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1200 BASELINE ROAD

Ottawa, Ontario

Serviceability Report

June 30, 2026

**1200 BASELINE ROAD
OTTAWA, ONTARIO**

SERVICEABILITY REPORT

Prepared by:

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

June 30, 2026

Ref: R-2025-111
Novatech File: 124090

June 30, 2026

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

Attention: Mohammed Fawzi

Dear Mr. Watson:

**Re: 1200 Baseline Road
 Functional Servicing Report
 Novatech File No.: 124090**

Please find enclosed the complete pdf copy of the above noted report dated May 24th, 2026.
This report is submitted in support of a Zoning By-law Amendment Application.

If you have any questions, please contact the undersigned.

Yours truly,

NOVATECH



Cara Ruddle, P.Eng.
Senior Project Manager, Land Development Engineering

cc: David Johnston (Zena Investment Corporation)

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1.0. INTRODUCTION

Novatech has been retained by Zena Investment Corporation to assess the serviceability for the proposed residential development at 1200 Baseline Road. The purpose of this report is to demonstrate that the proposed development can be serviced by the existing municipal infrastructure surrounding the subject site. This report is being submitted in support of the Zoning By-law Amendment application. **Figure 1** Key Plan shows the site location.

2.0 EXISTING DEVELOPMENT

The subject site has an area of 2.62ha and is located on the south side of the Baseline Road and Merivale Road intersection. The site is bordered by an office building to the west, Eleanor Drive apartments and townhomes to the south, and St. Augustine Parish and townhomes to the east. The legal description of the site is designated as Part of Lots 13, 14, and 15 and Part of Lot 12, Registered Plan 30, and Part of Block E Registered Plan 592106, City of Ottawa.

The site is currently occupied by an existing car dealership and associated paved parking and car storage areas. **Figure 2** shows the existing site conditions.

3.0 PROPOSED DEVELOPMENT

The proposed development is a seven-building residential complex. It is intended to phase the development with Phase one including two buildings in the western portion of the site fronting Merivale Road. The two residential towers will be 25 and 30 stories in height with commercial and amenity areas on the ground level. Phase two will include two residential towers by the Baseline and Merivale intersection (25 and 34 stories in height), a 14-storey residential building and two 6-storey residential buildings at the rear of the site. A private internal road is proposed through the site with entrances from Merivale Road, Baseline Road and Eleanor Drive. Parking will be provided by underground parking garages with some parallel parking along the internal road.

The table below summarizes the number of units proposed for each building. The types of units are unknown at this time so an average of 1.8 persons per unit will be used in the servicing calculations.

Table 3.1 Building Unit Summary

Tower	Number of Units
A	254
B	195
C	342
D	255
E	135
F	64
G	46

Figure 3 & 4 shows the proposed development. Correspondence from the City pre-consultation meeting for the proposed development is also included in **Appendix A** for reference.

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KEY PLAN

CITY OF OTTAWA
1200 BASELINE ROAD

PROPOSED MULTI-TOWER
DEVELOPMENT

DATE
DEC 2025

JOB
124090

FIGURE
FIG-1

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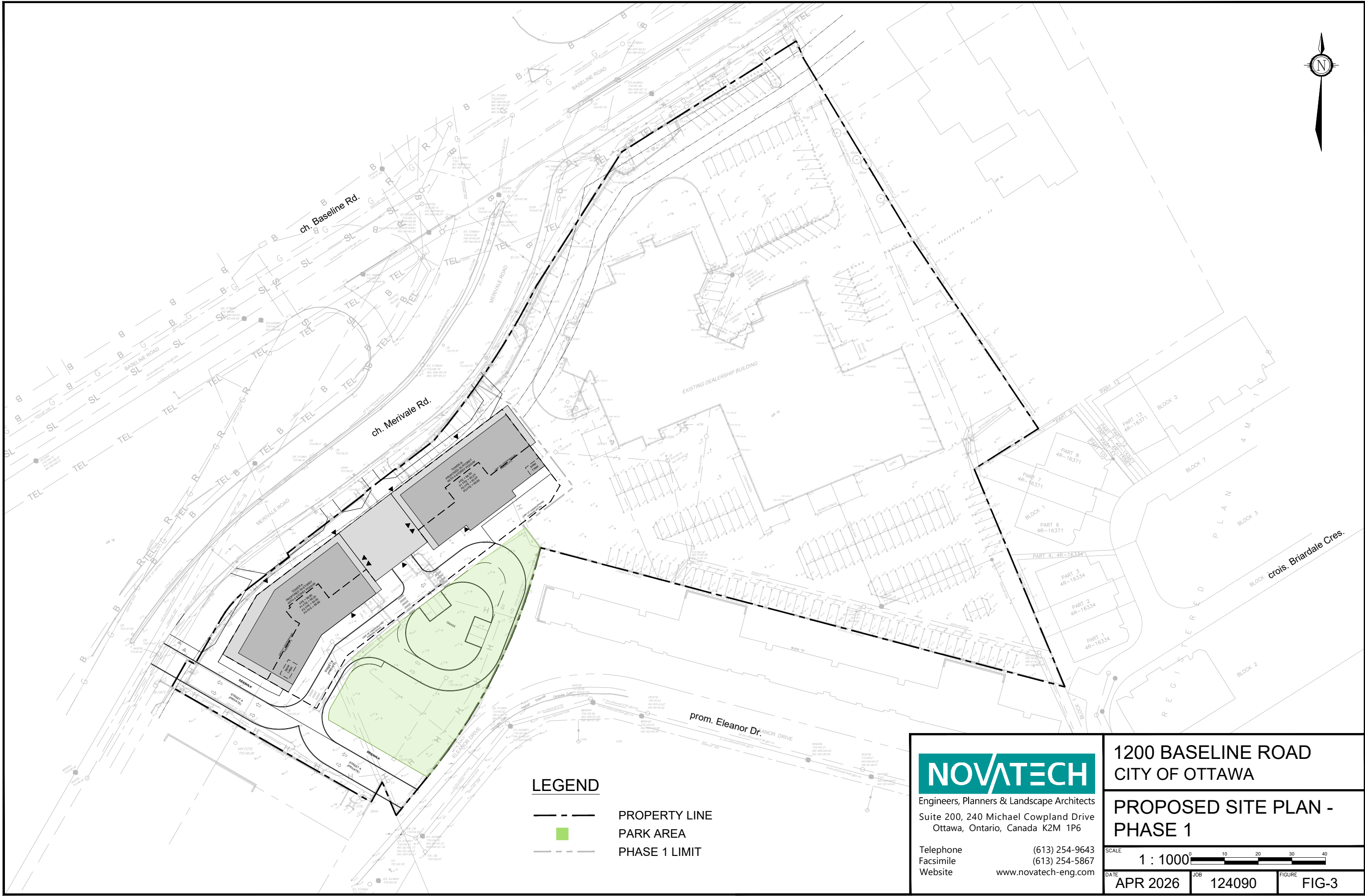


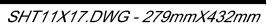
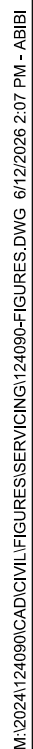
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1200 BASELINE ROAD CITY OF OTTAWA		
EXISTING CONDITIONS PLAN		
SCALE	1 : 1000	
DATE	JOB	FIGURE
APR 2026	124090	FIG-2

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4.0 SITE CONSTRAINTS

A geotechnical investigation was completed by Paterson Group Inc. and a report prepared entitled 'Geotechnical Investigation, Proposed Development, 1200 Baseline Road, Ottawa, Ontario' dated September 22, 2025. The following was noted in this report.

- Bedrock is present on the site ranging in depths from 0.6-5.8m below ground surface. Bedrock removal will be required during the construction of this development.
- Groundwater was found at depths ranging from 1.3-3.6m below ground surface and the groundwater table was estimated to be 2-4m below ground surface. A sub-slab drainage system is recommended for this development due to the groundwater table elevations and proposed underground parking structures.
- During construction, groundwater volumes pumped could be between 50,000 to 400,000 L/day and it would be required to register on the Environmental Activity and Sector Registry (EASR). However, the project is expected to be phased, so each building constructed one at a time. As the phasing of the underground foundation works is planned in stages the groundwater volumes to be pumped are expected to be maintained under the 50,000L/day threshold.

5.0 WATER SERVICING

There is an existing 300mm diameter watermain along each of the Merivale Road, Baseline Road and Eleanor Drive right-of-ways. The subject property is within the 2W and ME City of Ottawa pressure zones. The existing car dealership has a 100mm diameter water service that connects to the existing 300mm diameter watermain along the Baseline Road frontage (2W pressure zone).

The proposed development will be serviced by a private 200mm diameter watermain. Since the site is located within two different pressure zones, the watermain looping can only occur within the same pressure zone. Also, buildings with an average day demand greater than 50 cubic meters of water will require two water services separated by a valve as per the City of Ottawa Technical Bulletin ISDTB-2014-02.

Water demand and fire flow calculations have been calculated using criteria from Section 4 of the *City Water Guidelines*. The required fire demand was calculated using the Fire Underwriters Survey (FUS) Guidelines using assumptions on building construction and setback requirements for the worst-case scenario of the potential development options. Water demand was calculated for a population of 2,300 people from a total of 1,278 units based on the following criteria:

- Average Daily Demand = 280 L/capita/day
- Average Apartment Population = 1.8 Person/Unit
- Maximum Daily Demand = 2.5 x Average Daily Demand
- Peak Hour Demand = 2.2 x Maximum Daily Demand
- Fire Flow = Fire Underwriters Survey (FUS)

The preliminary water demand and fire flow calculations are provided in **Appendix B** for reference. A summary of the water demand and fire flows are provided in **Table 5.1** below.

Refer to **Figure 5** Existing Services Plan which shows the existing and **Figures 6 & 7** which shows the proposed services for each phase of the subject development.

Table 5.1 Water Demand Summary

Phase	Tower	Ave. Daily Demand	Max. Daily Demand	Peak Hour Demand	Fire Flow
		(L/s)	(L/s)	(L/s)	(L/min)
Phase 1	A	1.03	2.58	5.68	5,000
	B	1.12	2.80	6.16	5,000
Phase 2	C	2.15	5.38	11.84	7,000
	D	1.49	3.72	8.18	5,000
	E	0.37	0.93	2.05	7,000
	F	0.27	0.67	1.48	5,000
	G	1.02	2.55	5.61	6,000
Total Demands		7.46	18.64	41.00	7,000

These boundary conditions provided in **Tables 5.2** and **5.3** below were used to analyze the performance of the watermain for three theoretical conditions for each phase: 1) High Pressure check under Average Day conditions 2) Peak Hour demand 3) Maximum Day + Fire Flow demand.

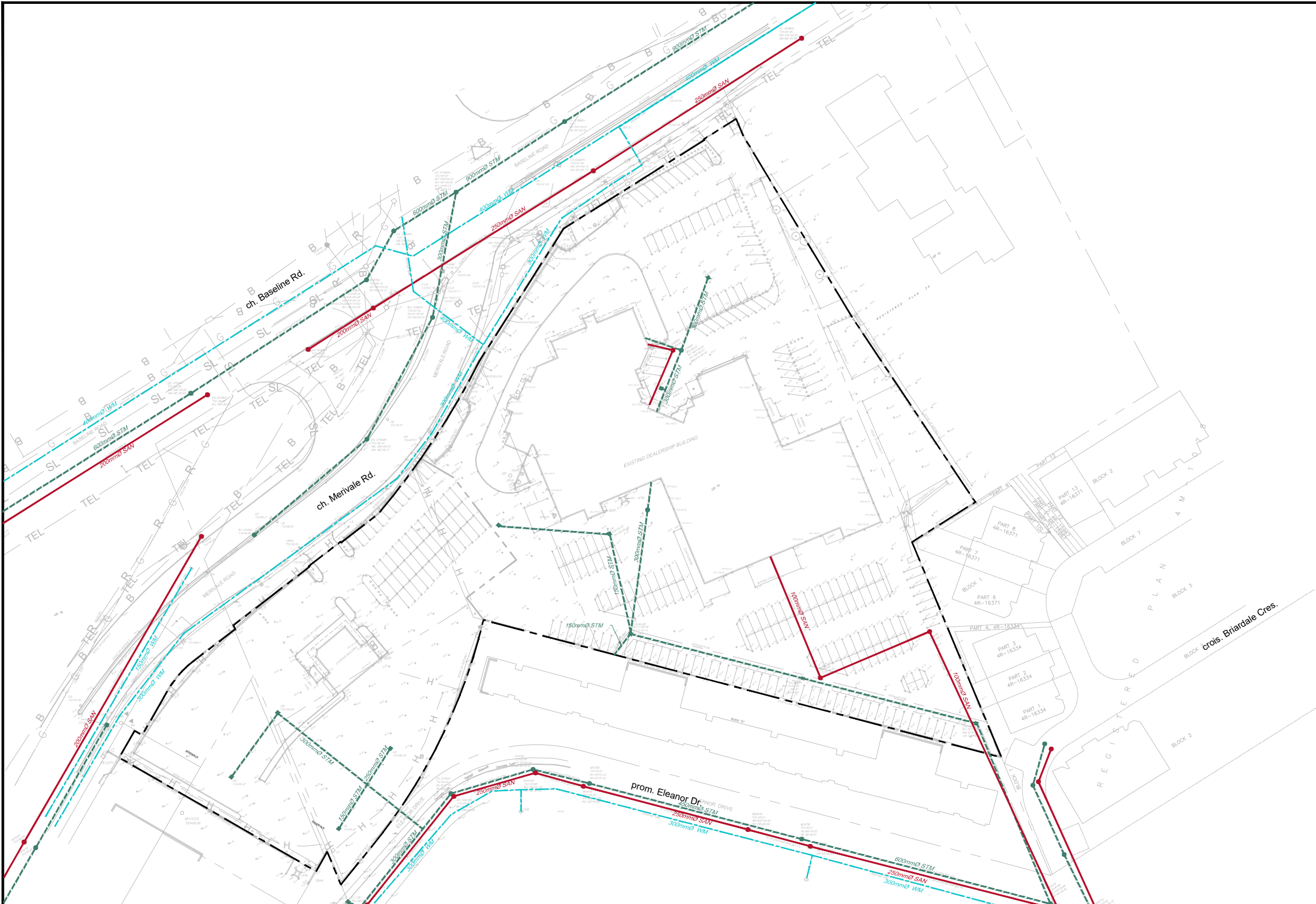
Table 5.2 Water Boundary Conditions Phase 1

Criteria	Head (m)
Connection 1 to Existing 305mm Watermain on Merivale Road (West)	
Minimum HGL	147.3
Maximum HGL	158.3
Max Day + Fire Flow (83.3 L/s)	157.4
Connection 2 to Existing 305mm Watermain on Merivale Road (Center)	
Minimum HGL	147.3
Maximum HGL	158.5
Max Day + Fire Flow (83.3 L/s)	157.6
Connection 3 to Existing 305mm Watermain on Merivale Road (East)	
Minimum HGL	147.3
Maximum HGL	158.5
Max Day + Fire Flow (83.3 L/s)	157.5

Table 5.3 Water Boundary Conditions Phase 2

Criteria	Head (m)
Connection 1 to Existing 305mm Watermain on Merivale Road (West)	
Minimum HGL	146.0
Maximum HGL	158.3
Max Day + Fire Flow (83.3 L/s)	156.7
Max Day + Fire Flow (100.0 L/s)	155.4
Max Day + Fire Flow (116.7 L/s)	154.2
Connection 2 to Existing 305mm Watermain on Merivale Road (Center)	
Minimum HGL	146.1
Maximum HGL	158.3
Max Day + Fire Flow (83.3 L/s)	156.9
Max Day + Fire Flow (100.0 L/s)	155.7
Max Day + Fire Flow (116.7 L/s)	154.5

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LEGEND

- | | | | |
|--|--|--|------------------------|
| | EXISTING STORM SEWER & FLOW DIRECTION ARROW | | EXISTING GASLINE |
| | EXISTING CATCHBASIN | | EXISTING BELL PLANT |
| | EXISTING STORM MANHOLE | | EXISTING ROGERS PLANT |
| | EXISTING SANITARY SEWER & FLOW DIRECTION ARROW | | EXISTING TELUS PLANT |
| | EXISTING SANITARY MANHOLE | | EXISTING STREET LIGHTS |
| | EXISTING WATERMAIN | | PROPERTY LIGHT |

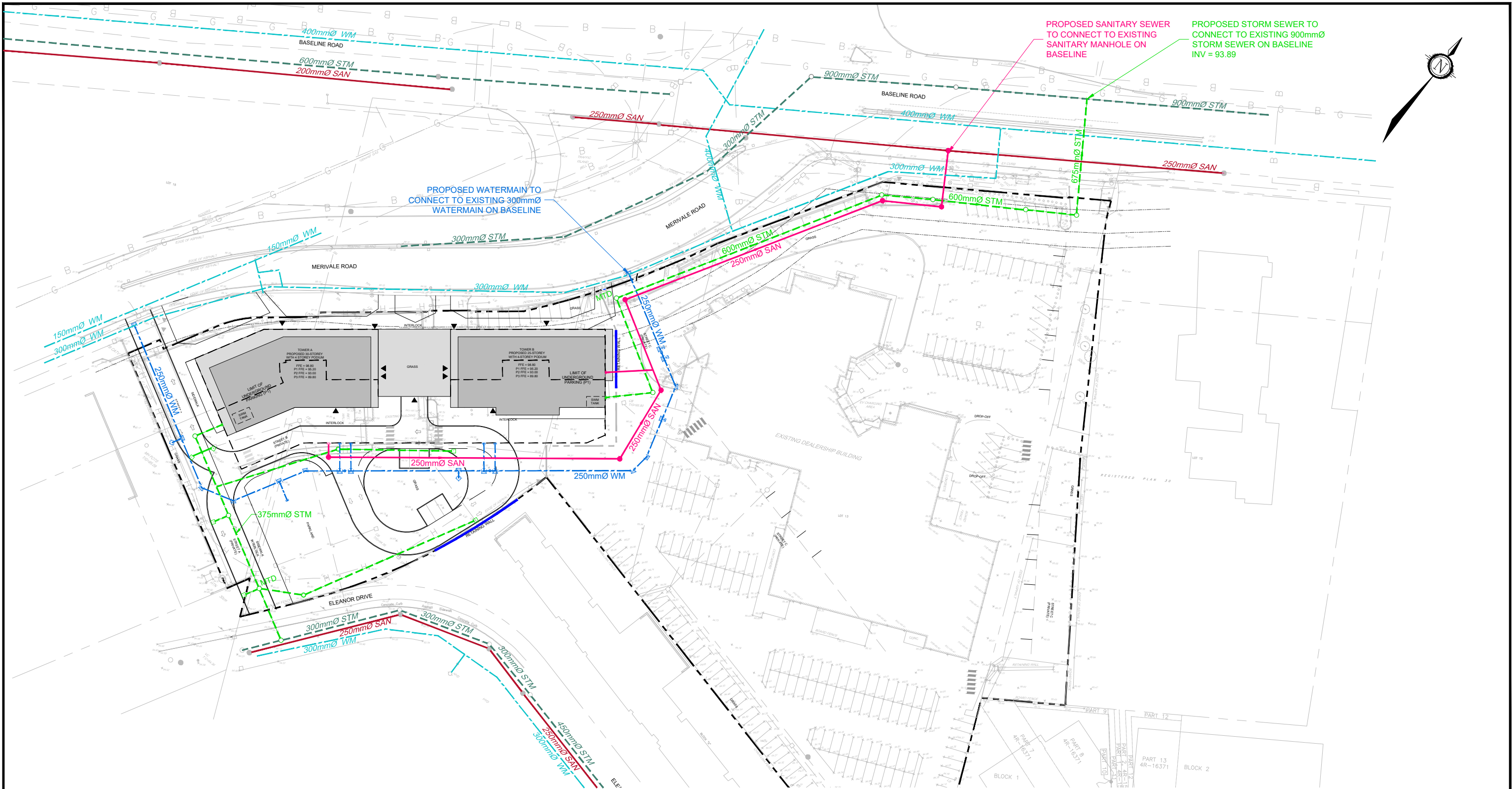
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1200 BASELINE ROAD
CITY OF OTTAWA

EXISTING SERVICES PLAN

SCALE 1 : 1250
DATE JUN 2026 JOB 124090 FIGURE FIG-5

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LEGEND

- PROPOSED STORM SEWER & FLOW DIRECTION ARROW
- PROPOSED SANITARY SEWER & FLOW DIRECTION ARROW
- PROPOSED WATERMAIN
- STORM MANHOLE
- SANITARY MANHOLE
- EXISTING STORM SEWER & FLOW DIRECTION ARROW
- EXISTING SANITARY SEWER & FLOW DIRECTION ARROW
- EXISTING WATERMAIN



MANUFACTURED TREATMENT DEVICE

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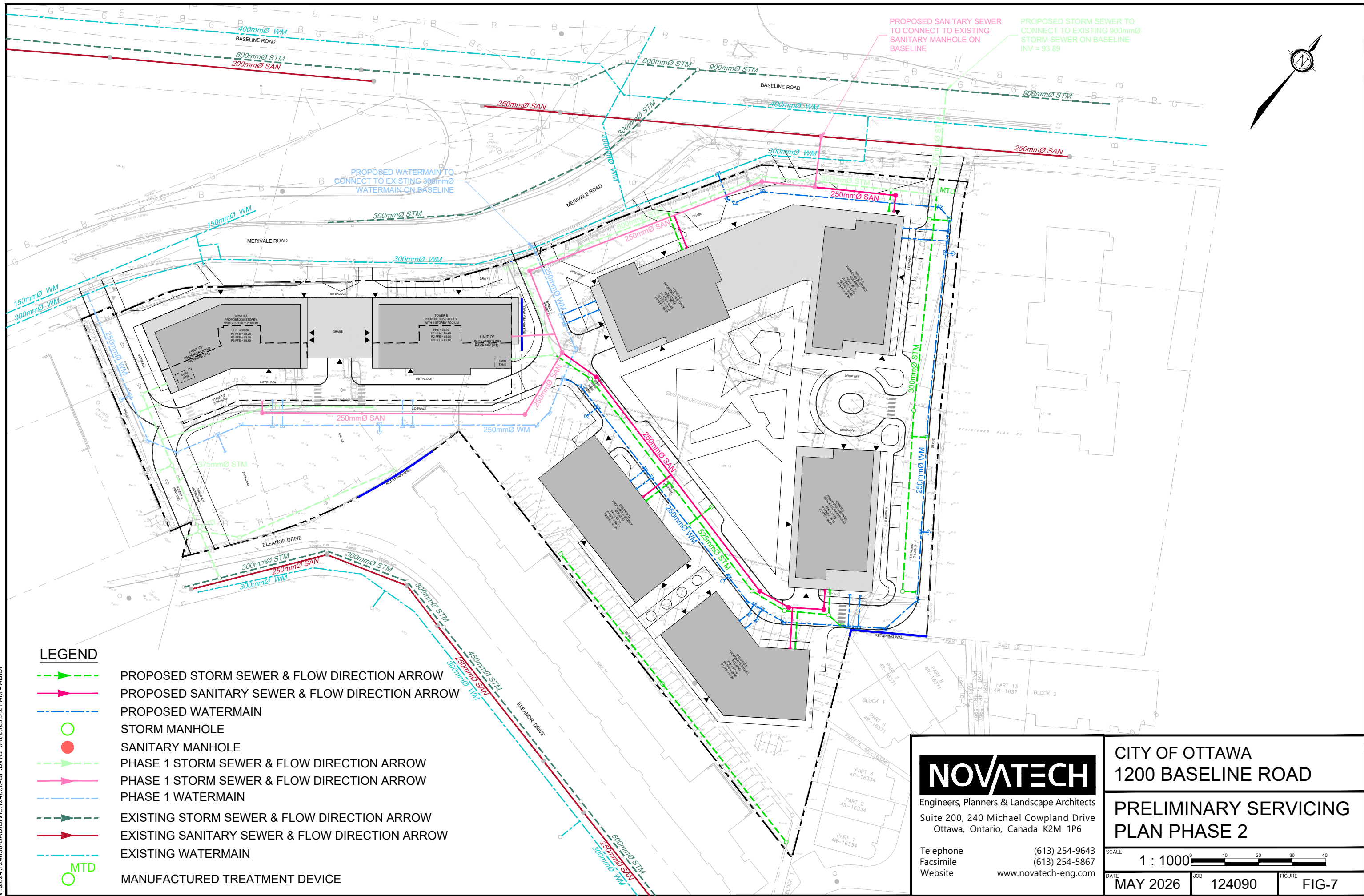
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CITY OF OTTAWA
1200 BASELINE ROAD

PRELIMINARY SERVICING
PLAN PHASE 1

SCALE 1 : 1000
DATE MAY 2026 JOB 124090 FIGURE FIG-6

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CITY OF OTTAWA
1200 BASELINE ROAD

PRELIMINARY SERVICING
PLAN PHASE 2

SCALE 1 : 1000

DATE MAY 2026 JOB 124090 FIGURE FIG-7

SHT11X17.DWG - 279mmX432mm

Criteria	Head (m)
Connection 3 to Existing 305mm Watermain on Merivale Road (East)	
Minimum HGL	146.1
Maximum HGL	158.3
Max Day + Fire Flow (83.3 L/s)	156.8
Max Day + Fire Flow (100.0 L/s)	155.7
Max Day + Fire Flow (116.7 L/s)	154.4

The following **Tables 5.4** and **5.5** summarize the results from the hydraulic water analysis of the two phases.

Table 5.4 Water Analysis Results Summary Phase 1

Condition	Demand (L/s)	Min/Max Allowable Operating Pressures (psi)	Limits of Design Operating Pressures (psi)
High Pressure	2.15	80psi (Max)	94.06
Max Day + Fire Flow*	88.71	20psi (Min)	92.27
Peak Hour	11.84	40psi (Min)	78.12

Table 5.5 Water Analysis Results Summary Phase 2

Condition	Demand (L/s)	Min/Max Allowable Operating Pressures (psi)	Limits of Design Operating Pressures (psi)
High Pressure	7.46	80psi (Max)	93.78
Max Day + Fire Flow*	135.31	20psi (Min)	91.25
Peak Hour	41.00	40psi (Min)	76.30

Based on the preceding analysis it can be concluded that the watermain will provide adequate flow, pressures, and stagnation limits for the various conditions outlined in the previous tables with the installation of Pressure Reducing Valves (PRV). Exact unit count and water demand for the buildings will be finalized during the site plan process. Calculations will be updated at that time to confirm capacity of the surrounding system. Refer to **Appendix B** for hydraulic calculations and City of Ottawa boundary conditions.

6.0 SANITARY SERVICING

There is an existing 250mm diameter sanitary sewer within the Baseline Road and Eleanor Drive right-of-ways and a 200mm diameter sanitary sewer along Merivale Road. The smaller building on the west side of the site is serviced by a 125mm diameter sanitary service that connects to the existing 250mm diameter sanitary sewer along Eleanor Drive. The car dealership building sanitary service outlets from the back of the building through an easement to connect into the existing 250mm diameter sanitary sewer along Eleanor Drive.

The proposed development will be serviced by a private 250mm diameter sanitary service. A sanitary servicing concept for each phase is shown in **Figure 6 & 7**.

Sanitary flows for the proposed development were calculated using criteria from Section 4 of the *City Sewer Guidelines*. The proposed development is a mixed-use development; however,

residential units have been used to calculate flows since this gives the highest possible flows for the proposed development blocks. Therefore, the calculations are based on a total population of 2,360 people from a total of 1,311 units on the following design criteria:

- Residential Average Flow = 280 L/capita/day
- Average Apartment = 1.8 Person/unit
- Peaking Factor = Harmon Equation (max peaking factor = 2.82)
- Peak Extraneous Flows (Infiltration) = 0.33L/s/ha

The peak sanitary flow (including infiltration) for Phase 1 was 6.98 L/s and Phase 2 was 16.62 L/s. Detailed sanitary flow calculations and sanitary drainage area plan are provided in **Appendix C** for reference.

The City indicated in the Pre-Consultation meeting that there were sanitary capacity issues with the sewers surrounding the subject site and that capacity was not available. After further discussions with the City, it is understood that there is limited capacity in the existing sewer along Baseline Road. This will need to be reviewed with the City during the Site Plan Application process as the City's statement about limited sanitary sewer capacity was based on the information and development at that time. Subsequent applications and other proposed developments would have an impact on the existing sanitary sewer capacity.

7.0 STORM SERVICING & STORMWATER MANAGEMENT

The topography of the site slopes from the north down towards the south with 1/3 of the site towards Eleanor Drive and the rest towards the Briardale Crescent right-of-way. There is an existing 900mm storm sewer located within the Baseline Road and a 300mm diameter storm sewer along Merivale Road and Eleanor Drive and a 600mm diameter storm sewer downstream on Eleanor Drive. The existing storm sewer ultimately outlets to the Rideau Canal. The existing storm sewers are shown in **Figure 5 & 6**.

The existing site is serviced by private storm sewers. The western portion of the site drains to catchbasins and a private storm sewer that outlets to the existing 300mm diameter storm sewer along Eleanor Drive. The eastern portion of the site catchbasins and a private storm sewer that outlets through an easement to the existing 600mm diameter storm sewer by the intersection of Eleanor Drive and Briardale Crescent. There is also an existing 300mm diameter storm sewer within an easement along the back property limit that services both the site as well as the adjacent residential building at 25 Eleanor Drive. The existing storm sewers are shown on **Figure 5 Existing Services Plan**.

The proposed development will be serviced with a private storm sewer which will vary in pipe sizes ranging from 300mm to 750mm in diameter. Due to the elevation of the existing storm sewers, the western portion of the site will outlet to the existing storm sewer along Eleanor Drive and the eastern portion of the site will outlet to the existing storm sewer on Baseline Road. The existing storm sewer within the easement along the rear property line will be replaced but will still service the adjacent residential property at 25 Eleanor Drive per existing conditions. The conceptual layout of the proposed storm sewer system for each phase is shown in **Figure 6 & 7**.

Stormwater management design criteria for the proposed development were provided in the *Pre-Consultation meeting* with the city on April 19, 2024, and is as follows:

- Allowable runoff coefficient (c) of the lesser of the pre-development coefficient or c-0.5.
- Time of Concentration (Tc) of pre-development flow or a maximum of 10 minutes.
- Flows up to the 100-year storm event to be controlled to the pre-development flow of a 2-year storm event.
- Quality control of stormwater runoff must be treated to provide an Enhanced Level of protection, corresponding to an 80% removal of total suspended solids.

Quantity Control

Based on the design criteria outlined during the pre-consultation, the proposed development is required to control all post development storm event release rates in accordance with the pre-development 2-year storm. Preliminary calculations were completed to determine the allowable release rates for each phase under pre-development conditions. As noted in the pre-consultation meeting, a runoff coefficient of 0.50 was applied for the pre-development condition. The resulting allowable release rates for the two phases are summarized in **Table 7.1** below.

Table 7.1: Allowable Release Rates

Outlet	Allowable Release Rate (L/s)
Phase 1	
Outlet	79.6
Phase 2	
Outlet	277.7

Storage of stormwater will be required on site for all storm events as the required release rate for each storm is more than the allowable release rates provided above. It is assumed that storm water can be stored in underground storage tanks within each building. The release of storm water to the City storm system will be controlled by utilizing inlet control devices (ICDs) in the building tanks. The release rates and storage required for catchment area are summarized in the tables below.

Table 7.2: Post-development Release Rates Phase 1

Table 7.2: Post-development Release Rates Phase 1		
Catchment ID	Controlled Device	Release Rates
		(100-year Storm)
Areas to Eleanor Drive		
A1	Tank	28.6
Areas to Baseline Road		
A2	Uncontrolled (100 Year)	22.4
A3	Tank	28.6
Total		79.6
Allowable		79.6

Table 7.3: Post-development Storage Summary Phase 1

Catchment ID	Area (ha)	Storage Required
		(100-year Storm)
Areas to Eleanor Drive		
A1	0.385	138.96
Areas to Baseline Road		
A2	0.06	-
A3	0.30	20.96

Table 7.4: Post-development Release Rates Phase 2

Table 7.4: Post-development Release Rates Phase 2		
Catchment ID	Controlled Device	Release Rates
		(100-year Storm)
Areas to Eleanor Drive		
A1	Tank	138.96
Areas to Baseline Road		
A2	Uncontrolled (100 Year)	22.4
A3	Tank	176.4
A4	Uncontrolled (100 Year)	5.0
A5	Uncontrolled (100 Year)	45.3
Total		277.7
Allowable		277.7

Table 7.5: Post-development Storage Summary Phase 2

Catchment ID	Area (ha)	Storage Required
		(100-year Storm)
Areas to Eleanor Drive		
A1	0.451	124.16
Areas to Baseline Road		
A2	0.059	-
A3	1.903	377.77
A4	0.040	-
A5	0.152	-

Quality Control

Quality control of stormwater can be provided with the installation of a manufactured treatment device (MTD) unit. Since there are two storm outlets there will need to be at least two MTD units installed, one upstream of each connection to the City storm sewer system. The MTD units selected will need to provide an enhanced level of quality control or 80% removal of total suspended solids as well as meeting the ETV particle size distribution. Specific units and locations will be determined through the detailed design and site plan approval process. Initial locations of the two MTD units are shown on the General Plan of Services.

Overland Flow Route

During storm events exceeding the 100-year event, site grading will be designed to provide an overland flow route to the southeast corner of the site to the Brairdale Crescent right-of-way, as per existing conditions. See **Figures 8 & 9** which show the preliminary conceptual grading design and the overland flow route for each phase.

In summary, the existing storm sewer infrastructure can service the proposed development and appropriate stormwater management methods can be used to meet the allowable release rate. Refer to **Appendix D** for preliminary stormwater management calculations and a post development drainage area figure.

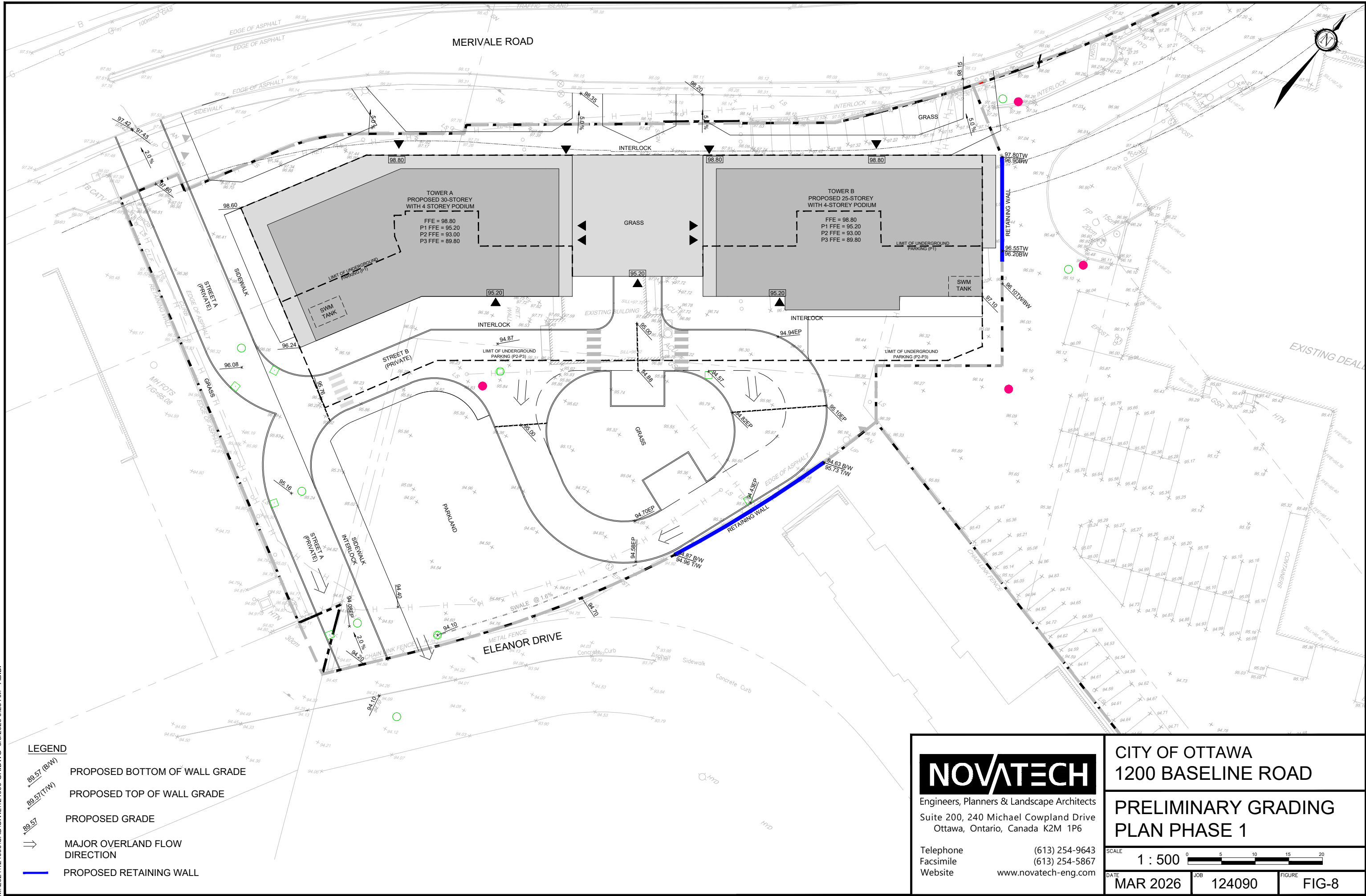
8.0 EROSION AND SEDIMENT CONTROL MEASURES

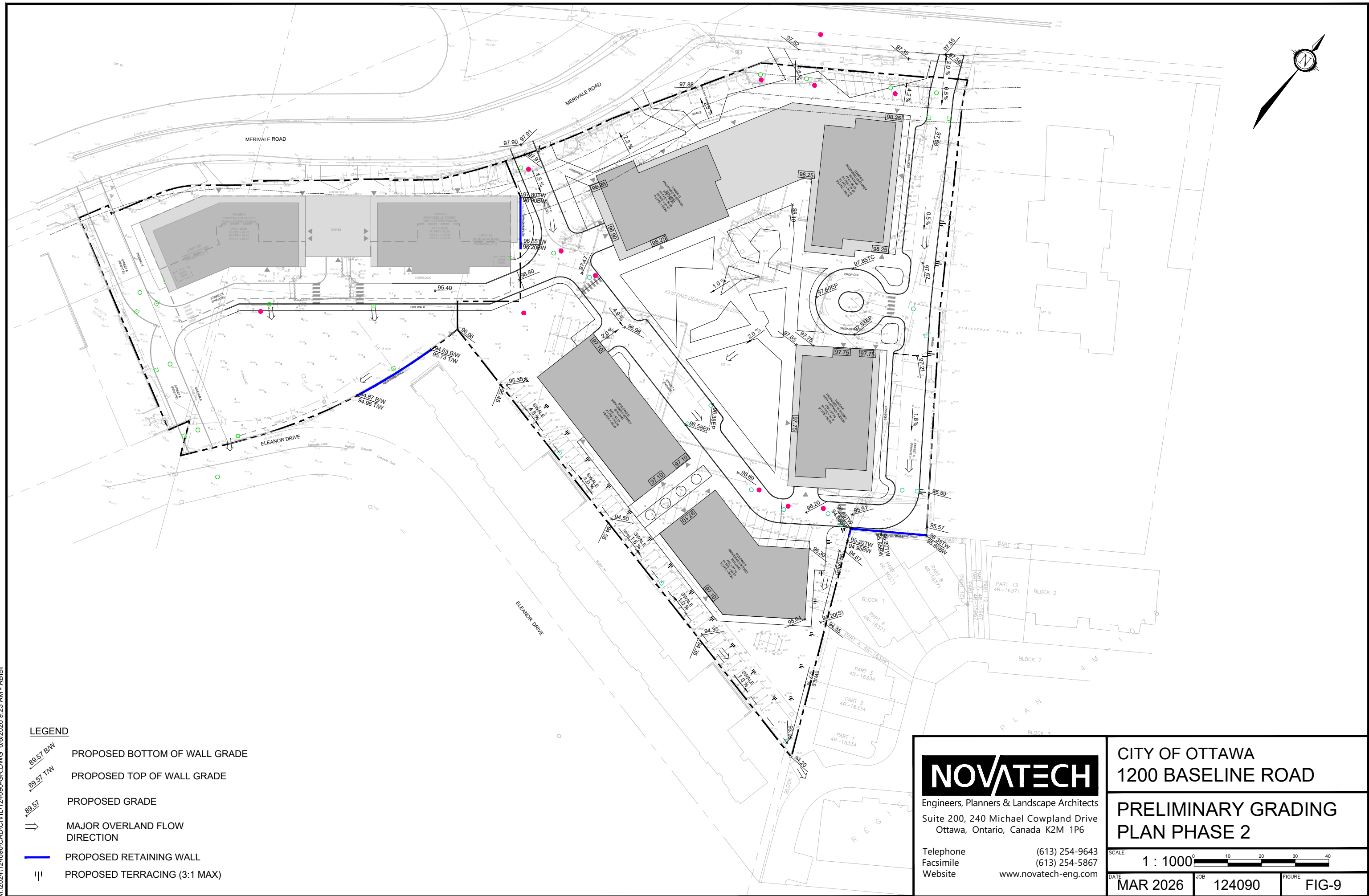
Temporary erosion and sediment control measures will be required on-site during construction in accordance with the Best Management Practices for Erosion and Sediment Control. This includes the following temporary measures:

- Filter socks will be placed in existing catchbasins and manholes, and will remain in place until vegetation has been established and construction is completed;
- Silt fences around the area under construction placed as per OPSS 577 and OPSD 219.110;
- Mud mats will be installed at the site entrances;
- The contractor will be required to perform regular street sweeping and cleaning as required, to suppress dust and to provide safe and clean roadways adjacent to the construction site;

The erosion and sediment control measures are to be installed to the satisfaction of the engineer, and the City of Ottawa prior to construction, and will remain in place during construction until vegetation is established. The erosion and sediment control measure will also be subject to regular inspection to ensure measures are operational.

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9.0 CONCLUSIONS AND RECOMMENDATIONS

The conclusions of this report are as follows:

- Water servicing, including both domestic and fire protection, can be provided by the two connections to the existing 300mm diameter watermain within the Merivale Road right-of-way.
- The proposed development will be serviced by a private sanitary sewer. The City has indicated the subject development should outlet to the existing 250mm diameter sanitary sewer along Baseline Road. Further discussions are required with the City in relation to capacity of the existing downstream sanitary sewer system.
- Quantity control of stormwater will be provided within each individual residential tower building through underground storage tanks located within the underground parking garage.
- Quality control of stormwater will be provided with a manufactured treatment device (MTD) unit located upstream of the connection to the City storm sewer system.
- An overland flow route will be provided to Eleanor Drive and Briardale Crescent.
- Erosion and sediment control measures (i.e. filter fabric, catchbasin inserts, silt fences, etc.) will be implemented prior to construction and are to remain in place until vegetation is established.

NOVATECH

Prepared by:



Ayesha Bibi, EIT.
Junior Engineer
Land Development Engineering

Reviewed by:



Cara Ruddell, P.Eng.
Senior Project Manager
Land Development Engineering

APPENDIX A

City Correspondence



File No.: PC2024-0140

May 1, 2024

Thomas Freeman
Fotenn
Via email: freeman@fotenn.com

**Subject: Pre-Consultation: Meeting Feedback
Proposed Zoning By-law Amendment & Site Plan Control
Applications – 1200 Baseline Road**

Please find below information regarding next steps as well as consolidated comments from the above-noted pre-consultation meeting held on April 19, 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 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. Site details: Official Plan: Hub, Mainstreet Corridor, Outer Urban Transect
2. Current Zoning: AM/ AM10
3. A Phase 2 Pre-consultation will be required
4. This site is subject to Section 37 requirements / 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.
5. Applicable Design guidelines:
 - a. Bird Safe Design Guidelines
 - b. Transit Oriented Development Guidelines
 - c. Urban Design Guidelines for High Rise Buildings
 - d. Urban Design Guidelines along Arterial Mainstreets
6. What is the function of that large open area – unspecified amenity? Urban plaza?
7. Please provide parking information
 - a. Parking plans
 - b. Loading areas

- c. Garbage pickup & waste areas?
- d. Garage ramp locations?
- 8. Preference for commercial/service uses on ground floor, specifically fronting on Merivale Rd.
 - a. Consider loading & parking areas
- 9. Please review Area Specific Policy 45 as it specifies a 7m streetscape zone from the ROW along Merivale Road
 - a. To be further discussed, as updates to this policy may be reflected in the future Merivale Secondary Plan
 - b. The OP policy considers 7m to be the minimum, however the elements mentioned in the policy may not all be required at this location – so, TBD on how wide the ultimate setback requirement would/should be
- 10. Consider community walking on/from Elenor drive – cutting through to get to the future transit station through the park & the remainder of the site
 - a. Formalize access to the to the station
 - b. Possibility to add a MUP from Elenor to Merivale (western property line?)
- 11. 25 Elenor – odd pointy part – restricts the frontage to the park
 - a. If possible clean up that odd property line – option to buy that triangular bit to purchase and extend the park frontage
 - b. Making it possible to shift the roadway and create that MUP along the west property line
- 12. Early consultation recommended with Agriculture & Agri-Food Canada (AAFC) and the Central Experimental Farm (CEF) and the NCC
- 13. Planning Rationale is required.
- 14. Would like to see a breakdown of unit types – such a large site provides ample opportunity to provide a mix of unit types and sizes
 - a. Townhouse units?
 - b. 3 bedroom units?

Urban Design

Comments:

Submission Requirements:

15. Urban Design Brief is required. Please see attached customized Terms of Reference to guide the preparation.
 - a. The Urban Design Brief should be structured by generally following the headings highlighted under Section 3 – Contents of these Terms of Reference.
 - b. The following elements are particularly important for this development application.
 - i. Shadow Analysis to justify location of height with sensitivity to the surrounding context.
 - ii. Cross-sections to understand future streetscape conditions.
 - c. Please note that the Urban Design Brief will also serve as the submission to the Urban Design Review Panel (see notes below).
16. Additional drawings and studies are required as shown on the ASPIL. Please follow the terms of references ([Planning application submission information and materials | City of Ottawa](#)) the prepare these drawings and studies. These include:
 - a. Design Brief
 - b. Site Plan
 - c. Landscape Plan (Conceptual to show spacing for tree soil volume)
 - d. Elevations
 - e. Wind Study
 - f. Shadow Analysis
 - g. UDRP Report

Urban Design Review Panel Review and Report

17. The site is located within a Design Priority Area and is subject to review by the Urban Design Review Panel. UDRP review occurs within the preconsultation stage. To proceed with UDRP review, please contact udrp@ottawa.ca.
18. The submission of a UDRP report is a requirement for deeming an application complete. Please follow the instructions provided in the Terms of Reference available here: [Urban Design Review Panel Report \(ottawa.ca\)](#)

Comments on Preliminary Design

19. Applicants are to provide a response to these comments in the Design Brief.

Policy Comments:

Area Specific OP Policies – Policy 45 Merivale Road:

20. Please review the area-specific policies in the Official Plan for Merivale Road. There is direction for streetscape treatments. There will likely be further discussions between policy, transportation, urban design and the file lead for how Merivale Road will evolve.

Section 6.1 Hubs:

21. Please review the policies within the Hub designation. Particular policies related to urban design include creating a high-quality, comfortable public realm by prioritizing pedestrians, cyclists and transit users. The inclusion of commercial and service uses on the ground floor and establishing safe, direct and desirable public routes for pedestrians and cyclists to transit stations.

22. There are further policies on building design related to defined entrances, edge and fenestration.

Section 4.6 Urban Design

23. The site is within a Design Priority Area, please review the applicable policies within Section 4.6 as applicable.

24. Particularly policy 5 in 4.6.1 and 4.6.3 speaks to the four-season comfort, pedestrian amenities and interest.

Proposal Comments:

25. Building numbers referenced below are as shown on the plan provided with the pre-consultation application. We note that building numbered differed in the materials shown in the meeting.

26. Thank you for providing a concept plan that focuses the greatest heights along the Corridor, this is consistent with the Official Plan direction for Hubs. Further analysis of building separation and angular plane for building abutting the low-rise community south will be needed to understand if building heights are appropriate, particular concern with Building C and F. Towers over 30-storeys require a minimum separation of 25m whereas 23m for towers under 30-storeys.

27. For considering the best location of the 40-storey tower that meets the Hub policies but is context sensitive, please include in the Shadow Analysis an option where the 40-storey building height is switched with Building F.

28. Examine the overall site organization, including building placement and ground floor programming, vehicular and pedestrian circulation, servicing, delineation and/or integration of public spaces and private realm.
- a. Consider including ground orientated units in the base of buildings, particularly for Building C, E and D.
 - b. Consider the different uses the 'great lawn' will serve.
 - c. Consider locations for commercial uses fronting Baseline and Merivale Roads
 - d. Consider locations for amenity space and lobbies which can activate the public realm
29. The area specific policies and policy direction in Hubs indicate the pedestrian amenities and features that are to be included, 7m may not be sufficient to include all features and will require additional discussion. As well, there is a grade change along Merivale from the road to the site, current conditions include retaining walls within the existing Myers site, so how will this grade change be accommodated in the future proposal?
30. Please provide a circulation plan to understand how future residents will be moving to and through the space (pedestrians, cyclists, vehicles). There appears to be opportunity to break up the building podium of Building A and B so that residents can directly access transit on Baseline. Consider how residents from Buildings D and E are getting to transit stations.
31. There are a few locations within the current plan that sufficient setbacks from building do not appear to be provided. Buildings G and F do not provide sufficient space to the new internal road, there should be space for sidewalks and trees.
32. There should be a minimum of 11.5m from building G to the property line if the adjacent property were to develop with a high-rise in the future.
33. Please review the podium and building design so that podiums are more prominent. A four-storey podium appears sufficient for the context but most buildings have several facades without podiums wrapping around the building, we would be looking for a more prominent base for each building.

Other Comments

34. It is recommended that the applicant come in for a Phase 2 pre-con with some analysis done on the streetscape, shadow studies and circulation studies. This also allows for a discussion on the design before the applicant submits to the UDRP.

Engineering

Comments:

GENERAL SERVICING

- 35. There are significant sanitary capacity restrictions in the area. The application cannot be supported due to these restrictions.
- 36. To more accurately assess possible sanitary outlet alternatives and solutions, please provide anticipated sanitary flows, for each phase, to the City.
 - a. The City does not have any planned sanitary sewer improvements in the area.

WATER

Existing Public Services:

- 203mm (CI), S of site (partial frontage), Eleanor Drive
- 305mm (CI), W of site (full frontage), Merivale Road/Baseline Road
- 102mm (CI), existing private service connection

Boundary Conditions:

- 37. Request Boundary Conditions prior to first submission. Contact assigned City Infrastructure Project Manager with the following information:
 - a. Location of service(s)
 - b. Type of development
 - c. Fire flow (per FUS method – include FUS calculation sheet with boundary condition request – boundary conditions will not be requested without fire flow calculations)
 - d. Average Daily Demand (l/s)
 - e. Maximum Hourly Demand (l/s)
 - f. Maximum Daily Demand (l/s)

General Comments:

- 38. Per WDG 4.3.1, where basic demand is greater than 50 m³ /day, there shall be a minimum of two water services, separated by an isolation valve, to avoid creation of vulnerable service area.

- a. Note that there are multiple water main pressure zones in the area. This should be taken into consideration as the multiple water services required, with looping on site, cannot be from separate water zones.

SANITARY

Existing Public Services:

- 250mm (AC), S of site (partial frontage), Eleanor Drive
- 125mm (PVC), private existing service
- 200mm (AC), W of site (partial frontage), Merivale Road
- 250mm (conc.) N of site (partial frontage), Baseline Road

General Comments:

39. There is currently no sanitary capacity available for this proposal.
40. Please submit anticipated sanitary demands.

STORMWATER/DRAINAGE

Existing Infrastructure/Systems:

- 300mm (conc.), S of site (partial frontage), Eleanor Drive
- 200mm (PVC), private existing service w/ 2 on site CBs
- 300mm (conc.), SW of site (no frontage), Merivale Road
- 300mm (conc.), W of site (partial frontage), Merivale Road
- 900mm (conc.) collector, N of site, Baseline Road,

General Comments:

41. Quantity Control:
 - a. Allowable runoff coefficient(c): Lesser of pre-development or $c=0.5$.
 - b. Time of Concentration (Tc): pre-development or maximum=10min.
 - c. Flows up to the 100-year storm event shall be controlled to the pre-development 2-year storm event.
 - d. It is expected that an on-site storage will be required.
42. Quality Control:

- a. Enhanced level of treatment is required: minimum 80% TSS removal.
- b. It is expected that an on-site treatment will be required.

43. Grading:

- a. Based on existing conditions, it appears that both Baseline Road and Merivale Road are both higher in elevation than the site. This limits the grading options for the site:
 - i. Consideration should be given to the overland flow route(s) for the site.
 - ii. Consideration should be given to the required freeboard elevations throughout the site (ie. at the ROW spill elevation, building floor elevations, etc.)
 - iii. A macro–Grading Plan indicating the intent for surface grading will be required to support the application.

GEOTECHNICAL INVESTIGATION

44. A geotechnical report is required for this development proposal.

GENERAL INFORMATION/OTHER

45. Topographic information and design grades to be tied to proper geodetic benchmark along with proper description of the Geodetic Benchmark used.
46. All submitted report and plan are to be provided in *.pdf documents (documents shall be flattened and unsecured)

REFERENCES AND RESOURCES

47. Record drawings and utility plans are also available for purchase from the City (Contact the City's Information Centre by email at InformationCentre@ottawa.ca or by phone at (613) 580-2424 x.44455).
48. Servicing and site works shall be in accordance with the following documents:
- a. General City of Ottawa guidelines (including technical bulletins)
 - b. Previous plans and reports developed for the site
49. geoOttawa - <https://maps.ottawa.ca/geoOttawa/>

Feel free to contact Ryan Brault (ryan.brault@ottawa.ca, (613) 580-2424, ext. 32540), Project Manager, for follow-up questions.

Noise

Comments:

50. Noise Impact Studies will be required for the following:

- a. Road, as the site is within proximity to Baseline and Merivale.
- b. Stationary, due to the proximity to neighboring exposed mechanical equipment and/or if there will be any exposed mechanical equipment due to the proximity to neighboring noise sensitive land uses.

Feel free to contact Rochelle Fortier, TPM , for follow-up questions.

Transportation

Comments:

Follow Transportation Impact Assessment Guidelines:

51. A full Transportation Impact Assessment is required. Please submit the Scoping report to rochelle.fortier@ottawa.ca at your earliest convenience or, at the latest, as part of the Phase 2 pre-con package. Should a Phase 2 pre-con be waived, the applicant is still responsible to submit the Scoping Report and must allow for a 14 day circulation period.
52. The Strategy Report must be submitted for review at the latest with the Phase 3 pre-con package. The applicant is still encouraged to submit the Strategy Report to the TMP before submission of the Phase 3 pre-con package and allow for a 14 day circulation period.
53. If an RMA is required to support the proposed development, the functional plan and/or RMA plans must be submitted with the formal submission to deem complete. Request base mapping asap if RMA is required. Contact Engineering Services.
54. 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.
 - c. ROW and corner triangles must be unincumbered and conveyed at no cost to the City. Note that conveyance of the ROW/corner triangle will be required prior to registration of the SP agreement. Additional information on the conveyance process can be provided upon request.

- d. ROW protection on Baseline Road is subject to unequal widening outlined in the Baseline BRT EA. Note that additional ROW beyond what is identified in the OP may be required to accommodate the Baseline BRT design. Future ROW line must be shown on the concept plan (site plan), and all set-backs must be measured from this new property line. Please see included plan for BRT design, note that the Baseline BRT design is still subject to change.
- e.

55. Conceptual Access Locations:

- a. Please be advised that any accesses to Baseline and Merivale will be restricted to right-in right-out operation.
- b. Access A: existing site access to Merivale is further south, pushing the access closer to the Baseline/Merivale intersection may result in queueing and safety issues. **Preference is to have access remain in current location** as it provides adequate corner clearance to the intersection (minimum corner clearance of 70m is suggested per TAC).
- c. Access A in its proposed location interferes with existing OC Transpo Bus Stop #4041. Approval from OC Transpo will be required to relocate this bus stop.
- d. Ensure all site accesses meet the [City's Private Approach Bylaw](#). [Accesses B and C must be a minimum of 3m from the property line.](#)
- e. Clear throat requirements for apartments (>200 units) on an arterial is 40m. The clear throat length is measured from the ends of the driveway curb return radii at the roadway and the point of first conflict on-site. Access C shows parking stalls within close proximity of Baseline Road, and Access A shows a drop-off bay in close proximity to Merivale Road. These will need to be removed to provide sufficient clear throat length.

56. Baseline Road BRT Phase 1 Design - please refer to the attached drawings for the design in vicinity of Baseline/Merivale.

57. TMP includes:

- a. Baseline Road
 - i. transit signal priority and queue jump lanes between Baseline Station and Richmond Road (Affordable Network)

- ii. at-grade BRT connecting Baseline Station to Heron Station (Affordable Network)
- iii. at-grade BRT connecting Bayshore Station to St Laurent Station (Network Concept)

b. Merivale Road

- i. Reallocation of existing traffic lanes to provide peak period bus lanes (peak direction only) and transit signal priority between Carling and Baseline (Affordable Network)
- ii. Road widening to provide exclusive bus lanes and transit signal priority between Baseline Road and Slack Road (Network Concept)

c. Baseline Road is a Cross-Town Bikeway

d. Draft TMP Active Transportation projects:

- i. Sidewalk along Eleanor Dr from Farlane Blvd to Greencrest Pl.
- ii. Feasibility study of improved road crossings and connectivity to the Experimental Farm Pathway at Merivale Rd, Baseline Rd and Prince of Wales Dr.

58. AODA legislation will apply for all areas accessible to the public (i.e. outdoor pathways, parking, etc.).

- a. Ensure all crosswalks located internally on the site provide a TWSI at the depressed curb, per requirements of the Integrated Accessibility Standards Regulation under the AODA.
- b. Clearly define accessible parking stalls and ensure they meet AODA standards (include an access aisle next to the parking stall and a pedestrian curb ramp at the end of the access aisle, as required).
- c. Please consider using the [City's Accessibility Design Standards](#), which provide a summary of AODA requirements.

59. The following comments are related to a Site Plan application but are provided for information purposes:

- a. Ensure site accesses meet the [City's Private Approach Bylaw](#) and all driveways/aisles meet the requirements outlined in [Section 107 of the Zoning By-law](#).
- b. Show all details of the roads abutting the site; include such items as pavement markings, accesses and/or sidewalks.

- c. Turning movement diagrams required for all accesses showing the largest vehicle to access/egress the site.
- d. Turning movement diagrams required for internal movements (loading areas, garbage).
- e. Show all curb radii measurements; ensure that all curb radii are reduced as much as possible and fall within TAC guidelines (Figure 8.5.1).
- f. Show dimensions for site elements (i.e. lane/aisle widths, access width and throat length, parking stalls, sidewalks, pedestrian pathways, etc.)
- g. Sidewalk is to be continuous across access as per City Specification 7.1.
- h. Show slope of garage ramp on site plan. Note that underground ramps should be limited to a 12% grade and must contain a subsurface melting device when exceeding 6%. Ramp grades greater than 15% can be psychological barriers to some drivers.
- i. Parking stalls at the end of dead-end parking aisles require adequate turning around space
- j. Grey out any area that will not be impacted by this application.

Feel free to contact **Rochelle Fortier**, Transportation Project Manager, for follow-up questions.

Environment

Comments:

60. No trigger for an environmental impact study.

61. Please add features that reduce the urban heat island effect (see OP 10.3.3) produced by the parking lot and a building footprint. For example, this impact can be reduced by adding large canopy trees, green roofs or vegetation walls, or constructing the parking lots or building differently.

62. Please review and incorporate bird safe design elements. Some of the risk factors include glass and related design traps such as corner glass and fly-through conditions, ventilation grates and open pipes, landscaping, light pollution. More guidance and solutions are available in the guidelines which can be found here:
https://documents.ottawa.ca/sites/documents/files/birdsafedesign_guidelines_en.pdf

Feel free to contact Matthew Hayley, Environmental Planner, for follow-up questions.

Forestry

Comments:

63. The following Tree Conservation Report (TCR) guidelines have been adapted from the Schedule E of the Tree Protection By-law – for more information on these requirements please contact julian.alvarez-barkham@ottawa.ca
- a. A Tree Conservation Report (TCR) must be supplied for review along with the suite of other plans/reports required by the City
 - i. An approved TCR is a requirement of Site Plan approval.
 - b. Any removal of privately-owned trees 10cm or larger in diameter, or 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.
 - c. The TCR must contain 2 separate plans:
 - i. Plan/Map 1 - show existing conditions with tree cover information.
 - ii. Plan/Map 2 - show proposed development with tree cover information.
 - d. 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.
 - i. For ease of review, the Planning Forester suggests that all trees be numbered and referenced in an inventory table.
 - e. Please identify trees by ownership – private onsite, private on adjoining site, city owned, co-owned (trees on a property line)
 - f. If trees are to be removed, the TCR must clearly show where they are, and document the reason they cannot be retained.
 - i. Compensation may be required for the removal of city owned trees.
 - g. The removal of trees on a property line will require the permission of both property owners.
 - h. 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 on the Tree Protection Specification or by searching Ottawa.ca.
 - i. The location of tree protection fencing must be shown on the plan;
 - ii. Show the critical root zone of the retained trees.

- i. 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.
64. The following Landscape Plan (LP) guidelines have been adapted from Schedule E of the Tree Protection By-law – for more information on these requirements please contact julian.alvarez-barkham@ottawa.ca
- a. Please ensure any retained trees are shown on the LP.
 - b. Minimum Setbacks
 - i. Maintain 1.5m from sidewalk or MUP/cycle track or water service laterals.
 - ii. Maintain 2.5m from curb.
 - iii. Coniferous species require a minimum 4.5m setback from curb, sidewalk, or MUP/cycle track/pathway.
 - iv. 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.
 - v. Adhere to Ottawa Hydro's planting guidelines (species and setbacks) when planting around overhead primary conductors.
 - b. Tree specifications
 - i. Minimum stock size: 50mm tree caliper for deciduous, 200cm height for coniferous.
 - ii. Maximize the use of large deciduous species wherever possible to maximize future canopy coverage.
 - c. 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.
 - d. No root barriers, dead-man anchor systems, or planters are permitted.
 - e. No tree stakes unless necessary (and only 1 on the prevailing winds side of the tree)
 - f. Hard surface planting
 - i. If there are hard surface plantings, a planting detail must be provided.
 - ii. Curb style planter design is highly recommended.
 - iii. No grates are to be used and if guards are required, City of Ottawa standard (which can be provided) shall be used.
 - c. Trees are to be planted at grade.

- d. 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 following:

Tree Type/Size	Single Tree Soil Volume (m3)	Multiple Tree Soil Volume (m3/tree)
Ornamental	15	9
Columnar	15	9
Small	20	12
Medium	25	15
Large	30	18
Conifer	25	15

- i. It is strongly suggested that the proposed species list include a column listing the available soil volume.
- e. Sensitive Marine Clay - Please follow the City's 2017 Tree Planting in Sensitive Marine Clay guidelines.
- f. The City requests that consideration be given to planting native species wherever there is a high probability of survival to maturity.
- g. 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.**

Feel free to contact Julian Alvarez-Barkham, Forester, for follow-up questions.

Parkland

Comments:

65. Parkland comments provided separately. See attached.

Feel free to contact Louise Cervený, Parks Planner, for follow-up questions.

Heritage

Comments:

Heritage Value

66. The CEF's heritage value is defined in its Commemorative Integrity Statement (CIS). It is divided into three sections:

- a. a central core of administrative, scientific, and functional farm buildings;
- b. the experimental fields, plots, and shelter beds; and,
- c. the arboretum, ornamental gardens, and experimental hedges.

67. Given its location, the proposed development should be sensitively designed to reduce impacts on the heritage value(s) identified in the CIS. Staff will be focused on the potential impact of the proposed development on the heritage value of the CEF.

Heritage Planning Requirements

68. The property is not designated under the *Ontario Heritage Act*. As such, a heritage permit application is not required to facilitate this proposal.

69. Notwithstanding, heritage review is required due to adjacency to the CEF in consultation with the NCC and AAFC.

Policy Comments

70. Section 4.5.4 in the City's Official Plan indicates that development including or adjacent to a National Historic Site shall have regard for their cultural heritage value, as defined in Federal designation documentation, and further, that the City may require demonstration that development does not adversely impact these resources.

71. Further, section 2.6.3 of the Provincial Policy Statement (PPS) states that "Planning authorities shall not permit development and site alteration on adjacent lands to protected heritage property except where the proposed development and site alteration has been evaluated and it has been demonstrated that the heritage attributes of the protected heritage property will be conserved".

Submission Requirements

72. A Heritage Impact Assessment is required. Please follow the instructions provided in the Terms of Reference available here: [Heritage Impact Assessment \(ottawa.ca\)](http://ottawa.ca)

73. A Shadow Analysis illustrating the shadow impacts on the CEF should be included as part of the submission and evaluated within the Heritage Impact Assessment

Other Comments

74. Heritage Planning strongly recommends considering a variety of massing options to help limit the potential shadowing impacts on the CEF's experimental fields, in consultation with DR and UD staff, and Federal Agencies. Reducing shadow impacts will help mitigate the proposal's impact on the CEF's defined heritage value.
75. Staff encourage the applicant team to engage the NCC and AAFC.
76. Staff advise the applicant team to submit a shadow analysis as soon as possible to give the respective parties time to evaluate.
77. Heritage staff support the recommendation that the applicant should come in for a Phase 2 pre-con with some analysis done on the streetscape, shadow studies and circulation studies.

Feel free to contact Anne Fitzpatrick, Heritage Planner, for follow-up questions.

Community issues

Comments below have been provided by those community members who were invited to the pre-consultation meeting:

78. Additional material is required regarding the detailed impacts of shadowing on the nearby Central Experimental Farm (CEF). We also believe that Agriculture and Agri-Food Canada should be advised of this project sooner rather than later.
79. Regarding the egress and ingress from the property onto Eleanor Drive, we have a concern over the increased traffic that will be generated from vehicles going west on Baseline, turning on Farlane Blvd, and driving down Eleanor to access the site. Eleanor Dr near the development site is of a high density with a residential tower, and several 3-storey walk-ups. There is a park on the street and many children who play there. The proposed development could have up to 3000 people, so the increased traffic is concerning to us.
80. We believe there is an error on the TIA as there are three exits from the site but only two are noted. Also, the section related to the multi-use pathway is incorrect as there is a pathway across the street on the CEF.
81. We also do not understand the trip generator numbers as they appear to be under-represented on the site plan drawing 1A.
82. We don't support 40 stories, perhaps 32 to match the height of the towers at 780 Baseline? We also suggest that the 40-storey building, and the western-most building be swapped locations as that would reduce shadowing impacts on the CEF.

- 83. The Merivale/Baseline intersection is one of the worst intersections in the City for accidents and there are two exit points within close proximity to the intersection.
- 84. There is insufficient information to understand the impacts on infrastructure requirements for the development.
- 85. Will all the buildings, especially the 40-storey building as it is currently located, meet the City's angular plane requirements?
- 86. The 18-storey building (eastern most building) will cast shadows on the Longwood development of attached bungalow townhomes. I don't expect the residence on the north side of that development to be pleased about a 18-storey building in their back yard. The shadowing impacts here also need to be assessed.
- 87. What is a watershed plan?
- 88. The open space and parkland are good additions.
- 89. What are the requirements and provisions for on-site parking? What is the parking ratio between spaces and units? There is very limited on street parking and Baseline just runs one bus every 15 minute. We believe most residents will have cars.
- 90. What is the open space in the middle of the buildings? Is it just grass?
- 91. The City has told us that there will be a Baseline Secondary Plan, however this is sometime in the future and there is significant development underway in this corridor which seems to have no coordinated pattern.

NCC Comments:

There are no works proposed on federal land, and thus no federal approval required. We offer these comments as the federal planning agency.

- 92. The federally-owned and managed Central Experimental Farm is in close proximity to the site. To understand potential impacts to the CEF, we request that the City ensure the application includes:
 - a. A Heritage Impact Assessment that responds to the Commemorative Integrity Statement for the CEF and the CEF National Historic Site Management Plan.
 - b. A Shadow Analysis that evaluates the full impact of shadowing of the proposed development, both by phase and at full build-out.
 - c. A 3D digital building model file so that the proposed development can be evaluated through digital modelling.

- d. A viewshed analysis as part of the Urban Design Brief, illustrating the visual effect of the development.
93. As the City is aware, there is an ongoing working group comprised of staff from the City, Agriculture and Agri-Food Canada, and the NCC to “develop the terms of reference for a plan to assess and mitigate potential impacts of future development as permitted by the Official Plan policy framework surrounding the Central Experimental Farm on the scientific and heritage values associated with the farm as a National Historic Site of Canada and research institution”. This proposed development, much like 1081 Carling and 780 Baseline, has the potential for impacts to the CEF. We request that the City:
- a. Encourage the proponent to consult early with Agriculture and Agri-Food Canada – we would be happy to facilitate any conversations.
94. Given the confidentiality of the pre-application consultation process, we have not shared the pre-application consultation with AAFC. Would you please ask the proponent whether the pre-consultation materials can be shared internally with AAFC, such that they can then be prepared to take part in any future consultations?

Other

95. 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. The HPDS was passed by Council on April 13, 2022.
- a. At this time, the HPDS is not in effect and Council has referred the 2023 HPDS Update Report back to staff with direction to bring forward an updated report to Committee with recommendations for revised phasing timelines, resource requirements and associated amendments to the Site Plan Control By-law by no later than Q1 2024.
 - b. Please refer to the HPDS information attached and ottawa.ca/HPDS for more information.

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

Yours Truly,
Kieran Watson

Encl. Baseline Transitway Station

Urban Design Brief TOR

Parks Comments

c.c. Ryan Brault, Infrastructure Project Manager
Rochelle Fortier, Transportation Project Manager
Molly Smith, Planner – Urban Design
Matthew Hayley, Environmental Planner
Louise Cerveney, Parks Planner
Anne Fitzpatrick, Heritage Planner
Julian Alvarez-Barkham, Planning Forester

To / Destinataire	Kieran Watson, Planner Development Review West	File/N° de fichier: PC2024-0140
From / Expéditeur	Louise Cervený Park Planner Parks and Facilities Planning	
Subject / Objet	Myers Site - 1200 Baseline Road Park Review Comments	Date: April 25 2024

Please find below Parks & Facilities Planning comments on the above-noted development application.

Parkland Dedication:

- The amount of required parkland conveyance is to be calculated as per the City of Ottawa Parkland Dedication By-law No.2022-280 (or as amended):
 - (i) For conveyance of parkland (residential > 18 units/net ha):
one hectare per 600 net residential units but shall not exceed a maximum of 10% of the gross land area where less than or equal to five hectares.
 - (ii) Where land is developed for a mix of uses within a building, the conveyance requirement shall be the cumulative sum for each use, as calculated using the applicable rate prorated proportionally to the gross floor area allocated to each use.

1st Pre-consultation Preliminary Parkland Dedication Calculation:

- Preliminary parkland conveyance calculations based on information provided/identified in the pre-application consultation, is calculated to be 26,123 square meters.

At 1st pre-consultation if details are not provided, please include the following bullets:

- PFP requests the following information to confirm and calculate the parkland conveyance:
 - Number of residential units proposed
 - Gross floor area of proposed residential development
 - Gross floor area of proposed commercial development
 - The proportion of commercial/residential development proposed on site.

Form of Parkland Dedication:

- PFP will be requesting **land conveyance** for parkland dedication in accordance with the Parkland Dedication By-law (as amended).
- The proposed park block is to provide the full required parkland conveyance.

- PFP requests a surveyor's note (or equivalent) which specifies the gross land area of the property with your application.

Shape & Location of Park Block:

- A continuous sidewalk is required along all park street frontages.
 - The park block shall be dedicated as one, contiguous parcel.
 - The park block shall be rectangular-based.
 - PFP requests that the park block be located in the south-west area of the site.
 - Please see the options proposed by Parks and Facilities Planning.
- The proposed park locations and road alignments allow for a safer park location and less paved road surface.
 - Option 2 curved road provides traffic calming.
 - In both options acquisition of additional property to the south east is required.
 - Locating the park to the north removes the road on the south side of the west building and provides a park view at all levels of the building.
 - A minimum setback of 5m is required from park.
 - PFP is open to discussing an appropriate location for the proposed parkland and invite the applicant to review our Park Development Manual for further direction.

Option 1



Option2



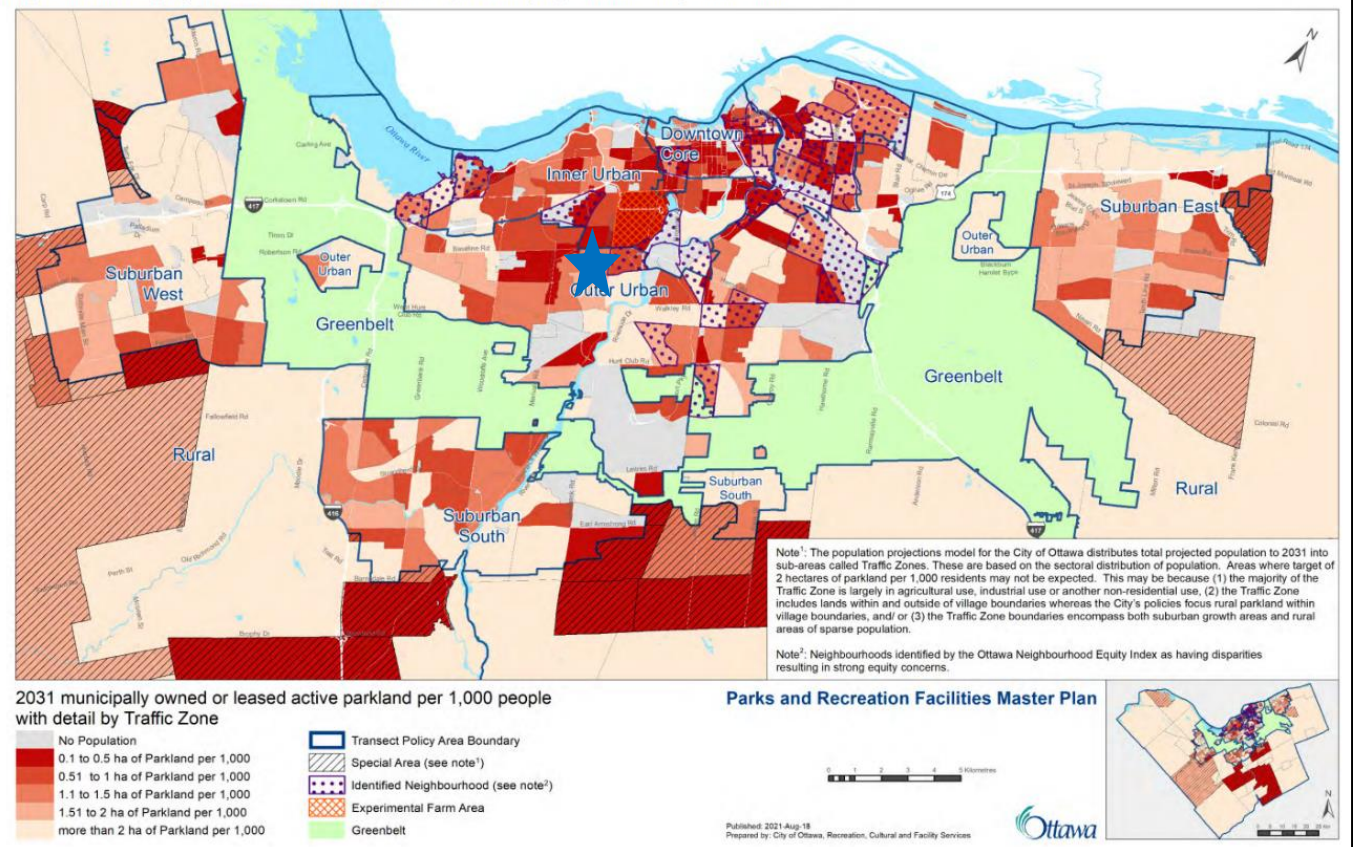
Policies:

- The required parkland dedication is requested in **land conveyance**.
- Policy 4.4.1(2) of the City of Ottawa's Official Plan indicates the following:
All development, regardless of use, shall meet all of the following criteria to the satisfaction of the City:
 - a) *Consider land acquisition for parks as directed by the Parkland Dedication By-law to meet community needs for both residential and non-residential development, with an emphasis on active recreation amenities and potential cultural development with new parks acquired to address gaps or community needs; and*
 - b) **Prioritize land for parks on-site over cash-in-lieu of parkland.** *Cash-in-lieu of parkland shall only be accepted when land or location is not suitable. The land to be conveyed shall, wherever feasible:*
 - i) Be a minimum of 400 square metres or as described in the Land First Policy and updated Park Development Manual as directed by the Parks and Recreation Facilities Master Plan;
 - ii) Be free of encumbrances above and below ground when land for parks is obtained by parkland dedication; or in the case of land purchases for the creation of new parks in established areas, unless the encumbrances have been approved by the City where reasonable;
 - iii) Be of a usable shape, topography and size that reflects its intended use;

- iv) Meet applicable provincial soil regulations; and
 - v) Meet the minimum standards for drainage, grading and general condition.
- Policy 4.4.1(3) of the City of Ottawa's Official Plan indications:
For Site Plan Control applications in the Downtown, Inner Urban, Outer Urban and Suburban Transects, where the development site is more than 4,000 m², the City shall place a priority on acquisition of land for park(s) as per the Planning Act and the Parkland Dedication By-law.
 - Policy 4.4.6(1)(e) of the City of Ottawa's Official Plan indicates that a preferred minimum of 50% of the park perimeter shall be continuous frontage on abutting streets.
 - Policy urban design – public space adjacent to park
 - The conveyance of parkland is further supported by the Parks and Recreation Facilities Master Plan, where *the city will prioritize the acquisition of new parkland in neighbourhoods that do not meet the 2ha per 1,000 people target.*

Map 3 of the Parks and Recreation Facilities Master Plan, which illustrates the site location and the deficiency in providing 2ha per 1,000 people is as follows:

Map 3: 2031 municipally owned or leased active parkland per 1,000 people with detail by Traffic Zone



Zoning (include if applicable):

- It is common practice for the City to zone most parks as “O1” (Parks and Open Space Zone). PFP request that the park block be rezoned through the Zoning By-law Amendment application.
- PFP will request a surveyor’s certificate to confirm parkland dedication required, prior to Zoning By-
- law amendment approval.
- We request minimum interior side yard of ‘5 meters’ from an “O1” zone to mitigate the impact of the proposed buildings on the park block.
- The applicant should submit a site plan with the dimensions of the park or a CAD file for the purpose of preparing the Location Map / Zoning Key Plan for the Details of the Recommended Zoning By-law Amendment portion of the staff report.

1st Pre-consultation General Comments – to be addressed in 2nd Submission:

- The future site plan illustrating the park block is to show high level park macro-grading on the Preliminary Grading Plan, including key spot elevations, stormwater flow arrows and slope percentages. Park block is to be graded to the surrounding levels and needs to show positive surface drainage towards the ROW.
- Park services are to be connected from a municipal street. At a minimum, the park would require the following:
 - i. 300mm diameter storm sewer connection to a municipal storm sewer and CB/MH located 2m inside the park lot line;
 - ii. A 50mm diameter water line complete with water vault chamber at 2m inside the park property line as per city standard details for unit price contracts. Costs for the water vault chamber and water meter, if ultimately required, shall be paid for by the City or be included as part of the maximum park construction budget for the park;
 - iii. 150mm diameter sanitary sewer and Manhole at 2m inside the park property line;
 - iv. A 120/240 volt, 200 amperes single phase hydro service at 2m inside the park property line complete with electrical kiosk for park services as per city standard details.
 - v. Electrical and water connections (minimum 50mm) are to be connected directly to the street line, including back flow preventors, shutoff valves, water and hydro meters and chambers.
- The park block shall be conveyed to the City in a ‘clean and green’ state. This includes, but is not limited to:

- Removal of all debris, contaminated soils, vegetation (except as identified for retention), etc;
- Being brought to the same grade level as the surrounding area, ensuring positive surface drainage throughout the park block;
- Services are to be provided to 2m inside the park block property line;
- Supplying and installing a minimum depth of 150mm of topsoil and seed or sod to City standards.
- Any fill or disposal of soil to/from the park block is to meet current soil regulations.
- The Owner may be required to supply and install a minimum 1.5m high commercial grade chain link fence or approved equivalent along the park lot lines depending on the final location of the park block and proposed land use(s) adjacent to the park.
- The above noted requirements are standard requirements the owner is responsible for in the construction and installation of the 'base park improvements' for the park block and at the owner's sole expense.
- A Record of Site Condition would be required prior to registration of the site plan agreement since there is a proposed change in use to parkland.
- The conditions of site plan approval would require the Owner to convey the parkland to the City at the time of registration of the site plan agreement. The Owner would be responsible for retaining a land surveyor to prepare a draft reference plan describing the park parcel.
- Before carrying out any of the 'base park improvements' the Owner must obtain, at the Owner's expense, a License of Occupation (LOO) or a Consent to Enter (CTE) form the City's Corporate Real Estate Office.
- The City would take over the park block after the site works have been completed and the grassed areas in the park have been established to the satisfaction of the City.
- The City will be responsible for the future development of the park.

Facility Fit Plan:

- PFP requests a Facility Fit Plan
- Facility Fit Plans must clearly show (in metric) the following:
 - a. Those items required on a Site Plan but for the park block
 - b. Key Plan showing the location of the park block within the development site
 - c. Overlaid over an aerial photo if requested
 - d. Critical dimensions of all park amenities including buffers and setbacks
 - e. Grading across the park block and within the context of development area

- f. Any existing vegetation and special features within the park which may be preserved.

Urban Design Review Panel

- In the event that the Urban Design Review Panel provides comments on the park size, location or configuration that differ from the above comments, staff may need to revisit the above comments.

Phase 1 Environmental Site Assessment

- PFP and ERU will need to receive confirmation that redevelopment of the site from (industrial use) to park use is achievable. Any remedial work required to convert land use will be the responsibility of the owner prior to conveyance of park block to the City.

Limiting Distance Agreement

- The applicant, owner and architect should be aware that the City does not enter into limiting distance agreements under Part 3, subsection 3.2.3.1 of O.Reg. 332/12, Building Code, that would encumber parkland.

Reference Documents:

- Please review the following City of Ottawa reference documents which outline the requirements for parkland conveyance and/or cash-in-lieu of parkland.
 - o Official Plan (2021)
 - o Parks and Recreation Facilities Master Plan (2021)
 - o Park Development Manual, 2nd edition
 - o Parkland Dedication By-Law (2022-280) and Planning Act amendments
 - o City of Ottawa Standard Parks Conditions

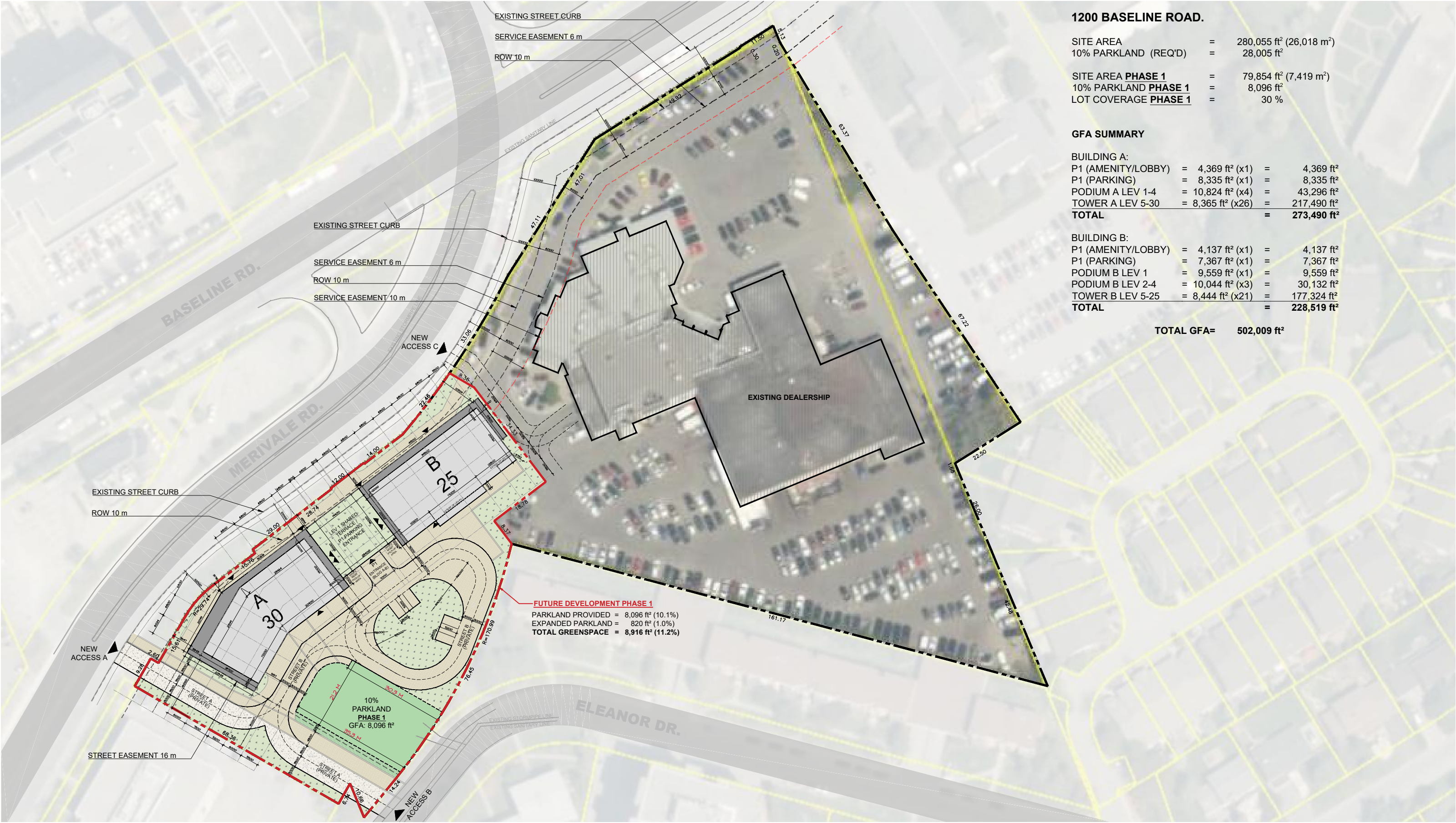
Please note that the park comments are preliminary and will be finalized (and subject to change) upon receipt of the development application and the requested supporting documentation.

If you have any questions, please let me know.

Regards,

Louise Cervený

Louise.Cervený@ottawa.ca



1200 BASELINE ROAD.

SITE AREA	=	280,055 ft ² (26,018 m ²)
10% PARKLAND (REQ'D)	=	28,005 ft ²
SITE AREA PHASE 1	=	79,854 ft ² (7,419 m ²)
10% PARKLAND PHASE 1	=	8,096 ft ²
LOT COVERAGE PHASE 1	=	30 %

GFA SUMMARY

BUILDING A:			
P1 (AMENITY/LOBBY)	=	4,369 ft ² (x1)	= 4,369 ft ²
P1 (PARKING)	=	8,335 ft ² (x1)	= 8,335 ft ²
PODIUM A LEV 1-4	=	10,824 ft ² (x4)	= 43,296 ft ²
TOWER A LEV 5-30	=	8,365 ft ² (x26)	= 217,490 ft ²
TOTAL			= 273,490 ft²

BUILDING B:			
P1 (AMENITY/LOBBY)	=	4,137 ft ² (x1)	= 4,137 ft ²
P1 (PARKING)	=	7,367 ft ² (x1)	= 7,367 ft ²
PODIUM B LEV 1	=	9,559 ft ² (x1)	= 9,559 ft ²
PODIUM B LEV 2-4	=	10,044 ft ² (x3)	= 30,132 ft ²
TOWER B LEV 5-25	=	8,444 ft ² (x21)	= 177,324 ft ²
TOTAL			= 228,519 ft²

TOTAL GFA= 502,009 ft²

FUTURE DEVELOPMENT PHASE 1
PARKLAND PROVIDED = 8,096 ft² (10.1%)
EXPANDED PARKLAND = 820 ft² (1.0%)
TOTAL GREENSPACE = 8,916 ft² (11.2%)



1200 Baseline Rd.



Site Plan - Phase 1
SCALE = 1:1000
FEBRUARY 6, 2026



1200 BASELINE ROAD.

SITE AREA	=	280,055 ft ² (26,018 m ²)
10% PARKLAND (REQ'D)	=	28,005 ft ²
10% PARKLAND (PROV.)	=	28,153 ft ²
LOT COVERAGE	=	29.6 %

GFA SUMMARY

BUILDING A:			
P1 (AMENITY/LOBBY)	=	4,102 ft ² (x1)	= 4,102 ft ²
P1 (PARKING)	=	8,601 ft ² (x1)	= 8,601 ft ²
PODIUM A LEV 1-4	=	10,824 ft ² (x4)	= 43,296 ft ²
TOWER A LEV 5-30	=	8,365 ft ² (x26)	= 217,490 ft ²
TOTAL			= 273,489 ft²

BUILDING B:			
P1 (AMENITY/LOBBY)	=	3,870 ft ² (x1)	= 3,870 ft ²
P1 (PARKING)	=	7,633 ft ² (x1)	= 7,633 ft ²
PODIUM B LEV 1	=	9,559 ft ² (x1)	= 9,559 ft ²
PODIUM B LEV 2-4	=	10,044 ft ² (x3)	= 30,132 ft ²
TOWER B LEV 5-25	=	8,444 ft ² (x21)	= 177,324 ft ²
TOTAL			= 228,518 ft²

BUILDING C-D:			
PODIUM C LEV 1	=	14,931 ft ² (x1)	= 14,931 ft ²
PODIUM D LEV 1	=	11,490 ft ² (x1)	= 11,490 ft ²
PODIUM CD LEV 2-4	=	27,875 ft ² (x3)	= 83,625 ft ²
TOWER C LEV 5-34	=	8,073 ft ² (x30)	= 242,190 ft ²
TOWER D LEV 5-25	=	8,138 ft ² (x21)	= 170,898 ft ²
TOTAL			= 523,134 ft²

BUILDING E:			
PODIUM E LEV 1-4	=	11,302 ft ² (x4)	= 45,208 ft ²
TOWER E LEV 5-14	=	8,138 ft ² (x10)	= 113,932 ft ²
TOTAL			= 126,588 ft²

BUILDING F:			
BLDG F LEV 1-6	=	10,278 ft ² (x6)	= 61,668 ft ²
TOTAL			= 61,668 ft²

BUILDING G:			
BLDG G LEV 1-6	=	10,624 ft ² (x6)	= 63,744 ft ²
TOTAL			= 63,744 ft²

TOTAL GFA= 1,277,141 ft²



1200 Baseline Rd.



Site Plan - Phase 2
SCALE = 1:1000
FEBRUARY 6, 2026

APPENDIX B

Watermain Information

Chris Visser

From: Fawzi, Mohammed <mohammed.fawzi@ottawa.ca>
Sent: Thursday, December 11, 2025 12:39 PM
To: Chris Visser
Cc: Cara Ruddle; Dieme, Abi
Subject: RE: Water Boundary Conditions - 1200 Baseline
Attachments: 1200 Baseline Road December 2025.pdf

Hi Chris,

The following are boundary conditions, HGL, for hydraulic analysis at 1200 Baseline Road (zone ME) assumed to be looped with a 254mm watermain and connected via three (3) connections for two (2) separate phases to the 305 mm watermain on Merivale Road. (see attached PDF for location).

Phase 1:

Connection 1 – 305mm Watermain on Merivale Road (West)

Minimum HGL = 147.3 m
Maximum HGL = 158.5 m
Max Day + Fire Flow (83.3 L/s) = 157.4 m

Connection 2 – 305mm Watermain on Merivale Road (Center)

Minimum HGL = 147.3 m
Maximum HGL = 158.5 m
Max Day + Fire Flow (83.3 L/s) = 157.6 m

Connection 3 – 305mm Watermain on Merivale Road (East)

Minimum HGL = 147.3 m
Maximum HGL = 158.5 m
Max Day + Fire Flow (83.3 L/s) = 157.5 m

Phase 2:

Connection 1 – 305mm Watermain on Merivale Road (West)

Minimum HGL = 146.0 m
Maximum HGL = 158.3 m
Max Day + Fire Flow (83.3 L/s) = 156.7 m
Max Day + Fire Flow (100.0 L/s) = 155.4 m
Max Day + Fire Flow (116.7 L/s) = 154.2 m

Connection 2 – 305mm Watermain on Merivale Road (Center)

Minimum HGL = 146.1 m
Maximum HGL = 158.3 m
Max Day + Fire Flow (83.3 L/s) = 156.9 m
Max Day + Fire Flow (100.0 L/s) = 155.7 m
Max Day + Fire Flow (116.7 L/s) = 154.5 m

Connection 3 – 305mm Watermain on Merivale Road (East)

Minimum HGL = 146.1 m
Maximum HGL = 158.3 m
Max Day + Fire Flow (83.3 L/s) = 156.8 m

Max Day + Fire Flow (100.0 L/s) = 155.7 m

Max Day + Fire Flow (116.7 L/s) = 154.4 m

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

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

Best Regards,

Mohammed Fawzi, P.Eng.

Senior Project Manager (A), Infrastructure Projects

Development Review – West Branch

Planning, Development and Building Services Department (PDBS)| Direction générale des services de la planification, de l'aménagement et du bâtiment (DGSPAB)

City of Ottawa | Ville d'Ottawa

110 Laurier Avenue West | 110 Avenue Laurier Ouest

Ottawa, ON K1P 1J1

613.580.2424 ext./poste 70120, Mohammed.Fawzi@ottawa.ca

Classified as City of Ottawa - Internal / Ville d'Ottawa - classé interne

From: Fawzi, Mohammed

Sent: December 8, 2025 1:25 PM

To: 'Chris Visser' <c.visser@novatech-eng.com>

Cc: c.ruddle <c.ruddle@novatech-eng.com>; Dieme, Abi <Abibatou.Dieme@ottawa.ca>

Subject: RE: Water Boundary Conditions - 1200 Baseline

Hi Chris,

Thanks for the revised concept. I don't see any issues with this configuration. I'll have the boundary conditions processed.

On a side note, I remember you mentioning it, but I can't seem to recall what the purpose of the 9.0m wide easement is for that fronts Merivale/Baseline.

Thanks Chris.

Best Regards,

Mohammed Fawzi, P.Eng.

Senior Project Manager (A), Infrastructure Projects

Development Review – West Branch

Planning, Development and Building Services Department (PDBS) | Direction générale des services de la planification, de l'aménagement et du bâtiment (DGSPAB)

City of Ottawa | Ville d'Ottawa

110 Laurier Avenue West | 110 Avenue Laurier Ouest

Ottawa, ON K1P 1J1

613.580.2424 ext./poste 70120, Mohammed.Fawzi@ottawa.ca

From: Chris Visser <c.visser@novatech-eng.com>

Sent: December 8, 2025 12:04 PM

To: Fawzi, Mohammed <mohammed.fawzi@ottawa.ca>

Cc: c.ruddle <c.ruddle@novatech-eng.com>; Dieme, Abi <Abibatou.Dieme@ottawa.ca>

Subject: RE: Water Boundary Conditions - 1200 Baseline

CAUTION: This email originated from an External Sender. Please do not click links or open attachments unless you recognize the source.

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Fawzi,

Attached is the updated Water Boundary Conditions plan for 1200 Baseline. Connection #2 has been relocated onto the 300MM watermain on Merivale, in the same Water pressure area as the other 2 proposed connect points.

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

Thanks,

Chris Visser, Project Coordinator | Land Development Engineering

NOVATECH

Engineers, Planners & Landscape Architects

240 Michael Cowpland Drive, Suite 200, Ottawa, ON, K2M 1P6 | Tel: 613.254.9643 Ext: 245

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From: Fawzi, Mohammed <mohammed.fawzi@ottawa.ca>

Sent: Monday, December 8, 2025 9:07 AM

To: Chris Visser <c.visser@novatech-eng.com>

Cc: Cara Ruddle <c.ruddle@novatech-eng.com>; Dieme, Abi <Abibatou.Dieme@ottawa.ca>

Subject: RE: Water Boundary Conditions - 1200 Baseline

Hi Chris,

Thank you for your email.

Connection 2 still appears to be connected to a different pressure zone – it cannot be internally looped while connected to a different pressure zone. Please refer to the GeoOttawa screenshot from my previous email for the pressure boundaries. I've included it below for convenience.

Happy to discuss further. Thanks Chris.

Mohammed Fawzi, P.Eng.

Planning, Development and Building Services Department (PDBS) | Direction générale des services de la planification, de l'aménagement et du bâtiment (DGSPAB)

110 Laurier Avenue West | 110 Avenue Laurier Ouest
Ottawa, ON K1P 1J1

Classified as City of Ottawa - Internal / Ville d'Ottawa - classé interne

Sent: December 4, 2025 9:44 AM

To: Fawzi, Mohammed <mohammed.fawzi@ottawa.ca>

Cc: c.ruddle <c.ruddle@novatech-eng.com>

Subject: Water Boundary Conditions - 1200 Baseline

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Fawzi,

Based on our discussion we had on Teams on Tuesday; this email is to clarify that for the proposed development. Below is the original water boundary request email, with the changes to the request in **GREEN**.

We are looking for boundary conditions for the existing watermain infrastructure to complete a water servicing analysis for the 1200 Baseline Road development. The development will consist of a residential development with multiple towers (ranging from 6 to 40 stories). Phase 1 consist of 2 Towers (A & B) and Phase 2 consist of 5 Towers (C-G), along with a public open space. Attached are the Hydrant Sketch showing the existing water infrastructure, site plan for the development and Water Demands and FUS calculations.

Phase 1 (Towers A-B)

Avg Day Demand = 2.15 L/s

Max Day Demand = 5.38 L/s

Peak Hour Demand = 11.84 L/s

Fire Flow Demand

- Tower A = 83 L/s
- Tower B = 83 L/s

Phase 2 (Towers C-G)

Avg. Day Demand = 5.30 L/s

Max Day Demand = 13.26 L/s

Peak Hour Demand = 29.16 L/s

Fire Flow Demand

- Tower C = 117 L/s
- Tower D = 83 L/s
- Tower E = 83 L/s
- Tower F = 117 L/s
- Tower G = 100 L/s

Due to the demands from the site exceeding 50m³/day it is proposed to have **3** service connections (separated by a valve) for the development, one on Merivale Road (Phase 1) on the existing 300mm watermain and another on Baseline Road, **connecting into the same 300mm Watermain on Merivale Road. (Phase 2). Sketch is attached to show connection points.**

Please do not hesitate to call or email should you have any questions.

Chris Visser, Project Coordinator | Land Development Engineering

NOVATECH

Engineers, Planners & Landscape Architects

240 Michael Cowpland Drive, Suite 200, Ottawa, ON, K2M 1P6 | Tel: 613.254.9643 Ext: 245

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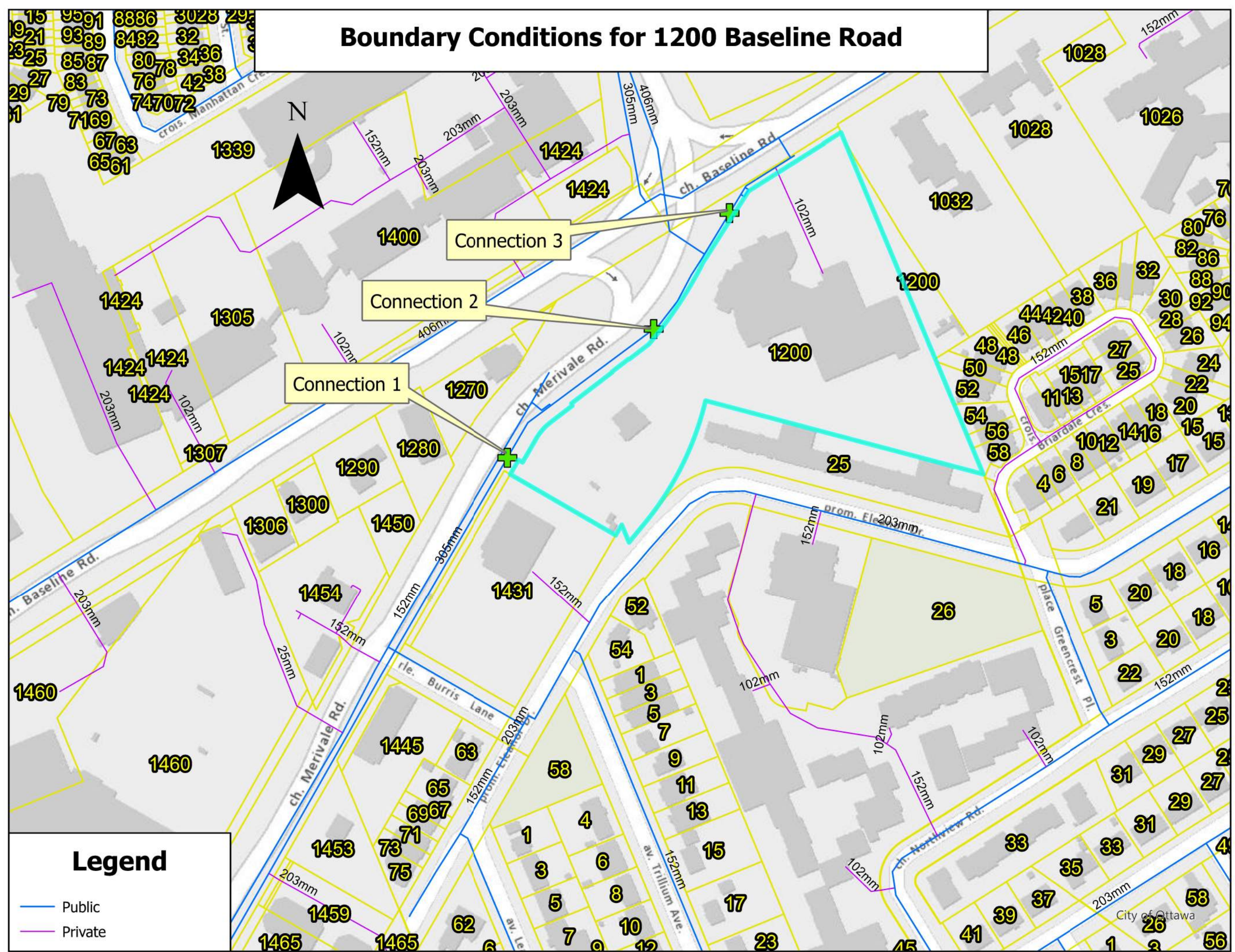
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Boundary Conditions for 1200 Baseline Road



FUS - Fire Flow Calculations

Novatech Project #: 124090
Project Name: 1200 Baseline Raad
Date: February 20, 2026
Input By: AB
Reviewed By: CJR
Drawing Reference: 124090 - GP

Legend: Input by User

No Input Required

Reference: Fire Underwriter's Survey Guideline (2020)
Formula Method

Building Description: Building G
Type II - Non-combustible construction

Step				Choose		Value Used	Total Fire Flow (L/min)
Base Fire Flow							
1	Construction Material			Multiplier			
	Coefficient related to type of construction C	Type V - Wood frame		1.5	0.8		
		Type IV - Mass Timber		Varies			
		Type III - Ordinary construction		1			
		Type II - Non-combustible construction	Yes	0.8			
		Type I - Fire resistive construction (2 hrs)		0.6			
2	Floor Area						
	A	Building Footprint (m ²)	987				
		Number of Floors/Storeys	6				
		Protected Openings (1 hr) if C<1.0	Yes				
		Area of structure considered (m ²)			1,481		
	F	Base fire flow without reductions				7,000	
		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%	5,950	
		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%	-2,826	
		Standard Water Supply	Yes	-10%	-10%		
		Fully Supervised System	Yes	-10%	-10%		
		Cumulative Sub-Total		-50%			
		Area of Sprinklered Coverage (m ²)	5625.91083	95%			
		Cumulative Total		-48%			
5	Exposure Surcharge		FUS Table 5	Surcharge			
	(3)	North Side	20.1 - 30 m		10%	2,380	
		East Side	>30m		0%		
		South Side	10.1 - 20 m		15%		
		West Side	10.1 - 20 m		15%		
		Cumulative Total			40%		
	Results						
6	(1) + (2) + (3)	Total Required Fire Flow, rounded to nearest 1000L/min			L/min	6,000	
		(2,000 L/min < Fire Flow < 45,000 L/min)		or	L/s	100	
				or	USGPM	1,585	

FUS - Fire Flow Calculations

Novatech Project #: 124090
Project Name: 1200 Baseline Road
Date: February 20, 2026
Input By: AB
Reviewed By: CJR
Drawing Reference: 124090 - GP

Legend: Input by User

No Input Required

Reference: Fire Underwriter's Survey Guideline (2020)
Formula Method

Building Description: Building F
Type II - Non-combustible construction

Step				Choose		Value Used	Total Fire Flow (L/min)
Base Fire Flow							
1	Construction Material			Multiplier			
	Coefficient related to type of construction C	Type V - Wood frame		1.5	0.8		
		Type IV - Mass Timber		Varies			
		Type III - Ordinary construction		1			
		Type II - Non-combustible construction	Yes	0.8			
		Type I - Fire resistive construction (2 hrs)		0.6			
Floor Area							
2	A	Building Footprint (m ²)	955				
		Number of Floors/Storeys	6				
		Protected Openings (1 hr) if C<1.0	Yes				
		Area of structure considered (m ²)		1,432			
	F	Base fire flow without reductions				7,000	
		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%	5,950	
		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%	-2,826	
		Standard Water Supply	Yes	-10%	-10%		
		Fully Supervised System	Yes	-10%	-10%		
		Cumulative Sub-Total		-50%			
		Area of Sprinklered Coverage (m ²)	5442.68718	95%			
Cumulative Total		-48%					
5	Exposure Surcharge		FUS Table 5	Surcharge			
	(3)	North Side	20.1 - 30 m		10%	3,273	
		East Side	10.1 - 20 m		15%		
		South Side	10.1 - 20 m		15%		
		West Side	10.1 - 20 m		15%		
		Cumulative Total		55%			
Results							
6	(1) + (2) + (3)	Total Required Fire Flow, rounded to nearest 1000L/min			L/min	6,000	
		(2,000 L/min < Fire Flow < 45,000 L/min)		or	L/s	100	
				or	USGPM	1,585	

FUS - Fire Flow Calculations

Novatech Project #: 124090
Project Name: 1200 Baseline Road
Date: February 20, 2026
Input By: AB
Reviewed By: CJR
Drawing Reference: 124090 - GP

Legend: Input by User

No Input Required

Reference: Fire Underwriter's Survey Guideline (2020)
Formula Method

Building Description: Building E
Type II - Non-combustible construction

Step				Choose		Value Used	Total Fire Flow (L/min)	
Base Fire Flow								
1	Construction Material				Multiplier			
	Coefficient related to type of construction C	Type V - Wood frame			1.5	0.8		
		Type IV - Mass Timber			Varies			
		Type III - Ordinary construction			1			
		Type II - Non-combustible construction		Yes	0.8			
		Type I - Fire resistive construction (2 hrs)			0.6			
2	Floor Area							
	A	Podium Level Footprint (m ²)		1050				
		Total Floors/Storeys (Podium)		4				
		Tower Footprint (m ²)		756				
		Total Floors/Storeys (Tower)		10				
		Protected Openings (1 hr)		Yes				
		A, Total Effective Floor Area (m ²)				1,575		
	F	Base fire flow without reductions					7,000	
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%	5,950	
		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%	-2,826	
		Standard Water Supply		Yes	-10%	-10%		
		Fully Supervised System		Yes	-10%	-10%		
		Cumulative Sub-Total			-50%			
		Area of Sprinklered Coverage (m ²)		11172.38855	95%			
		Cumulative Total			-48%			
5	Exposure Surcharge per			FUS Table 5	Surcharge			
	(3)	North Side		20.1 - 30 m			10%	2,083
		East Side		20.1 - 30 m			10%	
		South Side		10.1 - 20 m			15%	
		West Side		>30m			0%	
		Cumulative Total			35%			
	Results							
6	(1) + (2) + (3)	Total Required Fire Flow, rounded to nearest 1000L/min				L/min	5,000	
		(2,000 L/min < Fire Flow < 45,000 L/min)			or	L/s	83	
					or	USGPM	1,321	

FUS - Fire Flow Calculations

Novatech Project #: 124090
Project Name: 1200 Baseline Road
Date: February 20, 2026
Input By: AB
Reviewed By: CJR
Drawing Reference: 124090 - GP

Legend: Input by User

No Input Required

Reference: Fire Underwriter's Survey Guideline (2020)
Formula Method

Building Description: Building D
Type II - Non-combustible construction

Step				Choose		Value Used	Total Fire Flow (L/min)	
Base Fire Flow								
1	Construction Material				Multiplier			
	Coefficient related to type of construction C	Type V - Wood frame			1.5	0.8		
		Type IV - Mass Timber			Varies			
		Type III - Ordinary construction			1			
		Type II - Non-combustible construction		Yes	0.8			
		Type I - Fire resistive construction (2 hrs)			0.6			
2	Floor Area							
	A	Podium Level Footprint (m ²)		1067				
		Total Floors/Storeys (Podium)		4				
		Tower Footprint (m ²)		756				
		Total Floors/Storeys (Tower)		21				
		Protected Openings (1 hr)		Yes				
		A, Total Effective Floor Area (m ²)				1,601		
	F	Base fire flow without reductions					7,000	
		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%	5,950	
		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%	-2,826	
		Standard Water Supply		Yes	-10%	-10%		
		Fully Supervised System		Yes	-10%	-10%		
		Cumulative Sub-Total			-50%			
		Area of Sprinklered Coverage (m ²)		19139.42856	95%			
		Cumulative Total			-48%			
5	Exposure Surcharge per			FUS Table 5	Surcharge			
	(3)	North Side		>30m			0%	1,190
		East Side		>30m			0%	
		South Side		20.1 - 30 m			10%	
		West Side		20.1 - 30 m			10%	
		Cumulative Total			20%			
	Results							
6	(1) + (2) + (3)		Total Required Fire Flow, rounded to nearest 1000L/min			L/min	4,000	
			(2,000 L/min < Fire Flow < 45,000 L/min)		or	L/s	67	
					or	USGPM	1,057	

FUS - Fire Flow Calculations

Novatech Project #: 124090
Project Name: 1200 Baseline Road
Date: February 20, 2026
Input By: AB
Reviewed By: CJR
Drawing Reference: 124090 - GP

Legend: Input by User

No Input Required

Reference: Fire Underwriter's Survey Guideline (2020)
Formula Method

Building Description: Building C
Type II - Non-combustible construction

Step			Choose		Value Used	Total Fire Flow (L/min)	
Base Fire Flow							
1	Construction Material			Multiplier			
	Coefficient related to type of construction C	Type V - Wood frame		1.5	0.8		
		Type IV - Mass Timber		Varies			
		Type III - Ordinary construction		1			
		Type II - Non-combustible construction	Yes	0.8			
		Type I - Fire resistive construction (2 hrs)		0.6			
2	Floor Area						
	A	Podium Level Footprint (m ²)	1387				
		Total Floors/Storeys (Podium)	4				
		Tower Footprint (m ²)	750				
		Total Floors/Storeys (Tower)	30				
		Protected Openings (1 hr)	Yes				
		A, Total Effective Floor Area (m ²)					2,081
	F	Base fire flow without reductions				8,000	
		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%	6,800	
		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%	-3,230	
		Standard Water Supply	Yes	-10%	-10%		
		Fully Supervised System	Yes	-10%	-10%		
		Cumulative Sub-Total		-50%			
		Area of Sprinklered Coverage (m ²)	26646.113	95%			
		Cumulative Total		-48%			
5	Exposure Surcharge per		FUS Table 5	Surcharge			
	(3)	North Side	>30m			0%	2,040
		East Side	20.1 - 30 m			10%	
		South Side	20.1 - 30 m			10%	
		West Side	20.1 - 30 m			10%	
		Cumulative Total				30%	
	Results						
6	(1) + (2) + (3)	Total Required Fire Flow, rounded to nearest 1000L/min			L/min	6,000	
		(2,000 L/min < Fire Flow < 45,000 L/min)		or	L/s	100	
				or	USGPM	1,585	

FUS - Fire Flow Calculations

Novatech Project #: 124090
Project Name: 1200 Baseline Road
Date: February 20, 2026
Input By: AB
Reviewed By: CJR
Drawing Reference: 125090 - GP

Legend: Input by User

No Input Required

Reference: Fire Underwriter's Survey Guideline (2020)
Formula Method

Building Description: Building B
Type II - Non-combustible construction

Step				Choose		Value Used	Total Fire Flow (L/min)	
Base Fire Flow								
1	Construction Material				Multiplier			
	Coefficient related to type of construction C	Type V - Wood frame			1.5	0.8		
		Type IV - Mass Timber			Varies			
		Type III - Ordinary construction			1			
		Type II - Non-combustible construction		Yes	0.8			
		Type I - Fire resistive construction (2 hrs)			0.6			
2	Floor Area							
	A	Podium Level Footprint (m ²)		933				
		Total Floors/Storeys (Podium)		4				
		Tower Footprint (m ²)		784				
		Total Floors/Storeys (Tower)		21				
		Protected Openings (1 hr)		Yes				
		A, Total Effective Floor Area (m ²)						1,400
	F	Base fire flow without reductions					7,000	
		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%	5,950	
		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%	-2,826	
		Standard Water Supply		Yes	-10%	-10%		
		Fully Supervised System		Yes	-10%	-10%		
		Cumulative Sub-Total			-50%			
		Area of Sprinklered Coverage (m ²)		19196.09112	95%			
		Cumulative Total			-48%			
5	Exposure Surcharge per			FUS Table 5	Surcharge			
	(3)	North Side		>30m			0%	1,785
		East Side		20.1 - 30 m			10%	
		South Side		20.1 - 30 m			10%	
		West Side		20.1 - 30 m			10%	
		Cumulative Total					30%	
	Results							
6	(1) + (2) + (3)	Total Required Fire Flow, rounded to nearest 1000L/min				L/min	5,000	
		(2,000 L/min < Fire Flow < 45,000 L/min)			or	L/s	83	
					or	USGPM	1,321	

FUS - Fire Flow Calculations

Novatech Project #: 124090
Project Name: 1200 Baseline Road
Date: February 20, 2026
Input By: AB
Reviewed By: CJR
Drawing Reference: 124090

Legend: Input by User

No Input Required

Reference: Fire Underwriter's Survey Guideline (2020)
Formula Method

Building Description: Building A
Type II - Non-combustible construction

Step			Choose		Value Used	Total Fire Flow (L/min)	
Base Fire Flow							
1	Construction Material			Multiplier			
	Coefficient related to type of construction C	Type V - Wood frame		1.5	0.8		
		Type IV - Mass Timber		Varies			
		Type III - Ordinary construction		1			
		Type II - Non-combustible construction	Yes	0.8			
		Type I - Fire resistive construction (2 hrs)		0.6			
2	Floor Area						
	A	Podium Level Footprint (m ²)	1006				
		Total Floors/Storeys (Podium)	4				
		Tower Footprint (m ²)	777				
		Total Floors/Storeys (Tower)	16				
		Protected Openings (1 hr)	Yes				
		A, Total Effective Floor Area (m ²)					1,508
	F	Base fire flow without reductions				7,000	
		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%	5,950	
		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%	-2,826	
		Standard Water Supply	Yes	-10%	-10%		
		Fully Supervised System	Yes	-10%	-10%		
		Cumulative Sub-Total		-50%			
		Area of Sprinklered Coverage (m ²)	15631.6154	95%			
		Cumulative Total		-48%			
5	Exposure Surcharge per		FUS Table 5	Surcharge			
	(3)	North Side	>30m			0%	1,190
		East Side	20.1 - 30 m			10%	
		South Side	>30m			0%	
		West Side	20.1 - 30 m			10%	
		Cumulative Total				20%	
	Results						
6	(1) + (2) + (3)	Total Required Fire Flow, rounded to nearest 1000L/min			L/min	4,000	
		(2,000 L/min < Fire Flow < 45,000 L/min)		or	L/s	67	
				or	USGPM	1,057	

Water Demand Design Sheet



Novatech Project #: 124090

Project Name: 1200 Baseline Road - Phase 1

Date: 12/16/2025

Input By: AB

Reviewed By: CR

Drawing Reference: Sketch/Figure/Drawing

Legend:

Input by User

No Input Required

Calculated Cells →

Reference:

Ottawa Design Guidelines - Water Distribution (2010 and TBs)

MOE Design Guidelines for Drinking-Water Systems (2008)

Fire Underwriter's Survey Guideline (2020)

Ontario Building Code, Part 3 (2012)

Small System =

NO

Location	Total Water Demand														
Node	Residential Input & Average Demand								Maximum Day & Peak Hour Demand						Design Fire Demand
	Singles	Semis / Towns	Apts (2-BR)	Apts (1-BR)	Apts (Avg)	PARK	Pop. Equiv.	Res. Average Day Flow Demand (L/s)	Maximum Day Demand			Peak Hour Demand			Required Fire Flow (RFF)
									Res. Peaking Factor	ICI Peaking Factor	Max Day Flow Demand (L/s)	Res. Peaking Factor	ICI Peaking Factor	Peak Hour Flow Demand (L/s)	FUS (L/min)
Junc A					264		475.20	1.54	2.50	1.50	3.85	5.50	2.70	8.47	4,000
Junc B					195		351.00	1.14	2.50	1.50	2.84	5.50	2.70	6.26	5,000
Junc P						0.08	0.00	0.003	2.50	1.50	0.008	5.50	2.70	0.018	5,000
TOTAL	0	0	0	0	459		826.20	2.68	2.50	1.50	6.69	5.50	2.70	14.73	

Demand Parameters

Residential					
Unit Type Population Equiv.	Singles	Semis/ Towns	Apts (2-BR)	Apts (1-BR)	Apts (Avg)
	3.4	2.7	2.1	1.4	1.8
Dailly Demand	L/per person/day				
Average Demand	280				
Basic Demand	200				
Picnic and Fair Grounds Flush Toilets only	20	L/Person/day Assume 75 Per/acre			

Quick Fire Flow Reference Guide			
FUS (L/min)	Comments	OBC (L/min)	Comments
> 2,000	Min FUS	< 9,000	Unsprinklered Non- Combustible
	Low Density - Singles/Towns		
10,000	Complies w/ TB2014-01 Cap. (10m rear spacing, 6 units max, <600 m²)		
13,000	Non-complying w/TB2014-01. Calculate.		
15,000 Medium Density			
Back-to-back Towns.			

Water Demand Design Sheet



Maximum Pressure During Average Day (AVDY) Conditions

Novatech Project #: 124090

Legend: Input by User No Input Required

Project Name: 1200 Baseline Road - Phase 1

Acceptable (40psi - 80psi)

Date: 12/16/2025

Acceptable w/ PRV (81psi - 100psi)

Input By: AB

Unacceptable (< 40psi or > 100psi)

Reviewed By: CR

Note: Hydraulic modelling completed using EPANET 2.0.

Drawing Reference: Sketch/Figure/Drawing

Node	Elevation (m)	Demand (L/s)	Total Head (m)	Pressure (m)	Pressure (psi)
Junc 1	93.03	0	158.5	65.47	93
Junc A	92.55	1.54	158.5	65.95	94
Junc B	92.35	1.14	158.5	66.15	94
Junc C	95.4	0	158.5	63.1	90
Junc 2	94.93	0	158.5	63.57	90
Junc H1	93.7	0	158.5	64.8	92
Junc H2	92.45	0	158.5	66.05	94
Junc H3	95.17	0	158.5	63.33	90
Junc P	93.2	0	158.5	65.3	93
Resvr RES2	158.5	-1.35	158.5	0	0
Resvr RES1	158.5	-1.34	158.5	0	0

Water Demand Design Sheet



Minimum Pressure During Peak Hour (PKHR) Conditions

Novatech Project #: 124090

Legend: Input by User No Input Required

Project Name: 1200 Baseline Road - Phase 1

Acceptable (≥ 40 psi)

Date: 12/16/2025

Unacceptable (< 40 psi)

Input By: AB

Note: Hydraulic modelling completed using EPANET 2.0.

Reviewed By: CR

Drawing Reference: Sketch/Figure/Drawing

Node	Elevation (m)	Demand (L/s)	Total Head (m)	Pressure (m)	Pressure (psi)
Junc 1	93.03	0	147.29	54.26	77
Junc A	92.55	8.47	147.29	54.74	78
Junc B	92.35	6.26	147.29	54.94	78
Junc C	95.4	0	147.3	51.9	74
Junc 2	94.93	0	147.29	52.36	74
Junc H1	93.7	0	147.29	53.59	76
Junc H2	92.45	0	147.29	54.84	78
Junc H3	95.17	0	147.29	52.12	74
Junc P	93.2	0.02	147.29	54.09	77
Resvr RES2	147.3	-7.4	147.3	0	0
Resvr RES1	147.3	-7.35	147.3	0	0

Minimum Pressure During Max Day Plus Fire Flow (MXDY+FF) Condition

Novatech Project #: 124090

Legend: Input by User No Input Required

Project Name: 1200 Baseline Road - Phase 1

Acceptable ($\Rightarrow$ 20psi)

Date: 12/16/2025

Unacceptable ($<$ 20psi)

Input By: AB

Note: Hydraulic modelling completed using EPANET 2.0.

Reviewed By: CR

Drawing Reference: Sketch/Figure/Drawing

Node	Elevation (m)	Demand (L/s)	Total Head (m)	Pressure (m)	Pressure (psi)
Junc 1	93.03	0	157.32	64.29	91
Junc A	92.55	3.85	157.25	64.7	92
Junc B	92.35	2.84	157.23	64.88	92
Junc C	95.4	0	157.39	61.99	88
Junc 2	94.93	0	157.3	62.37	89
Junc H1	93.7	0	157.34	63.64	90
Junc H2	92.45	41.67	157.22	64.77	92
Junc H3	95.17	41.67	157.31	62.14	88
Junc P	93.2	0.01	157.28	64.08	91
Resvr RES2	157.6	-64.52	157.6	0	0
Resvr RES1	157.4	-25.52	157.4	0	0

Water Demand Design Sheet



Novatech Project #: 124090
Project Name: 1200 Baseline Road - Phase 2
Date: 12/16/2025
Input By: AB
Reviewed By: CR
Drawing Reference: Sketch/Figure/Drawing

Legend: Input by User No Input Required
Calculated Cells →
Reference: Ottawa Design Guidelines - Water Distribution (2010 and TBs)
MOE Design Guidelines for Drinking-Water Systems (2008)
Fire Underwriter's Survey Guideline (2020)
Ontario Building Code, Part 3 (2012)

Small System = NO

Location	Total Water Demand														
Node	Residential Input & Average Demand								Maximum Day & Peak Hour Demand						Design Fire Demand
	Singles	Semis / Towns	Apts (2-BR)	Apts (1-BR)	Apts (Avg)	Park Area	Pop. Equiv.	Res. Average Day Flow Demand (L/s)	Maximum Day Demand			Peak Hour Demand			Required Fire Flow (RFF)
									Res. Peaking Factor	ICI Peaking Factor	Max Day Flow Demand (L/s)	Res. Peaking Factor	ICI Peaking Factor	Peak Hour Flow Demand (L/s)	FUS (L/min)
Junc A					264		475.20	1.54	2.50	1.50	3.85	5.50	2.70	8.47	4,000
Junc B					195		351.00	1.14	2.50	1.50	2.84	5.50	2.70	6.26	5,000
Junc P						0.26	0.00	0.01	2.50	1.50	0.03	5.50	2.70	0.06	5,000
Junc C					342		615.60	2.00	2.50	1.50	4.99	5.50	2.70	10.97	6,000
Junc G					46		82.80	0.27	2.50	1.50	0.67	5.50	2.70	1.48	6,000
Junc F					64		115.20	0.37	2.50	1.50	0.93	5.50	2.70	2.05	6,000
Junc E					135		243.00	0.79	2.50	1.50	1.97	5.50	2.70	4.33	5,000
Junc D					255		459.00	1.49	2.50	1.50	3.72	5.50	2.70	8.18	4,000
TOTAL	0	0	0	0	1301		2341.80	7.60	2.50	1.50	19.00	5.50	2.70	41.80	

Demand Parameters

Residential					
Unit Type Population Equiv.	Singles	Semis/ Towns	Apts (2-BR)	Apts (1-BR)	Apts (Avg)
	3.4	2.7	2.1	1.4	1.8
Daily Demand	L/per person/day				
Average Demand	280				
Basic Demand	200				
Picnic and Fair Grounds Flush Toilets only	20	L/Person/day Assume 75 Per/acre			

Quick Fire Flow Reference Guide			
FUS (L/min)	Comments	OBC (L/min)	Comments
> 2,000	Min FUS	< 9,000	Unsprinklered Non- Combustible
10,000	Low Density - Singles/Towns Complies w/ TB2014-01 Cap. (10m rear spacing, 6 units max, <600 m²)		
13,000	Non-complying w/TB2014-01. Calculate.		
15,000	Medium Density Back-to-back Towns.		

Water Demand Design Sheet



Maximum Pressure During Average Day (AVDY) Conditions

Novatech Project #: 124090

Legend: Input by User No Input Required

Project Name: 1200 Baseline Road - Phase 2

Acceptable (40psi - 80psi)

Date: 12/16/2025

Acceptable w/ PRV (81psi - 100psi)

Input By: AB

Unacceptable (< 40psi or > 100psi)

Reviewed By: CR

Note: Hydraulic modelling completed using EPANET 2.0.

Drawing Reference: Sketch/Figure/Drawing

Node	Elevation (m)	Demand (L/s)	Total Head (m)	Pressure (m)	Pressure (psi)
Junc 1	93.03	0	158.3	65.27	93
Junc A	92.55	1.54	158.3	65.75	93
Junc B	92.35	1.14	158.3	65.95	94
Junc C	95.4	2	158.3	62.9	89
Junc G	94.4	0.27	158.3	63.9	91
Junc F	93.84	0.37	158.3	64.46	92
Junc E	93.44	0.79	158.3	64.86	92
Junc D	95.21	1.49	158.3	63.09	90
Junc 2	94.93	0	158.3	63.37	90
Junc H1	93.7	0	158.3	64.6	92
Junc H2	92.45	0	158.3	65.85	94
Junc H3	95.17	0	158.3	63.13	90
Junc H4	93.95	0	158.3	64.35	92
Junc H5	93.36	0	158.3	64.94	92
Junc P	93.2	0.01	158.3	65.1	93
Resvr RES2	158.3	-3.66	158.3	0	0
Resvr RES3	158.3	-2.02	158.3	0	0
Resvr RES1	158.3	-1.93	158.3	0	0

Water Demand Design Sheet



Minimum Pressure During Peak Hour (PKHR) Conditions

Novatech Project #: 124090

Legend: Input by User No Input Required

Project Name: 1200 Baseline Road - Phase 2

Acceptable (≥ 40 psi)

Date: 12/16/2025

Unacceptable (< 40 psi)

Input By: AB

Note: Hydraulic modelling completed using EPANET 2.0.

Reviewed By: CR

Drawing Reference: Sketch/Figure/Drawing

Node	Elevation (m)	Demand (L/s)	Total Head (m)	Pressure (m)	Pressure (psi)
Junc 1	93.03	0	146	52.97	75.3
Junc A	92.55	8.47	146	53.45	76.0
Junc B	92.35	6.26	146.01	53.66	76.3
Junc C	95.4	10.97	146.06	50.66	72.0
Junc G	94.4	1.48	146.04	51.64	73.4
Junc F	93.84	2.05	146.04	52.2	74.2
Junc E	93.44	4.33	146.04	52.6	74.8
Junc D	95.21	8.18	146.05	50.84	72.3
Junc 2	94.93	0	146.04	51.11	72.7
Junc H1	93.7	0	146	52.3	74.4
Junc H2	92.45	0	146.01	53.56	76.2
Junc H3	95.17	0	146.05	50.88	72.3
Junc H4	93.95	0	146.04	52.09	74.1
Junc H5	93.36	0	146.04	52.68	74.9
Junc P	93.2	0.06	146	52.8	75
Resvr RES2	146.1	-28.34	146.1	0	0
Resvr RES3	146.1	-13.9	146.1	0	0
Resvr RES1	146	0.44	146	0	0

Water Demand Design Sheet



Minimum Pressure During Max Day Plus Fire Flow (MXDY+FF) Condition

Novatech Project #: 124090

Legend: Input by User No Input Required

Project Name: 1200 Baseline Road - Phase 2

Acceptable (≥ 20 psi)

Date: 12/16/2025

Unacceptable (< 20 psi)

Input By: AB

Note: Hydraulic modelling completed using EPANET 2.0.

Reviewed By: CR

Drawing Reference: Sketch/Figure/Drawing

Node	Elevation (m)	Demand (L/s)	Total Head (m)	Pressure (m)	Pressure (psi)
Junc 1	93.53	0	156.65	63.12	90
Junc A	92.55	3.85	156.61	64.06	91
Junc B	92.35	2.84	156.58	64.23	91
Junc C	95.4	4.99	156.65	61.25	87
Junc G	94.4	0.67	156.45	62.05	88
Junc F	93.84	0.93	156.38	62.54	89
Junc E	93.44	1.97	156.42	62.98	90
Junc D	95.21	3.72	156.63	61.42	87
Junc 2	94.93	0	156.56	61.63	88
Junc H1	93.7	0	156.66	62.96	90
Junc H2	92.45	0	156.59	64.14	91
Junc H3	95.17	50	156.56	61.39	87
Junc H4	93.95	50	156.36	62.41	89
Junc H5	93.36	0	156.49	63.13	90
Junc P	93.2	0.03	156.63	63.43	90
Resvr RES2	156.9	-71.4	156.9	0	0
Resvr RES3	156.8	-28.1	156.8	0	0
Resvr RES1	156.7	-19.5	156.7	0	0

APPENDIX C

Sanitary Sewer Information

NOVATECH
Engineers, Planners & Landscape Architects

Novatech Project #: 124090
Project Name: 1200 Baseline Road
Date: 2/19/2026
Input By: AB
Reviewed By: CJR
Drawing Reference: 124090 - GP

Location				Demand											
Street	Area ID	From MH	To MH	Residential Flow									Extraneous Flow Area Method		Total Design Flow
				Singles	Semis / Towns	Apts	Park Area	Population	Cumulative Population	Average Pop. Flow	Design Peaking Factor M	Peak Design Pop. Flow	Cumulative Extraneous Drainage Area	Design Extraneous Flow	Total Peak Design Flow
								(in 1000's)	(in 1000's)	Q(q) (L/s)		Q(p) (L/s)	(ha.)	Q(e) (L/s)	Q(D) (L/s)
Street C	BUILDING E					135		0.284	0.284	0.92	3.47	3.19			3.19
Street C	BUILDING F					64		0.134	0.418	1.35	3.41	4.62			4.62
Street C	BUILDING G					46		0.097	0.515	1.67	3.37	5.63			5.63
Street B	BUILDING A					264		0.554	0.554	1.80	3.36	6.04			6.04
Street C	BUILDING B					195		0.410	1.478	4.79	3.15	15.08			15.08
GRASS	BUILDING C					342		0.718	2.197	7.12	3.04	21.66			21.66
GRASS	BUILDING D					255		0.536	0.536	1.74	3.37	5.84			5.84
Baseline Road	EX							0.000	2.732	8.85	2.98	26.40	2.602	0.86	27.25
Totals				0	0	1301	0.000	2.732	2.732	8.85	2.98	26.40	2.602	0.86	27.25

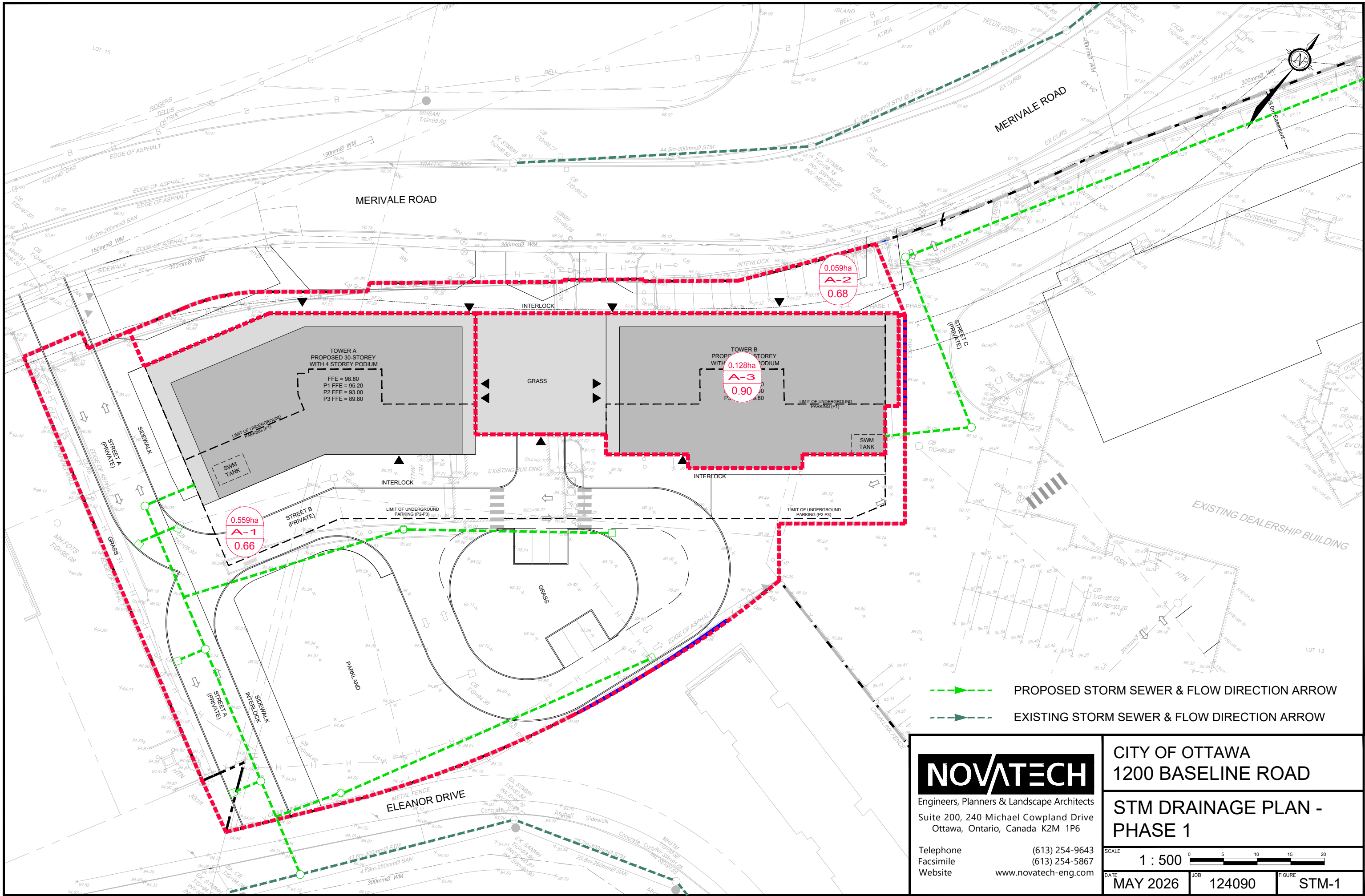
Definitions

- | | | | |
|--|-----------------------|-----------------------------|--------------------|
| Q(D) = Peak Design Flow (L/s) | | | |
| Q(A) = Peak Annual Flow (L/s) | | | |
| Q(R) = Peak Rare Flow (L/s) | | | |
| Q(p) = Peak Design Population Flow (L/s) | | | |
| Q(q) = Average Population Flow (L/s) | | | |
| | <u>Singles</u> | <u>Semis / Towns</u> | <u>Apts</u> |
| P = Residential Population = | 3.4 | 2.7 | 2.1 |
| q = Average Capita Flow | | | |
| M = Harmon Formula | | | |
| K = Harmon Correction Factor | | | |
| Typ. Service Diameter (mm) = | 135 | | |
| Typ. Service Length (m) = | 15 | 15 | |
| I/I Pipe Rate (L/mm dia/m/hr) = | 0.007 | | |
| Q(fd) = Foundation Flow (L/s) | | | |
| Q(ici) = Industrial / Commercial / Institutional Flow (L/s) | | | |
| Q(e) = Extraneous Flow (L/s) | | | |

APPENDIX D

Storm Sewer and Stormwater Management Information

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CITY OF OTTAWA
1200 BASELINE ROAD

STM DRAINAGE PLAN -
PHASE 1

SCALE 1 : 500

DATE MAY 2026 JOB 124090 FIGURE STM-1

PRE-DEVELOPMENT - PHASE 1
Pre-Development Runoff Coefficient "C"

Area	Surface	Ha	"C"	C _{avg}
Total	Hard		0.90	0.50
	Soft		0.20	

Runoff Coefficient was obtained from
 the Pre-consultation:Meeting
 Feedback

Allowable release Rates

Outlet Options	Area (ha)	Q _{2 Year} (L/s)
OUTLET	0.746	79.6

Time of Concentration	T _c =	10	min
Rainfall Intensity (2 Year Event)	I ₂ =	76.81	mm/hr
Rainfall Intensity (5 Year Event)	I ₅ =	104.19	mm/hr
Rainfall Intensity (10 Year Event)	I ₁₀ =	122.14	mm/hr
Rainfall Intensity (25 Year Event)	I ₂₅ =	144.69	mm/hr
Rainfall Intensity (50 Year Event)	I ₅₀ =	161.47	mm/hr
Rainfall Intensity (100 Year Event)	I ₁₀₀ =	178.56	mm/hr

$$100 \text{ year Intensity} = 1735.688 / (\text{Time in min} + 6.014)^{0.820}$$

$$10 \text{ year Intensity} = 1174.184 / (\text{Time in min} + 6.014)^{0.816}$$

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

$$2 \text{ year Intensity} = 732.951 / (\text{Time in min} + 6.199)^{0.810}$$

For 25 year storms add 10% to C value

For 50 year storms add 20% to C value

For 100 year storms add 25% to C value

AREA A2

Post Development Runoff Coefficient "C"

Area	Surface	Ha	"C"	C _{avg}	*C ₁₀₀
Total	Hard	0.040	0.90	0.68	0.76
0.059	Soft	0.019	0.20		

Runoff Coefficient Equation

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

$$*C = (A_{\text{hard}} \times 1.0 + A_{\text{soft}} \times 0.25) / A_{\text{Tot}}$$

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

Area A2 - Uncontrolled Flow

Area (ha)	Q _{100 Year} (L/s)
0.059	22.4

Time of Concentration	T _c =	10	min
Rainfall Intensity (2 Year Event)	I ₂ =	76.81	mm/hr
Rainfall Intensity (5 Year Event)	I ₅ =	104.19	mm/hr
Rainfall Intensity (10 Year Event)	I ₁₀ =	122.14	mm/hr
Rainfall Intensity (25 Year Event)	I ₂₅ =	144.69	mm/hr
Rainfall Intensity (50 Year Event)	I ₅₀ =	161.47	mm/hr
Rainfall Intensity (100 Year Event)	I ₁₀₀ =	178.56	mm/hr

$$100 \text{ year Intensity} = 1735.688 / (\text{Time in min} + 6.014)^{0.820}$$

$$10 \text{ year Intensity} = 1174.184 / (\text{Time in min} + 6.014)^{0.816}$$

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

$$2 \text{ year Intensity} = 732.951 / (\text{Time in min} + 6.199)^{0.810}$$

For 25 year storms add 10% to C value

For 50 year storms add 20% to C value

For 100 year storms add 25% to C value

AREA A1

Post Development Runoff Coefficient "C"

Area	Surface	Ha	"C"	C _{avg}	*C ₁₀₀
Total	Hard	0.364	0.90	0.66	0.74
0.559	Soft	0.195	0.20		

Runoff Coefficient Equation

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

$$*C = (A_{\text{hard}} \times 1.0 + A_{\text{soft}} \times 0.25) / A_{\text{Tot}}$$

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

QUANTITY STORAGE REQUIREMENT - 100 YEAR

0.56 =Area (ha)
 0.74 = 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	25	103.85	119.18	28.6	90.58	135.87
	30	91.87	105.43	28.6	76.83	138.30
	35	82.58	94.77	28.6	66.17	138.96
	40	75.15	86.24	28.6	57.64	138.34
	45	69.05	79.25	28.6	50.65	136.74

*Allowable Flow = (79.6 - 22.4)/2 = 28.6 L/s

AREA A3
Post Development Runoff Coefficient "C"

Area	Surface	Ha	"C"	C _{avg}	*C ₁₀₀
Total	Hard	0.128	0.90	0.90	1.00
0.128	Soft	0.000	0.20		

Runoff Coefficient Equation

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

$$*C = (A_{\text{hard}} \times 1.0 + A_{\text{soft}} \times 0.25) / A_{\text{Tot}}$$

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

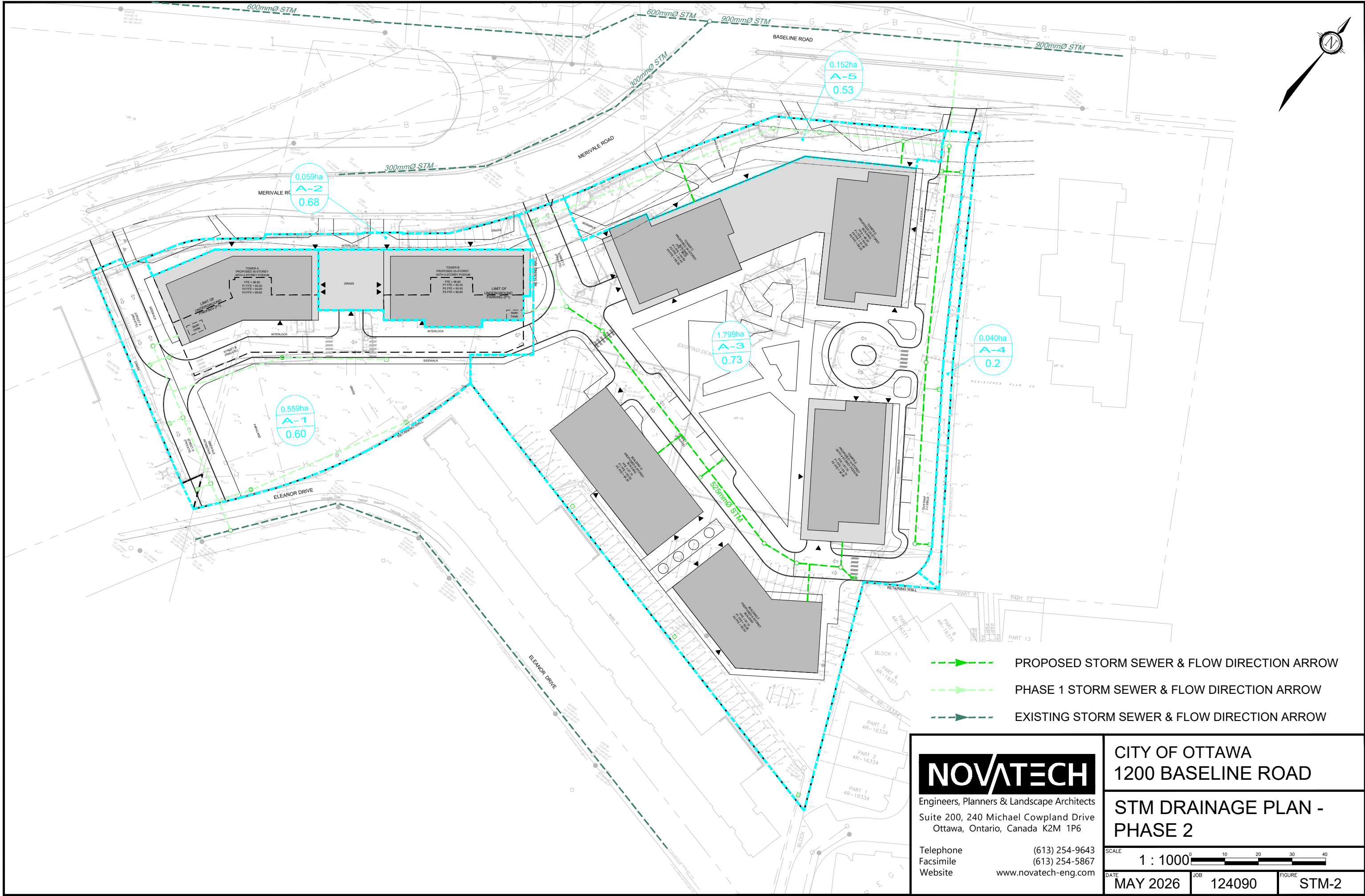
QUANTITY STORAGE REQUIREMENT - 100 YEAR

0.13 =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	0	398.62	141.84	28.6	113.24	0.00
	5	242.70	86.36	28.6	57.76	17.33
	10	178.56	63.54	28.6	34.94	20.96
	15	142.89	50.85	28.6	22.25	20.02
	20	119.95	42.68	28.6	14.08	16.90

*Allowable Flow = (79.6 - 22.4)/2 = 28.6 L/s

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CITY OF OTTAWA
1200 BASELINE ROAD

STM DRAINAGE PLAN -
PHASE 2

SCALE 1 : 1000

DATE MAY 2026 JOB 124090 FIGURE STM-2

PRE-DEVELOPMENT - PHASE 2

Pre-Development Runoff Coefficient "C"

Area	Surface	Ha	"C"	C _{avg}
Total	Hard		0.90	0.50
	Soft		0.20	

Runoff Coefficient was obtained from
 the Pre-consultation:Meeting
 Feedback

Allowable Release Rates

Outlet Options	Area (ha)	Q ₂ Year (L/s)
OUTLET	2.601	277.7

Time of Concentration	T _c =	10	min
Rainfall Intensity (2 Year Event)	I ₂ =	76.81	mm/hr
Rainfall Intensity (5 Year Event)	I ₅ =	104.19	mm/hr
Rainfall Intensity (10 Year Event)	I ₁₀ =	122.14	mm/hr
Rainfall Intensity (25 Year Event)	I ₂₅ =	144.69	mm/hr
Rainfall Intensity (50 Year Event)	I ₅₀ =	161.47	mm/hr
Rainfall Intensity (100 Year Event)	I ₁₀₀ =	178.56	mm/hr

$$100 \text{ year Intensity} = 1735.688 / (\text{Time in min} + 6.014)^{0.820}$$

$$10 \text{ year Intensity} = 1174.184 / (\text{Time in min} + 6.014)^{0.816}$$

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

$$2 \text{ year Intensity} = 732.951 / (\text{Time in min} + 6.199)^{0.810}$$

For 25 year storms add 10% to C value

For 50 year storms add 20% to C value

For 100 year storms add 25% to C value

AREA A1

Post Development Runoff Coefficient "C"

Area	Surface	Ha	"C"	C _{avg}	*C ₁₀₀
Total	Hard	0.323	0.90	0.60	0.68
0.559	Soft	0.236	0.20		

Runoff Coefficient Equation

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

$$*C = (A_{\text{hard}} \times 1.0 + A_{\text{soft}} \times 0.25) / A_{\text{Tot}}$$

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

QUANTITY STORAGE REQUIREMENT - 100 YEAR

0.56 =Area (ha)
 0.68 = 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 (m³)
100 YEAR	20	119.95	127.41	28.6	98.81	118.57
	25	103.85	110.30	28.6	81.70	122.55
	30	91.87	97.58	28.6	68.98	124.16
	35	82.58	87.71	28.6	59.11	124.14
	40	75.15	79.82	28.6	51.22	122.92

*Allowable Runoff value assumed same as phase 1 as area remained the same

AREA A2

Post Development Runoff Coefficient "C"

Area	Surface	Ha	"C"	C _{avg}	*C ₁₀₀
Total	Hard	0.040	0.90	0.68	0.76
0.059	Soft	0.019	0.20		

Runoff Coefficient Equation

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

$$*C = (A_{\text{hard}} \times 1.0 + A_{\text{soft}} \times 0.25) / A_{\text{Tot}}$$

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

Area A2 - Uncontrolled Flow

Area (ha)	Q _{100 Year} (L/s)
0.059	22.4

Time of Concentration	T _c =	10	min
Rainfall Intensity (2 Year Event)	I ₂ =	76.81	mm/hr
Rainfall Intensity (5 Year Event)	I ₅ =	104.19	mm/hr
Rainfall Intensity (10 Year Event)	I ₁₀ =	122.14	mm/hr
Rainfall Intensity (25 Year Event)	I ₂₅ =	144.69	mm/hr
Rainfall Intensity (50 Year Event)	I ₅₀ =	161.47	mm/hr
Rainfall Intensity (100 Year Event)	I ₁₀₀ =	178.56	mm/hr

$$100 \text{ year Intensity} = 1735.688 / (\text{Time in min} + 6.014)^{0.820}$$

$$10 \text{ year Intensity} = 1174.184 / (\text{Time in min} + 6.014)^{0.816}$$

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

$$2 \text{ year Intensity} = 732.951 / (\text{Time in min} + 6.199)^{0.810}$$

For 25 year storms add 10% to C value

For 50 year storms add 20% to C value

For 100 year storms add 25% to C value

AREA A4

AREA A4

Post Development Runoff Coefficient "C"

Area	Surface	Ha	"C"	C _{avg}	*C ₁₀₀
Total	Hard	0.000	0.90	0.20	0.25
0.040	Soft	0.040	0.20		

Runoff Coefficient Equation

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

$$*C = (A_{\text{hard}} \times 1.0 + A_{\text{soft}} \times 0.25) / A_{\text{Tot}}$$

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

Area A4 - Uncontrolled Flow

Area (ha)	Q _{100 Year} (L/s)
0.040	5.0

Time of Concentration	T _c =	10	min
Rainfall Intensity (2 Year Event)	I ₂ =	76.81	mm/hr
Rainfall Intensity (5 Year Event)	I ₅ =	104.19	mm/hr
Rainfall Intensity (10 Year Event)	I ₁₀ =	122.14	mm/hr
Rainfall Intensity (25 Year Event)	I ₂₅ =	144.69	mm/hr
Rainfall Intensity (50 Year Event)	I ₅₀ =	161.47	mm/hr
Rainfall Intensity (100 Year Event)	I ₁₀₀ =	178.56	mm/hr

$$100 \text{ year Intensity} = 1735.688 / (\text{Time in min} + 6.014)^{0.820}$$

$$10 \text{ year Intensity} = 1174.184 / (\text{Time in min} + 6.014)^{0.816}$$

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

$$2 \text{ year Intensity} = 732.951 / (\text{Time in min} + 6.199)^{0.810}$$

For 25 year storms add 10% to C value

For 50 year storms add 20% to C value

For 100 year storms add 25% to C value

AREA A5

AREA A5

Post Development Runoff Coefficient "C"

Area	Surface	Ha	"C"	C _{avg}	*C ₁₀₀
Total	Hard	0.071	0.90	0.53	0.60
0.152	Soft	0.081	0.20		

Runoff Coefficient Equation

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

$$*C = (A_{\text{hard}} \times 1.0 + A_{\text{soft}} \times 0.25) / A_{\text{Tot}}$$

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

Area A5 - Uncontrolled Flow

Area (ha)	Q _{100 Year} (L/s)
0.152	45.3

Time of Concentration	T _c =	10	min
Rainfall Intensity (2 Year Event)	I ₂ =	76.81	mm/hr
Rainfall Intensity (5 Year Event)	I ₅ =	104.19	mm/hr
Rainfall Intensity (10 Year Event)	I ₁₀ =	122.14	mm/hr
Rainfall Intensity (25 Year Event)	I ₂₅ =	144.69	mm/hr
Rainfall Intensity (50 Year Event)	I ₅₀ =	161.47	mm/hr
Rainfall Intensity (100 Year Event)	I ₁₀₀ =	178.56	mm/hr

$$100 \text{ year Intensity} = 1735.688 / (\text{Time in min} + 6.014)^{0.820}$$

$$10 \text{ year Intensity} = 1174.184 / (\text{Time in min} + 6.014)^{0.816}$$

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

$$2 \text{ year Intensity} = 732.951 / (\text{Time in min} + 6.199)^{0.810}$$

For 25 year storms add 10% to C value

For 50 year storms add 20% to C value

For 100 year storms add 25% to C value

AREA A3

Post Development Runoff Coefficient "C"

Area	Surface	Ha	"C"	C _{avg}	*C ₁₀₀	Runoff Coefficient Equation
Total	Hard	1.364	0.90	0.73	0.82	$C = (A_{\text{hard}} \times 0.9 + A_{\text{soft}} \times 0.2) / A_{\text{Tot}}$
1.799	Soft	0.435	0.20			$*C = (A_{\text{hard}} \times 1.0 + A_{\text{soft}} \times 0.25) / A_{\text{Tot}}$

QUANTITY STORAGE REQUIREMENT - 100 YEAR

1.80 =Area (ha)
 0.82 = 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	10	178.56	731.21	176.4	554.81	332.89
	15	142.89	585.16	176.4	408.76	367.89
	20	119.95	491.21	176.4	314.81	377.77
	25	103.85	425.26	176.4	248.86	373.29
	30	91.87	376.21	176.4	199.81	359.65

*Allowable Flow = 277.7 - 28.6-22.6-5-45.3= 176.4 L/s