Study	Delineate a Wellhead Protection Area (WHPA) and characterize vulnerability for new communal residential drinking water well systems, in accordance with Technical Rules under *Clean Water Act.*	☐ ☒ ☒ ☒ ☒ Study Trigger Details: Required for all new communal residential drinking water well systems; including new municipal wells, new private communal wells (small water works) that require a Municipal Responsibility Agreement (MRA), expansions or increased water takings from an existing municipal well or existing private communal well and new private communal wells.	

PLANNING									
R	**A**	**Study/Plan Name**	**Description**	**When Required**					**Applicable Study Components & Other Comments**
				1	**2**	**3**	**4**	**5**	
☐	☐	12. Agrology and Soil Capability Study	Confirm or recommend alterations to mapping of agricultural lands in the City.	☒	☐	☐	☐	☐	
				Study Trigger Details: For the expansion of a settlement area or identification of a new settlement area through a comprehensive review; or where it is demonstrated that the land does not meet the requirements for an Agricultural Resource Area.					
☐	☐	13. Archaeological Assessment	Discover any archaeological resources on site, evaluate cultural heritage value and conservation strategies	☒	☒	☒	☒	☒	
				Study Trigger Details: When the land has either: a known archaeological site; or the potential to have archaeological sites; or where the City's Archaeological Resource Potential Mapping Study indicates archaeological potential, outside of the historic core; or upon discovery of any archaeological resource during construction in the City's historic core area.					
☒	☐	14. Building Elevations	Visual of proposed development to understand	☒	☒	☐	☐	☒	

			facing of building including direction of sunlight, height, doors, and windows.	Study Trigger Details: Site Plan: for residential buildings with 25 or more residential units; or for residential buildings with less than 25 residential units, if the units are within the Urban area or the High-performance Development Standard threshold in the rural area. Official Plan or Zoning By-law: if staff deem it necessary to determine compliance with OP policies, the Zoning By-law or City of Ottawa Urban Design Guidelines.					
☐	☐	15. Heritage Impact Assessment	Determine impacts of proposed development on cultural heritage resources.	☒	☒	☒	☒	☒	Study Trigger Details: Where development or an application under the Ontario Heritage Act is proposed on, adjacent to, across the street from or within 30 metres of a protected heritage property; or for any development adjacent to the Rideau Canal UNESCO World Heritage Site and its landscaped buffer.	Conservation Plan Yes ☐ No ☐
☐	☐	16. Heritage Act Acknowledgement Report	A submission requirement to demonstrate that the *Ontario Heritage Act* requirements have been satisfied, to ensure that multiple applications are considered currently.	☐	☒	☒	☒	☒	Study Trigger Details: Where the subject property is listed on the Heritage Register and the applicant must submit a Heritage Permit Application (designated heritage property listed on the Heritage Register) or provide notice of intent to demolish or remove a building (non-designated property listed on the Heritage Register).	Heritage Permit Application Yes ☐ No ☐ Notice of Intent to Demolish Yes ☐ No ☐
☐	☐	17. Impact Assessment Study – Mineral Aggregate	Mineral aggregate extraction activities; and to protect known high quality mineral aggregate resources from development and activities that would preclude or hinder their existence (ability to be extracted) or expansion.	☒	☒	☒	☒	☒	Study Trigger Details: New Development within 500 metres of lands within the Bedrock Overlay , or within 300 metres of lands within the Sand and Gravel Resource Area Overlay.	

☐	☐	18. Impact Assessment Study – Mining Hazards	To identify or confirm known mineral deposits or petroleum resources and significant areas of mineral potential. To protect mineral and petroleum resources from development and activities which would preclude or hinder the establishment of new operations or access to the resources.	☒	☒	☒	☒	☒	Study Trigger Details: For all applications in proximity to mining operations.	
☐	☐	19. Impact Assessment Study – Waste Disposal Sites / Former Landfill Sites	To identify or confirm known proximity of existing or former waste disposal sites. To ensure issues of public health, public safety and environmental impact are addressed.	☒	☒	☒	☒	☒	Study Trigger Details: For the establishment of any new Solid Waste Disposal Site or for a footprint expansion of an operating Solid Waste Disposal Site; or development within three kilometers of an operating or non-operating Waste Disposal Site.	
☒	☐	20. Landscape Plan	A plan to demonstrate how the canopy cover, urban design, health, and climate change objectives of Official Plan will be met through tree planting and other site design elements.	☒	☒	☒	☒	☒	Study Trigger Details: Site Plan, Plan of Subdivision, and Plan of Condominium: always required, except where it is demonstrated that the landscape component of a project is not relevant to the review of the application. A high-level conceptual Landscape Plan may be required to support Zoning By-law and Official Plan Amendment applications.	
☐	☐	21. Mature Neighbourhood Streetscape Character Analysis	In the Mature Neighbourhoods a Streetscape Character Analysis is required to determine the applicable zoning requirements.	☐	☒	☐	☐	☐	Study Trigger Details: Zoning By-law amendment application in areas covered by the Mature Neighbourhoods zoning overlay for applications of residential development of four storeys or less located in a R1, R2, R3, or R4 zone.	

☐	☐	22. Minimum Distance Separation	Provincial land use planning tool that determines setback distances between livestock barns, manure storages or anaerobic digesters and surrounding land uses, with the objective of minimizing land use conflicts and nuisance complaints related to odour.	☒	☒	☒	☒	☒	
				Study Trigger Details: Applications in the Rural Area, outside of a village.					
☐	☐	23. Parking Plan	A tool to assess the sufficiency of on-street parking in plans of subdivision.	☐	☐	☒	☒	☐	
				Study Trigger Details: For new or revised plans of subdivision with public streets.					
☒	☐	24. Plan of Survey	A Plan of Survey depicts legal boundaries and is a specialized map of a parcel of land and it delineates boundary locations, building locations, physical features and other items of spatial importance.	☒	☒	☒	☒	☒	
				Study Trigger Details: Required for all *Planning Act* applications.					
☐	☐	25. Plan of Subdivision	Proposed subdivision layout to be used for application approval	☐	☒	☒	☐	☐	
				Study Trigger Details: Always required with the submission of plan of subdivision application. Only required with a Zoning By-law Amendment application, where such ZBLA is in response to enable a subdivision.					
☐	☐	26. Plan of Condominium	Proposed condominium layout to be used for application approval	☐	☐	☐	☒	☐	
				Study Trigger Details: With the submission of plan of condominium application.					
☒	☐	27. Planning Rationale	Provides the planning justification in support of the	☒	☒	☒	☐	☐	Integrated Environmental Review Summary

			Planning Act application and to assist staff and the public in the review of the proposal.	Study Trigger Details: For all Official Plan amendment, Zoning By-law amendment, or plan of subdivision applications.						Yes ☐ No ☐
☐	☐	28. Preliminary Construction Management Plan	A checklist that shows a development proposal's anticipated impacts to all modes of transportation and all elements in the right of way during construction.	☐	☐	☒	☐	☒	Study Trigger Details: For all Site Plan and plan of subdivision applications.	
☐	☐	29. Public Consultation Strategy	Proposal to reach and collect public input as part of development application.	☒	☒	☒	☒	☒	Study Trigger Details: Official Plan Amendment, Zoning By-law Amendment and Subdivision: Always required. Condominium: Vacant Land only Site Plan: At the discretion of the City's file lead in consultation with the Business and Technical Support Services Manager.	
☐	☐	30. Shadow Analysis		☐	☒	☐	☐	☐		

			A visual model of how the proposed development will cast its shadow.	Study Trigger Details: When there is an increase in height or massing proposed for a residential, commercial or office use. Two triggers: 1. Inside the Greenbelt: proposed development is over 5 storeys in height (≤15 meters). If a development proposal is 5 storeys or less, but is proposing an increase in height and/or massing and is in close proximity to a shadow sensitive area, a shadow analysis may be requested. 2. Outside the Greenbelt: proposed development is over 3 storeys in height (≤9 meters) and is in close proximity to a shadow sensitive area. Where a proposed development is not in close proximity to a shadow sensitive area (e.g. industrial development) the trigger for a shadow analysis is over 5 storeys in height (≤15 meters).					
☒	☐	31. Site Plan	A Site Plan is a visual drawing that illustrates the proposed development of a site in two dimensions.	☒	☒	☒	☒	☒	Site Plan Yes ☐ No ☐ Concept Plan Yes ☐ No ☐ Facility Fit Plan Yes ☐ No ☐		
				Study Trigger Details: Site Plan: All Other applications: where a layout of the public realm, building massing, heights, densities or massing of the proposal provides changes to the planned context; sites proposing multiple land uses; sites with multiple landowners; sites with two or more buildings, on-site park dedication, and/or a new public or private street(s); sites with proposed changes to connectivity (such as active transportation networks, vehicular circulation or access to transit); sites where the development potential on adjacent properties may be impacted by or could be integrated into the proposed site.							
☒	☐	32. Urban Design Brief	Illustrate how a development proposal represents high-	☒	☒	☒	☐	☒			

			quality and context sensitive design that implements policies of the Official Plan, relevant secondary plans, and Council approved plans and guidelines.	<u>Study Trigger Details</u>: For all Official Plan amendment, Zoning By-law amendment, and plan of subdivision applications. For SPC applications: proposals for residential buildings with 25 or more residential units, or for proposals for residential buildings with less than 25 residential units, if the units are within the Urban area or the High-performance Development Standard threshold in the rural area where OP Policy 11.3 (3) is relevant; for non-residential and mixed-use proposals.	
☐	☐	33. Urban Design Review Panel Report	Demonstrates that a development proposal has attended an Urban Design Review Panel formal review meeting, received, and responded to the associated recommendations, if applicable	☒ ☒ ☒ ☒ ☒ <u>Study Trigger Details</u>: Required for all planning act applications subject to UDRP review, in accordance with the UDRP Panel Terms of Reference.	
☐	☐	34. Wind Analysis	A visual model and a written evaluation of how a proposed development will impact pedestrian-level wind conditions.	☐ ☒ ☐ ☐ ☒ <u>Study Trigger Details</u>: Applications seeking an increase in height and/or massing which is either: a tall building(s), 10 storeys or more or a proposed building that is more than twice the height of adjacent existing buildings and is greater than five storeys in height and is adjacent to existing or planned low rise development, open spaces, water bodies and large public amenity areas.	
☒	☐	35. Zoning Confirmation Report	The purpose of the Zoning Confirmation Report (ZCR) is to identify all zoning compliance issues, if any, at the outset of a planning application.	☐ ☒ ☐ ☐ ☒ <u>Study Trigger Details</u>: Required for all SPC and ZBLA applications.	

ENVIRONMENTAL

R	A	Study / Plan Name	Description	When Required					Applicable Study Components & Other Comments
				1	2	3	4	5	
☐	☐	36. Community Energy Plan	Includes a community energy analysis, alongside mitigation measures, and other associated information. The community energy analysis refers to the overall assessment process to identify on and off-site measures to align the design of the development with City climate objectives.	☐	☐	☐	☐	☐	
				NOT IMPLEMENTED & NOT REQUIRED					
☐	☐	37. Energy Modelling Report	The Energy Modeling Report is a Site Plan Control application submission requirement to show how climate change mitigation, and energy objectives will be met through exterior building design elements.	☐	☐	☐	☐	☐	
				NOT IMPLEMENTED & NOT REQUIRED					
☐	☐	38. Environmental Impact Study	Assessment of environmental impacts of a project and documents the existing natural features, identifies the potential environmental impacts, recommends ways to avoid and reduce the negative impacts, and proposes ways to enhance natural features and functions.	☒	☒	☒	☐	☒	Assessment of Landform Features Yes ☐ No ☐ Integrated Environmental Review Yes ☐ No ☐ Protocol for Wildlife Protection during Construction Yes ☐ No ☐ Significant Woodlands Guidelines for Identification, Evaluation, and Impact Assessment Yes ☐ No ☐
				<u>Study Trigger Details</u>: Is required when development or site alteration is proposed in or within a specified distance of environmentally designated lands, natural heritage features, the City's Natural Heritage System, or hazardous forest types for wildland fire. The EIS Decision Tool (Appendix 2 of the Environmental Impact Study Guidelines) provides a checklist of the natural heritage features and adjacent areas within which an EIS is required to support development applications under the *Planning Act.*					
☐	☐	39. Environmental Management Plan	A comprehensive environmental planning	☒	☐	☐	☐	☐	

			document that identifies, evaluates, and mitigates the potential impacts of proposed development on the natural environment and its ecological functions at local planning stage.	Study Trigger Details: Official Plan amendments for local plans (area-specific policy or secondary plan, where: there is significant change in the conditions upon which the original study was based; there are proposed changes to planned infrastructure needed to service a subdivision that would have a significant impact on the infrastructure needs of another subdivision within the EMP study area, or the applicable Class Environmental Assessment approval has expired.	
☐	☐	40. High-performance Development Standard	A collection of voluntary and required standards that raise performance of new building projects to achieve sustainable and resilient design	☐ ☐ ☐ ☐ ☐ NOT IMPLEMENTED & NOT REQUIRED	
☒	☐	41. Tree Conservation Report	Demonstrates how tree cover will be retained and protected on the site, including mature trees, stands of trees, and hedgerows.	☐ ☐ ☒ ☒ ☒ Study Trigger Details: Where there is a tree of 10 centimeters in diameter or greater on the site and/or if there is a tree on an adjacent site that has a Critical Root Zone (CRZ) extending onto the development site.	

APPENDIX B
Development Servicing Study Checklist

73-83 STE CECILE STREET
CITY OF OTTAWA
DEVELOPMENT SERVICING STUDY CHECKLIST

4.1 General Content	**Addressed (Y/N/NA)**	**Comments**
Executive Summary (for larger reports only).	N/A	
Date and revision number of the report.	Y	
Location map and plan showing municipal address, boundary, and layout of proposed development.	Y	Refer to Report Figures
Plan showing the site and location of all existing services.	Y	Refer to Grading and Servicing Plans
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.	Y	Refer to Site Plan
Summary of Pre-consultation Meetings with City and other approval agencies.	Y	
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.	N/A	
Statement of objectives and servicing criteria.	Y	Report Sections: 5.0 Water Servicing , 6.0 Sanitary Servicing, 7.0 Storm Servicing
Identification of existing and proposed infrastructure available in the immediate area.	Y	
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).	N/A	
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 neighboring properties. This is also required to confirm that the proposed grading will not impede existing major system flow paths.	Y	Refer to Grading Plan and Storm Drainage Area Plan

73-83 STE CECILE STREET
CITY OF OTTAWA
DEVELOPMENT SERVICING STUDY CHECKLIST

4.1 General Content	**Addressed (Y/N/NA)**	**Comments**
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.	N/A	
Proposed phasing of the development, if applicable.	N/A	
Reference to geotechnical studies and recommendations concerning servicing.	N	
All preliminary and formal site plan submissions should have the following information:		
Metric scale	Y	
North arrow (including construction	Y	
Key plan	Y	
Name and contact information of applicant and property owner	Y	
Property limits including bearings and dimensions	Y	
Existing and proposed structures and parking areas	Y	
Easements, road widening and rights-of-	Y	
Adjacent street names	Y	

73-83 STE CECILE STREET
CITY OF OTTAWA
DEVELOPMENT SERVICING STUDY CHECKLIST

4.2 Water	**Addressed (Y/N/NA)**	**Comments**
Confirm consistency with Master Servicing Study, if available.	N/A	
Availability of public infrastructure to service proposed development.	Y	Report Sections: 5.0 Water Servicing , 6.0 Sanitary Servicing, 7.0 Storm Servicing
Identification of system constraints.	N/A	
Identify boundary conditions.	Y	Provided by City of Ottawa
Confirmation of adequate domestic supply and pressure.	Y	Refer to Appendix C
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.	Y	Refer to Appendix C
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.	Y	Refer to Appendix C
Definition of phasing constraints. Hydraulic modeling is required to confirm servicing for all defined phases of the project including the ultimate design.	N/A	
Address reliability requirements such as appropriate location of shut-off valves.	Y	Refer to Appendix C
Check on the necessity of a pressure zone boundary modification.	N/A	
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.	Y	Report Section 5.0 Water Servicing & Appendix C
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.	Y	Report Section 5.0 Water Servicing
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.	N/A	
Confirmation that water demands are calculated based on the City of Ottawa Design Guidelines.	Y	Report Section 5.0 Water Servicing & Appendix C
Provision of a model schematic showing the boundary conditions locations, streets, parcels, and building locations for reference.	N/A	

73-83 STE CECILE STREET
CITY OF OTTAWA
DEVELOPMENT SERVICING STUDY CHECKLIST

4.3 Wastewater	Addressed (Y/N/NA)	**Comments**
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	Y	Report Section 6.0 Sanitary Servicing
Confirm consistency with Master Servicing Study and/or justifications for deviations.	N/A	
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.	N/A	
Description of existing sanitary sewer available for discharge of wastewater from proposed development.	Y	Report Section 6.0 Sanitary Servicing
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)	y	Refer to Appendix D
Calculations related to dry-weather and wet-weather flow rates from the development in standard MOE sanitary sewer design table (Appendix 'C') format.	N/A	
Description of proposed sewer network including sewers, pumping stations, and forcemains.	Y	Report Section 6.0 Sanitary Servicing & Appendix D
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).	N/A	
Pumping stations: impacts of proposed development on existing pumping stations or requirements for new pumping station to service development.	N/A	
Forcemain capacity in terms of operational redundancy, surge pressure and maximum flow velocity.	N/A	
Identification and implementation of the emergency overflow from sanitary pumping stations in relation to the hydraulic grade line to protect against basement flooding.	N/A	
Special considerations such as contamination, corrosive environment etc.	N/A	

73-83 STE CECILE STREET
CITY OF OTTAWA
DEVELOPMENT SERVICING STUDY CHECKLIST

4.4 Stormwater	**Addressed (Y/N/NA)**	**Comments**
Description of drainage outlets and downstream constraints including legality of outlet (i.e. municipal drain, right-of-way, watercourse, or private property).	Y	Report Section 7.0 Storm Servicing Stormwater Management
Analysis of the available capacity in existing public infrastructure.	N	Stormwater release rates less than or equal to city allowable release rate criteria
A drawing showing the subject lands, its surroundings, the receiving watercourse, existing drainage patterns and proposed drainage patterns.	Y	Refer to Storm Drainage Area Plan
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.	Y	Report Section 7.0 Storm Servicing Stormwater Management
Water Quality control objective (basic, normal or enhanced level of protection based on the sensitivities of the receiving watercourse) and storage requirements.	Y	Report Section 7.0 Storm Servicing & Stormwater Management
Description of stormwater management concept with facility locations and descriptions with references and supporting information.	Y	Report Section 7.0 Storm Servicing Stormwater Management
Set-back from private sewage disposal systems.	N/A	
Watercourse and hazard lands setbacks.	N/A	
Record of pre-consultation with the Ontario Ministry of Environment and the Conservation Authority that has jurisdiction on the affected watershed.	N/A	
Confirm consistency with sub-watershed and Master Servicing Study, if applicable study exists.	N/A	
Storage requirements (complete with calcs) and conveyance capacity for 5 yr and 100 yr events.	Y	Refer to Appendix E
Identification of watercourse within the proposed development and how watercourses will be protected, or, if necessary, altered by the proposed development with applicable approvals.	N/A	
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.	Y	Refer to Appendix E
Any proposed diversion of drainage catchment areas from one outlet to another.	N/A	
Proposed minor and major systems including locations and sizes of stormwater trunk sewers, and SWM	N/A	
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.	N/A	

73-83 STE CECILE STREET
CITY OF OTTAWA
DEVELOPMENT SERVICING STUDY CHECKLIST

4.4 Stormwater	Addressed (Y/N/NA)	Comments
Identification of potential impacts to receiving watercourses.	N/A	
Identification of municipal drains and related approval requirements.	N/A	
Description of how the conveyance and storage capacity will be achieved for the development.	Y	Report Section 7.0 Storm Servicing Stormwater Management
100 year flood levels and major flow routing to protect proposed development from flooding for establishing minimum building elevations (MBE) and overall grading.	Y	Refer to Storm Drainage Area Plan
Inclusion of hydraulic analysis including HGL elevations.	N/A	
Description of approach to erosion and sediment control during construction for the protection of receiving watercourse or drainage corridors.	Y	Report Section 8.0 Erosion and Sediment Control
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.	N/A	
Identification of fill constrains related to floodplain and geotechnical investigation.	N/A	

4.5 Approval and Permit Requirements	Addressed (Y/N/NA)	Comments
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.	N/A	
Application for Certificate of Approval (CofA) under the Ontario Water Resources Act.	N/A	
Changes to Municipal Drains.	N/A	
Other permits (National Capital Commission, Parks Canada, Public Works and Government Services Canada, Ministry of Transportation etc.)	N/A	

4.6 Conclusion	Addressed (Y/N/NA)	Comments
Clearly stated conclusions and recommendations.	Y	Report Section 9.0 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.	N/A	T.B.D.
All draft and final reports shall be signed and stamped by a professional Engineer registered in Ontario.	Y	

APPENDIX C
Watermain Servicing Information

73-83 STE. CECILE STREET

	Unit Type	Unit Type	Unit Type	Unit Type	Total	Residential Demand (L/s)		
	Bachelor Apartment	1-Bed Room Apartment	2-Bed Room Apartment	3-Bed Room Apartment		Avg. Day	Max. Day	Peak Hour
73-83 Ste-Cecile	5	26	8	2	41	0.21	0.53	1.18
Unit Population	7	36	17	6	66			

Design Parameters:

- Bachelor Apartment = 1.4 persons/unit
- 1-Bed Apartment = 1.4 persons/unit
- 2-Bed Apartment = 2.1 persons/unit
- 3-Bed Apartment = 3.1 persons/unit

Section 4.0 Ottawa Sewer Design Guidelines

- Average Domestic Flow	280	L/person/day

Peaking Factors (Table 4.2)

Max. Daily Demand:

- Residential	2.5	x Avg. Day

Peak Hourly Demand:

- Residential	2.2	x Max. Day

FUS - Fire Flow Calculations

NOVATECH
Engineers, Planners & Landscape Architects

Novatech Project #: 122167
Project Name: 73,79 & 83 Ste. Cecile Street
Date: 2/20/2025
Input By: Ben Barkley
Reviewed By: Matthew Hrehoriak
Drawing Reference: 122167-GP

Legend: Input by User
No Input Required
Reference: Fire Underwriter's Survey Guideline (2020)
Formula Method

Building Description: 4-storey, 41-unit Apartment
Type III - Ordinary 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	1	
		Type IV - Mass Timber		Varies		
		Type III - Ordinary construction	Yes	1		
		Type II - Non-combustible construction		0.8		
		Type I - Fire resistive construction (2 hrs)		0.6		
2	**Floor Area**					
	A	Building Footprint (m^2)	552.1			
		Number of Floors/Storeys	4			
		Protected Openings (1 hr) if C<1.0	No			
		Area of structure considered (m^2)			**2,208**	
	F	**Base fire flow without reductions**				**10,000**
		F = 220 **C** (**A**)$^{0.5}$				
Reductions or Surcharges						
3	**Occupancy hazard reduction or surcharge**		**FUS Table 3**	**Reduction/Surcharge**		
	(1)	Non-combustible		-25%	-15%	**8,500**
		Limited combustible	Yes	-15%		
		Combustible		0%		
		Free burning		15%		
		Rapid burning		25%		
4	**Sprinkler Reduction**		**FUS Table 4**	**Reduction**		
	(2)	Adequately Designed System (NFPA 13)	Yes	-30%	-30%	**-3,400**
		Standard Water Supply	Yes	-10%	-10%	
		Fully Supervised System	No	-10%		
				Cumulative Sub-Total	**-40%**	
		Area of Sprinklered Coverage (m^2)	2208	100%		
				Cumulative Total	**-40%**	
5	**Exposure Surcharge**		**FUS Table 5**		**Surcharge**	
	(3)	North Side	10.1 - 20 m		15%	**6,375**
		East Side	0 - 3 m		25%	
		South Side	20.1 - 30 m		10%	
		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**	**11,000**
		(2,000 L/min < Fire Flow < 45,000 L/min)		or	L/s	**183**
				or	USGPM	2,906

CALCULATED WATER DEMNADS:

PROPOSED DEVELOPMENT (4 STOREY BUILDING)

AVERAGE DAY =	0.21	L/s
MAXIMUM DAY =	0.53	L/s
PEAK HOUR =	1.18	L/s
MAX DAY + FIRE =	183.53	L/s

CITY OF OTTAWA BOUNDARY CONDITIONS:

BOUNDAY CONDITIONS BASED ON CONNECTION TO 203mm DIA. WATERMAIN ON STE CECILE STREET.

MINIMUM HGL =	109.4	m
MAXIMUM HGL =	118.4	m
MAX DAY + FIRE =	101	m

WATERMAIN ANALYSIS:

73-83 STE CECILE STREET

FINSIHED FLOOR GROUND ELEVATION = 55.60 m

HIGH PRESSURE TEST = MAX HGL - AVG GROUND ELEV x 1.42197 PSI/m < 80 PSI

HIGH PRESSURE = 89.3 PSI

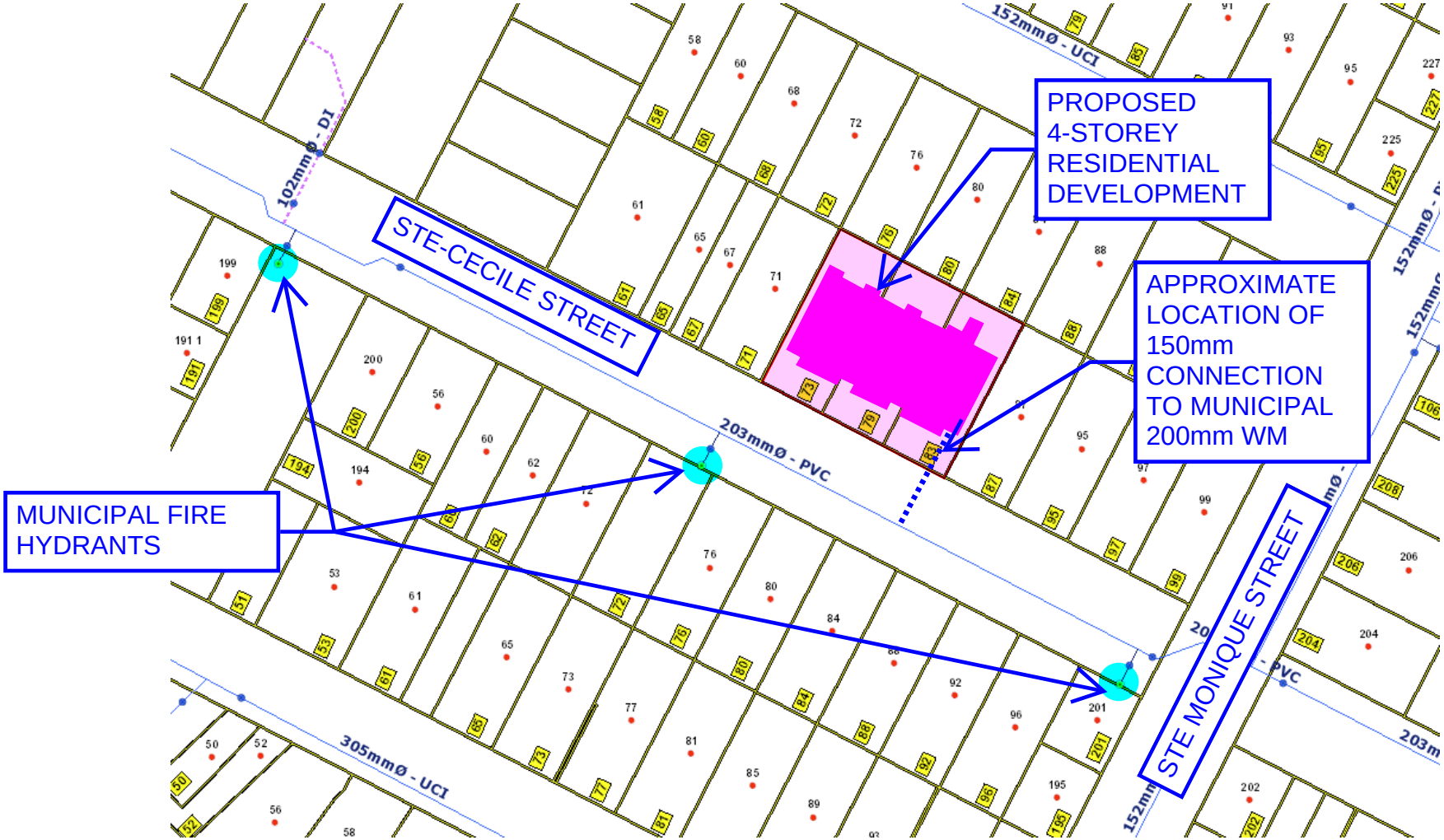
LOW PRESSURE TEST = MIN HGL - AVG GROUND ELEV x 1.42197 PSI/m > 40 PSI

LOW PRESSURE = 76.5 PSI

MAX DAY + FIRE TEST = MAX DAY + FIRE - AVG GROUND ELEV x 1.42197 PSI/m > 20 PSI

LOW PRESSURE = 64.6 PSI

122167 - Boundary Conditions Request



Ben Barkley

From: Matthew Hrehoriak
Sent: Thursday, February 20, 2025 9:17 AM
To: Ben Barkley
Subject: FW: Ste Cecile WM Boundary Conditions Request (D07-12-24-0177)
Attachments: 73-79-81 Ste-Cecile Street February 2025.pdf; 122167-FUS-2025.pdf; SteCecileBoundarySketch.pdf; 122167-WaterDemands2025.pdf

Matthew Hrehoriak, P.Eng., Project Manager | Land Development Engineering
NOVATECH
Engineers, Planners & Landscape Architects
240 Michael Cowpland Drive, Suite 200, Ottawa, ON, K2M 1P6 | Tel: 613.254.9643 x 273 | Cell: 613.791.0387

From: Hughes, Brett <brett.hughes@ottawa.ca>
Sent: Thursday, February 20, 2025 9:15 AM
To: Matthew Hrehoriak <m.hrehoriak@novatech-eng.com>
Cc: Azimi, Farbod <farbod.azimi@ottawa.ca>; Pratt, Nastassia <nastassia.pratt@ottawa.ca>; Khan, Haris <haris.khan@ottawa.ca>
Subject: RE: Ste Cecile WM Boundary Conditions Request (D07-12-24-0177)

Matthew,
Water resources have confirmed that the hydrants identified in the multi-hydrant analysis can provide the calculated required fire flow of 11,000 L/min or 183 L/s. Please use this email as written confirmation from the City that the hydrants you have identified in the multi-hydrant analysis can provide sufficient fire flow for the proposed development. Please be sure to include this confirmation email and any supporting documents (see attachments) in the Serviceability Report.

"The following are boundary conditions, HGL, for hydraulic analysis at Ste-Cecile Street (zone 1E) assumed to be connected to the 203 mm watermain on Ste-Cecile Street (see attached PDF for location).

Minimum HGL = 109.4 m
Maximum HGL = 118.4 m
Max Day + Fire Flow (183.0 L/s) = 101.0 m

The maximum pressure is estimated to be more than 80 psi. A pressure check at completion of construction is recommended to determine if pressure control is required.

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. Fire Flow analysis is a reflection of available flow in the watermain; there may be additional restrictions that occur between the watermain and the hydrant that the model cannot take into account."

Regards,

Brett Hughes BEng.
Project Manager, Infrastructure
Development Review Central
PLANNING, DEVELOPMENT & BUILDING SERVICES (PDBS)
110 Laurier Ave West | 4th Floor | Ottawa, ON | K1P 1J1
City of Ottawa | Ville d'Ottawa
613.580.2424 ext./poste 32541

From: Matthew Hrehoriak <m.hrehoriak@novatech-eng.com>
Sent: February 05, 2025 10:06 AM
To: Hughes, Brett <brett.hughes@ottawa.ca>
Subject: FW: Ste Cecile WM Boundary Conditions Request

Hey Brett,

After review, the building is now 4 stories above grade plus the basement so the FUS at 183 L/s is correct. Please proceed with the water boundary conditions.

Thanks,

Matthew Hrehoriak, P.Eng., Project Manager | Land Development Engineering
NOVATECH
Engineers, Planners & Landscape Architects
240 Michael Cowpland Drive, Suite 200, Ottawa, ON, K2M 1P6 | Tel: 613.254.9643 x 273 | Cell: 613.791.0387

From: Matthew Hrehoriak
Sent: Tuesday, January 28, 2025 9:27 AM
To: Fawzi, Mohammed <mohammed.fawzi@ottawa.ca>
Cc: Ben Barkley <b.barkley@novatech-eng.com>
Subject: FW: Ste Cecile WM Boundary Conditions Request

Morning Mohammed,

Please see updated water demands below for the Cecile Street Project, we are requesting boundary conditions for the 200mm diameter watermain.

Let me know if you need any further information.

Thanks

Matthew Hrehoriak, P.Eng., Project Manager | Land Development Engineering
NOVATECH
Engineers, Planners & Landscape Architects
240 Michael Cowpland Drive, Suite 200, Ottawa, ON, K2M 1P6 | Tel: 613.254.9643 x 273 | Cell: 613.791.0387

From: Ben Barkley <b.barkley@novatech-eng.com>
Sent: Tuesday, January 28, 2025 9:19 AM
To: Matthew Hrehoriak <m.hrehoriak@novatech-eng.com>
Subject: RE: Ste Cecile WM Boundary Conditions Request

Matt,

Below is the revised FUS calculations for 73, 79 & 83 Ste. Cécile St to accompany our watermain boundary conditions request:

- Average Day Demand = 0.21 L/s
- Maximum Day Demand = 0.53 L/s
- Peak Hour Demand = 1.18 L/s
- Fire Flow Demand = 183 L/s

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

Ben Barkley, CAD Technologist
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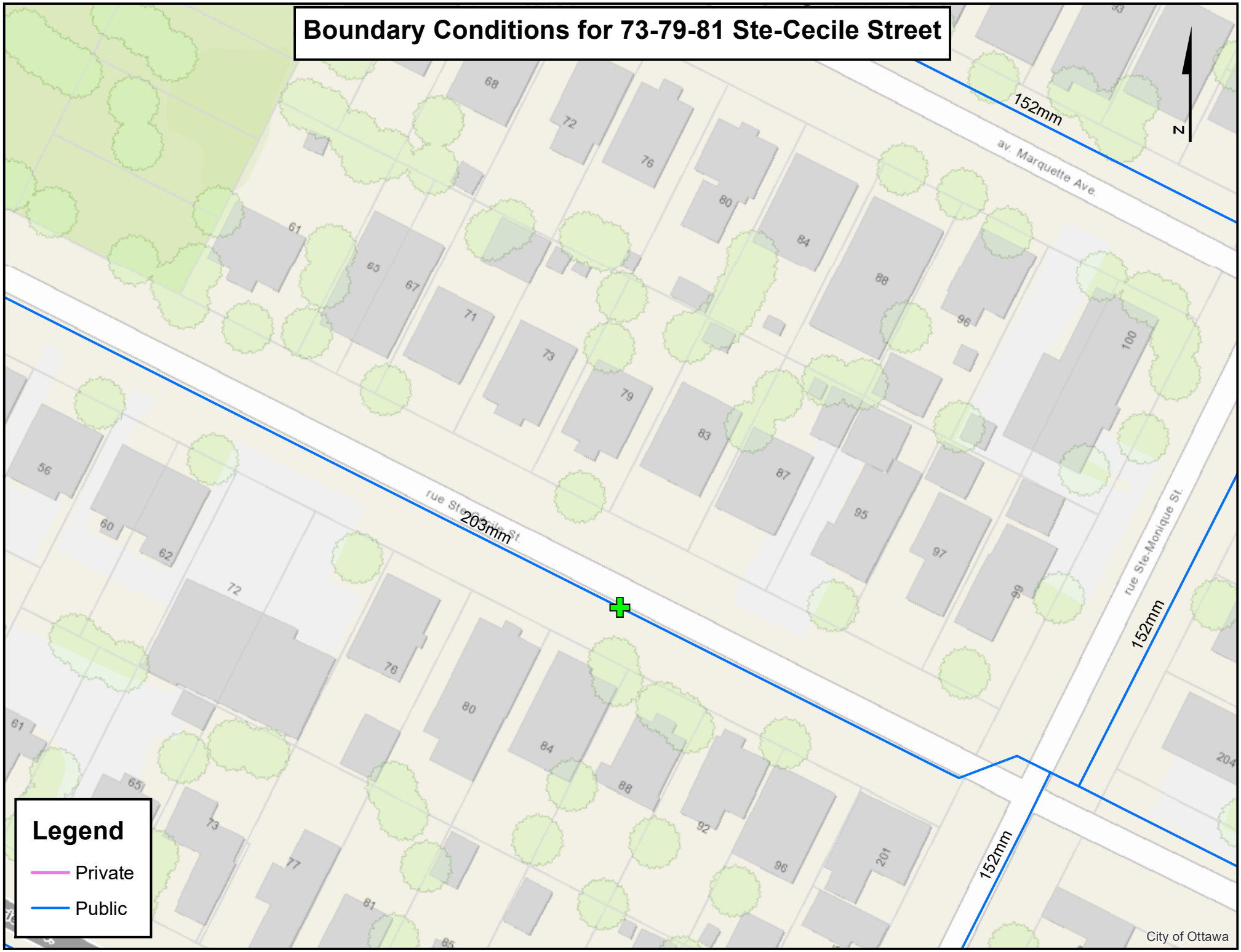
Boundary Conditions for 73-79-81 Ste-Cecile Street
N
av. Marquette Ave.
rue Ste-Monique St.
152mm
203mm
152mm
152mm
Legend
Private
Public
City of Ottawa

LEGEND

- DISTANCE FROM HYDRANT TO SIAMESE CONNECTION
- PROPOSED SIAMESE CONNECTION
- EXISTING CLASS AA HYDRANT
- PROPERTY LINE

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CITY OF OTTAWA
73-83 STE CECILE STREET

HYDRANT COVERAGE PLAN

SCALE 1 : 500 (0, 5m, 10m, 20m)

DATE FEB 2025 | JOB 122167 | FIGURE 5

SHT11X17.DWG - 279mmX432mm

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ZONING SETBACK

16.4m

PROPOSED
4-STOREY
RESIDENTIAL
DEVELOPMENT

ZONING SETBACK

ZONING SETBACK

2.7m

2.7m

STE CECILE STREET

25.3m

ZONING SETBACK

LEGEND

ZONING SETBACK

PROPERTY LINE

5.0m EXPOSURE SURCHARGE DISTANCE

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CITY OF OTTAWA
73-83 STE CECILE STREET

SURCHARGE EXPOSURE DISTANCE PLAN

SCALE 1 : 300 (0, 3, 6, 9, 12)

DATE FEB 2025 | JOB 122167 | FIGURE 5

SHT11X17.DWG - 279mmX432mm

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APPENDIX D
Sanitary Calculations

PROJECT #: 122167
PROJECT NAME: 73-83 STE. CECILE STREET
LOCATION: OTTAWA

NOVATECH
Engineers, Planners & Landscape Architects

DATE PREPARED: DECEMBER 2024

73-83 STE. CECILE STREET

LOCATION			RESIDENTIAL												INFILTRATION			Total Flow (l/s)	PIPE					
AREA	FROM	TO	Unit Type		Unit Type		Unit Type		Unit Type		TOTAL				Total Area (ha)	Accum. Area (ha)	Infilt. Flow (l/s)		Size (mm)	Slope (%)	Length (m)	Capacity (l/s)	Full Flow Vel. (m/s)	Q/Q_{full} (%)
			Bachelor Units	Pop.	1 Bed Units	Pop.	2 Bed Units	Pop.	3 Bed Units	Pop.	Pop.	Accum. Pop.	Peak Factor	Peak Flow (l/s)										
	BLDG	EX MH	5	7	26	36	8	17	2	6	66	66	3.2	0.68	0.112	0.112	0.04	0.72	150	2.00	11.8	21.5	1.22	3.4%
Existing Sewer Capacity																			375	0.37		106.6	0.97	

Design Parameters:

- Bachelor Apartment = 1.4 persons/unit
- 1 Bed Apartment = 1.4 persons/unit
- 2 Bed Apartment = 2.1 persons/unit
- 3 Bed Apartment = 3.1 persons/unit

Section 4.0 Ottawa Sewer Design Guidelines

- Average Domestic Flow	280	280	280	L/person/day
- Extraneous Flows	0.33	0.33	0.33	l/s/ha
Residential Peaking Factor	Harmon Equation	Harmon Equation	Harmon Equation	

APPENDIX E
Storm Sewer Design & Stormwater Management Calculations

LEGEND

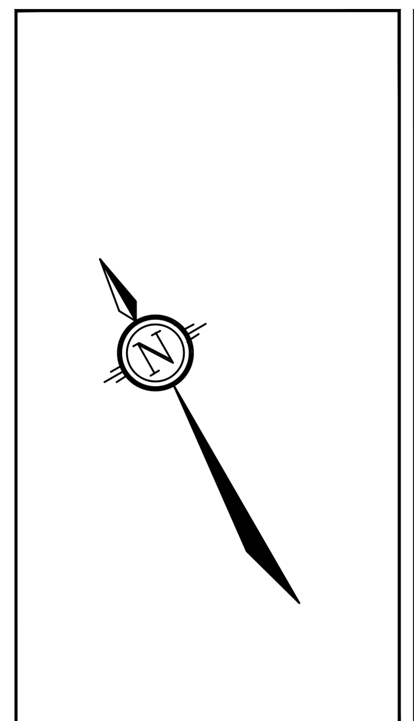
- PRE-DEVELOPMENT DRAINAGE AREA LIMITS
- POST-DEVELOPMENT DRAINAGE AREA LIMITS
- 1:2 YR / 1:5 YR / 1:100 YR — APPROXIMATE PONDING LIMITS
- A-4 — AREA ID
- 0.198 — DRAINAGE AREA (ha)
- 0.88 — 1:5 YEAR WEIGHTED RUNOFF COEFICIENT
- STMMH 01 — PROPOSED STORM MANHOLE
- CB 1 — PROPOSED CATCHBASIN
- PROPOSED STORM SEWER AND FLOW DIRECTION
- ICD — PROPOSED INLET CONTROL DEVICE
- EMERGENCY OVERLAND FLOW ROUTE
- PROPOSED BUILDING ENTRANCE / EXIT
- MH-ST — *EXISTING STORM MH & SEWER*
- CB — *EXISTING CATCHBASIN C/W CATCHBASIN LEAD*
- MAXIMUM 3:1 SIDESLOPE

ROOF DRAIN TABLE: AREA A-2 (ROOF DRAINS 1 to 2)						
AREA ID *	ROOF DRAIN No. (WATTS MODEL)	ROOF DRAIN OPENING SETTING	1:5 YEAR RELEASE RATE	APPROX. 5 YR PONDING DEPTH	1:100 YEAR RELEASE RATE	APPROX. 100 YR PONDING DEPTH
A-2	RD 1 (RD-100-A-ADJ)	1/2 EXPOSED	1.03 L/s	11.4 cm	1.18 L/s	14 cm
A-2	RD 2 (RD-100-A-ADJ)	1/2 EXPOSED	1.03 L/s	11.4 cm	1.18 L/s	14 cm
A-2	RD 3 (RD-100-A-ADJ)	1/2 EXPOSED	1.03 L/s	11.4 cm	1.18 L/s	14 cm

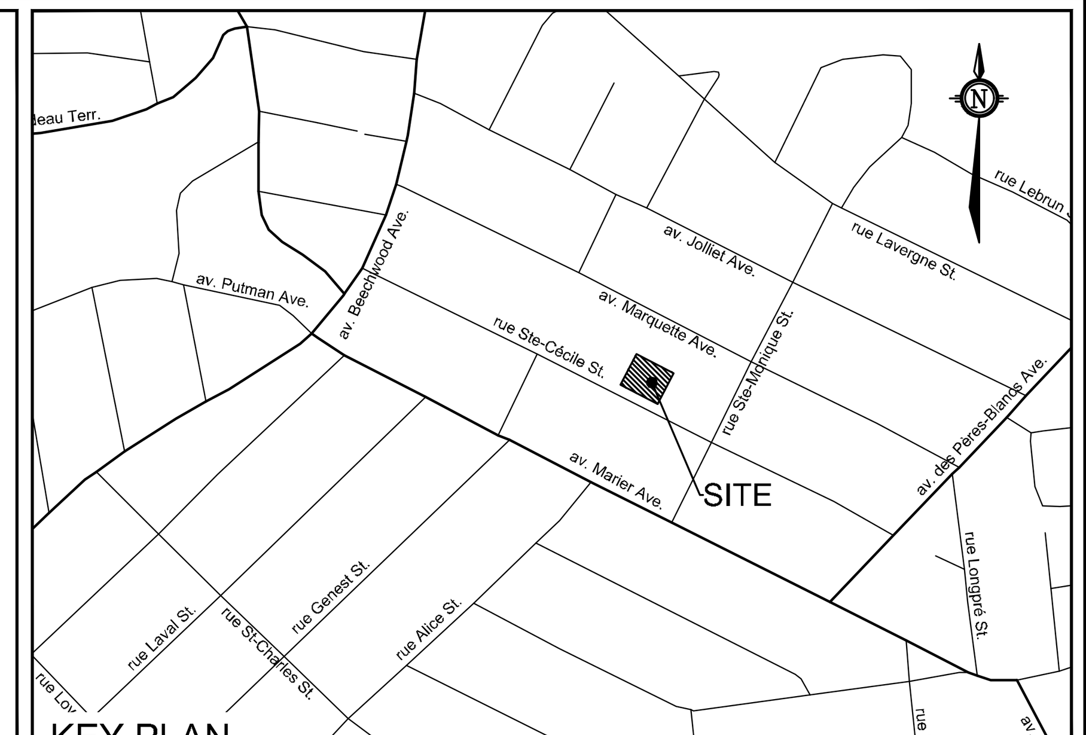
* REFER TO THE 'DEVELOPMENT SERVICING STUDY AND STORMWATER MANAGEMENT REPORT' (R-2022-198) PREPARED BY NOVATECH FOR DRAINAGE AREA IDENTIFIERS AND STORMWATER MANAGEMENT DETAILS.

**ALL CONTROLLED FLOW ROOF DRAINS FOR THE PROPOSED BUILDING TO BE WATTS 'ADJUSTABLE ACCUTROL' ROOF DRAINS.

INLET CONTROL DEVICE - DATA TABLE								
STRUCTURE ID	ICD TYPE	DIAMETER OF OUTLET PIPE (mm)	DESIGN FLOW (L/s)			DESIGN HEAD (m)		
			2-YEAR	5-YEAR	100-YEAR	2-YEAR	5-YEAR	100-YEAR
CB 1	TEMPEST LMF 60	250	3.0	3.4	3.6	0.80	1.15	1.27

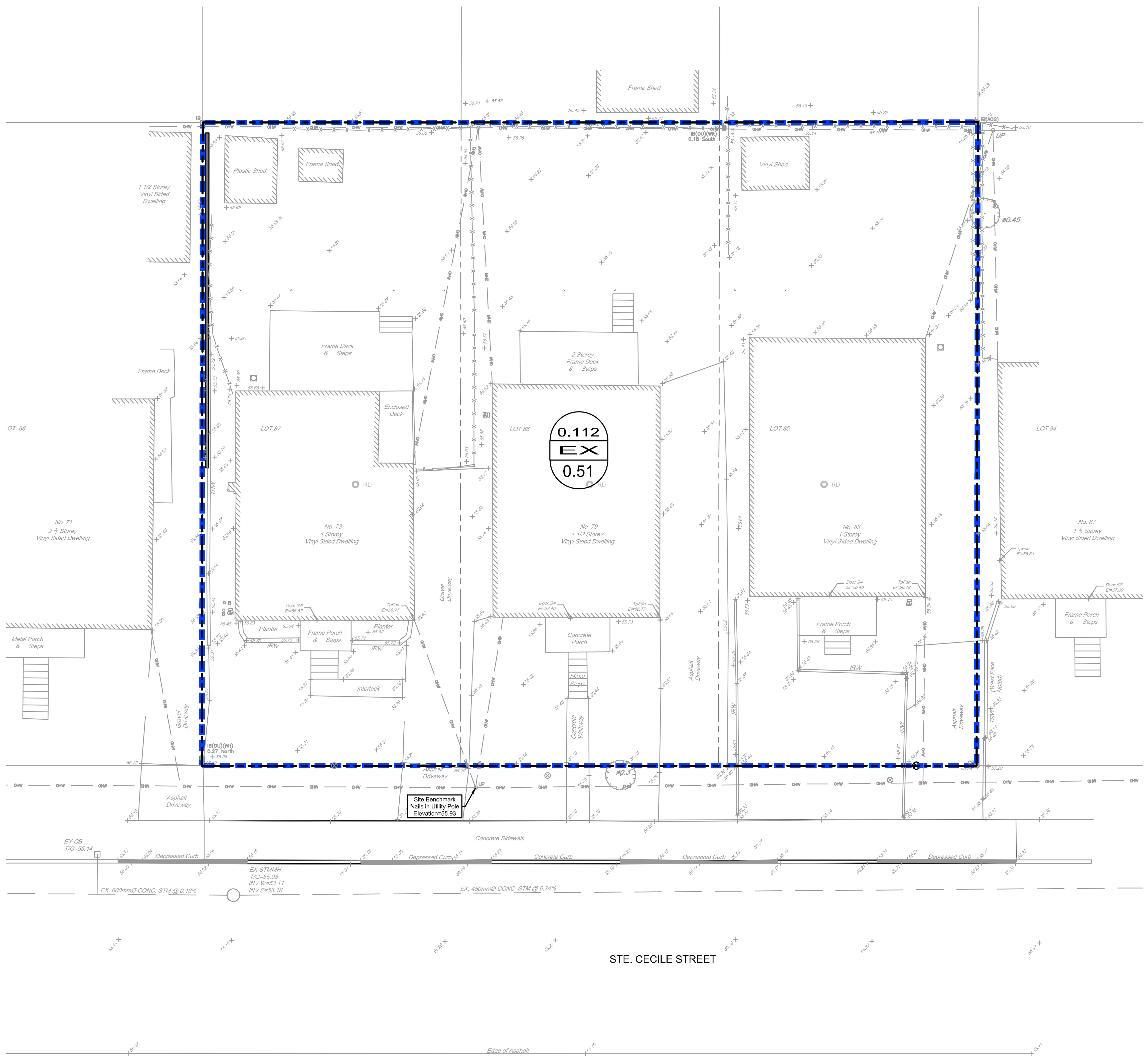


NORTH

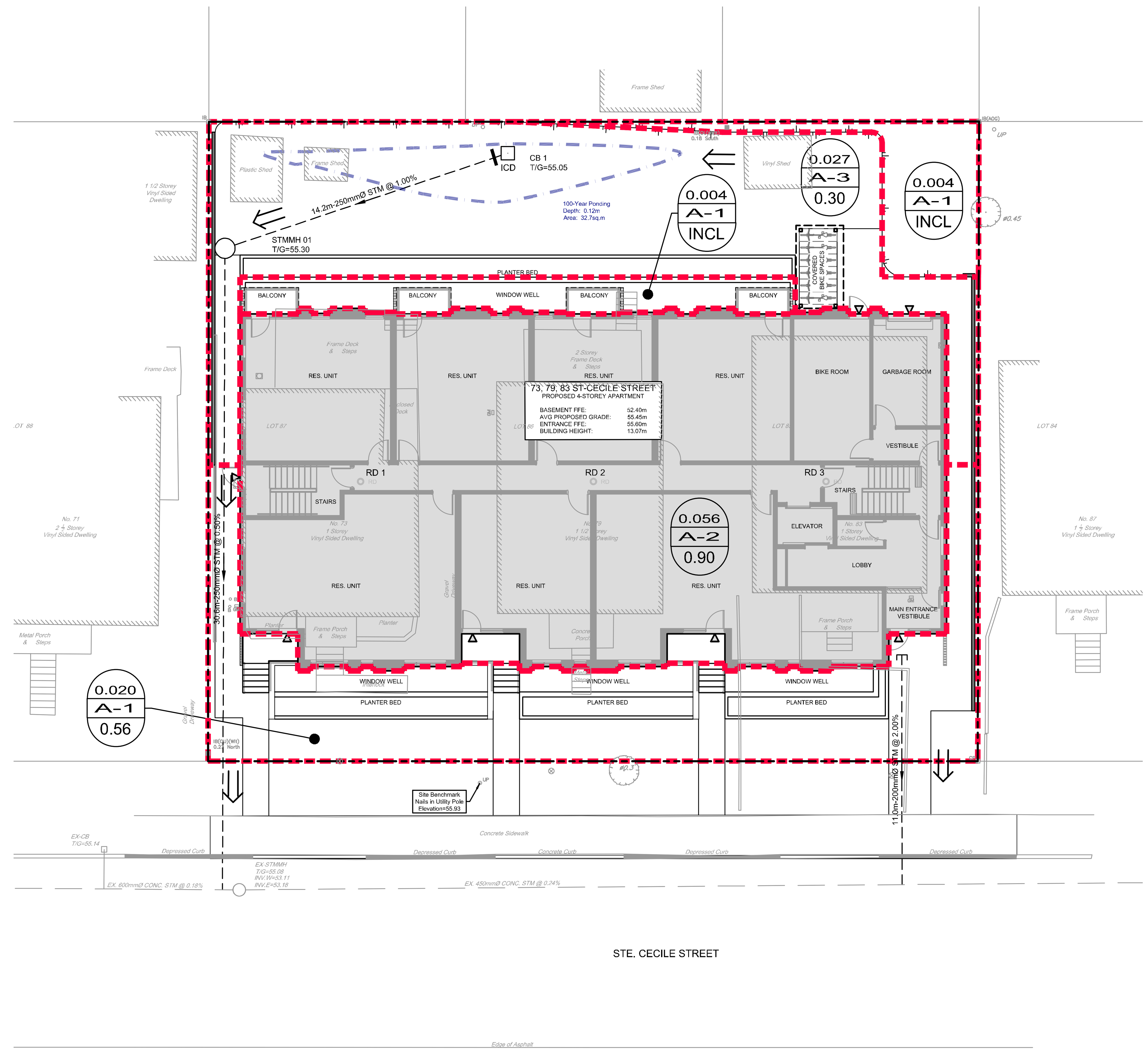


KEY PLAN
N.T.S.

PRE-DEVELOPMENT DRAINAGE AREA PLAN



POST-DEVELOPMENT DRAINAGE AREA PLAN



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
14072375 CANADA INC.
(HENRY INVESTMENTS)
1770 CANAAN ROAD
CUMBERLAND, ONTARIO, K4C 1J5

No.	REVISION	DATE	BY
2	RE-ISSUED FOR SITE PLAN APPLICATION	FEB 21/25	MJH
1	ISSUED FOR SITE PLAN APPLICATION	DEC 19/24	MJH

SCALE 1:150

DESIGN DMM/ZA
CHECKED MJH
DRAWN DMM/ZA
CHECKED MJH
APPROVED JLS

FOR REVIEW ONLY

LICENSED PROFESSIONAL ENGINEER
M. J. HREHORIAK
100211256
FEB 21/2025
PROVINCE OF ONTARIO

NOVATECH
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Website www.novatech-eng.com

LOCATION
CITY OF OTTAWA
73-83 CECILE STREET

DRAWING NAME
STORM DRAINAGE AREA PLAN

PROJECT No. 122167
REV # 2
DRAWING No. 122167-SWM

PLANA1.DWG - 841mmx594mm

PLAN # 19217

D02-24-0084
D07-12-24-0177

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IB

UP

IB(OU)(Wt)
0.18 South

IB(AOG)

UP

Plastic Shed

Frame Shed

ICD

Vinyl Shed

TREE CRITICAL
ROOT ZONE

TREE PROTECTION
FENCING. REFER
TO LANDSCAPE
PLAN FOR DETAILS.

Storey
Sided
lling

AND
TING
RING
TION
TION.

MUM
ROM
N TO
R AS
AWA
3-513

100-Year Ponding
Depth: 0.14m
Area: 147 sq.m

5-Year Ponding
Depth: 0.114m
Area: 99 sq.m

2-Year Ponding
Depth: 0.089m
Area: 64 sq.m

0.056
A-2
0.90

RD
1/2 OPEN

No. 73
1 Storey
Vinyl Sided Dwelling

No. 79
1 1/2 Storey
Vinyl Sided Dwelling

No. 83
1 Storey
Vinyl Sided Dwelling

No. 87
1 ½ Storey
Vinyl Sided Dwelling

GM

Gravel Driveway

Asphalt Driveway

Interlock

IB(OU)(Wt)
0.27 North

CP

TREE PROTECTION
FENCING. REFER
TO LANDSCAPE
PLAN FOR DETAILS.

TREE CRITICAL
ROOT ZONE

MAINTAIN AND PROTECT ALL
EXISTING UTILITIES WITHIN R.O.W.
AND ADJACENT TO R.O.W. (TYPICAL)

Concrete Sidewalk

Depressed Curb

Concrete Curb

EX-STMMH
T/G=55.08
INV.W=53.11
INV.E=53.18

STM @ 0.18%

EX. 450mmØ CONC. STM @ 0.24%

N

LEGEND:

- ROOF DRAINAGE AREA
- 2-YEAR PONDING LIMIT
- 5-YEAR PONDING LIMIT
- 100-YEAR PONDING LIMIT

0.056 / A-2 / 0.90 — ROOF DRAINAGE AREA (ha), ROOF DRAINAGE AREA ID, RUN OFF COEFFICIENT

RD-2 / 1/2 OPEN — ROOF DRAIN ID, ROOF DRAIN NOTCH SETTING

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Website www.novatech-eng.com

73-83 STE-CECILE STREET

ROOF DRAINAGE AREA PLAN

SCALE 1 : 150 (0, 1.5m, 3m, 6m)

DATE FEB 2025 | JOB 122167 | FIGURE 6

Time to Peak Calculations - Existing Conditions

TABLE 1A: Time of Concentration (Uplands Overland Flow Method)

Area ID	Overland Flow						Channel Flow			Overall	
	Length (m)	Elevation U/S (m)	Elevation D/S (m)	Slope (%)	Velocity (Uplands (m/s)	Travel Time (min)	Length (m)	Velocity * (m/s)	Travel Time (min)	Time of Concentration (min)	Time to Peak (min)
PRE	45	62.6	62.1	1.1%	0.63	1	N/A	N/A	N/A	1	1

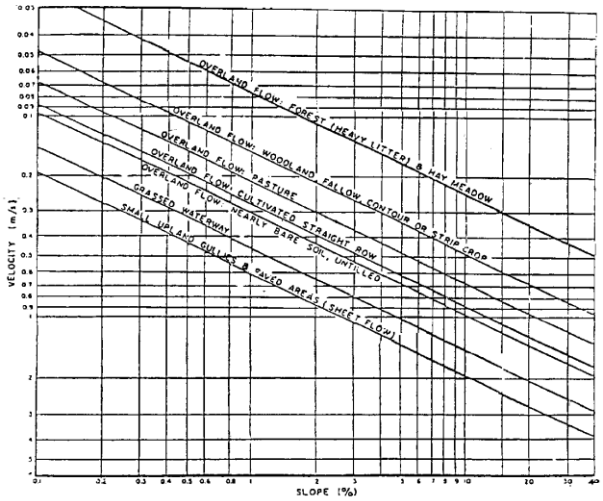


Figure A.5.2: Upland Method for Estimating Time of Concentration
(SCS National Engineering Handbook, 1971)

TABLE 1A: Pre-Development Runoff Coefficient "C" - PRE

Area	Surface	Ha	"C"	C_{avg}	$*C_{100}$
Total	Hard	0.049	0.90	0.51	0.58
0.112	Soft	0.063	0.20		

Runoff Coefficient Equation
$C = (A_{hard} \times 0.9 + A_{soft} \times 0.2)/A_{Tot}$
* Runoff

TABLE 1B: Pre-Development Flows

Outlet Options	Area (ha)	C_{avg}	Tc (min)	$Q_{2\ Year}$ (L/s)	$Q_{5\ Year}$ (L/s)	$Q_{100\ Year}$ (L/s)
Ste. Cecile Street	0.112	0.51	10	**12.2**	**16.5**	**32.3**

Time of Concentration	Tc=	10	min
Intensity (2 Year Event)	I_2=	76.81	mm/hr
Intensity (5 Year Event)	I_5=	104.19	mm/hr
Intensity (100 Year Event)	I_{100}=	178.56	mm/hr

100 year Intensity = 1735.688 / (Time in min + 6.014) $^{0.820}$
5 year Intensity = 998.071 / (Time in min + 6.053) $^{0.814}$
2 year Intensity = 732.951 / (Time in min + 6.199) $^{0.810}$

Equations:
Flow Equation
Q = 2.78 x C x I x A
Where:
C is the runoff coefficient
I is the rainfall intensity, City of Ottawa IDF
A is the total drainage area

TABLE 2A: Allowable Runoff Coefficient "C"

Area	"C"
Total	0.50
0.112	

TABLE 2B: Allowable Flows

Outlet Options	Area (ha)	"C"	Tc (min)	$Q_{5\ Year}$ (L/s)
Ste. Cecile Street	0.112	0.50	10	**16.2**

Time of Concentration Tc= 10 min

Intensity (5 Year Event) I_5= 104.19 mm/hr

5 year Intensity = 998.071 / (Time in min + 6.053) $^{0.814}$

Equations:
Flow Equation
Q = 2.78 x C x I x A
Where:
C is the runoff coefficient
I is the rainfall intensity, City of Ottawa IDF
A is the total drainage area

TABLE 3A: Post-Development Runoff Coefficient "C" - A-1

Area	Surface	Ha	"C"	C_{avg}	$*C_{100}$
Total	Hard	0.015	0.90	0.58	0.65
0.028	Soft	0.013	0.20		

Runoff Coefficient Equation

$C = (A_{hard} \times 0.9 + A_{soft} \times 0.2)/A_{Tot}$

* Runoff Coefficient increases by 25% up to a maximum value of 1.00 for the 100-Year event

TABLE 3B: Post-Development A-1 Flows

Outlet Options	Area (ha)	C_{avg}	Tc (min)	$Q_{2\ Year}$ (L/s)	$Q_{5\ Year}$ (L/s)	$Q_{100\ Year}$ (L/s)
Ste. Cecile Street	0.028	0.58	10	**3.4**	**4.7**	**9.1**

Time of Concentration	Tc=	10	min
Intensity (2 Year Event)	I_2=	76.81	mm/hr
Intensity (5 Year Event)	I_5=	104.19	mm/hr
Intensity (100 Year Event)	I_{100}=	178.56	mm/hr

100 year Intensity = 1735.688 / (Time in min + 6.014) $^{0.820}$
5 year Intensity = 998.071 / (Time in min + 6.053) $^{0.814}$
2 year Intensity = 732.951 / (Time in min + 6.199) $^{0.810}$

Equations:
Flow Equation
Q = 2.78 x C x I x A
Where:
C is the runoff coefficient
I is the rainfall intensity, City of Ottawa IDF
A is the total drainage area

TABLE 4A: Post-Development Runoff Coefficient "C" - A-2

			5 Year Event		100 Year Event	
Area	0.4	Ha	"C"	C_{avg}	"C" + 25%	*C_{avg}
Total	Hard	0.000	0.90		1.00	
0.056	Roof	0.056	0.90	0.90	1.00	1.00
	Soft	0.000	0.20		0.25	

TABLE 4B: 2 YEAR EVENT QUANTITY STORAGE REQUIREMENT - A-2

0.056 =Area (ha)
0.90 = C

Return Period	Time (min)	Intensity (mm/hr)	Flow Q (L/s)	Allowable Runoff (L/s)	Net Flow to be Stored (L/s)	Storage Req'd (m^3)
2 YEAR	10	76.81	10.76	2.6	8.15	4.89
	15	61.77	8.65	2.6	6.04	5.44
	20	52.03	**7.29**	**2.6**	**4.68**	**5.62**
	25	45.17	6.33	2.6	3.72	5.58
	30	40.04	5.61	2.6	3.00	5.40

TABLE 4C: 5 YEAR EVENT QUANTITY STORAGE REQUIREMENT - A-2

0.056 =Area (ha)
0.90 = C

Return Period	Time (min)	Intensity (mm/hr)	Flow Q (L/s)	Allowable Runoff (L/s)	Net Flow to be Stored (L/s)	Storage Req'd (m^3)
5 YEAR	15	83.56	11.71	3.1	8.63	7.77
	20	70.25	9.84	3.1	6.77	8.12
	25	**60.90**	**8.53**	**3.1**	**5.46**	**8.19**
	30	53.93	7.56	3.1	4.48	8.07
	35	48.52	6.80	3.1	3.72	7.82

TABLE 4D: 100 YEAR EVENT QUANTITY STORAGE REQUIREMENT - A-2

0.056 =Area (ha)
1.00 = C

Return Period	Time (min)	Intensity (mm/hr)	Flow Q (L/s)	Allowable Runoff (L/s)	Net Flow to be Stored (L/s)	Storage Req'd (m^3)
100 YEAR	30	91.87	14.30	3.5	10.76	19.37
	35	82.58	12.86	3.5	9.32	19.56
	40	**75.15**	**11.70**	**3.5**	**8.16**	**19.58**
	45	69.05	10.75	3.5	7.21	19.47
	50	63.95	9.96	3.5	6.42	19.25

Equations:

Flow Equation

$Q = 2.78 \times C \times I \times A$

Where:

C is the runoff coefficient
I is the rainfall intensity, City of Ottawa IDF
A is the total drainage area

Runoff Coefficient Equation

$C_5 = (A_{hard} \times 0.9 + A_{soft} \times 0.2)/A_{Tot}$

$C_{100} = (A_{hard} \times 1.0 + A_{soft} \times 0.25)/A_{Tot}$

Table 4E: Roof Drain Flows

Roof Drains		
Roof Area	518	m²
Qty	3	
Type	Accutrol RD-100-A-ADJ	
Setting	1/2 Open	
Design Head	0.05-0.15	m
Design Flow 1" of head	0.32	L/s (ea)
Design Flow 2" of head	0.63	L/s (ea)
Design Flow 3" of head	0.79	L/s (ea)
Design Flow 4" of head	0.95	L/s (ea)
Design Flow 5" of head	1.10	L/s (ea)
Design Flow 6" of head	1.26	L/s (ea)

Table 4F: Total Roof Storage

Storm Event	Roof Drain ID	**Avg Area Per Roof Drain (m²)	Avg Ponding Depth Per Roof Drain (m)	*Total Volume (m³)	Total Volume (m³) Required
2 Year	RD-1	64	0.089	1.88	-
	RD-2	64	0.089	1.88	-
	RD-3	64	0.089	1.88	-
			Total	**5.65**	**5.62**
5 Year	RD-1	99	0.114	3.75	-
	RD-2	99	0.114	3.75	-
	RD-3	99	0.114	3.75	-
			Total	**11.26**	**8.19**
100 Year	RD-1	147	0.140	6.82	-
	RD-2	147	0.140	6.82	-
	RD-3	147	0.140	6.82	-
			Total	**20.47**	**19.58**

*Note: Ponding volumes calculated using cone equation:

$$V = \frac{Area\ X\ Depth}{3}$$

TABLE 5A: Post-Development Runoff Coefficient "C" - A-3

			5 Year Event		100 Year Event	
Area	0.4	Ha	"C"	C_{avg}	"C" + 25%	*C_{avg}
Total	Hard	0.004	0.90		1.00	
0.027	Roof	0.000	0.90	0.30	1.00	0.36
	Soft	0.023	0.20		0.25	

TABLE 5B: 2 YEAR EVENT QUANTITY STORAGE REQUIREMENT - A-3

0.027 =Area (ha)
0.30 = C

Return Period	Time (min)	Intensity (mm/hr)	Flow Q (L/s)	Allowable Runoff (L/s)	Net Flow to be Stored (L/s)	Storage Req'd (m^3)
2 YEAR	0	167.22	3.81	1.5	2.31	0.00
	5	**103.57**	**2.36**	**1.5**	**0.86**	**0.26**
	10	76.81	1.75	1.5	0.25	0.15
	15	61.77	1.41	1.5	-0.09	-0.08
	20	52.03	1.19	1.5	-0.31	-0.38

TABLE 5C: 5 YEAR EVENT QUANTITY STORAGE REQUIREMENT - A-3

0.027 =Area (ha)
0.30 = C

Return Period	Time (min)	Intensity (mm/hr)	Flow Q (L/s)	Allowable Runoff (L/s)	Net Flow to be Stored (L/s)	Storage Req'd (m^3)
5 YEAR	0	230.48	5.25	1.7	3.55	0.00
	5	**141.18**	**3.22**	**1.7**	**1.52**	**0.46**
	10	104.19	2.38	1.7	0.68	0.41
	15	83.56	1.90	1.7	0.20	0.18
	20	70.25	1.60	1.7	-0.10	-0.12

TABLE 5D: 100 YEAR EVENT QUANTITY STORAGE REQUIREMENT - A-3

0.027 =Area (ha)
0.36 = C

Return Period	Time (min)	Intensity (mm/hr)	Flow Q (L/s)	Allowable Runoff (L/s)	Net Flow to be Stored (L/s)	Storage Req'd (m^3)
100 YEAR	5	242.70	6.58	1.8	4.78	1.43
	10	178.56	4.84	1.8	3.04	1.82
	15	**142.89**	**3.87**	**1.8**	**2.07**	**1.87**
	20	119.95	3.25	1.8	1.45	1.74
	25	103.85	2.81	1.8	1.01	1.52

Equations:

Flow Equation

$Q = 2.78 \times C \times I \times A$

Where:

C is the runoff coefficient
I is the rainfall intensity, City of Ottawa IDF
A is the total drainage area

Runoff Coefficient Equation

$C_5 = (A_{hard} \times 0.9 + A_{soft} \times 0.2)/A_{Tot}$

$C_{100} = (A_{hard} \times 1.0 + A_{soft} \times 0.25)/A_{Tot}$

TABLE 5E: Structure information

Structures	Size Dia.(mm)	Area (m^2)	T/G	Inv IN	Inv OUT
CB 1	600	0.37	55.05	N/A	53.78

TABLE 5F: Storage Provided - A-3

Area A-3 Storage Table				Total Storage	
Elevation (m)	System Depth (m)	CB 1 Volume (m^3)	Underground Volume (m^3)*	CB 01 Ponding Volume (m^3)	**Total Volume (m^3)**
53.780	0.00	-	0.00		**0.00**
55.050	1.27	0.47	0.47	0.00	**0.47**
55.100	1.32			0.10	**0.57**
55.150	1.37			0.80	**1.27**
55.200	1.42			2.54	**3.02**
55.250	1.47			5.45	**5.92**
55.300	1.52			10.35	**10.83**
55.350	1.57			17.04	**17.51**
55.400	1.62			24.48	**24.95**

TABLE 5F: Orfice Sizing Information Area - A-3 Structure - CB 1

Control Device					
TEMPEST		LMF 60			
Design Event	**Flow (L/S)**	**Head (m)**	**Elev (m)**	**Outlet dia. (mm)**	**Volume (m^3)**
1:2 Year	3.0	0.80	54.70	250.00	0.26
1:5 Year	3.4	1.15	55.05	250.00	0.46
1:100 Year	3.6	1.27	55.17	250.00	1.87

*NOTE: Design head taken from the center of the outlet pipe

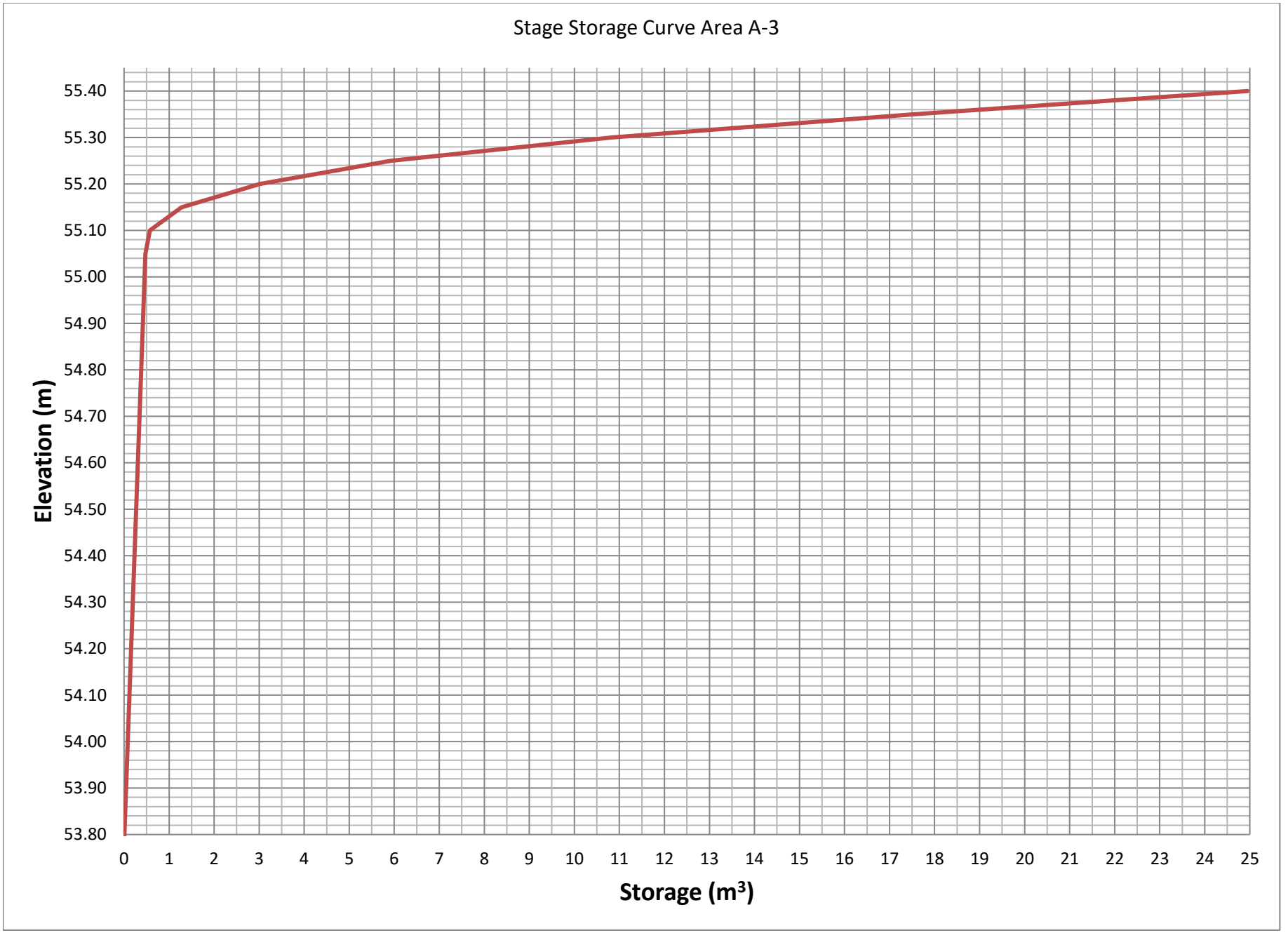

Stage Storage Curve Area A-3
Elevation (m)
55.40
55.30
55.20
55.10
55.00
54.90
54.80
54.70
54.60
54.50
54.40
54.30
54.20
54.10
54.00
53.90
53.80
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25
Storage (m³)

Table 6: Post-Development Stormwater Mangement Summary

Area ID	Area (ha)	1:5 Year Weighted Cw	Oulet Location	Orifice	2 Year Storm Event				5 Year Storm Event				100 Year Storm Event			
					Release (L/s)	Head (m)	Req'd Vol (cu.m)	Vol. Provided	Release (L/s)	Head (m)	Req'd Vol (cu.m)	Vol. Provided	Release (L/s)	Head (m)	Req'd Vol (cu.m)	Max. Vol. Provided
A-1	0.028	0.58	Ste. Cecile St	N/A	3.4	N/A	N/A	N/A	4.7	N/A	N/A	N/A	9.1	N/A	N/A	N/A
A-2	0.056	0.90	Ste. Cecile St	RD-100-A-ADJ	2.6	0.09	5.6	5.6	3.1	0.08	8.2	11.3	3.5	0.14	19.6	20.5
A-3	0.027	0.30	Ste. Cecile St	LMF 60	3.0	1.24	0.2	0.5	3.4	1.27	0.4	25.0	3.6	1.34	1.9	25.0
Total Post Developemt Release Rate					**9.0**				**11.2**				**16.2**			
Target Allowable Release Rate					**16.2**				**16.2**				**16.2**			
Total Pre-Development Release Rate					**12.2**				**16.5**				**32.3**			

73-83 STE CECILE STREET
CITY OF OTTAWA
Project No.: 122167

STORM SEWER DESIGN SHEET
73-83 STE CECILE STREET
FLOW RATES BASED ON RATIONAL METHOD

NOVATECH
Engineers, Planners & Landscape Architects

LOCATION			AREA (ha)					FLOW							TOTAL FLOW	SEWER DATA								
AREA ID	From Manhole	To Manhole	Total Area (ha)	C = 0.20	C = 0.90	C	AC (ha)	Indiv 2.78 AC	Accum 2.78 AC	Time of Concentration	Rainfall Intensity 2 Year (mm/hr)	Rainfall Intensity 5 Year (mm/hr)	Rainfall Intensity 10 Year (mm/hr)	Peak Flow (L/s)	Total Peak Flow, Q (L/s)	Dia. (m) Actual	Dia. (mm)	Type	Slope (%)	Length (m)	Capacity (L/s)	Velocity (m/s)	Flow Time (min)	Ratio Q/Q full
(1:2 YEAR STORM EVENT)																								
A-2	BUILDING SERVICE		0.056	0.000	0.054	0.90	0.05	0.140	0.140	10.00	76.81			10.8	10.8	0.203	200	PVC	2.00	11.0	48.3	1.49	0.12	22%
							0.00	0.000	0.000	10.00														
							0.00	0.000	0.000	10.00														
A-3	CB 1	STMMH 01	0.027	0.023	0.004	0.30	0.01	0.023	0.023	10.00	76.81			1.8	1.8	0.254	250	PVC	1.00	14.2	62.0	1.22	0.19	3%
							0.00	0.000	0.000	10.00														
							0.00	0.000	0.000	10.00														
	STMMH 01	EX STMMH					0.00	0.000	0.023	10.19	76.07			1.7	1.7	0.254	250	PVC	0.50	30.6	43.8	0.86	0.59	4%
							0.00	0.000	0.000	10.19														
							0.00	0.000	0.000	10.19														

Q = 2.78 AIC, where
Q = Peak Flow in Litres per Second (L/s)
A = Area in hectares (ha)
I = Rainfall Intensity (mm/hr), 5 year storm
C = Runoff Coefficient

Consultant:	**Novatech**
Date:	12/17/2024 (Revised 02/21/2025)
Design By:	BJB / MJH
	Dwg. Reference: / **Checked By:**
	122167-SWM / MJH

APPENDIX F
Roof Drain & ICD Information

WATTS® DRAINAGE

Adjustable Accutrol Weir

Tag: RD-100-A-ADJ

Adjustable Flow Control for Roof Drains

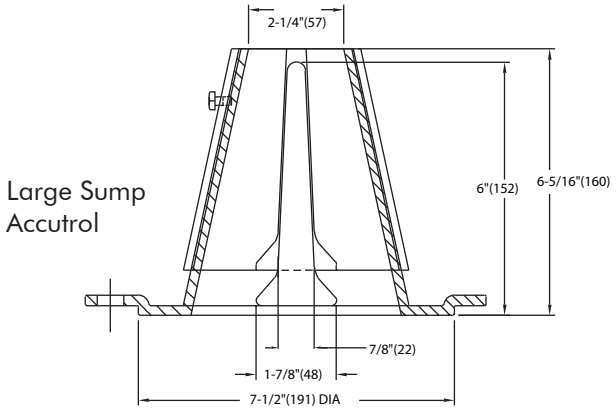
ADJUSTABLE ACCUTROL(for Large Sump Roof Drains only)

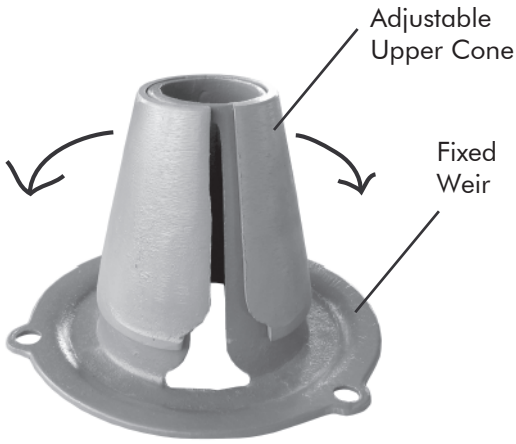
For more flexibility in controlling flow with heads deeper than 2", Watts Drainage offers the Adjustable Accutrol. The Adjustable Accutrol Weir is designed with a single parabolic opening that can be covered to restrict flow above 2" of head to less than 5 gpm per inch, up to 6" of head. To adjust the flow rate for depths over 2" of head, set the slot in the adjustable upper cone according to the flow rate required. Refer to Table 1 below.
Note: Flow rates are directly proportional to the amount of weir opening that is exposed.

EXAMPLE:

For example, if the adjustable upper cone is set to cover 1/2 of the weir opening, flow rates above 2" of head will be restricted to 2-1/2 gpm per inch of head.

Therefore, at 3" of head, the flow rate through the Accutrol Weir that has 1/2 the slot exposed will be:
[5 gpm(per inch of head) x 2 inches of head] + 2-1/2 gpm(for the third inch of head) = 12-1/2 gpm.





1/2 Weir Opening Exposed Shown Above

TABLE 1. Adjustable Accutrol Flow Rate Settings

Weir Opening Exposed	Head of Water 1"	2"	3"	4"	5"	6"
	Flow Rate (gallons per minute)					
Fully Exposed	5	10	15	20	25	30
3/4	5	10	13.75	17.5	21.25	25
1/2	5	10	12.5	15	17.5	20
1/4	5	10	11.25	12.5	13.75	15
Closed	5	10	10	10	10	10

Job Name _____ Contractor _____

Job Location _____ Contractor's P.O. No. _____

Engineer _____ Representative _____

WATTS® DRAINAGE
CANADA: 5435 North Service Road, Burlington, ON, L7L 5H7 TEL: 905-332-6718 TOLL-FREE: 1-888-208-8927 Website: www.wattsdrainage.ca
CANADA

Volume III: TEMPEST INLET CONTROL DEVICES

Municipal Technical Manual Series

SECOND EDITION

LMF (Low to Medium Flow) ICD

HF (High Flow) ICD

MHF (Medium to High Flow) ICD

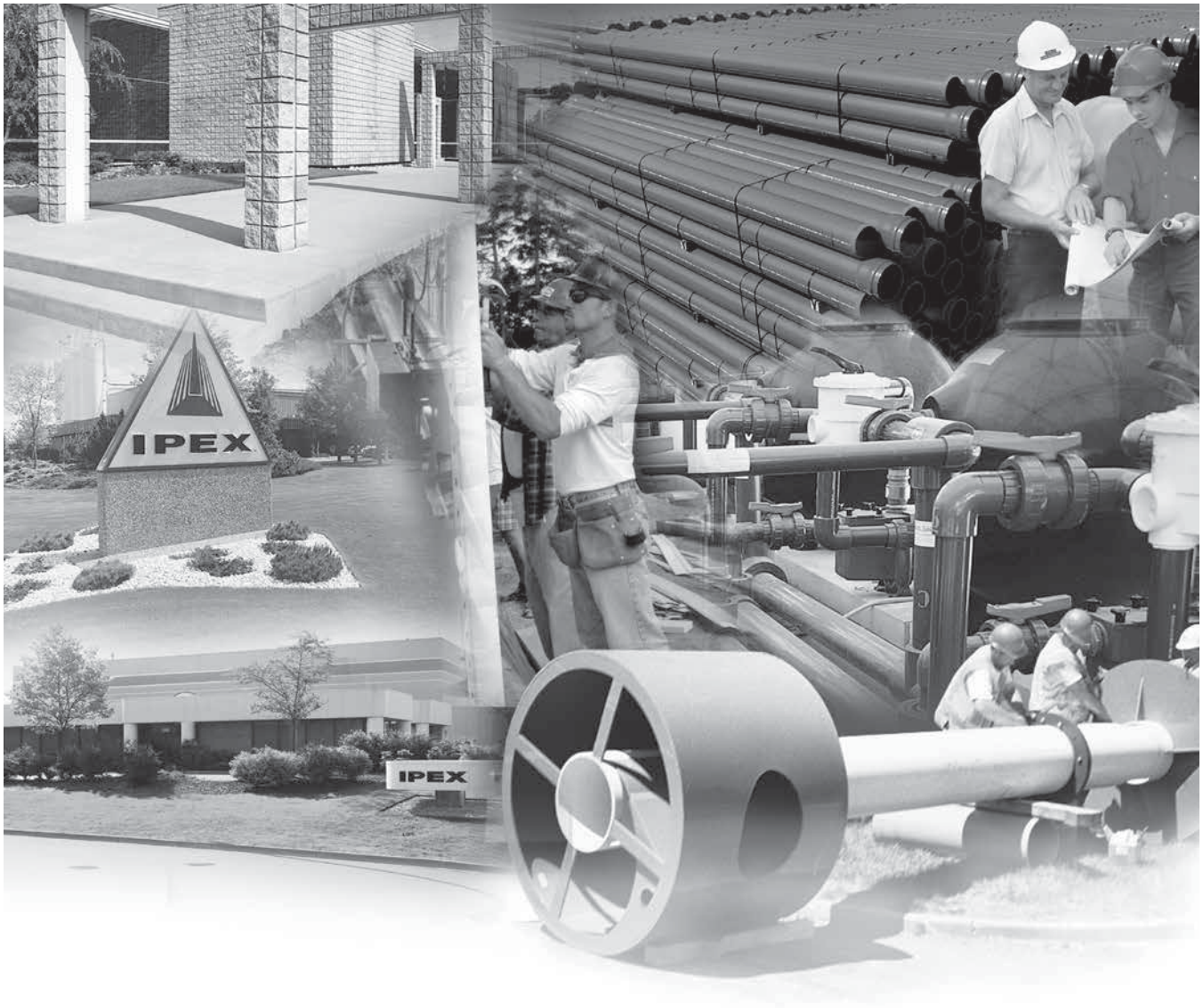
IPEX
by aliaxis

IPEX Tempest™ Inlet Control Devices

Municipal Technical Manual Series

Vol. I, 2nd Edition

For information contact: IPEX, Marketing,
1425 North Service Road East, Oakville, Ontario, Canada, L6H 1A7



ABOUT IPEX

At IPEX, we have been manufacturing non-metallic pipe and fittings since 1951. We formulate our own compounds and maintain strict quality control during production. Our products are made available for customers thanks to a network of regional stocking locations throughout North America. We offer a wide variety of systems including complete lines of piping, fittings, valves and custom-fabricated items.

More importantly, we are committed to meeting our customers' needs. As a leader in the plastic piping industry, IPEX continually develops new products, modernizes manufacturing facilities and acquires innovative process technology. In addition, our staff take pride in their work, making available to customers their extensive thermoplastic knowledge and field experience. IPEX personnel are committed to improving the safety, reliability and performance of thermoplastic materials. We are involved in several standards committees and are members of and/or comply with the organizations listed on this page.

For specific details about any IPEX product, contact our customer service department.

CONTENTS

PRODUCT INFORMATION: TEMPEST LOW, MEDIUM FLOW (LMF) ICD

Purpose

To control the amount of storm water runoff entering a sewer system by allowing a specified flow volume out of a catch basin or manhole at a specified head. This approach conserves pipe capacity so that catch basins downstream do not become uncontrollably surcharged, which can lead to basement floods, flash floods and combined sewer overflows.

Product Description

Our LMF ICD is designed to accommodate catch basins or manholes with sewer outlet pipes 6" in diameter and larger. Any storm sewer larger than 12" may require custom modification. However, IPEX can custom build a TEMPEST device to accommodate virtually any storm sewer size.

Available in 14 preset flow curves, the LMF ICD has the ability to provide flow rates: 2lps – 17lps (31gpm – 270gpm)

Product Function

The LMF ICD vortex flow action allows the LMF ICD to provide a narrower flow curve using a larger orifice than a conventional orifice plate ICD, making it less likely to clog. When comparing flows at the same head level, the LMF ICD has the ability to restrict more flow than a conventional ICD during a rain event, preserving greater sewer capacity.

Product Construction

Constructed from durable PVC, the LMF ICD is light weight 8.9 Kg (19.7 lbs).

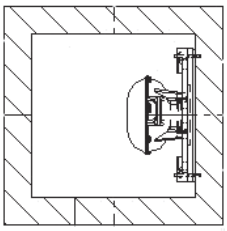
Product Applications

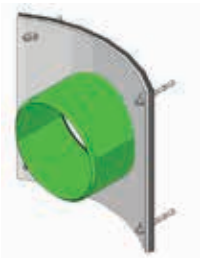
Will accommodate both square and round applications:

Square Application

Round Application

Universal Mounting Plate





+

Spigot CB Wall Plate

=

Universal Mounting Plate Hub Adapter

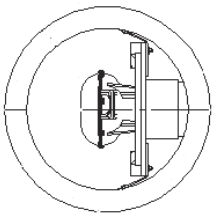


Chart 1: LMF 14 Preset Flow Curves

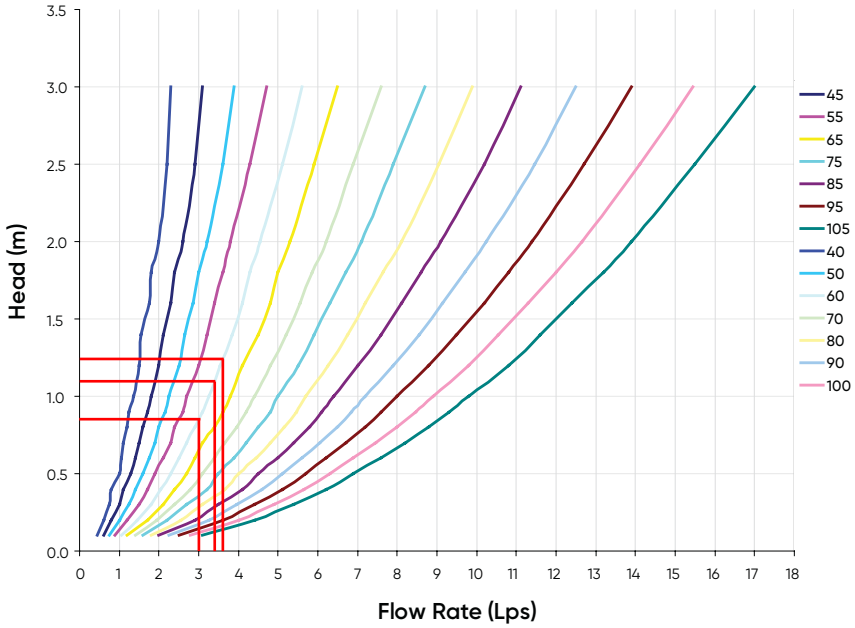
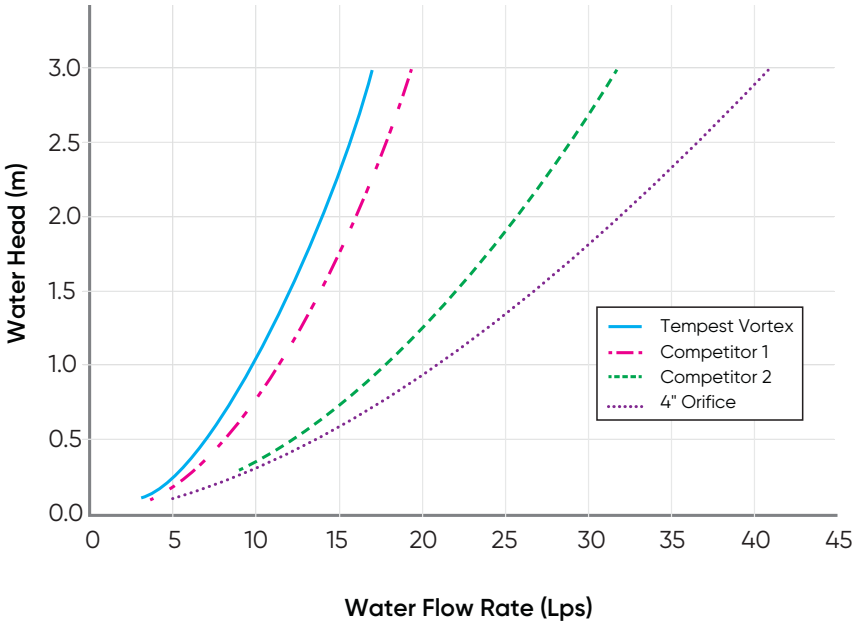


Chart 2: LMF Flow vs. ICD Alternatives



PRODUCT INSTALLATION

Instructions to assemble a TEMPEST LMF ICD into a Square Catch Basin:

STEPS:

1. Materials and tooling verification:
   - Tooling: impact drill, 3/8" concrete bit, torque wrench for 9/16" nut, hand hammer, level, and marker.
   - Material: (4) concrete anchor 3/8 x 3-1/2, (4) washers, (4) nuts, universal mounting plate, ICD device.
2. Use the mounting wall plate to locate and mark the hole (4) pattern on the catch basin wall. You should use a level to ensure that the plate is at the horizontal.
3. Use an impact drill with a 3/8" concrete bit to make the four holes at a minimum of 1-1/2" depth up to 2-1/2". Clean the concrete dust from the holes.
4. Install the anchors (4) in the holes by using a hammer. Thread the nuts on the top of the anchors to protect the threads when you hit the anchors with the hammer. Remove the nuts from the ends of the anchors.
5. Install the universal mounting plate on the anchors and screw the 4 nuts in place with a maximum torque of 40 N.m (30 lbf-ft). There should be no gap between the wall mounting plate and the catch basin wall.
6. From the ground above using a reach bar, lower the ICD device by hooking the end of the reach bar to the handle of the ICD device. Align the triangular plate portion into the mounting wall plate. Push down the device to be sure it has centered in to the universal mounting plate and has created a seal.

⚠ WARNING

- Verify that the outlet pipe doesn't protrude into the catch basin. If it does, cut down the pipe flush to the catch basin wall.
- Call your IPEX representative for more information or if you have any questions about our products.

Instructions to assemble a TEMPEST LMF ICD into a Round Catch Basin:

STEPS:

1. Materials and tooling verification.
   - Tooling: impact drill, 3/8" concrete bit, torque wrench for 9/16" nut, hand hammer, level and marker.
   - Material: (4) concrete anchor 3/8 x 3-1/2, (4) washers and (4) nuts, spigot CB wall plate, universal mounting plate hub adapter, ICD device.
2. Use the spigot catch basin wall plate to locate and mark the hole (4) pattern on the catch basin wall. You should use a level to ensure that the plate is at the horizontal.
3. Use an impact drill with a 3/8" concrete bit to make the four holes at a depth between 1-1/2" to 2-1/2". Clean the concrete dust from the holes.
4. Install the anchors (4) in the holes by using a hammer. Thread the nuts on the top of the anchors to protect the threads when you hit the anchors with the hammer. Remove the nuts from the ends of the anchors.
5. Install the CB spigot wall plate on the anchors and screw the 4 nuts in place with a maximum torque of 40 N.m (30 lbf-ft). There should be no gap between the spigot wall plate and the catch basin wall.
6. Apply solvent cement on the hub of the universal mounting plate, hub adapter and the spigot of the CB wall plate, then slide the hub over the spigot. Make sure the universal mounting plate is at the horizontal and its hub is completely inserted onto the spigot. Normally, the corners of the universal mounting plate hub adapter should touch the catch basin wall.
7. From ground above using a reach bar, lower the ICD device by hooking the end of the reach bar to the handle of the ICD device. Align the triangular plate portion into the mounting wall plate. Push down the device to be sure it has centered in to the mounting plate and has created a seal.

⚠ WARNING

- Verify that the outlet pipe doesn't protrude into the catch basin. If it does, cut back the pipe flush to the catch basin wall.
- The solvent cement which is used in this installation is to be approved for PVC.
- The solvent cement should not be used below 0°C (32°F) or in a high humidity environment. Refer to the IPEX solvent cement guide to confirm the required curing time or visit the IPEX Online Solvent Cement Training Course available at ipexna.com.
- Call your IPEX representative for more information or if you have any questions about our products.

NOTE: Do not use or test the products in this manual with compressed air or other gases including air-over-water-boosters

SALES AND CUSTOMER SERVICE

IPEX Inc.
Toll Free: (866) 473-9462
ipexna.com

About the IPEX Group of Companies

As leading suppliers of thermoplastic piping systems, the IPEX Group of Companies provides our customers with some of the largest and most comprehensive product lines. All IPEX products are backed by more than 50 years of experience. With state-of-the-art manufacturing facilities and distribution centers across North America, we have established a reputation for product innovation, quality, end-user focus and performance.

Markets served by IPEX group products are:

- Electrical systems
- Telecommunications and utility piping systems
- PVC, CPVC, PP, ABS, PEX, FR-PVDF and PE pipe and fittings (1/4" to 48")
- Industrial process piping systems
- Municipal pressure and gravity piping systems
- Plumbing and mechanical piping systems
- PE Electrofusion systems for gas and water
- Industrial, plumbing and electrical cements
- Irrigation systems

Products manufactured by IPEX Inc.

IPEX by aliaxis

MNMNTPIP110817RC

APPENDIX G
Engineering Drawings

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 $2,000,000.00. INSURANCE POLICY TO NAME OWNERS, ENGINEERS AND ARCHITECTS AS CO-INSURED AND THE CITY OF OTTAWA AS THIRD PARTY.
5. 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.
6. REMOVE FROM SITE ALL EXCESS EXCAVATED MATERIAL UNLESS OTHERWISE INSTRUCTED BY ENGINEER. EXCAVATE AND REMOVE FROM SITE ALL ORGANIC MATERIAL AND DEBRIS. ALL CONTAMINATED MATERIAL (IF ANY) SHALL BE DISPOSED OF AT A LICENSED LANDFILL FACILITY.
7. ALL ELEVATIONS ARE GEODETIC. THE SITE BENCHMARKS ARE THE NAILS IN UTILITY POLE (ELEVATION=55.93). REFER TO FARLEY, SMITH AND DENIS SURVEYING LTD. TOPOGRAPHIC PLAN OF PART OF LOTS 85, 86 AND 87, CITY OF OTTAWA.
8. REFER TO GEOTECHNICAL INVESTIGATION REPORT NO, 59-HII-R0, DATED DECEMBER 08, 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 GRANULAR MATERIAL.
9. REFER TO THE DEVELOPMENT SERVICING STUDY AND STORMWATER MANAGEMENT REPORT No. R-2022-198 DATED DECEMBER 19, 2024 PREPARED BY NOVATECH.
10. REFER TO ARCHITECT'S AND LANDSCAPE ARCHITECT'S DRAWINGS FOR BUILDING AND HARD SURFACE AREAS AND DIMENSIONS.
11. SAW CUT AND KEYGRIND ASPHALT AT ALL ROAD CUTS AND ASPHALT TIE IN POINTS AS PER CITY OF OTTAWA STANDARDS (R10). ALL ROAD CUTS TO BE REINSTATED WITH FULL MILL OVERLAY AS PER CITY OF OTTAWA STANDARDS (R10).
12. CONTRACTOR TO PROVIDE THE CONSULTANT WITH A GENERAL PLAN OF SERVICES AND GRADING PLAN INDICATING ALL SERVICING AS-BUILT INFORMATION SHOWN ON THE PLANS. AS-BUILT INFORMATION MUST INCLUDE: PIPE MATERIAL, SIZES, LENGTHS, SLOPES, INVERT AND T/G ELEVATIONS, STRUCTURE LOCATIONS, VALVE AND HYDRANT LOCATIONS, T/WM ELEVATIONS, ANY ALIGNMENT CHANGES, AND ALL SURFACE ELEVATION AS BUILT GRADES.

SEWER NOTES:

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

ITEM	SPEC. No.	REFERENCE
STORM / SANITARY MANHOLE (1200Ø)	701.010	OPSD
CATCHBASIN (600x600mm)	705.010	OPSD
CB, FRAME & COVER	400.020	OPSD
STORM / SANITARY MH FRAME	S25	CITY OF OTTAWA
STORM COVER (CLOSED)	S24.1	CITY OF OTTAWA
STORM COVER (OPEN)	S28.1	CITY OF OTTAWA
SEWER TRENCH	S6 & S7	CITY OF OTTAWA
STORM SEWER < 450mmØ	PVC SDR 35 (UNLESS SPECIFIED OTHERWISE)	
STORM SEWER >= 450mmØ	CONC 65D (UNLESS SPECIFIED OTHERWISE)	
SANITARY SEWER	PVC DR 35	CITY OF OTTAWA

3. SERVICES ARE TO BE CONSTRUCTED TO 1.0m FROM FACE OF BUILDING AT A MINIMUM SLOPE OF 1.0%.
3. ALL STORM AND SANITARY SERVICE LATERALS SHALL BE EQUIPPED WITH BACKFLOW PREVENTION DEVICES AS PER THE CITY OF OTTAWA STANDARD DETAILS S14 AND S14.1 OR S14.2.
4. ALL WEEPING TILE CONNECTIONS TO BE MADE TO THE PROPOSED STORM SEWER SYSTEM DOWNSTREAM OF ANY INLET CONTROL DEVICES.
5. INSULATE ALL PIPES (SAN/STM) THAT HAVE LESS THAN 2.0m COVER PER INSULATION DETAIL FOR SHALLOW SEWERS. PROVIDE 150mm CLEARANCE BETWEEN PIPE AND INSULATION.
6. 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.
7. STORM MANHOLES AND CBMHS ARE TO HAVE 300mm SUMPS UNLESS OTHERWISE INDICATED.
8. ALL CATCHBASINS, MANHOLES AND/OR CATCHBASIN MANHOLES THAT ARE TO HAVE ICD'S INSTALLED WITHIN THEM ARE TO HAVE 600mm SUMPS.
9. ALL CATCHBASINS AND CATCHBASIN MANHOLES TO BE PROVIDED WITH MINIMUM 3 METER LONG PERFORATED SUBDRAINS EXTENDING IN TWO DIRECTIONS AT THE SUBGRADE LEVEL. THE SUBGRADE SURFACE SHOULD BE SHAPED TO PROMOTE WATER FLOW TO THE DRAINAGE LINES.
10. CONTRACTOR TO TELEVISE (CCTV) ALL PROPOSED SEWERS, 200mmØ OR GREATER PRIOR TO BASE COURSE ASPHALT, UPON COMPLETION OF CONTRACT, THE CONTRACTOR IS RESPONSIBLE TO FLUSH AND CLEAN ALL SEWERS & APPURTENANCES AND RE CCTV PRIOR TO ACCEPTANCE.
11. CONTRACTOR TO TELEVISE (CCTV) ALL EXISTING SEWERS IN STE-CECILE STREET FRONTING THE SITE PRE AND POST CONSTRUCTION.
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 410.07.16, 410.07.16.04 AND 407.07.24. DYE TESTING IS TO BE COMPLETED ON ALL SANITARY SERVICES TO CONFIRM PROPER CONNECTION TO THE SANITARY SEWER MAIN. THE FIELD TESTS SHALL BE PERFORMED IN THE PRESENCE OF A CERTIFIED PROFESSIONAL ENGINEER WHO SHALL SUBMIT A CERTIFIED COPY OF THE TEST RESULTS.
13. ALL EXISTING BUILDING SEWER SERVICES NOTED TO BE REMOVED ARE TO BE CAPPED AT THE PROPERTY LINE.

GRADING NOTES:

1) ALL TOPSOIL, ORGANIC OR DELETERIOUS MATERIAL MUST BE ENTIRELY REMOVED FROM BENEATH THE PROPOSED PAVED AREAS.
2) EXPOSED SUBGRADES IN PROPOSED PAVED AREAS SHOULD BE PROOF ROLLED WITH A LARGE STEEL DRUM ROLLER AND INSPECTED BY THE GEOTECHNICAL CONSULTANT.
3) ANY SOFT AREAS EVIDENT FROM THE PROOF ROLLING SHOULD BE SUBEXCAVATED AND REPLACED WITH SUITABLE MATERIAL THAT IS FROST COMPATIBLE WITH THE EXISTING SOILS.
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) GRADE AND/OR FILL BEHIND PROPOSED CURB AND BETWEEN BUILDINGS AND CURBS, WHERE REQUIRED TO PROVIDE POSITIVE DRAINAGE.
6) MINIMUM OF 2% GRADE FOR ALL GRASS AREAS UNLESS OTHERWISE NOTED.
7) ALL CURBS SHALL BE BARRIER CURB (150mm) UNLESS OTHERWISE NOTED AND CONSTRUCTED AS PER CITY OF OTTAWA STANDARDS (SC1.1, SC1.4).
8) ALL SIDEWALKS ARE TO BE CONSTRUCTED AS PER CITY OF OTTAWA DETAILS (SC1.4, SC4, SC5, SC6), INSTALL TWSI AT ALL DEPRESSED CURB RAMPS PER CITY DETAIL (SC7.3).
9) AS PER PRIVATE APPROACH BY-LAW NO. 2004-447 SECTION 26 (h) THE GRADE OF ANY PART OF A PRIVATE APPROACH TO A BUILDING MAY BE GREATER THAN 6% BUT SHALL NOT EXCEED 12% PROVIDED THAT A SUBSTANCE MELTING DEVICE SUFFICIENT TO KEEP THE PRIVATE APPROACH FREE OF ICE AT ALL TIMES IS INSTALLED AND PROPERLY MAINTAINED BY THE OWNER.

WATERMAIN NOTES:

1. SPECIFICATIONS:

ITEM	SPEC. No.	REFERENCE
WATERMAIN TRENCHING	W17	CITY OF OTTAWA
THERMAL INSULATION IN SHALLOW TRENCHES	W22	CITY OF OTTAWA
WATERMAIN CROSSING BELOW SEWER	W25	CITY OF OTTAWA
WATERMAIN	PVC DR 18	

2. SUPPLY AND CONSTRUCT ALL WATERMAINS AND APPURTENANCES IN ACCORDANCE WITH THE CITY OF OTTAWA STANDARDS AND SPECIFICATIONS. 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.
3. ALL WATERMAINS / SERVICES ARE TO HAVE A MINIMUM COVER DEPTH OF 2.4m OR SHALL BE INSULATED IN ACCORDANCE WITH CITY OF OTTAWA STANDARD DETAIL DRAWING W22.
4. PROVIDE MINIMUM 0.5m CLEARANCE BETWEEN OUTSIDE OF PIPES AT ALL CROSSINGS.
5. WATER SERVICE IS TO BE CONSTRUCTED TO WITHIN 1.0m OF FOUNDATION WALL AND CAPPED, UNLESS OTHERWISE INDICATED.
6. ANY SERVICES WITHIN 2.4m OF AN EXISTING CATCH BASIN MUST BE INSULATED IN ACCORDANCE WITH CITY OF OTTAWA STANDARD DETAIL DRAWING W23.
7. ALL EXISTING WATER SERVICES NOTED TO BE REMOVED ARE TO BE BLANKED AT THE WATERMAN CONNECTION IN STE CECILE STREET.

EROSION AND SEDIMENT CONTROL NOTES:

THE CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES, TO PROVIDE FOR PROTECTION OF THE AREA DRAINAGE SYSTEM AND THE RECEIVING WATERCOURSE, DURING CONSTRUCTION ACTIVITIES. THE CONTRACTOR ACKNOWLEDGES THAT FAILURE TO IMPLEMENT APPROPRIATE EROSION AND SEDIMENT CONTROL MEASURES MAY BE SUBJECT TO PENALTIES IMPOSED BY ANY APPLICABLE REGULATORY AGENCY.

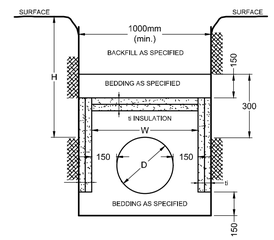
1. THE OWNER AGREES TO PREPARE AND IMPLEMENT AN EROSION AND SEDIMENT CONTROL PLAN TO THE SATISFACTION OF THE CITY OF OTTAWA, APPROPRIATE TO THE SITE CONDITIONS, PRIOR TO UNDERTAKING ANY SITE ALTERATIONS (FILLING, GRADING, REMOVAL OF VEGETATION, ETC.) AND DURING ALL PHASES OF SITE PREPARATION AND CONSTRUCTION IN ACCORDANCE WITH THE CURRENT BEST MANAGEMENT PRACTICES FOR EROSION AND SEDIMENT CONTROL SUCH AS BUT NOT LIMITED TO INSTALLING FILTER CLOTHS ACROSS MANHOLE/CATCHBASIN LIDS TO PREVENT SEDIMENTS FROM ENTERING STRUCTURES AND INSTALL AND MAINTAIN A LIGHT DUTY SILT FENCE BARRIER AS REQUIRED.
2. THE CONTRACTOR SHALL PLACE FILTER BAGS UNDER THE CATCHBASIN AND MANHOLE GRATES FOR THE DURATION OF CONSTRUCTION AND WILL REMAIN IN PLACE DURING ALL PHASES OF CONSTRUCTION.
3. SILT FENCING FOR ENTIRE PERIMETER OF SITE, SHALL BE UTILIZED TO CONTROL EROSION FROM THE SITE DURING CONSTRUCTION.
4. PROVIDE MUD MATS AT ALL CONSTRUCTION ACCESS POINTS TO MINIMIZE SEDIMENT TRANSPORT OFFSITE.
5. EROSION AND SEDIMENT CONTROL MEASURES MAY BE MODIFIED IN THE FIELD AT THE DISCRETION OF THE CITY OF OTTAWA SITE INSPECTOR OR CONSERVATION AUTHORITY.
6. THE CONTRACTOR IS RESPONSIBLE TO ENSURE ROADS ARE KEPT FREE OF MUD AND DEBRIS.

SEWER & WATERMAIN INSULATION NOTES:

1. INSULATE ALL SEWER PIPES THAT HAVE LESS THAN 2.0m COVER AND ALL WATERMAIN WITH LESS THAN 2.4m OF COVER WITH EXPANDED POLYSTYRENE INSULATION AS PER OPSD 1109.030.
2. THE THICKNESS OF INSULATION SHALL BE THE EQUIVALENT OF 25mm FOR EVERY 300mm REDUCTION IN THE REQUIRED DEPTH OF COVER WITH 50mm MINIMUM (SEE TABLE)

COVER SEWER / WATER (mm)	INSULATION THICKNESS (mm)
2000-1700 / 2400-2100	50
1700-1400 / 2100-1800	75
1400 - / 1800-1500	100

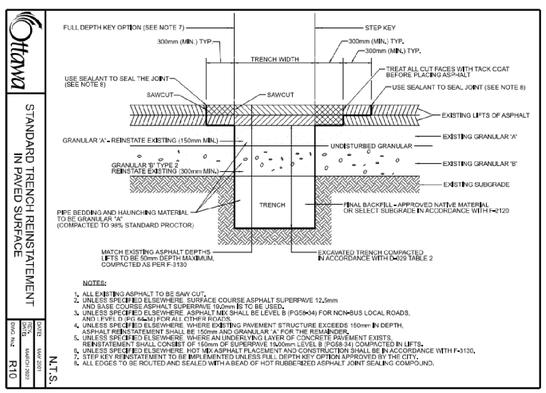
T = THICKNESS OF INSULATION (mm)
W = WIDTH OF INSULATION (mm)
W = D + 300 (1000 mm.)
D = O.D OF PIPE (mm)



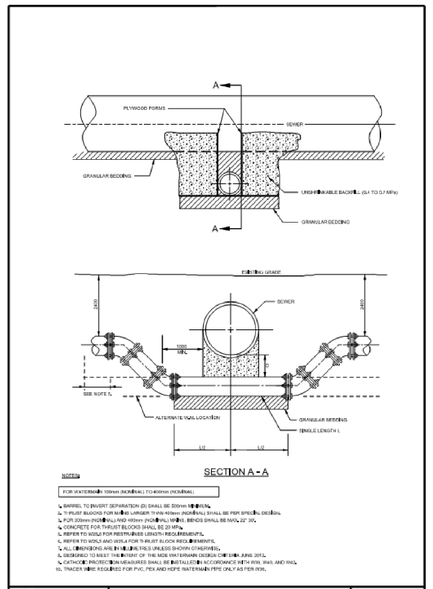
INSULATION DETAIL FOR SHALLOW SEWERS & WATERMAIN
N.T.S.

PAVEMENT STRUCTURES:

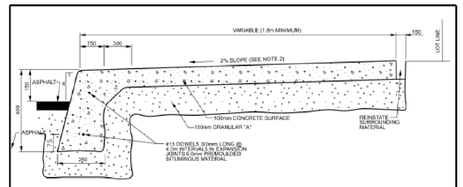
LIGHT DUTY PAVEMENT
50mm HL-3 OR SUPERPAVE 12.5
150mm GRANULAR "A"
300mm GRANULAR "B" TYPE II
ASPHALT GRADE PG 58-34



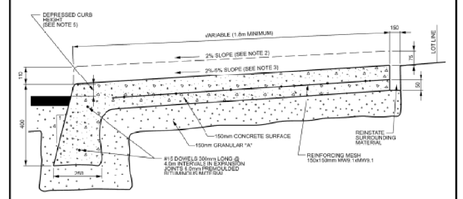
STANDARD TRENCH REINSTATEMENT IN PAVED SURFACE
DWG. No.: R10 | DATE: MAR 2001 | REV. DATE: MARCH 2021
N.T.S.



Ottawa | WATERMAIN CROSSING BELOW SEWER | DATE: MAY 2001 | REV. DATE: MARCH 2021 | DWG. No.: W25



TYPICAL SIDEWALK SECTION

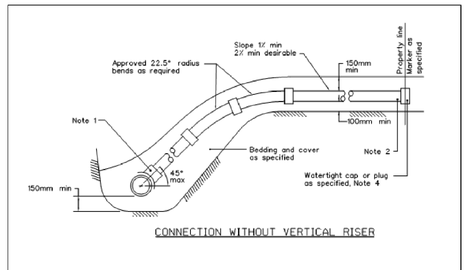


SECTION AT PRIVATE ENTRANCE AND PEDESTRIAN RAMPS

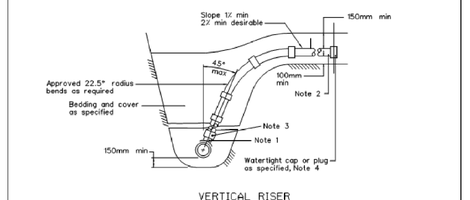
NOTES:
1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.
2. THE MAXIMUM SLOPE IS NOT TO EXCEED 2%.
3. FOR CURB RAMPS, SLOPE OF 2% TO 5%, MAXIMUM 8%.
4. EXPANSION AND DUMMY JOINTS AS PER SC5.
5. DEPRESSED CURB HEIGHT - FOR PEDESTRIAN CURB RAMPS 0 TO 6 mm AND FOR PRIVATE ENTRANCES 0 TO 13 mm.

N.T.S.

Ottawa | MONOLITHIC CONCRETE CURB AND SIDEWALK | DATE: MAY 2001 | REV. DATE: MAY 2021 | DWG. No.: SC2



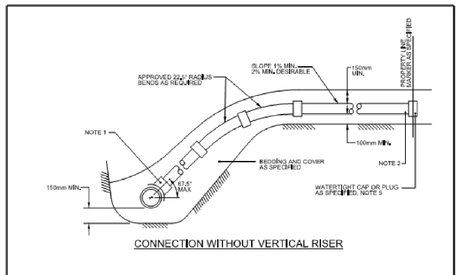
CONNECTION WITHOUT VERTICAL RISER



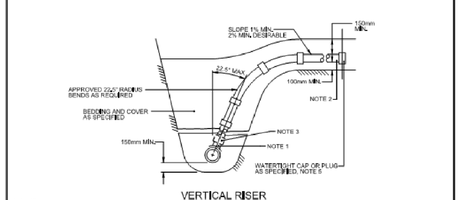
VERTICAL RISER

NOTES:
1. ALL DIAMETERS OF SERVICE CONNECTIONS TO FLEXIBLE MAIN SEWER SHALL BE MADE USING APPROVED TEE OR WYE FITTINGS.
2. SANITARY SERVICES TO BE 135mm AND STORM SERVICES TO BE 100mm FOR NEW RESIDENCES UNLESS SPECIFIED OTHERWISE. SERVICE PIPE AND RADIUS BENDS TO BE APPROVED CSA B182.2, SDR35 PRODUCTS UNLESS SPECIFIED OTHERWISE.
3. APPROVED CONTROLLED SETTLEMENT JOINTS OPTIONAL FOR SERVICE CONNECTIONS TO MAIN SEWERS UP TO 5m DEEP. WHERE APPROVED, CONNECTIONS TO SEWERS OVER 5m DEEP REQUIRE APPROVED CONTROLLED SETTLEMENT JOINTS.
4. CAP OR PLUG AT THE PROPERTY LINE SHALL BE ADEQUATELY BRACED TO WITHSTAND TESTING PRESSURE.
5. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN.

Ottawa | SEWER SERVICE CONNECTIONS FOR FLEXIBLE MAIN SEWER PIPE (MODIFIED OPSD-1006.020) | DATE: MARCH 2006 | REV. DATE: MARCH 2013 | DWG. No.: S11.1



CONNECTION WITHOUT VERTICAL RISER



VERTICAL RISER

NOTES:
1. ALL DIAMETERS OF SERVICE CONNECTIONS THAT HAVE NOMINAL DIAMETERS NO GREATER THAN 50% OF THE NOMINAL DIAMETER OF THE MAIN SEWER PIPE SHALL BE MADE USING A BELL END INSERT AS PER ST1.2 OR AN APPROVED RUBBER GASKETED INSERT, INSTALLED ABOVE THE SPRING LINE.
2. SANITARY SERVICES TO BE 135mm AND STORM SERVICES TO BE 100mm FOR NEW RESIDENCES UNLESS SPECIFIED OTHERWISE. SERVICE PIPE AND RADIUS BENDS TO BE APPROVED CSA B182.2, SDR35 PRODUCTS UNLESS SPECIFIED OTHERWISE.
3. APPROVED CONTROLLED SETTLEMENT JOINTS OPTIONAL FOR SERVICE CONNECTIONS TO MAIN SEWERS UP TO 5m DEEP. WHERE APPROVED, CONNECTIONS TO SEWERS OVER 5m DEEP REQUIRE APPROVED CONTROLLED SETTLEMENT JOINTS.
4. VERTICAL RISER SHALL BE SAME AS SERVICE PIPE UNLESS OTHERWISE SPECIFIED.
5. CAP OR PLUG AT THE PROPERTY LINE SHALL BE ADEQUATELY BRACED TO WITHSTAND TESTING PRESSURE.
6. FOR NEW CONSTRUCTION, INSERTS MUST BE INSTALLED ON THE MAIN PIPE BEFORE THAT PIPE IS LAID. FOR SERVICES/BRANCHES 375mm DIA. OR LESS, APPROVED "CORED TEES" MAY BE USED.
7. APPROVED CUT-IN TOOL MUST BE USED FOR FIELD MADE CONNECTIONS.
8. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN.

N.T.S.

Ottawa | SEWER SERVICE CONNECTIONS FOR RIGID MAIN SEWER PIPE (MODIFIED OPSD-1006.010) | DATE: MARCH 2006 | REV. DATE: MARCH 2014 | DWG. No.: S11

NOTE:
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OWNER INFORMATION
14072375 CANADA INC.
(HENRY INVESTMENTS)
1770 CANAAN ROAD
CUMBERLAND, ONTARIO, K4C 1J5

No.	REVISION	DATE	BY
2	RE-ISSUED FOR SITE PLAN APPLICATION	FEB 21/25	MJH
1	ISSUED FOR SITE PLAN APPLICATION	DEC 19/24	MJH

SCALE

DESIGN	DMM/ZA
CHECKED	MJH
DRAWN	DMM/ZA
CHECKED	MJH
APPROVED	JLS

FOR REVIEW ONLY

LICENSED PROFESSIONAL ENGINEER M.J.HREHORIAK 100211256 FEB 21/2025 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
73-83 STE CECILE STREET

DRAWING NAME
NOTES AND DETAILS PLAN

PROJECT No. 122167
REV REV # 2
DRAWING No. 122167-ND

D02-24-0084
D07-12-24-0177

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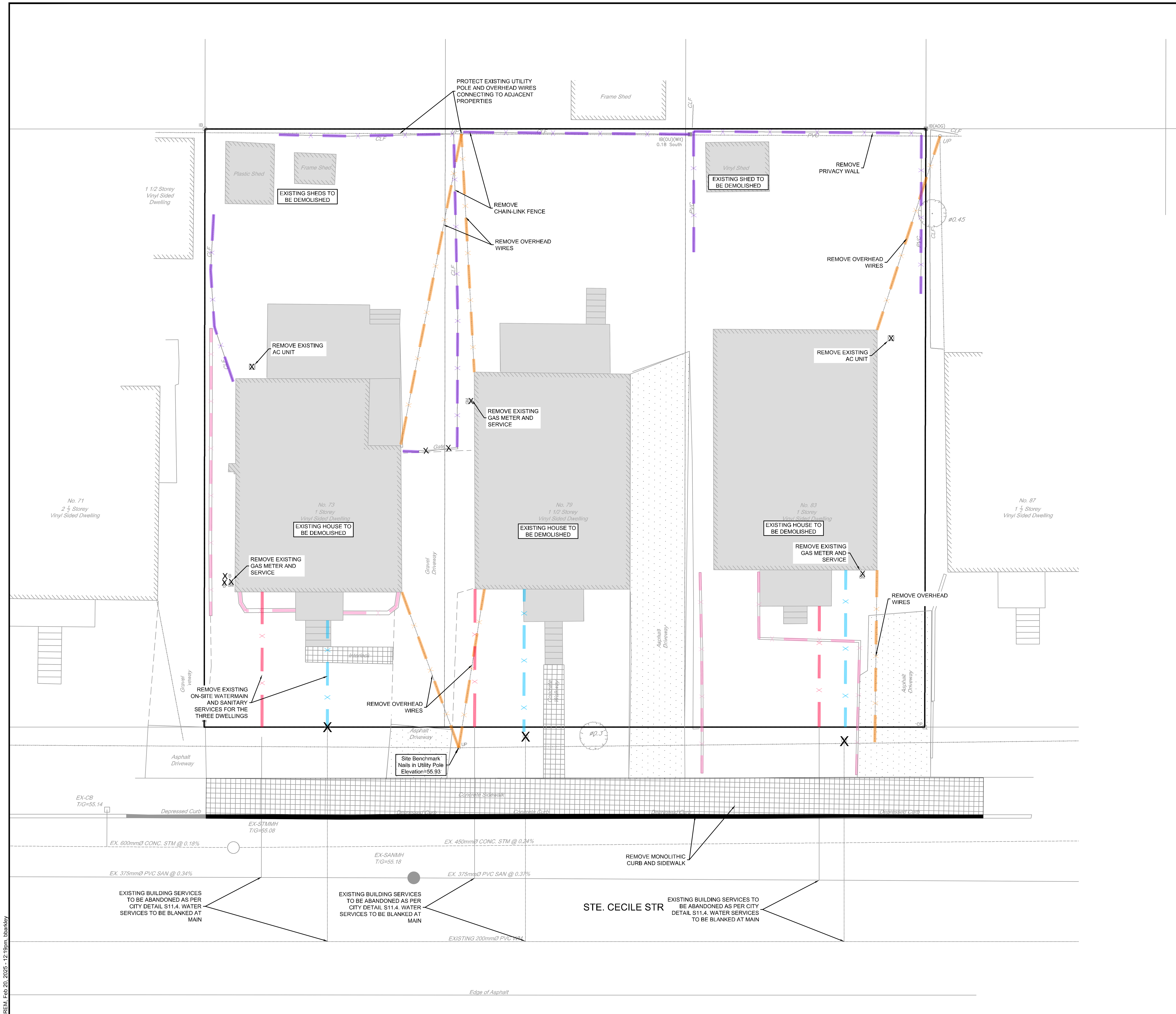
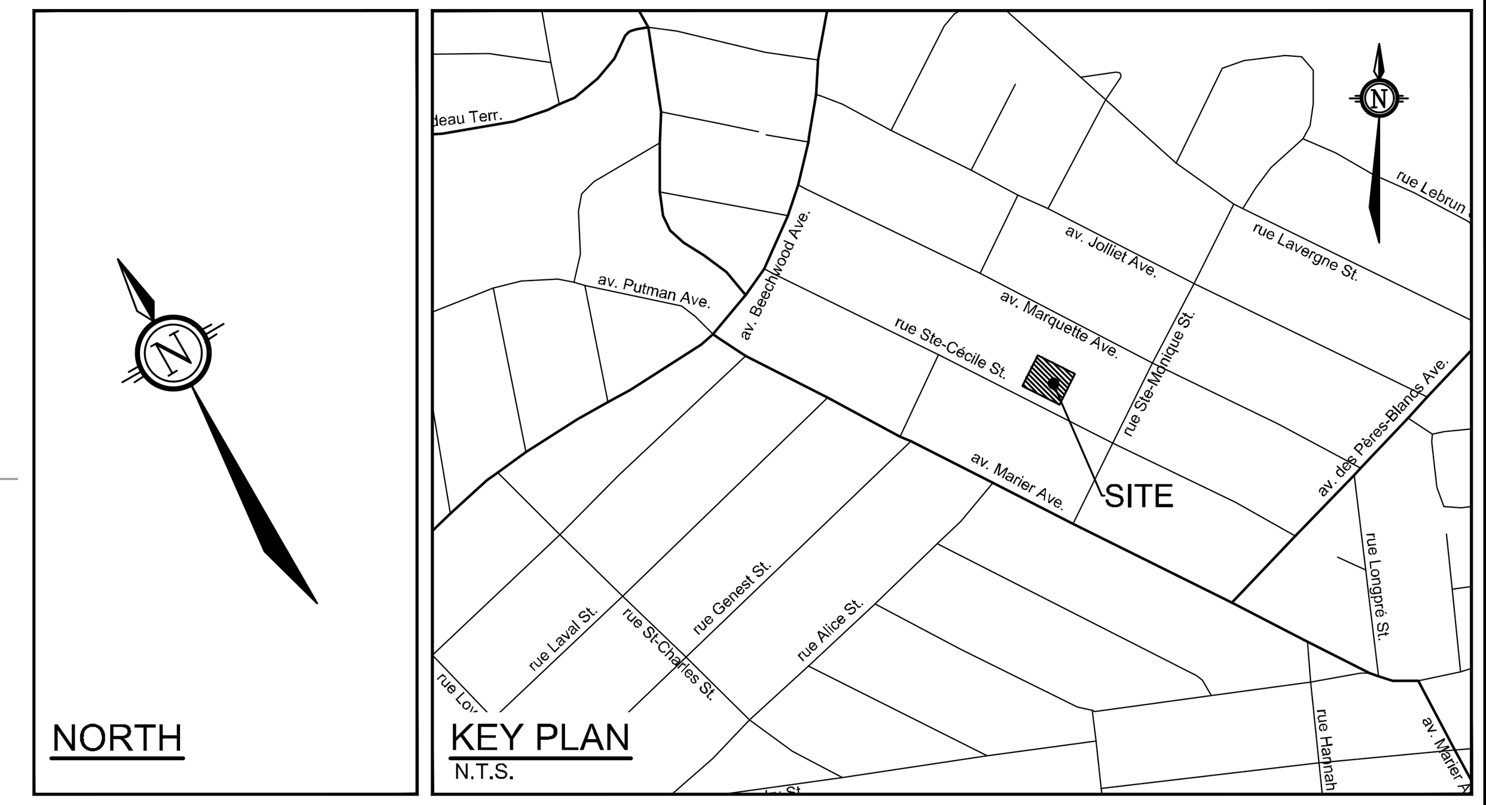
PLAN # 19217





LEGEND

- ASPHALT REMOVAL
- INTERLOCK / CONCRETE SIDEWALK REMOVAL
- X REMOVALS
- EXISTING FENCE REMOVAL
- EXISTING UTILITIES REMOVAL
- EXISTING ON-SITE WATERMAIN REMOVAL
- EXISTING ON-SITE SANITARY REMOVAL
- EXISTING RETAINING WALL REMOVAL
- EXISTING MONOLITHIC CURB AND SIDEWALK REMOVAL
- *EXISTING UTILITY POLE*
- *EXISTING UTILITY POLE ANCHORS*
- *EXISTING GAS METER*
- *EXISTING AC UNIT*

REFER TO 122167-ND FOR ADDITIONAL NOTES

D02-24-0084

D07-12-24-0177

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14072375 CANADA INC.
(HENRY INVESTMENTS)
1770 CANAAN ROAD
CUMBERLAND, ONTARIO, K4C 1J5

No.	REVISION	DATE	BY
2	RE-ISSUED FOR SITE PLAN APPLICATION	FEB 21/25	MJH
1	ISSUED FOR COORDINATION	DEC 17/24	MJH

SCALE 1:100

DESIGN	DMM/ZA
CHECKED	MJH
DRAWN	DMM/ZA
CHECKED	MJH
APPROVED	JLS

FOR REVIEW ONLY

LICENSED PROFESSIONAL ENGINEER M. J. HREHORIAK 100211256 FEB 21/2025 PROVINCE OF ONTARIO

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Website www.novatech-eng.com

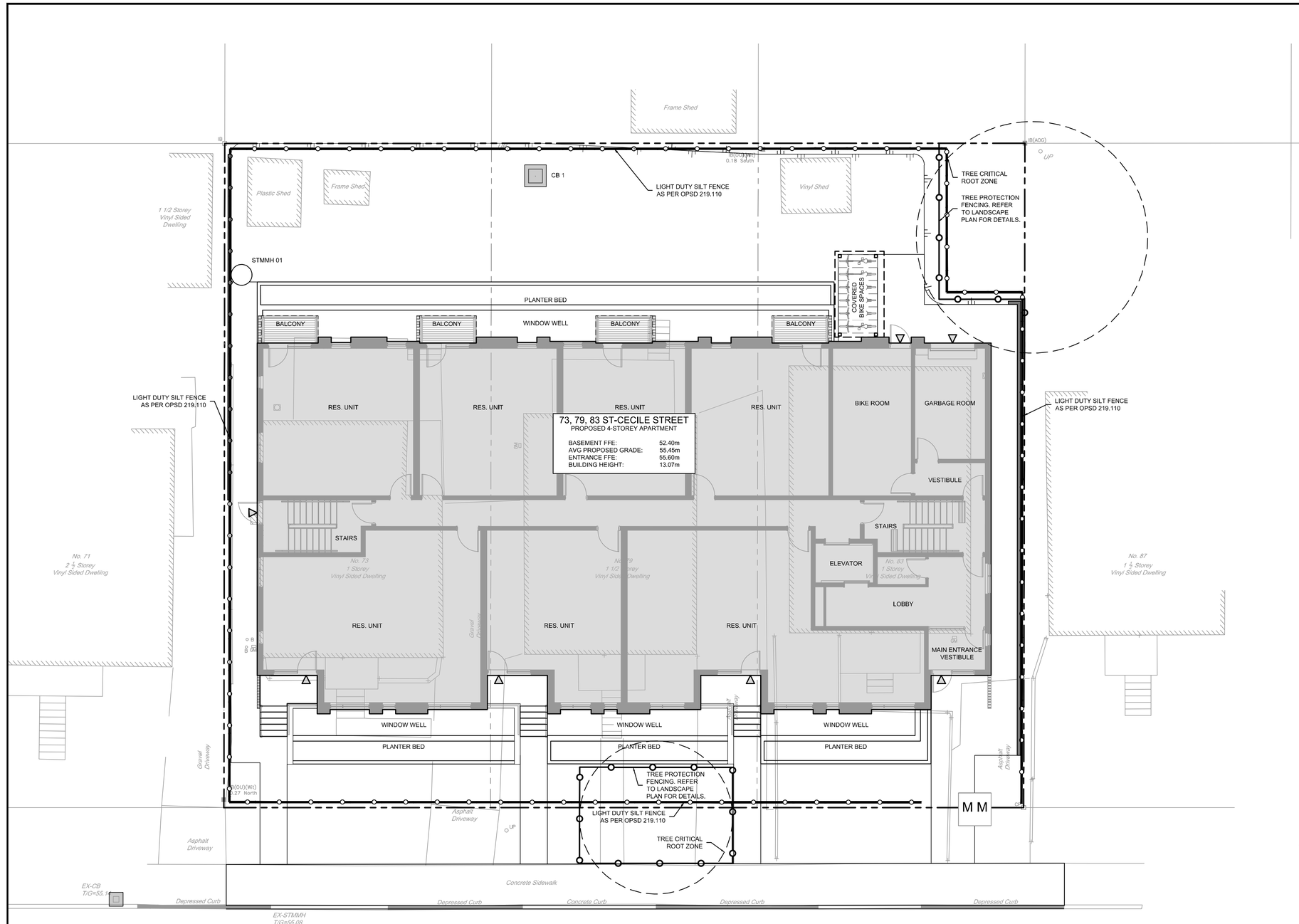
LOCATION
CITY OF OTTAWA
73-83 CECILE STREET

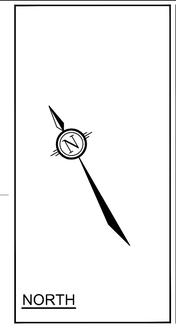
DRAWING NAME
EXISTING CONDITIONS AND REMOVALS PLAN

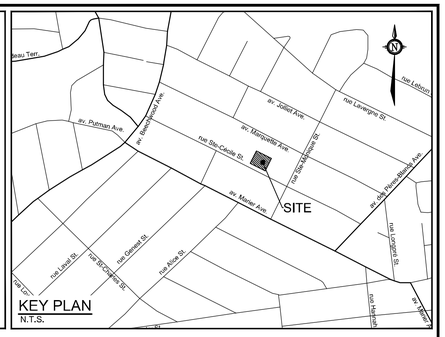
PROJECT No. 122167
REV REV # 2
DRAWING No. 122167-REM

PLANA1.DWG - 841mmx594mm

PLAN # 19217

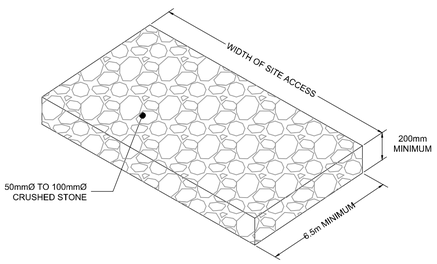






LEGEND

- PROPERTY LINE
- 2.0% GRADE AND DIRECTION
- MAXIMUM 3:1 SIDESLOPE
- EMERGENCY OVERLAND FLOW ROUTE
- STMMH 01 PROPOSED STORM MANHOLE
- CB 1 PROPOSED CATCHBASIN
- PROPOSED BARRIER CURB (PER SC1.1)
- DC PROPOSED DEPRESSED CURB (PER SC1.1)
- ICD PROPOSED INLET CONTROL DEVICE
- RD PROPOSED ROOF DRAIN
- PROPOSED RETAINING WALL
- PROPOSED BUILDING ENTRANCE
- BALCONIES FROM LEVEL 1-3
- LIGHT DUTY SILT FENCE (OPSD 219,110)
- M M PROPOSED MUD MAT / CONSTRUCTION ENTRANCE
- PROPOSED FILTER BAGS AT CATCHBASINS
- *EXISTING CONCRETE CURB*
- MH-SA *EXISTING SANITARY MANHOLE*
- MH-ST *EXISTING STORM MANHOLE*
- CB *EXISTING CATCHBASIN*
- *EXISTING TREES / VEGETATION*
- EX.UP *EXISTING UTILITY POLE C/W GUY WIRES*
- *EXISTING FENCE*
- *EXISTING LIGHT STANDARD*



MUD MAT DETAIL
NOT TO SCALE

	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 Bags	Location as Indicated On Plans	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

REFER TO 122167-ND FOR ADDITIONAL NOTES

NOTE:
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2	RE-ISSUED FOR SITE PLAN APPLICATION	FEB 21/25	MJH
1	ISSUED FOR SITE PLAN APPLICATION	DEC 19/24	MJH

SCALE 1:100
1:100 0 1 2 3 4

DESIGN DMM/ZA
CHECKED MJH
DRAWN DMM/ZA
CHECKED MJH
APPROVED JLS

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LOCATION
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73-83 CECILE STREET

DRAWING NAME
EROSION AND SEDIMENT CONTROL PLAN

PROJECT No. 122167
REV REV # 2
DRAWING No. 122167-ESC

D02-24-0084
D07-12-24-0177

PLAN # 19217

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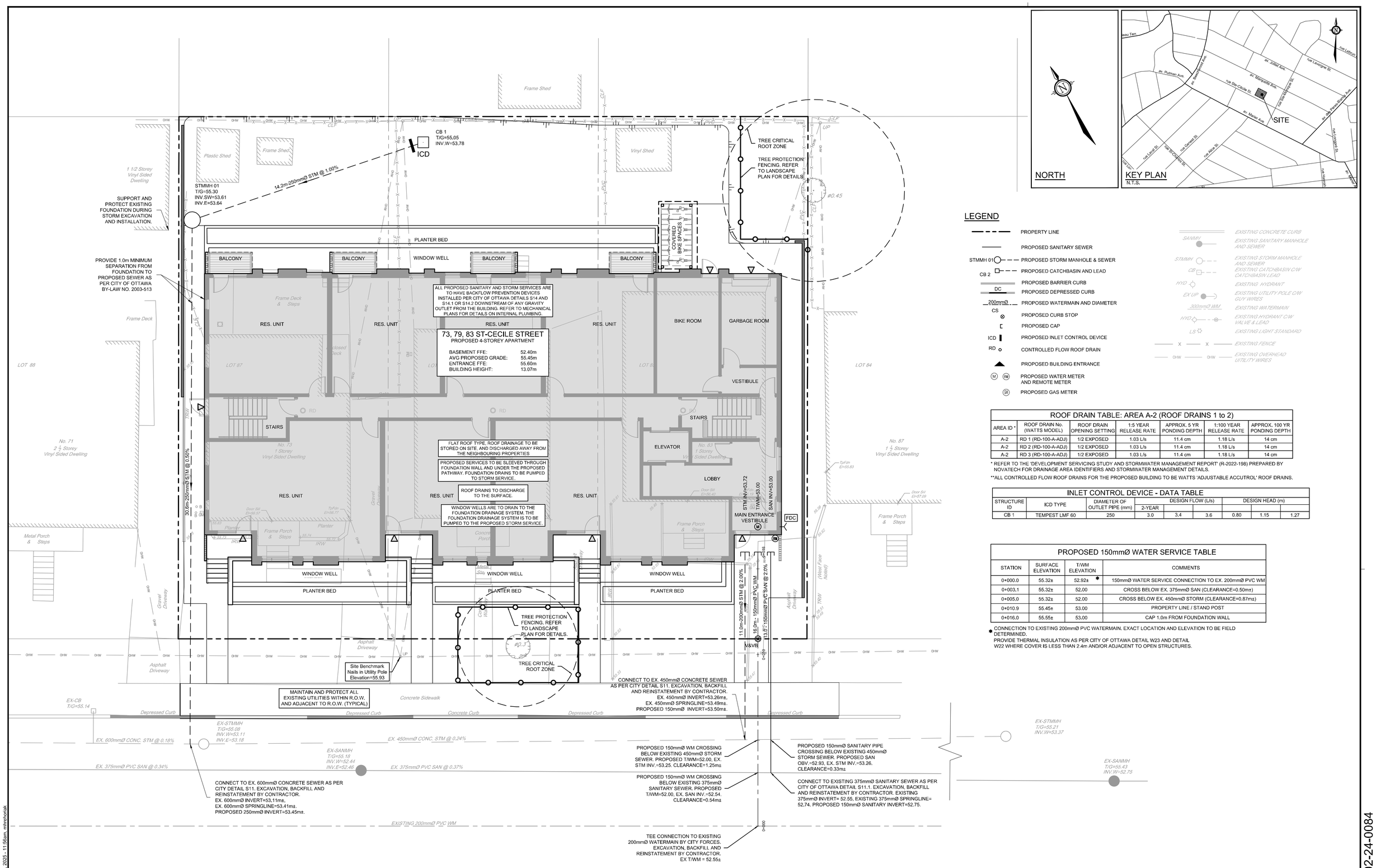

LEGEND

- PROPERTY LINE
- PROPOSED SANITARY SEWER
- STMMH 01 — PROPOSED STORM MANHOLE & SEWER
- CB 2 — PROPOSED CATCHBASIN AND LEAD
- PROPOSED BARRIER CURB
- DC — PROPOSED DEPRESSED CURB
- 200mmØ — PROPOSED WATERMAIN AND DIAMETER
- CS — PROPOSED CURB STOP
- PROPOSED CAP
- ICD — PROPOSED INLET CONTROL DEVICE
- RD — CONTROLLED FLOW ROOF DRAIN
- PROPOSED BUILDING ENTRANCE
- (M) (RM) PROPOSED WATER METER AND REMOTE METER
- (GI) PROPOSED GAS METER

- SAN/MH — EXISTING CONCRETE CURB / EXISTING SANITARY MANHOLE AND SEWER
- STMMH — EXISTING STORM MANHOLE AND SEWER / EXISTING CATCHBASIN C/W CATCHBASIN LEAD
- CB — EXISTING CATCHBASIN C/W CATCHBASIN LEAD
- HYD — EXISTING HYDRANT
- EX UP — EXISTING UTILITY POLE C/W GUY WIRES
- 300mmØ WM — EXISTING WATERMAIN
- HYD — EXISTING HYDRANT C/W VALVE & LEAD
- LS — EXISTING LIGHT STANDARD
- X — X — EXISTING FENCE
- OHW — OHW — EXISTING OVERHEAD UITILITY WIRES

ROOF DRAIN TABLE: AREA A-2 (ROOF DRAINS 1 to 2)

AREA ID *	ROOF DRAIN No. (WATTS MODEL)	ROOF DRAIN OPENING SETTING	1:5 YEAR RELEASE RATE	APPROX. 5 YR PONDING DEPTH	1:100 YEAR RELEASE RATE	APPROX. 100 YR PONDING DEPTH
A-2	RD 1 (RD-100-A-ADJ)	1/2 EXPOSED	1.03 L/s	11.4 cm	1.18 L/s	14 cm
A-2	RD 2 (RD-100-A-ADJ)	1/2 EXPOSED	1.03 L/s	11.4 cm	1.18 L/s	14 cm
A-2	RD 3 (RD-100-A-ADJ)	1/2 EXPOSED	1.03 L/s	11.4 cm	1.18 L/s	14 cm

* REFER TO THE 'DEVELOPMENT SERVICING STUDY AND STORMWATER MANAGEMENT REPORT' (R-2022-198) PREPARED BY NOVATECH FOR DRAINAGE AREA IDENTIFIERS AND STORMWATER MANAGEMENT DETAILS.

**ALL CONTROLLED FLOW ROOF DRAINS FOR THE PROPOSED BUILDING TO BE WATTS 'ADJUSTABLE ACCUTROL' ROOF DRAINS.

INLET CONTROL DEVICE - DATA TABLE

STRUCTURE ID	ICD TYPE	DIAMETER OF OUTLET PIPE (mm)	DESIGN FLOW (L/s)			DESIGN HEAD (m)		
			2-YEAR					
CB 1	TEMPEST LMF 60	250	3.0	3.4	3.6	0.80	1.15	1.27

PROPOSED 150mmØ WATER SERVICE TABLE

STATION	SURFACE ELEVATION	T/WM ELEVATION	COMMENTS
0+000.0	55.32±	52.92± *	150mmØ WATER SERVICE CONNECTION TO EX. 200mmØ PVC WM
0+003.1	55.32±	52.00	CROSS BELOW EX. 375mmØ SAN (CLEARANCE=0.50m±)
0+005.0	55.32±	52.00	CROSS BELOW EX. 450mmØ STORM (CLEARANCE=0.87m±)
0+010.9	55.45±	53.00	PROPERTY LINE / STAND POST
0+016.0	55.55±	53.00	CAP 1.0m FROM FOUNDATION WALL

* CONNECTION TO EXISTING 200mmØ PVC WATERMAIN. EXACT LOCATION AND ELEVATION TO BE FIELD DETERMINED.
PROVIDE THERMAL INSULATION AS PER CITY OF OTTAWA DETAIL W23 AND DETAIL W22 WHERE COVER IS LESS THAN 2.4m AND/OR ADJACENT TO OPEN STRUCTURES.

REFER TO 122167-ND FOR ADDITIONAL NOTES

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
14072375 CANADA INC.
(HENRY INVESTMENTS)
1770 CANAAN ROAD
CUMBERLAND, ONTARIO, K4C 1J5

No.	REVISION	DATE	BY
2	RE-ISSUED FOR SITE PLAN APPLICATION	FEB 21/25	MJH
1	ISSUED FOR SITE PLAN APPLICATION	DEC 19/24	MJH

SCALE 1:100 (1:100 0 1 2 3 4)

DESIGN DMM/ZA
CHECKED MJH
DRAWN DMM/ZA
CHECKED MJH
APPROVED JLS

FOR REVIEW ONLY

LICENSED PROFESSIONAL ENGINEER M.J. HREHORIAK 100211256 FEB 21/2025 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
73-83 CECILE STREET

DRAWING NAME
GENERAL PLAN OF SERVICES

PROJECT No. 122167
REV REV # 2
DRAWING No. 122167-GP

D07-12-24-0177 D02-24-0084

PLAN # 19217

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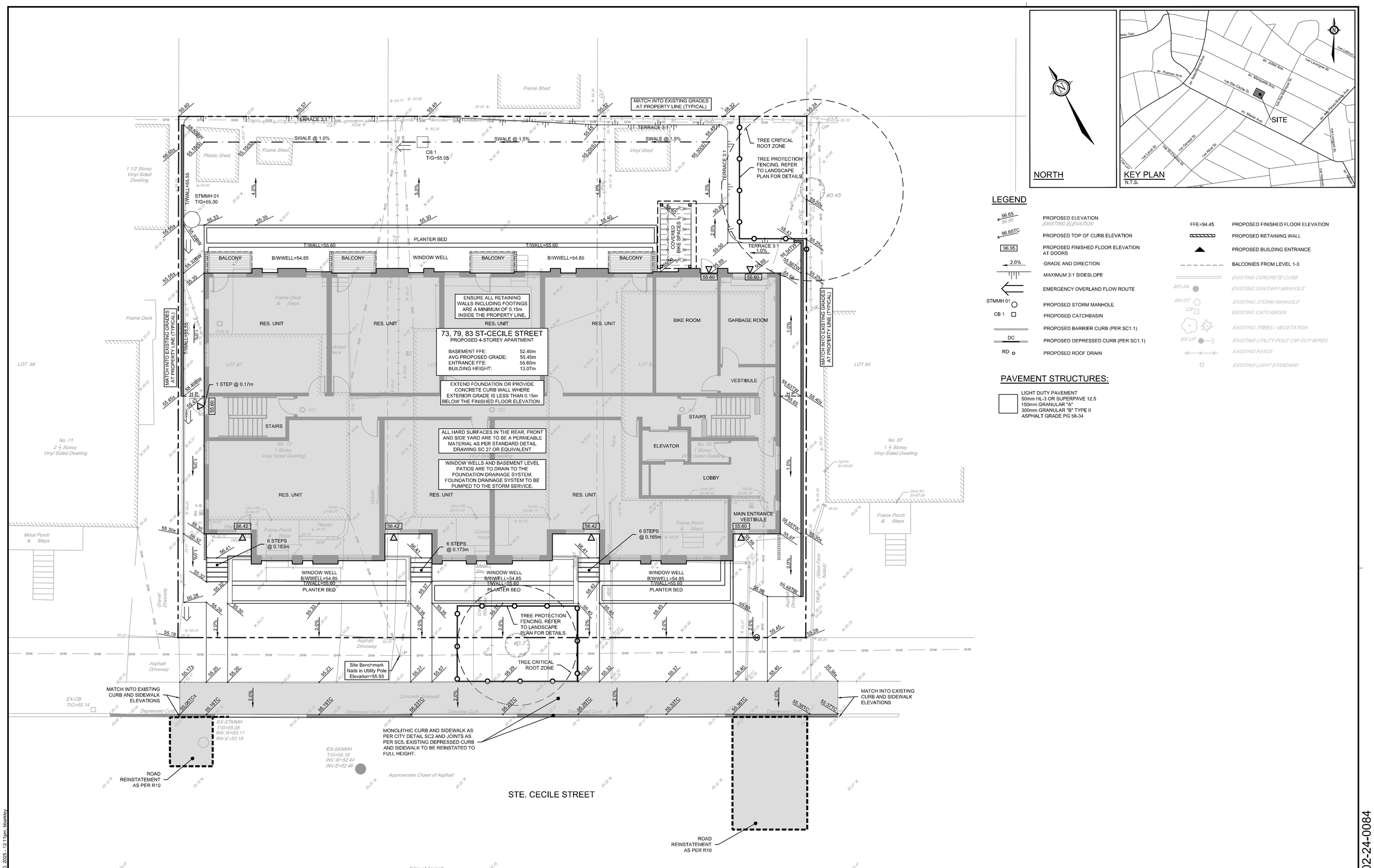

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CUMBERLAND, ONTARIO, K4C 1J5

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LOCATION
CITY OF OTTAWA
73-83 CECILE STREET

DRAWING NAME
GRADING PLAN

PROJECT No. 122167
REV REV # 2
DRAWING No. 122167-GR

D07-12-24-0177 D02-24-0084

PLAN # 19217

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