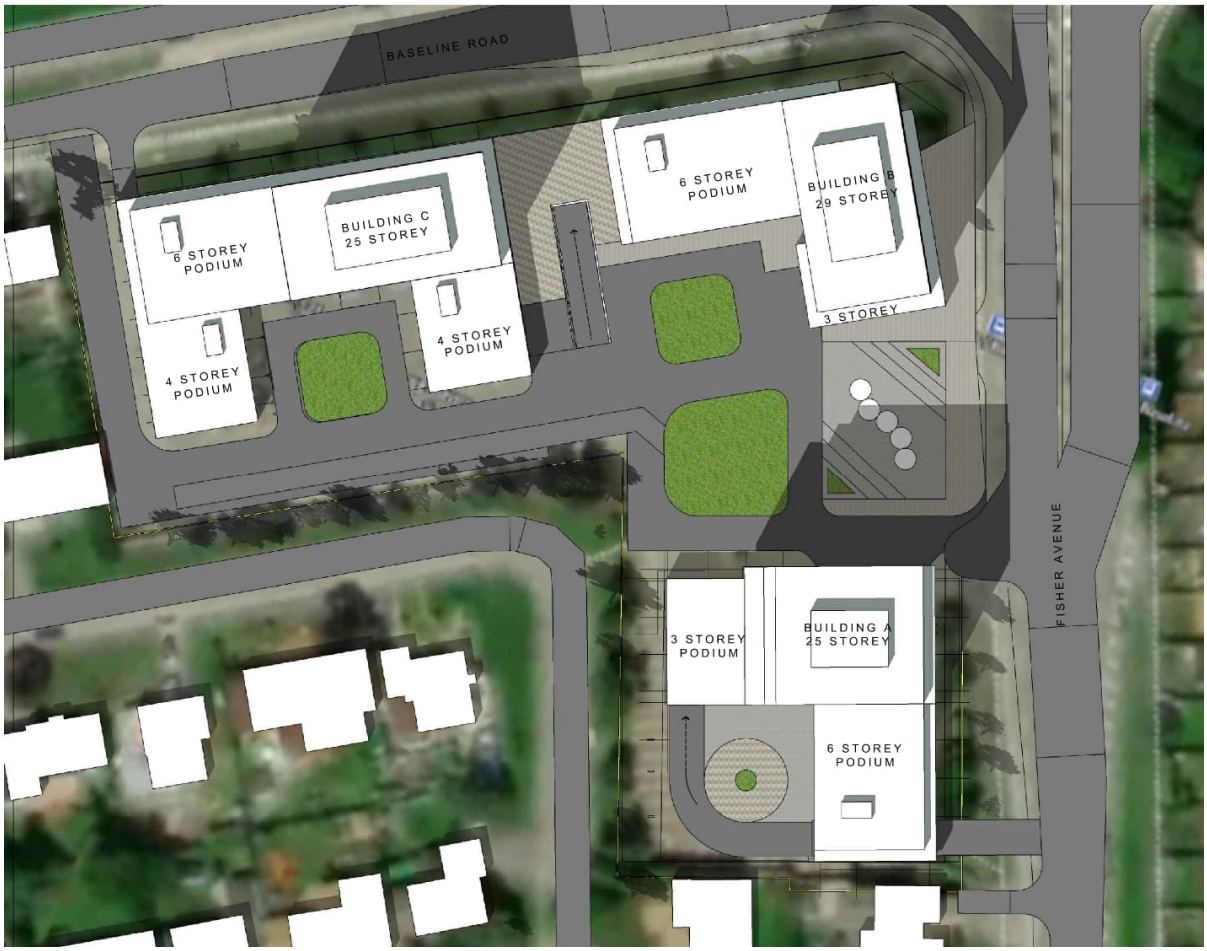
SERVICING AND STORMWATER MANAGEMENT REPORT
MIXED USE DEVELOPMENT - PHASE 1 - 780 BASELINE ROAD



Project No.: CCO-22-0952

Prepared for:

Theberge Homes
205-1600 Laperriere Ave
Ottawa, ON, K1Z 8P5

Prepared by:

McIntosh Perry Consulting Engineers Ltd.
115 Walgreen Road
Carp, ON K0A 1L0

June 9, 2023

McINTOSH PERRY

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1.0 PROJECT DESCRIPTION

1.1 Purpose

McIntosh Perry (MP) has been retained by Theberge Homes to prepare this Servicing and Stormwater Management Report in support of the Site Plan Control application for phase 1 of the proposed development located at 780 Baseline Road within the City of Ottawa.

The main purpose of this report is to present a servicing design for the development in accordance with the recommendations and guidelines provided by the City of Ottawa (City), the Rideau Valley Conservation Authority (RVCA), and the Ministry of the Environment, Conservation and Parks (MECP). This report will address the water, sanitary and storm sewer servicing for the development, ensuring that existing and available services will adequately service the proposed development.

This report should be read in conjunction with the following drawings:

- CCO-22-0952, C101 – Site Grading and Drainage Plan, and
- CCO-22-0952, C102 – Site Servicing Plan.
- CCO-22-0952, PRE – Pre-Development Drainage Area Plan (Appendix E)
- CCO-22-0952, POST – Post-Development Drainage Area Plan (Appendix F)

1.2 Site Description

The subject property, herein referred to as the site, is located at 780 Baseline Road within the Knoxdale-Merivale Ward. The site covers approximately 1.57 ha and is located at the intersection of Baseline Road and Fisher Avenue. The site is zoned for General Mixed use (GM). See Site Location Plan in Appendix 'A' for more details.

1.3 Proposed Development and Statistics

Phase 1 of the proposed development consists of a high-rise mixed-use building covering approximately 0.48 ha within the site which includes 0.13 Ha of parkland dedication. Building A contains 320 residential units and 711 m^2 of commercial space with access from Fisher Avenue. Underground parking and drive aisles will be provided throughout the site with access Fisher Avenue. Refer to Site Plan prepared by Roderick Lahey Architect Inc (RLA) and included in Appendix B for further details.

1.4 Existing Conditions and Infrastructure

The site is currently developed containing a 1-storey commercial strip mall and asphalt parking areas. The existing appears to be serviced by the 203 mm diameter watermain within Hillard Avenue. There is an existing 375 mm diameter municipal sanitary sewer that passes through the southern portion of the site, from Hillard Avenue to Fisher Avenue.

Sewer and watermain mapping collected from the City of Ottawa indicate that the following services exist across the property frontages within the adjacent municipal rights-of-way(s):

- Fisher Avenue
  - 406 mm diameter PVC watermain,
  - 375-450 mm diameter PVC sanitary sewer tributary to the Cave Creek collector,
  - 1200 mm diameter concrete storm sewer tributary to the Rideau Canal approximately 1 km downstream.

- Baseline Road
  - 406 mm diameter cast iron watermain,
  - 300 mm diameter concrete sanitary sewer tributary to the Cave Creek collector,
  - 1050 mm diameter concrete storm sewer tributary to the Rideau Canal approximately 1 km downstream.

- Hillard Avenue
  - 203 mm diameter PVC watermain,
  - 300 mm diameter PVC sanitary sewer tributary to the Cave Creek collector,
  - 450 mm diameter concrete storm sewer tributary to the Rideau Canal approximately 1.2 km downstream.

1.5 Approvals

The proposed development is subject to the City of Ottawa site plan control process. Site plan control requires the City to review, provided concurrence and approve the engineering design package. Permits to construct can be requested once the City has issued a site plan agreement.

An Environmental Compliance Approval (ECA) through the Ministry of Environment, Conservation and Parks (MECP) is not anticipated to be required for the development since the development is contained a single parcel of land, does not outlet to a combined sewershed, and does not propose industrial usage. As a result, the stormwater management system meets the exemption requirements under O.Reg 525/90.

2.0 BACKROUND STUDIES, STANDARDS, AND REFERENCES

2.1 Background Reports / Reference Information

As-built drawings of existing services, provided by the City of Ottawa Information centre, within the vicinity of the proposed site were reviewed in order to identify infrastructure available to service the contemplated development.

A topographic survey of the site was completed by Farley, Smith & Denis Surveying Ltd., dated April 27, 2022, Revised February 23, 2023 (File No.: 26-23).

An Assessment of Adequacy of Public Services Report was completed by McIntosh Perry, dated October 6th, 2022.

2.2 Applicable Guidelines and Standards

City of Ottawa:

- Ottawa Sewer Design Guidelines, City of Ottawa, SDG002, October 2012. (Ottawa Sewer Guidelines)
  - Technical Bulletin ISTB-2014-01 City of Ottawa, February 2014. (ISTB-2014-01)
  - Technical Bulletin PIEDTB-2016-01 City of Ottawa, September 2016. (PIEDTB-2016-01)
  - Technical Bulletin ISTB-2018-01 City of Ottawa, January 2018. (ISTB-2018-01)
  - Technical Bulletin ISTB-2018-03 City of Ottawa, March 2018. (ISTB-2018-03)
  - Technical Bulletin ISTB-2019-01 City of Ottawa, January 2019. (ISTB-2019-01)
  - Technical Bulletin ISTB-2019-02 City of Ottawa, February 2019. (ISTB-2019-02)
- Ottawa Design Guidelines – Water Distribution City of Ottawa, July 2010. (Ottawa Water Guidelines)
  - Technical Bulletin ISD-2010-2 City of Ottawa, December 15, 2010. (ISD-2010-2)
  - Technical Bulletin ISDTB-2014-02 City of Ottawa, May 2014. (ISDTB-2014-02)
  - Technical Bulletin ISTB-2018-02 City of Ottawa, March 2018. (ISTB-2018-02)

Ministry of Environment, Conservation and Parks:

- Stormwater Planning and Design Manual, Ministry of the Environment, March 2003. (MECP Stormwater Design Manual)
- Design Guidelines for Sewage Works, Ministry of the Environment, 2008. (MECP Sewer Design Guidelines)

Other:

- Water Supply for Public Fire Protection, Fire Underwriters Survey, 2020. (FUS Guidelines)

3.0 PRE-CONSULTATION SUMMARY

A pre-consultation email was provided by City staff on March 20, 2023, regarding the proposed site servicing. The notes from this meeting can be found in Appendix B. Specific design parameters to be incorporated within this design include the following:

- Control post-development flows to the 5-year pre-development storm with a maximum combined C value of 0.50, and calculated time of concentration.
- Flows to the storm sewer in excess of the 5-year storm release rate, up to and including the 100-year storm event, must be detained on site.
- Quality Control to an enhanced level (80% TSS removal).

4.0 WATERMAIN

4.1 Existing Watermain

The site is located within the 2W2C pressure zone, as per the Water Distribution System mapping included in Appendix C. There are three municipal fire hydrants along Fisher Avenue, one along Baseline Road, and one along Sunnycrest Drive available to service the development.

4.2 Proposed Watermain

Dual 150mm diameter PVC water services are proposed to service the development, extending from the existing 203mm PVC watermain within Hillard Avenue, complete with water valves located at the property line. In accordance with Section 4.3.1 of the Ottawa Water Guidelines, service areas with a basic day demand greater than 50 m^3/day require a dual connection to the municipal system.

The Fire Underwriters Survey 2020 (FUS) method was utilized to determine the required fire flow for the site. The 'C' factor (type of construction) for the FUS calculation was determined to be 0.8 (non-combustible type). The occupancy type of the building was determined to be limited combustible per page 24 of the FUS guidelines. The total effective floor area ('A' value) for the FUS calculation was determined to be 6,913.8 m^2. The results of the calculations yielded a required fire flow of 9,000 L/min. The detailed calculations for the FUS can be found in Appendix C.

The water demands for the proposed building have been calculated to adhere to the Ottawa Design Guidelines – Water Distribution manual and can be found in Appendix C. The results have been summarized in Table 1, below. In accordance with Section 4.3.1 of the guidelines, service areas with a basic day demand greater than 50 m^3/day require a dual connection to the municipal system. The basic day demand for the development is estimated to be 157 m^3/day, therefore a dual connection is required.

Table 1: Water Supply Design Criteria and Water Demands

Phase 1 Site Area	0.48 ha
Bachelor/1 Bedroom	1.4 L/person/unit
2 Bedroom	2.1 L/person/unit
3 Bedroom	3.1 L/person/unit
Residential Daily Demand	280 L/person/day
Maximum Daily Peaking Factor	2.5 x avg day
Maximum Hour Peaking Factor	2.2 x max day
Commercial	28,000 L/ha/day
Average Day Demand (L/s)	1.82
Maximum Daily Demand (L/s)	4.52
Peak Hourly Demand (L/s)	8.12
FUS Fire Flow Requirement (L/s)	150.00 (9,000 L/min)

Boundary Conditions have been requested from the City however were not available at the time of submission. Once boundary conditions are provided by the City, operating pressures at the proposed connections will be analysed to confirm they adhere to the Ottawa Water Guidelines.

To confirm the adequacy of fire flow to protect the proposed development, public fire hydrants within 150 m of the proposed building were analysed per City of Ottawa ISTB 2018-02 Appendix I Table 1. Based on City guidelines (ISTB-2018-02), the existing hydrants can provide adequate fire protection to the proposed development. The results are summarized in Table 2, below.

Table 2: Fire Protection Confirmation

Building	Fire Flow Demand (L/min.)	Fire Hydrant(s) within 75m*	Fire Hydrant(s) within 150m*	Combined Fire Flow (L/min.)
780 Baseline – Building A	9,000 (FUS)	3	2	24,700

* Fire hydrants within 75 metres contribute 5,700 L/min to fire flow and fire hydrants within 150 meters contribute 3,800 L/min to fire flow, respectively, per ISTB-2018-02.

5.0 SANITARY DESIGN

5.1 Existing Sanitary Sewer

There is an existing 300 mm diameter sanitary sewer within Baseline Road, an existing 450 mm diameter sanitary sewer within Fisher Avenue, and an existing 300 mm diameter sanitary sewer within Sunnycrest Drive/Hillard Avenue fronting the site. The subject site currently contributes wastewater to the Cave Creek trunk sewer.

In addition, there is an existing 375 mm diameter municipal sanitary sewer that crosses through site, from Hillard Avenue to Fisher Avenue.

5.2 Sanitary Sewer Realignment

The existing 375mm diameter AC sanitary crossing through the site and the two 300mm diameter PVC sanitary sewers directly upstream of the 375mm sewer need to be relocated to allow for the construction of the Phase I building.

5.2.1 Pipe Capacity

Based on as built drawings (Contract No. ISB05-2058, DWG No. 2058-03), the existing capacity of the existing 375mm crossing through the site with a 1.57-3.00% slope is 229 L/s. The capacity of the existing 300mm diameter sewer from MHSA 46203 to MHSA46205 at 0.52% is 73 L/s. The existing capacity of the 300mm sewer from MHSA46208 to MHSA46205 at 0.52%-0.57% is 76 L/s. The existing capacity of the 450mm sewer within Fisher Avenue from MHSA50442 to MHSA50433 is 126 L/s.

As show in drawing C102 the existing 375mm sewer within the site is proposed to be realigned with a 375mm diameter sewer at 0.32%. The existing 300mm diameter sewer from MHSA46208 to MHSA46205 is proposed to be realigned with a 375mm diameter sewer at 0.57%. The existing 300mm diameter sewer from MHSA46203 to MHSA46205 is proposed to be realigned with a 300mm diameter sewer at 0.52%.

As demonstrated in the Sanitary Sewer Design Sheet in Appendix D, the capacity of the existing legs of the realigned sanitary sewers within Hillard Avenue match or improve on the capacity of the respective existing sewers. The realigned 375mm sewer within the site has a capacity of 103 L/s. Due to the complexity of the downstream network, the City will need to advise of any downstream constraints.

5.3 Proposed Sanitary Sewer

A new 200 mm diameter gravity sanitary service is proposed be connected to the re-aligned 375mm diameter sanitary sewer within the site. An internal wastewater sampling chamber is proposed to provide monitoring for site sanitary flows per the Ottawa Sewer Design Guidelines and City of Ottawa Sewer-Use By-Law 2003-514 (14).

The peak design flows for the proposed building were calculated using criteria from the Ottawa Sewer Guidelines and are summarized in Table 3, below. Based on the unit occupancy statistics provided by the architect, the proposed site development will generate a flow of 6.21 L/s. See Appendix D of this report for more details.

Table 3: Sanitary Design Criteria

Design Parameter	Value
Site Area	0.48 ha
Residential	280 L/person/day
Commercial/Amenity	2,800 L/(m^2/day)
1 Bedroom Apartment	1.4 persons/unit
2 Bedroom Apartment	2.1 persons/unit
3 Bedroom Apartment	3.1 persons/unit
Bachelor Apartment	1.4 persons/unit
Residential Peaking Factor	3.31
Extraneous Flow Allowance	0.33 L/s/ha

The full flowing capacity of a 200 mm diameter service at a 1% slope is estimated to be 32.8 L/s. Therefore, a 200 mm diameter service would be sufficiently sized to accommodate the contemplated development.

A sanitary flow of 5.41 L/s for Building A was submitted to City staff for a review of the municipal system. It was indicated that there were no concerns with the additional flows. The estimated demand for Building A has increased to 6.21 L/s based on the latest site statistics provided by the architect. Due to the complexity of the downstream network, the City will need to advise of any downstream constraints. Refer to correspondence included in Appendix D for reference.

6.0 STORM SEWER DESIGN

6.1 Existing Storm Sewers

Stormwater runoff from the site is currently tributary to the Rideau River within the Ottawa River West sub-watershed. The site is currently serviced by series of existing catch basins.

There is an existing 450 mm diameter storm sewer within Hillard Avenue and an existing 1200 mm diameter storm sewer within Fisher Avenue available to service the site. The existing sewers are tributary to the Rideau River approximately 1.0-1.2 km downstream.

6.2 Proposed Storm Sewers

A new 250mm PVC storm service will be extended from the existing 450mm diameter storm sewer within Hillard Avenue. The sewer system will provide attenuation for the roof area and drive aisle/entrance area by an internal cistern complete with a Tempest LMF ICD or an approved equivalent. A cistern detail is to be provided by the Mechanical Engineer under separate cover.

Foundation drainage is proposed to be conveyed without flow attenuation via the 250mm diameter storm service downstream of any cistern controls.

0.13 ha of the site is proposed to be conveyed to the City as parkland. A new catchbasin is proposed to provide drainage for the parkland site via a 250mm storm lead extending to the existing 450mm diameter storm sewer within Hillard Avenue.

Two new catch basins are proposed to collect drainage north of the Phase I development. The existing drainage is currently collected by catch basins that are to be removed in order to construct Building A. The proposed catch basins will convey runoff to the existing site storm system.

See CCO-22-0952 - POST include in Appendix F of this report for more details. The Stormwater Management design for the subject property will be outlined in Section 7.0 of this report.

7.0 PROPOSED STORMWATER MANAGEMENT

7.1 Design Criteria and Methodology

Stormwater management for the proposed site will be maintained using an internal cistern and will collect runoff from the at-grade areas within the site. The flow will be directed to the existing 450mm diameter storm sewer within Hillard Avenue.

In summary, the following design criteria have been employed in developing the stormwater management design for the site as directed by the RVCA and City:

Quality Control

- 80% TSS removal is required for the site.

Quantity Control

- Any storm events greater than 5-year, up to 100-year, and including 100-year storm event must be detained on site.
- Post-development to be restricted to the 5-year storm event, based on a calculated time of concentration greater than 10 minutes and a rational method coefficient of 0.50. Refer to Section 7.2 for further details.

7.2 Runoff Calculations

Runoff calculations presented in this report are derived using the Rational Method, given as:

$$Q = 2.78CIA \quad \text{(L/s)}$$

Where: C = Runoff coefficient
I = Rainfall intensity in mm/hr (City of Ottawa IDF curves)
A = Drainage area in hectares

It is recognized that the Rational Method tends to overestimate runoff rates. As a result, the conservative calculation of runoff ensures that any SWM facility sized using this method is expected to function as intended. The following coefficients were used to develop an average C for each area:

Roofs/Concrete/Asphalt	0.90
Undeveloped and Grass	0.20

As per the City of Ottawa - Sewer Design Guidelines, the 5-year balanced 'C' value must be increased by 25% for a 100-year storm event to a maximum of 1.0.

7.3 Pre-Development Drainage

The site currently contains a catch basin system within the parking lot. It has been assumed that the existing development contained no stormwater management controls for flow attenuation. The estimated pre-development peak flows for the 5- and 100-year events are summarized below in Table 5. See CCO-22-0952 - PRE in Appendix G for calculations.

Table 4: Pre-Development Runoff Summary

Drainage Area	Area (ha)	Q (L/s)	
		5-Year	100-Year
A1	*0.34	83.88	160.04

* Phase I Site Area Less Parkland Dedication

7.4 Post-Development Drainage

The proposed site drainage limits are demonstrated on the Post-Development Drainage Area Plan. See CCO-22-0952 - POST in Appendix F of this report for more details. Based on the quantity control criteria discussed in Section 7.1 and a site area of 0.34 ha, post development drainage from the site is to be limited to a maximum release rate of 49.17 L/S. A summary of the Post-Development Runoff Calculations can be found below.

Table 5: Post-Development Runoff Summary

Drainage Area	Area (ha)	5-year Peak Flow (L/s)	100-year Peak Flow (L/s)	100-year Storage Required (m^3)	100-year Storage Available (m^3)
B1	0.25	3.21	6.14	110.00	110.00
B2	0.09	22.60	43.03	-	-
Total	0.34	25.81	49.17	110.00	110.00

Runoff for area B1 will be collected by roof drains (uncontrolled) and surface drains and conveyed to the internal cistern. The 110 m^3 internal cistern is anticipated to convey stormwater to the outlet at a maximum flow rate of 25.81 L/s and 49.17 L/s for the 5 and 100-year storms, respectively. Flows in excess of the 100-year storm event will need to be directed to Hillard Avenue via a cistern overflow. The cistern details are to be provided by the Mechanical Engineer, however, it is anticipated that the cistern will equipped with Tempest LMF ICD for attenuation.

Foundation drainage is proposed to be conveyed without flow attenuation via the 250 mm storm service, downstream of cistern controls.

7.5 Quality Control

Quality control for Area B1 will be provided via the cistern in a settling pit. Cistern details are to be confirmed the Mechanical Engineer. Pumped water will combine with clean roof drainage before discharging to the city sewer.

8.0 EROSION AND SEDIMENT CONTROL

8.1 Temporary Measures

Before construction begins, temporary silt fence, straw bale or rock flow check dams will be installed at all natural runoff outlets from the property. It is crucial that these controls be maintained throughout construction and inspection of sediment and erosion control will be facilitated by the Contractor or Contract Administration staff throughout the construction period.

Silt fences will be installed where shown on the final engineering plans, specifically along the downstream property limits. The Contractor, at their discretion or at the instruction of the City, Conservation Authority or the Contract Administrator shall increase the quantity of sediment and erosion controls on-site to ensure that the site is operating as intended and no additional sediment finds its way off site. The rock flow, straw bale & silt fence check dams and barriers shall be inspected weekly and after rainfall events. Care shall be taken to properly remove sediment from the fences and check dams as required. Fibre roll barriers are to be installed at all existing curb inlet catchbasins and filter fabric is to be placed under the grates of all existing catchbasins and manholes along the frontage of the site and any new structures immediately upon installation. The measures for the existing/proposed structures is to be removed only after all areas have been paved. Care shall be taken at the removal stage to ensure that any silt that has accumulated is properly handled and disposed of. Removal of silt fences without prior removal of the sediments shall not be permitted.

Although not anticipated, work through winter months shall be closely monitored for erosion along sloped areas. Should erosion be noted, the Contractor shall be alerted and shall take all necessary steps to rectify the situation. Should the Contractor's efforts fail at remediating the eroded areas, the Contractor shall contact the City and/or Conservation Authority to review the site conditions and determine the appropriate course of action. As the ground begins to thaw, the Contractor shall place silt fencing at all required locations as soon as ground conditions warrant. Please see the Site Grading, Drainage and Sediment & Erosion Control Plan for additional details regarding the temporary measures to be installed and their appropriate OPSD references.

8.2 Permanent Measures

Rip-rap will be placed at all locations that have the potential for concentrated flow. It is crucial that the Contractor ensure that the geotextile is keyed in properly to ensure runoff does not undermine the rip rapped area. Additional rip rap is to be placed at erosion prone locations as identified by the Contractor / Contract Administrator / City or Conservation Authority.

It is expected that the Contractor will promptly ensure that all disturbed areas receive topsoil and seed/sod and that grass be established as soon as possible. Any areas of excess fill shall be removed or levelled as soon as possible and must be located a sufficient distance from any watercourse to ensure that no sediment is washed out into the watercourse. As the vegetation growth within the

site provides a key component to the control of sediment for the site, it must be properly maintained once established. Once the construction is complete, it will be up to the landowner to maintain the vegetation and ensure that the vegetation is not overgrown or impeded by foreign objects.

9.0 SUMMARY

- Phase 1 proposed development consists of a high-rise mixed-use building at 780 Baseline Road.
- Two 150mm diameter water services are proposed to be connected to the existing 203mm diameter within Hillard Avenue.
- The existing sanitary sewer passing through the site is proposed to be re-aligned.
- A new 200 mm diameter sanitary service is proposed, complete with an internal monitoring, to service the development via the realigned sanitary sewer within the site.
- A new 250mm storm service for rooftop, surface, and foundation drainage is proposed to service the development. The storm service will connect to the 450mm diameter storm sewer within Hillard Avenue, tributary to the Rideau River approximately 1.0-1.2 km downstream.
- Storage for the 5- through 100-year storm events will be provided through internal cistern attenuation.
- Quality control will be provided for the development via a settling pit within the cistern.

10.0 RECOMMENDATION

Based on the information presented in this report, we recommend that City of Ottawa approve this Assessment of Adequacy of Public Services report in support of the Site Plan Control application for the proposed development at 780 Baseline Road.

This report is respectfully being submitted for approval.

Regards,

McIntosh Perry Consulting Engineers Ltd.

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11.0 STATEMENT OF LIMITATIONS

This report was produced for the exclusive use of Theberge Homes. The purpose of the report is to assess the existing stormwater management system and provide recommendations and designs for the post-construction scenario that are in compliance with the guidelines and standards from the Ministry of the Environment, Parks and Climate Change, City of Ottawa and local approval agencies. McIntosh Perry reviewed the site information and background documents listed in Section 2.0 of this report. While the previous data was reviewed by McIntosh Perry and site visits were performed, no field verification/measures of any information were conducted.

Any use of this review by a third party, or any reliance on decisions made based on it, without a reliance report is the responsibility of such third parties. McIntosh Perry accepts no responsibility for damages, if any, suffered by any third party as a result of decisions or actions made based on this review.

The findings, conclusions and/or recommendations of this report are only valid as of the date of this report. No assurance is made regarding any changes in conditions subsequent to this date. If additional information is discovered or becomes available at a future date, McIntosh Perry should be requested to re-evaluate the conclusions presented in this report, and provide amendments, if required.

APPENDIX A
KEY PLAN

McINTOSH PERRY

800 400 0 800

Scale 1:25,000 Metres

LEGEND

- Site Location
- Local Road
- Major Road
- Railroad
- Watercourse
- Waterbody
- Wooded Area

REFERENCE

GIS data provided by the Ontario Ministry of Northern Development, Mines, Natural Resources and Forestry, 2022.

CLIENT: THEBERGE HOMES

PROJECT: 780 BASELINE ROAD, OTTAWA

TITLE: SITE LOCATION

McINTOSH PERRY
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www.mcintoshperry.com

PROJECT NO: CCO-22-0952	FIGURE: 1
Date	Apr., 10, 2022
GIS	SK
Checked By	AG

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APPENDIX B
BACKGROUND DOCUMENTS

McINTOSH PERRY

From: Livingstone, Kelly <kelly.livingstone@ottawa.ca>
Sent: Monday, March 20, 2023 9:11 AM
To: Scott Alain <alain@fotenn.com>
Cc: Joey Theberge <joeytheberge@thebergehomes.com>; Miguel Tremblay <tremblay@fotenn.com>; Jeremy Silburt <jeremy@thebergehomes.com>; Hamlin, Allison <Allison.Hamlin@ottawa.ca>; Candow, Julie <julie.candow@ottawa.ca>; Paudel, Neeti <neeti.paudel@ottawa.ca>; Hassan, Selma <Selma.Hassan@ottawa.ca>; Cerveny, Louise <Louise.Cerveny@ottawa.ca>; Juarez, Luis <luis.juarez@ottawa.ca>
Subject: 780 Baseline - Site Plan Control - Submission Requirements

Hello all,

Please see attached for Site Plan submission requirements for the 780 Baseline Avenue - Tower A proposal along Fisher, with retention of the existing commercial Plaza. No formal pre-consultation meeting was held due to the significant conversation we've already been having on the related Zoning By-law Amendment.

In addition to the Required Plans, two comments expressed by staff are provided herein:

- A public sanitary sewer and easement is located on the property; the continued functioning of the sanitary sewer must be demonstrated at the Site Plan Control stage if it is proposed to be re-located.
- Please also see attached the Terms of Reference for the Design Brief submission. A new Design Brief is required for the Site Plan submission. Please note a Planning Rationale is not required, and so all the information must be contained in the design brief.

Thank you,

Ryan Robineau

From:	Candow, Julie <julie.candow@ottawa.ca>
Sent:	May 15, 2023 11:58 AM
To:	Ryan Robineau
Cc:	Curtis Melanson; Livingstone, Kelly
Subject:	Pre-consultation Notes for SPA - 780 Baseline Road

Hi Ryan,

Please see below, let me know if you have any questions. I have included the standard water boundary condition request comment below but acknowledge that you have already submitted your request.

1. Watermain Infrastructure:
   a) Individual residential facilities with a basic day demand greater than 50 m3/day shall be connected with a minimum of two water services, separated by an isolation valve, to avoid the creation of a vulnerable service area (as per Tech Bulletin 2021-03).
   b) Please submit a boundary condition request for this application:

      Water Boundary condition requests must include the location of the services and the expected loads required by the proposed development. Please provide an email to Julie Candow (Julie.candow@ottawa.ca) with the following information:

      i. Location of services
      ii. Type of development and the amount of fire flow required (as per OBC Section 7.2.11 or FUS for fire flows 9,000 L/min or above – See technical bulletin ISTB 2021-03).
      iii. Average daily demand: ___ l/s.
      iv. Maximum daily demand: ___l/s.
      v. Maximum hourly daily demand: ___ l/s.
2. Sanitary / Storm Infrastructure:
   a) A public sanitary sewer and easement is located on the property; the continued functioning of the sanitary sewer must be demonstrated at the Site Plan Control stage if it is proposed to be re-located.
   b) Municipal storm and sanitary infrastructure is available on Fisher Avenue. Asset Management has no preliminary concerns with the sanitary release rate anticipated from this site (Tower A).
   c) New services must be grouped in a common trench to minimize the number of road cuts.
3. The Stormwater Management Criteria, for the subject site, is to be based on the following:
   a) Meet an allowable release rate based on the pre-development Rational Method Coefficient or a maximum of 0.50, employing the City of Ottawa IDF parameters for a 5-year storm with a calculated time of concentration equal to or greater than 10 minutes;
   b) Attenuate all storms up to and including the City of Ottawa 100-year storm event on site.

c) Quality control to be provided to “Enhanced” level of treatment (80% TSS removal).

4. An MECP Environmental Compliance Approval is not anticipated to be required for this application assuming the proposed development meets the following criteria:

   a) Is designed to service one lot or parcel of land;
   b) Discharges into a storm sewer that is not a combined sewer;
   c) Does not service industrial land or a structure located on industrial land; and
   d) Is not located on industrial land. O.Reg. 525/98, s. 3; O.Reg. 40/15, s. 4.

5. Phase 1 ESAs and Phase 2 ESAs must conform to Ontario Regulation 153/04.

Julie Candow, P.Eng
Project Manager
Planning, Real Estate and Economic Development Department - West Branch
City of Ottawa
110 Laurier Avenue West Ottawa, ON
613.580.2424 ext. 13850

Please take note that due to the current COVID situation, I am working remotely and phone communication may not be reliable at this time. The best way to reach me is by email.

From: Ryan Robineau <r.robineau@mcintoshperry.com>
Sent: May 12, 2023 2:15 PM
To: Candow, Julie <julie.candow@ottawa.ca>
Cc: Curtis Melanson <c.melanson@mcintoshperry.com>
Subject: RE: 780 Baseline Boundary Condition Request

Thank you for the update Julie!

As noted in the attached pdf, no formal pre-consultation meeting was held for the 780 Baseline Tower A - Site Plan Control submission. Would you be able to provide a list of engineering requirements for the Tower A proposal?

Regards,

Ryan Robineau, EIT
Civil Engineering Technologist
T. 613.714.6611
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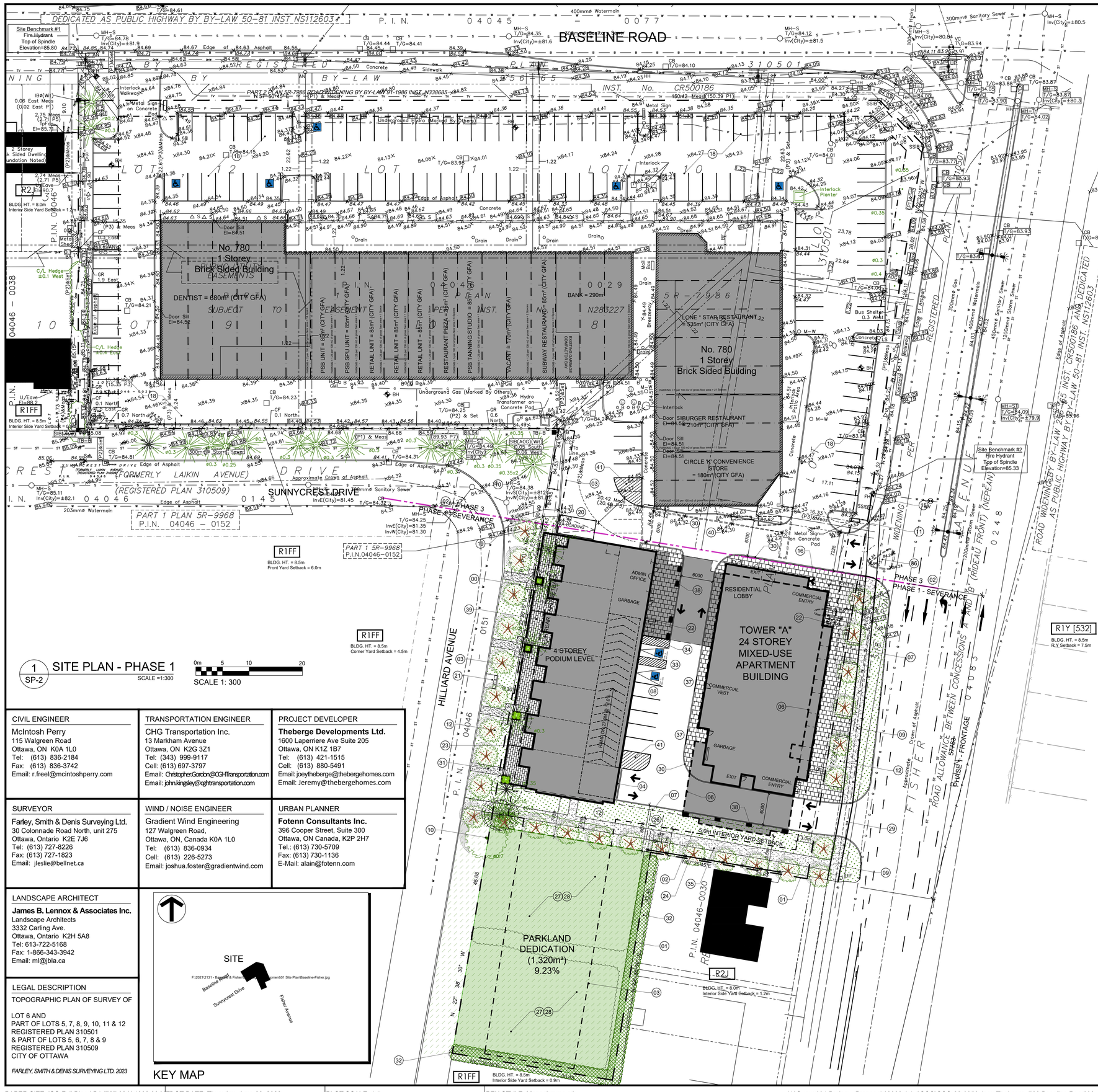

PROJECT INFORMATION

Zoning By-law 2008-250 Consolidation GM R1FF SITE AREA 1.57 ha. 15,688.6 sq. m. 168,870 sq. ft.

ZONING		REQUIRED	PROVIDED
BUILDING HEIGHT	BUILDING 'A'	18.0m	24 STOREY'S / 78.0m
ALLOWABLE PROJECTION - AMENITY LEVEL		0.0m	4.0m
DENSITY - MAXIMUM FLOOR SPACE INDEX		2.0 = 28,588.8 sq. m	4.6 = 64,056.5 sq. m
TOWER SEPARATION		23.0m	60.0m
TOWER FOOTPRINT		750 sq. m	930 sq. m
FRONT YARD SETBACK		3.0m	3.0m
INTERIOR SIDE YARD SETBACK		5.0m	6.5m
REAR YARD SETBACK		3.0m	3.0m
MINIMUM WIDTH OF LANDSCAPE AREA	(ABUTTING A STREET OR RESIDENTIAL ZONE)	3.0m	6.5m
MINIMUM WIDTH OF LANDSCAPE BUFFER @ PARKING LOT		3.0m	8.6m
TOTAL RESIDENTIAL UNIT COUNT		-	320
PARKING - RESIDENTIAL (AFTER 12 UNITS PER BLDG.) - 0.5 PER UNIT		154	328
PARKING - VISITOR ONLY (AFTER 12 UNITS PER BLDG.) - 0.1 PER UNIT		30	30
PARKING - COMM. MEDICAL (UNDER 500m² GFA NOT REQUIRED) - 2 PER 100m² GFA		–	5
PARKING - COMM. OFFICE - 1 PER 100m² GFA		2	4
BICYCLE PARKING - RESIDENTIAL - 0.5 PER UNIT		160	320
BICYCLE PARKING - COMMERCIAL - 1 PER 250m² GFA		3	8
AISLE & DRIVEWAY MINIMUM / MAXIMUM WIDTH		6.0m / 6.7m	6.0m
AMENITY AREA - TOTAL PER UNIT - 6.0m²		1,920.0m²	2,770.0m²
AMENITY AREA - 50% COMMUNAL PER UNIT - 3.0m²		960.0m²	1,320.0m²

SITE STATISTICS

GROSS BUILDING - AREA
(CITY OF OTTAWA'S DEFINITION)

EXISTING PLAZA - BASELINE (ESTIMATE 60% EFFICIENCY)	1,807.9 sq. m.	19,460 sq. ft.
EXISTING PLAZA - FISHER (ESTIMATE 60% EFFICIENCY)	925.3 sq. m.	9,960 sq. ft.
PROPOSED TOWER 'A'	20,136.9 sq. m.	216,752 sq. ft.
TOTAL AREA	22,870.0 sq. m.	246,172 sq. ft.

PARKING SPACE PROVIDED

COMMERCIAL RESTAURANT	- 5 PER 100m² GFA	200m²	46
COMMERCIAL MEDICAL	- 2 PER 100m² GFA	200m²	14
COMMERCIAL BANK	- 1.25 PER 100m² GFA	700m²	4
COMMERCIAL RETAIL	- 1.25 PER 100m² GFA	700m²	5
COMMERCIAL P.S.B.	- 1.25 PER 100m² GFA	1,300m²	5
TOTAL (EXISTING PLAZA)			138
PROPOSED TOWER 'A'			370

BICYCLE SPACE PROVIDED

EXISTING PLAZA - BASELINE	6
EXISTING PLAZA - FISHER	2
PROPOSED TOWER 'A'	328
TOTAL	336

LOT COVERAGE

EXISTING PLAZA - BASELINE	2,260.3m²	14.4%
EXISTING PLAZA - FISHER	1,156.7m²	7.4%
PROPOSED TOWER 'A'	1,721.7m²	11.0%
PAVED SURFACE	5,634.1m²	35.9%
LANDSCAPE OPEN SPACE	4,915.8m²	31.3%
TOTAL	15,688.6m²	100.0%

DRAWING NOTES

1. PROPERTY LINE
2. PHASE LINE
3. BUILDING SETBACK LINES
4. INTERNAL RAMP TO U/G GARAGE WITH TRENCH DRAIN
5. EXISTING FIRE HYDRANT
6. OUTLINE OF TOWER ABOVE
7. OUTLINE OF PHASE 1 PARKING GARAGE
8. SURFACE PARKING SPACE 2.6 X 5.2 M
9. 2.0m WIDE CITY SIDEWALK
10. EXISTING TREE TO REMAIN, PROTECT AS REQUIRED
11. EXISTING STREET CURB AND SIDEWALK
12. SOFT LANDSCAPING, SEE LANDSCAPE PLAN
13. BELOW GRADE CISTERN IN PARKING GARAGE
14. 1.2 X 1.8 CONCRETE PAD FOR GAS EQUIPMENT (GAS BLOW OFF)
15. HYDRO VAULT LOCATION IN PARKING GARAGE
16. SIAMESE CONNECTION
17. PROPOSED UTILITIES, SEE CIVIL
18. EXISTING COMMERCIAL PLAZA / PARKING TO REMAIN
19. EXISTING PEDESTRIAN WALKWAY
20. INTERIM LOADING BAY
21. EXISTING UTILITY EQUIPMENT / KIOSK
22. BICYCLE RACK, SEE LANDSCAPING
23. PRIVACY SCREEN
24. 2.1m HT. SOLID WOOD PRIVACY FENCE
25. METAL GRATE - AIR SHAFT
26. TEMPORARY SNOW STORAGE
27. PARKLAND AREA / INTERIM CONSTRUCTION STAGING AREA WITH CONSTRUCTION FENCING
28. EXISTING RESIDENTIAL HOUSE / LOT TO BE CLEARED
29. DEPRESSED CURB WITH 2.0m WIDE CONTINUOUS SIDEWALK TO CITY STANDARDS, SEE CIVIL
30. 150mm HT CONCRETE BARRIER CURB
31. 1.5m WIDE PRIVATE WALK
32. EXISTING CEDAR HEDGE TO REMAIN
33. ACCESSIBLE PARKING SPACES
34. DEPRESSED CURB WITH 1.5m WIDE ACCESSIBLE AISLE
35. 2.0m WIDE CONCRETE WALK
36. EXISTING ISLAND TO BE REMOVED
37. DEPRESSED CURB
38. STRUCTURAL SUPPORT FOR BUILDING ABOVE
39. PRIVATE TERRACES FOR TOWNHOUSE STYLE UNITS
40. RE- ALINE EXISTING CURB AND DRIVEWAY
41. PAINTED ISLAND

BUILDING STATISTICS - PHASE 1

GROSS BUILDING - AREA
(CITY OF OTTAWA'S DEFINITION)

PARKING LEVEL			0.0 sq. m. 000 sq. ft.
GROUND FLOOR	474.6 + 455.8 sq. m. 5,109 + 4,908 sq. ft.		930.6 sq. m. 10,017 sq. ft.
2nd FLOOR			1,691.2 sq. m. 18,204 sq. ft.
3rd FLOOR			1,692.0 sq. m. 18,212 sq. ft.
4th FLOOR			1,687.7 sq. m. 18,166 sq. ft.
5th FLOOR			393.1 sq. m. 4,231 sq. ft.
6th - 20th FLOOR - TOWER	15 x 743.2 sq. m. 15 x 8,000 sq. ft.		1,604.8 sq. m. 120,000 sq. ft.
21st & 22nd FLOOR	2 x 667.8 sq. m. 2 x 7,188 sq. ft.		1,335.6 sq. m. 14,376 sq. ft.
23rd & 24th FLOOR	2 x 629.2 sq. m. 2 x 6,773 sq. ft.		1,258.5 sq. m. 13,546 sq. ft.
AMENITY / MECHANICAL PENTHOUSE			0.0 sq. m. 000 sq. ft.
TOTAL AREA			20,136.9 sq. m. 216,752 sq. ft.
TOWER FOOTPRINT AREA			926.2 sq. m. 9,969 sq. ft.

UNIT STATISTICS

STUDIO UNIT	5.3%	17
1 BEDROOM UNIT	50.9%	163
2 BEDROOM UNIT	41.6%	133
3 BEDROOM	2.2%	7
TOTAL		320
COMMERCIAL MEDICAL / OFFICE		710.7 sq. m. 7,650 sq. ft.

CAR PARKING
AREA 'X' on SCHEDULE 1A

MINIMUM REQUIRED

RESIDENCE (AFTER 12 UNITS)	- 0.5 PER DWELLING UNIT	154
VISITOR (AFTER 12 UNITS)	- 0.1 PER DWELLING UNIT	30
COMM. MEDICAL FACILITY	- 2 PER 100m² of GFA	9
COMM. OFFICE (ABOVE THE FIRST FLOOR)	- 1 PER 100m² of GFA	2
TOTAL		186

MAXIMUM REQUIRED

RESIDENCE	- 1.75 PER DWELLING UNIT	560
COMM. MEDICAL FACILITY	- 5 PER 100m² of GFA	24
COMM. OFFICE (ABOVE THE FIRST FLOOR)	- 2 PER 100m² of GFA	7
TOTAL		591

PROVIDED

RESIDENCE	- 1.0 PER UNIT	328
VISITOR	- 0.1 PER UNIT (MAX. 30)	30
COMM. MEDICAL FACILITY (GROUND FLOOR)	- 2 PER 100m² of GFA	9
COMM. OFFICE (ABOVE THE FIRST FLOOR)	- 1 PER 100m² of GFA	3
TOTAL		370
EXTERIOR		9
PARKING GARAGE		361

BICYCLE PARKING

REQUIRED

RESIDENCE	- 0.5 PER UNIT (320 UNITS)	160
COMM. MEDICAL	- 1.0 PER 250m² OF G.F.A.	2
COMM. OFFICE	- 1.0 PER 250m² OF G.F.A.	1
TOTAL		163

PROVIDED

EXTERIOR	8
PARKING GARAGE	320
TOTAL	328

AMENITY SPACE

EXTERIOR AT GRADE - PRIVATE =	150.0 sq. m.
EXTERIOR AT GRADE - COMMUNAL =	400.0 sq. m.
5th FLOOR INTERIOR COMMUNAL =	370.0 sq. m.
5th FLOOR COMMUNAL TERRACE =	320.0 sq. m.
ROOF TOP COMMUNAL TERRACE =	100.0 sq. m.
ROOF TOP AMENITY ROOM =	130.0 sq. m.
PRIVATE TERRACE =	100.0 sq. m.
PRIVATE BALCONIES =	1,200.0 sq. m.
TOTAL =	2,770.0 sq. m.
TOTAL COMMUNAL =	1,320.0 sq. m.
REQUIRED - 6.0M² PER UNIT (320) =	1,920.0 sq. m.
REQUIRED COMMUNAL @ 50% =	960.0 sq. m.

REFUSE REQUIREMENT (320 UNITS)

GARBAGE	- 0.11 PER UNIT	36 YARDS
RECYCLING GMP	- 0.018 PER UNIT	6 YARDS
RECYCLING FIBER	- 0.038 PER UNIT	12 YARDS
COMPOST	- 240L PER 50 UNITS	7

IT IS THE RESPONSIBILITY OF THE APPROPRIATE CONTRACTOR TO CHECK AND VERIFY ALL DIMENSIONS ON SITE AND TO REPORT ALL ERRORS AND/OR OMISSIONS TO THE ARCHITECT.

ALL CONTRACTORS MUST COMPLY WITH ALL PERTINENT CODES AND BY-LAWS.

THIS DRAWING MAY NOT BE USED FOR CONSTRUCTION UNTIL SIGNED BY THE ARCHITECT.

DO NOT SCALE DRAWINGS.

NOTATION SYMBOLS:

- (00) INDICATES DRAWING NOTES, LISTED ON EACH SHEET.
- (00) INDICATES ASSEMBLIE TYPE; REFER TO TYPICAL ASSEMBLIES SCHEDUAL.
- (000) INDICATES WINDOW TYPE; REFER TO WINDOW ELEVATIONS AND DETAILS ON A900 SERIES.
- INDICATES DOOR TYPE; REFER TO DOOR SCHEDULE AND DETAILS ON A900 SERIES.
- 00 DETAIL NUMBER
- 00 TITLE
- A900/0000 SCALE
- DETAIL REFERENCE PAGE
- DETAIL CROSS REFERENCE PAGE

No.	DESCRIPTION	DATE
6		
5		
4		
3		
2	ISSUED FOR SPC APPLICATION	June 09, 23
1	ISSUED FOR OWNER / CONSULTANT REVIEW	Apr. 13, 23

REVISIONS:

ARCHITECT SEAL:

NORTH ARROW:

SEAL DATE: STAMP DATE

CLIENT:

Theberge Developments Ltd.

ARCHITECT:

F:\000_RLA Standards 2010\RLA LOGO (Beech Street).jpg

PROJECT TITLE:

780 Baseline Road

OTTAWA ONTARIO

SHEET TITLE:

SITE PLAN PHASE 1

DRAWN: RV | CHECKED: T.Z.

SCALE: 1:300 | SHEET No. SP-2

PROJECT No. 2131

D07-12-

CIVIL ENGINEER
McIntosh Perry
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Fax: (613) 836-3742
Email: r.freel@mcintoshperry.com

TRANSPORTATION ENGINEER
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13 Markham Avenue
Ottawa, ON K2G 3Z1
Tel: (343) 999-9117
Cell: (613) 697-3797
Email: Christopher.Gordon@CGHTransportation.com
Email: johnlingsley@cghtransportation.com

PROJECT DEVELOPER
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Tel: (613) 421-1515
Cell: (613) 880-5491
Email: joeytheberge@thebergehomes.com
Email: Jeremy@thebergehomes.com

SURVEYOR
Farley, Smith & Denis Surveying Ltd.
30 Colonnade Road North, unit 275
Ottawa, Ontario K2E 7J6
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Fax: (613) 727-1823
Email: jleslie@bellnet.ca

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Gradient Wind Engineering
127 Walgreen Road,
Ottawa, ON, Canada K0A 1L0
Tel: (613) 836-0934
Cell: (613) 226-5273
Email: joshua.foster@gradientwind.com

URBAN PLANNER
Fotenn Consultants Inc.
396 Cooper Street, Suite 300
Ottawa, ON Canada, K2P 2H7
Tel.: (613) 730-5709
Fax: (613) 730-1136
E-Mail: alain@fotenn.com

LANDSCAPE ARCHITECT
James B. Lennox & Associates Inc.
Landscape Architects
3332 Carling Ave.
Ottawa, Ontario K2H 5A8
Tel: 613-722-5168
Fax: 1-866-343-3942
Email: ml@jbla.ca

LEGAL DESCRIPTION

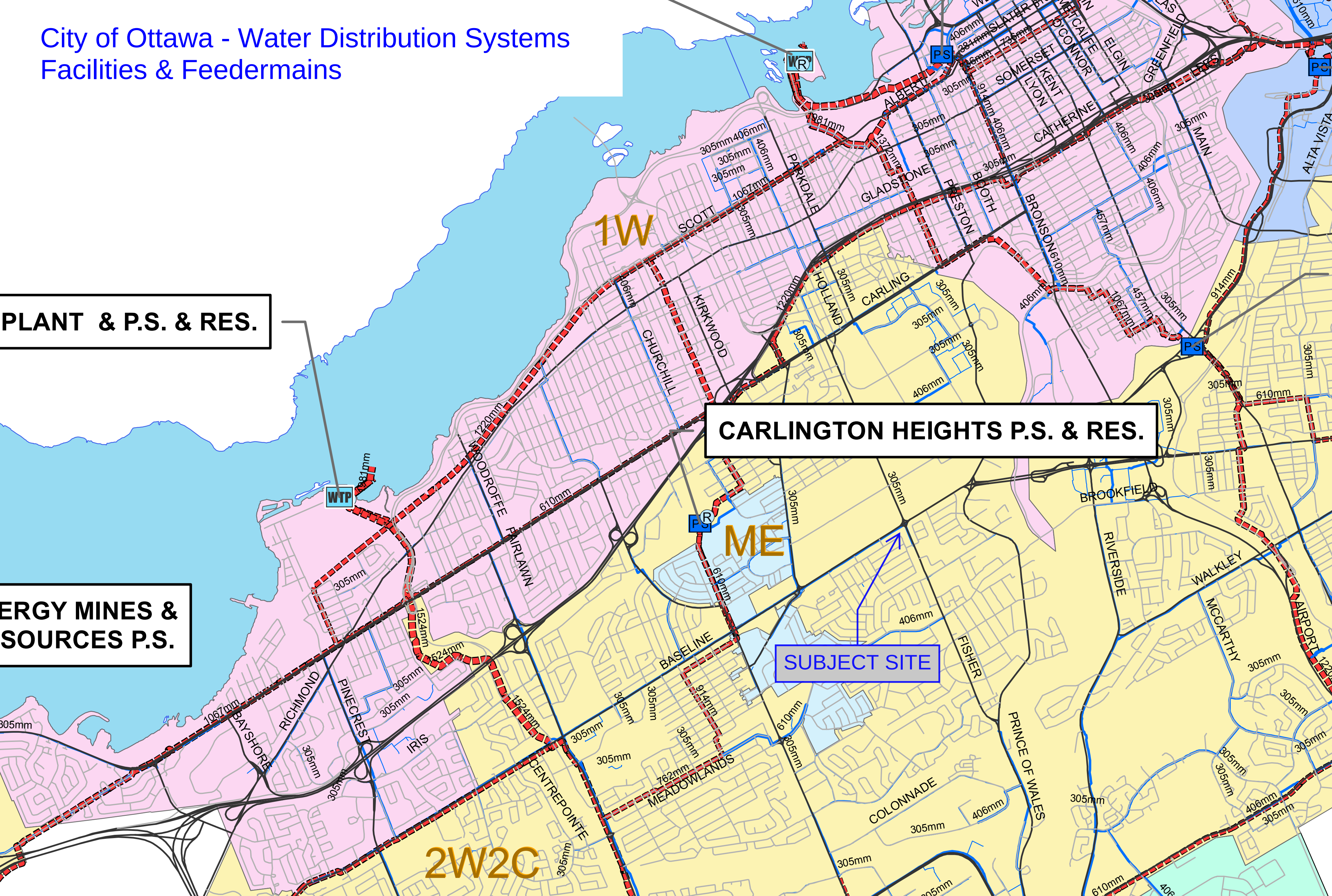
TOPOGRAPHIC PLAN OF SURVEY OF

LOT 6 AND
PART OF LOTS 5, 7, 8, 9, 10, 11 & 12
REGISTERED PLAN 310501
& PART OF LOTS 5, 6, 7, 8 & 9
REGISTERED PLAN 310509
CITY OF OTTAWA

FARLEY, SMITH & DENIS SURVEYING LTD. 2023

APPENDIX C
WATERMAIN CALCULATIONS

McINTOSH PERRY



City of Ottawa - Water Distribution Systems
Facilities & Feedermains
PLANT & P.S. & RES.
ERGY MINES &
SOURCES P.S.
CARLINGTON HEIGHTS P.S. & RES.
SUBJECT SITE
1W
ME
2W2C
WTP
PS
R
SCOTT
PARKDALE
GLADSTONE
PRESTON
BOOTH
BRONSON
CARLING
HOLLAND
KIRKWOOD
CHURCHILL
WOODROFFE
FAIRLAWN
BASELINE
MEADOWLANDS
CENTREPOINTE
RICHMOND
BAYSHORE
PINECREST
IRIS
FISHER
PRINCE OF WALES
COLONNADE
RIVERSIDE
BROOKFIELD
WALKLEY
MCCARTHY
AIRPORT
ALTA VISTA
MAIN
GREENFIELD
ELGIN
METCALFE
O'CONNOR
KENT
LYON
SOMERSET
SLATER
ALBERT
CATHERINE

McINTOSH PERRY

CCO-22-0952 - 780 Baseline Road - Building A - Water Demands

Project:	780 Baseline Road - Building A		
Project No.:	CCO-22-0952		
Designed By:	RRR		
Checked By:	RRR		
Date:	June 1, 2023		
Site Area:	0.48	gross ha	*Phase I Area*

Residential	**NUMBER OF UNITS**		**UNIT RATE**	
Single Family		homes	3.4	persons/unit
Semi-detached		homes	2.7	persons/unit
Townhouse		homes	2.7	persons/unit
Bachelor Apartment	**17**	units	1.4	persons/unit
1 Bedroom Apartment	**163**	**units**	1.4	persons/unit
2 Bedroom Apartment	**132**	**units**	2.1	persons/unit
3 Bedroom Apartment	**8**	**units**	3.1	persons/unit
Average Apartment		units	1.8	persons/unit
Total Population	**554**	**persons**		
Commercial	**711**	**m2**		
Industrial - Light		m2		
Industrial - Heavy		m2		

AVERAGE DAILY DEMAND

DEMAND TYPE	AMOUNT	UNITS
Residential	280	L/c/d
Industrial - Light	35,000	L/gross ha/d
Industrial - Heavy	55,000	L/gross ha/d
Shopping Centres	2,500	L/(1000m² /d
Hospital	900	L/(bed/day)
Schools	70	L/(Student/d)
Trailer Park with no Hook-Ups	340	L/(space/d)
Trailer Park with Hook-Ups	800	L/(space/d)
Campgrounds	225	L/(campsite/d)
Mobile Home Parks	1,000	L/(Space/d)
Motels	150	L/(bed-space/d)
Hotels	225	L/(bed-space/d)
Tourist Commercial	28,000	L/gross ha/d
Other Commercial	28,000	L/gross ha/d

AVERAGE DAILY DEMAND	**Residential**	**1.80**	**L/s**
	Commerical/Industrial/ Institutional	**0.02**	**L/s**

115 Walgreen Road, R.R.3. Carp, ON K0A 1L0 | T. 613-836-2184 | F. 613-836-3742
info@mcintoshperry.com | www.mcintoshperry.com

MAXIMUM DAILY DEMAND

DEMAND TYPE	AMOUNT		UNITS
Residential	2.5	x avg. day	L/c/d
Industrial	1.5	x avg. day	L/gross ha/d
Commercial	1.5	x avg. day	L/gross ha/d
Institutional	1.5	x avg. day	L/gross ha/d
MAXIMUM DAILY DEMAND	Residential	4.49	L/s
	Commerical/Industrial/ Institutional	0.03	L/s

MAXIMUM HOUR DEMAND

DEMAND TYPE	AMOUNT		UNITS
Residential	2.2	x max. day	L/c/d
Industrial	1.8	x max. day	L/gross ha/d
Commercial	1.8	x max. day	L/gross ha/d
Institutional	1.8	x max. day	L/gross ha/d
MAXIMUM HOUR DEMAND	Residential	8.06	L/s
	Commerical/Industrial/ Institutional	0.06	L/s

WATER DEMAND DESIGN FLOWS PER UNIT COUNT
CITY OF OTTAWA - WATER DISTRIBUTION GUIDELINES, JULY 2010

AVERAGE DAILY DEMAND	1.82	L/s
MAXIMUM DAILY DEMAND	4.52	L/s
MAXIMUM HOUR DEMAND	8.12	L/s

McINTOSH PERRY

CCO-22-0952 - 780 Baseline Road - Building A - Fire Underwriters Survey

Project:	780 Baseline Road - Building A
Project No.:	CCO-22-0952
Designed By:	RRR
Checked By:	CJM
Date:	June 2, 2023

From the Fire Underwriters Survey (2020)

From Part II – Guide for Determination of Required Fire Flow Copyright I.S.O.:
City of Ottawa Technical Bulletin ISTB-2018-02 Applied Where Applicable

A. BASE REQUIREMENT (Rounded to the nearest 1000 L/min)

F = 220 x C x √A Where: F = Required fire flow in liters per minute
C = Coefficient related to the type of construction.
A = The total floor area in square meters (including all storey's, but excluding basements at least 50 percent below grade) in the building being considered.

Construction Type: Non-Combustible Construction

C: 0.8 A: 18,898.2 m^2

Total Floor Area (per the 2020 FUS Page 20 - Total Effective Area): 6,913.8 m^2 Protected Vertical Openings Assumed

Calculated Fire Flow	14,634.3 L/min
	15,000.0 L/min

B. REDUCTION FOR OCCUPANCY TYPE (No Rounding)

From Page 24 of the Fire Underwriters Survey:

Limited Combustible	-15%
Fire Flow	12,750.0 L/min

C. REDUCTION FOR SPRINKLER TYPE (No Rounding)

Fully Supervised Sprinklered	-50%
Reduction	-6,375.0 L/min

D. INCREASE FOR EXPOSURE (No Rounding)

	Separation Distance (m)	Cons.of Exposed Wall	Length Exposed Adjacent Wall (m)	Height (Stories)	Length-Height Factor	
Exposure 1	3.1 to 10	Fire Resistive - Non Combustible (Unprotected Openings)	21.3	1	26.0	7%
Exposure 2	Over 30 m	Wood frame	7	2	14.0	0%
Exposure 3	3.1 to 10	Wood frame	12.5	1	12.5	15%
Exposure 4	20.1 to 30	Wood frame	15	1	15.0	0%
					%Increase*	22%

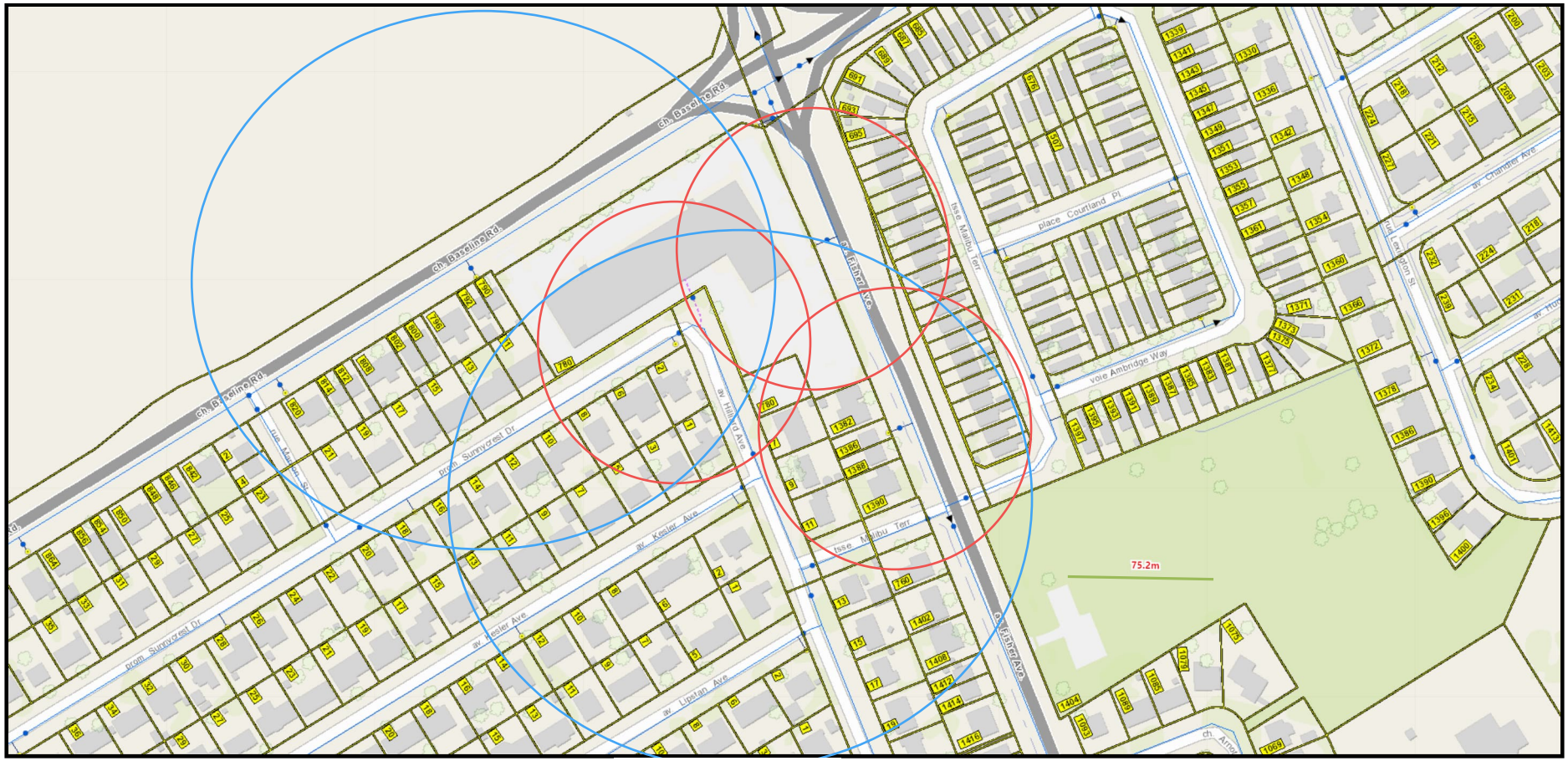
Increase*	2,805.0 L/min

E. Total Fire Flow (Rounded to the Nearest 1000 L/min)

Fire Flow	9,180.0 L/min
Fire Flow Required**	9,000.0 L/min

* In accordance with Part II, Section 4, the Increase for separation distance is not to exceed 75%
** In accordance with Section 4 the Fire flow is not to exceed 45,000 L/min or be less than 2,000 L/min

780 Baseline - Phase 1
Hydrant Coverage Figure



Hydrants within 75m = 3

Hydrants within 150m = 2

APPENDIX D
SANITARY CALCULATIONS

McINTOSH PERRY

McINTOSH PERRY

CCO-22-0952 - 780 Baseline Road - Phase I Building A - Sanitary Demands

Project:	780 Baseline Road - Phase I Building A
Project No.:	CCO-22-0952
Designed By:	AJG
Checked By:	AJG
Date:	June 1, 2023

Site Area	0.48	Gross ha	*Phase I Area*

Bachelor	**17**	1.40	Persons per unit
1 Bedroom	**163**	1.40	Persons per unit
2 Bedroom	**132**	2.10	Persons per unit
3 Bedroom	**8**	3.10	Persons per unit

Total Population	**554**	**Persons**
Commercial Area	**554**	**m^2**

DESIGN PARAMETERS

Institutional/Commercial Peaking Facto	1	
Residential Peaking Factor	3.36	** Using Harmon Formula =* 1+(14/(4+P^0.5))*0.8
		where P = population in thousands, Harmon's Correction Factor = 0.8
Mannings coefficient (n)	0.013	
Demand (per capita)	280	L/day
Infiltration allowance	0.33	L/s/Ha

EXTRANEOUS FLOW ALLOWANCES

Infiltration / Inflow	Flow (L/s)
Dry	0.02
Wet	0.13
Total	**0.16**

AVERAGE DAILY DEMAND

DEMAND TYPE	AMOUNT	UNITS	POPULATION / AREA	Flow (L/s)
Residential	280	L/c/d	554	1.80
Industrial - Light**	35,000	L/gross ha/d		0
Industrial - Heavy**	55,000	L/gross ha/d		0
Commercial / Amenity	2,800	L/(1000m^2 /d)	554	0.02
Hospital	900	L/(bed/day)		0
Schools	70	L/(Student/d)		0
Trailer Parks no Hook-Ups	340	L/(space/d)		0
Trailer Park with Hook-Ups	800	L/(space/d)		0
Campgrounds	225	L/(campsite/d)		0
Mobile Home Parks	1,000	L/(Space/d)		0
Motels	150	L/(bed-space/d)		0
Hotels	225	L/(bed-space/d)		0
Office	75	L/7.0m^2/d		0
Tourist Commercial	28,000	L/gross ha/d		0
Other Commercial	28,000	L/gross ha/d		0

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AVERAGE RESIDENTIAL FLOW	1.80	L/s
PEAK RESIDENTIAL FLOW	6.03	L/s
AVERAGE ICI FLOW	0.02	L/s
PEAK INSTITUTIONAL/COMMERCIAL FLOW	0.02	L/s
PEAK INDUSTRIAL FLOW	0.00	L/s
TOTAL PEAK ICI FLOW	0.02	L/s

TOTAL SANITARY DEMAND

TOTAL ESTIMATED AVERAGE DRY WEATHER FLOW	1.84	L/s
TOTAL ESTIMATED PEAK DRY WEATHER FLOW	6.08	L/s
TOTAL ESTIMATED PEAK WET WEATHER FLOW	6.21	L/s

SANITARY SEWER DESIGN SHEET

PROJECT: CCO-22-0952
LOCATION: 780 Baseline

McINTOSH PERRY

LOCATION				RESIDENTIAL									ICI AREAS							INFILTRATION ALLOWANCE			FLOW	SEWER DATA						
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
STREET	AREA ID	FROM	TO	UNIT TYPES				AREA	POPULATION		PEAK FACTOR	PEAK FLOW (L/s)	AREA (ha)						PEAK FLOW (L/s)	AREA (ha)		FLOW (L/s)	DESIGN FLOW (L/s)	CAPACITY (L/s)	LENGTH (m)	DIA (mm)	SLOPE (%)	VELOCITY (full) (m/s)	AVAILABLE CAPACITY	
				Bac/1-Bed	2-Bed	3-Bed	APT	(ha)	IND	CUM			INSTITUTIONAL		COMMERCIAL		INDUSTRIAL			IND	CUM								L/s	(%)
													IND	CUM	IND	CUM	IND	CUM											
SITE		BLDG	375mm Sewer	180	132	8		0.48	554.0	554.0	3.36	6.03	0.00	0.00	554.00	554.00		0.00	0.02	0.48	0.48	0.16	6.21	34.22	3.71	200	1.00	1.055	28.01	81.86

Design Parameters:

Residential			ICI Areas			
						Peak Factor
1-BED	1.4	p/p/u				
2-Bed	2.1	p/p/u	INST	28,000	L/Ha/day	1.5
3-Bed	3.1	p/p/u	COM	28,000	L/Ha/day	1.5
Other	60	p/p/Ha	IND	35,000	L/Ha/day	MOE Chart

Notes:

1. Mannings coefficient (n) = 0.013
2. Demand (per capita): 280 L/day
3. Infiltration allowance: 0.33 L/s/Ha
4. Residential Peaking Factor:
   Harmon Formula = 1+(14/(4+P^0.5)*0.8)
   where P = population in thousands

Designed: RP

Checked: RRR

Project No.: CCO-22-0952

No.	Revision	Date

Sheet No:
1 of 1

SANITARY SEWER DESIGN SHEET

PROJECT: CCO-22-0952
LOCATION: 780 Baseline

McINTOSH PERRY

LOCATION				RESIDENTIAL									ICI AREAS							INFILTRATION ALLOWANCE			FLOW	SEWER DATA						
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
STREET	AREA ID	FROM MH	TO MH	UNIT TYPES SF	SD	TH	APT	AREA (ha)	POPULATION IND	CUM	PEAK FACTOR	PEAK FLOW (L/s)	AREA (ha) INSTITUTIONAL IND	CUM	COMMERCIAL IND	CUM	INDUSTRIAL IND	CUM	PEAK FLOW (L/s)	AREA (ha) IND	CUM	FLOW (L/s)	DESIGN FLOW (L/s)	CAPACITY (L/s)	LENGTH (m)	DIA (mm)	SLOPE (%)	VELOCITY (full) (m/s)	AVAILABLE CAPACITY L/s	(%)
Hillard Ave to Fisher Ave	Existing Sewer Capacity	MHSA46208	MHSA46206																	0.00	0.00	0.00	0.00	65.38	40.73	300	0.42	0.896	65.38	
		MHSA46206	MHSA46205																	0.00	0.00	0.00	0.00	76.16	12.90	300	0.57	1.044	76.16	
		MHSA46203	MHSA46204																	0.00	0.00	0.00	0.00	72.75	7.10	300	0.52	0.997	72.75	
		MHSA46204	MHSA46205																	0.00	0.00	0.00	0.00	72.75	32.50	300	0.52	0.997	72.75	
		MHSA46205	MHSA19079																	0.00	0.00	0.00	0.00	316.81	61.87	375	3.00	2.779	316.81	
		MHSA19079	MHSA50442																	0.00	0.00	0.00	0.00	229.19	21.00	375	1.57	2.010	229.19	
		MHSA50442	MHSA50443																	0.00	0.00	0.00	0.00	126.19	109.30	450	0.18	0.769	126.19	
	Proposed Sewer Capacity	MHSA46208	MH1A																	0.00	0.00	0.00	0.00	65.38	21.37	300	0.42	0.896	65.38	
		MHSA46203	MHSA46206																	0.00	0.00	0.00	0.00	72.75	40.15	300	0.52	0.997	72.75	
		MHSA46206	MH1A																	0.00	0.00	0.00	0.00	76.16	19.15	300	0.57	1.044	76.16	
		MH1A	MH1B																	0.00	0.00	0.00	0.00	103.47	78.33	375	0.32	0.908	103.47	
		MH1B	MHSA50442																	0.00	0.00	0.00	0.00	103.47	38.57	375	0.32	0.908	103.47	

Design Parameters:

Residential			ICI Areas			
						Peak Factor
SF	3.4	p/p/u				
TH/SD	2.7	p/p/u	INST	28,000	L/Ha/day	1.5
APT	2.3	p/p/u	COM	28,000	L/Ha/day	1.5
Other	60	p/p/Ha	IND	35,000	L/Ha/day	MOE Chart

Notes:
1. Mannings coefficient (n) = 0.013
2. Demand (per capita): 280 L/day
3. Infiltration allowance: 0.33 L/s/Ha
4. Residential Peaking Factor:
Harmon Formula = 1+(14/(4+P^0.5)*0.8)
where P = population in thousands

Designed: RRR
Checked: AM
Project No.: CCO-22-0952

No.	Revision	Date
		Sheet No: 1 of 1

Alison Gosling

From: Candow, Julie <julie.candow@ottawa.ca>
Sent: October 6, 2022 11:41 AM
To: Alison Gosling
Subject: RE: 22-4516 - 780 Baseline - Sanitary Capacity

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Alison,

Asset Management has no concerns with the extra flow.

Thanks,

Julie Candow, P.Eng
Project Manager
Planning, Real Estate and Economic Development Department - West Branch
City of Ottawa
110 Laurier Avenue West Ottawa, ON
613.580.2424 ext. 13850

From: Candow, Julie
Sent: September 29, 2022 10:18 AM
To: Alison Gosling <a.gosling@mcintoshperry.com>
Subject: RE: 22-4516 - 780 Baseline - Sanitary Capacity

Hi Alison, I have passed on your request to Asset Management Branch for their confirmation.

I will follow up once I hear from them.

Thank you,

Julie Candow, P.Eng
Project Manager
Planning, Real Estate and Economic Development Department - West Branch
City of Ottawa
110 Laurier Avenue West Ottawa, ON
613.580.2424 ext. 13850

From: Alison Gosling <a.gosling@mcintoshperry.com>
Sent: September 29, 2022 9:17 AM

To: Candow, Julie <julie.candow@ottawa.ca>
Subject: FW: 22-4516 - 780 Baseline - Sanitary Capacity

Good morning Julie,

There have been some site statistic changes to the contemplated design for 780 Baseline. The changes will be reflected in a revised Assessment of Adequacy of Public Services report for the ZBLA application. Can the City please review the sanitary flows below and advise us of any concerns?

- Building A is anticipated to be serviced via the municipal sanitary sewer that crosses through the site, tributary to the 450mm sanitary sewer within Fisher Ave.
- Building B is anticipated to be serviced via the 300mm sanitary sewer within Baseline Rd.
- Building C is anticipated to be serviced via either the municipal sanitary sewer that crosses through the site or the 300mm sanitary sewer within Baseline Rd.

	Building A	Building B	Building C	Total
Average Dry Weather Flow	1.81	2.06	2.11	5.98
Peak Dry Weather Flow	6.01	6.74	6.93	18.21
Peak Wet Weather Flow	6.14	6.87	7.06	18.61

Please let me know if you have any questions.

Thank you,

Alison Gosling, P.Eng.
Project Engineer, Land Development
T. 613.714.4629
a.gosling@mcintoshperry.com | www.mcintoshperry.com

McINTOSH PERRY

Turning Possibilities Into Reality

From: Alison Gosling <a.gosling@mcintoshperry.com>
Sent: April 4, 2022 2:14 PM
To: Valic, Jessica <jessica.valic@ottawa.ca>
Subject: RE: 22-4516 - 780 Baseline - Sanitary Capacity

Thanks Jessica.

Alison Gosling, P.Eng.
Project Engineer, Land Development
T. 613.714.4629
a.gosling@mcintoshperry.com | www.mcintoshperry.com
McINTOSH PERRY
Turning Possibilities Into Reality

From: Valic, Jessica <jessica.valic@ottawa.ca>
Sent: April 4, 2022 10:05 AM
To: Alison Gosling <a.gosling@mcintoshperry.com>
Subject: RE: 22-4516 - 780 Baseline - Sanitary Capacity

Hi Alison,

There is no issue with the additional flow.

Regards,

Jessica

From: Alison Gosling <a.gosling@mcintoshperry.com>
Sent: March 31, 2022 11:19 AM
To: Valic, Jessica <jessica.valic@ottawa.ca>
Subject: RE: 22-4516 - 780 Baseline - Sanitary Capacity

Hi Jessica,

Did you get a response on this?

Thanks in advance,

Alison Gosling, P.Eng.
Project Engineer, Land Development
T. 613.714.4629
a.gosling@mcintoshperry.com | www.mcintoshperry.com
McINTOSH PERRY
Turning Possibilities Into Reality

From: Alison Gosling <a.gosling@mcintoshperry.com>
Sent: March 18, 2022 8:14 AM
To: Valic, Jessica <jessica.valic@ottawa.ca>
Subject: 22-4516 - 780 Baseline - Sanitary Capacity

Hi Jessica,

As discussed, can the City please assess the capacity of the local sanitary sewers for the contemplated development at 780 Baseline Road?

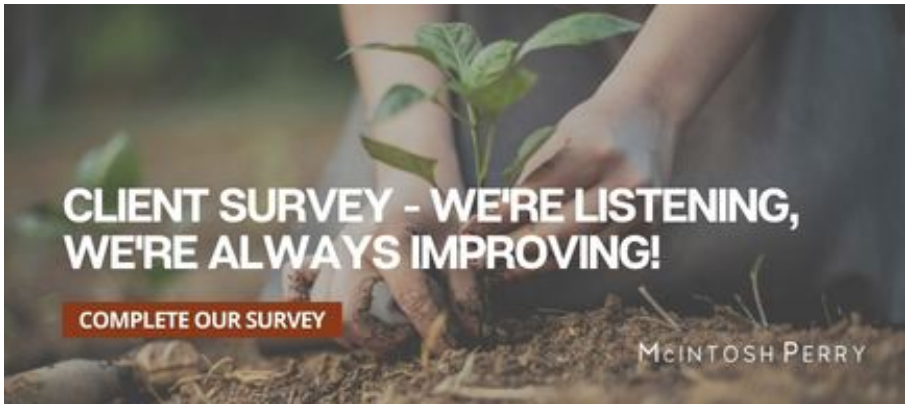
- Building A is anticipated to be serviced via the municipal sanitary sewer that crosses through the site, tributary to the 450mm sanitary sewer within Fisher Ave.
- Building B is anticipated to be serviced via either the municipal sanitary sewer that crosses through the site or the 300mm sanitary sewer within Baseline Rd.
- Building C is anticipated to be serviced via the 300mm sanitary sewer within Baseline Rd.

	Building A	Building B	Building C	Total
Average Dry Weather Flow	1.57	1.91	1.77	5.24
Peak Dry Weather Flow	5.28	6.28	5.79	16.12
Peak Wet Weather Flow	5.41	6.40	5.92	16.50

Please let me know if you have any questions.

Thank you,

Alison Gosling, P.Eng.
Project Engineer, Land Development
T. 613.714.4629
a.gosling@mcintoshperry.com | www.mcintoshperry.com
McINTOSH PERRY
Turning Possibilities Into Reality



APPENDIX E
PRE-DEVELOPMENT DRAINAGE PLAN

McINTOSH PERRY

GENERAL NOTES

1. THE ORIGINAL TOPOGRAPHY, GROUND ELEVATION AND SURVEY DATA SHOWN ARE SUPPLIED FOR INFORMATION PURPOSES ONLY, AND IMPLY NO GUARANTEE OF ACCURACY. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ALL INFORMATION SHOWN.
2. THIS PLAN IS NOT A CADASTRAL SURVEY SHOWING LEGAL PROPERTY BOUNDARIES AND EASEMENTS. THE PROPERTY BOUNDARIES SHOWN HEREON HAVE BEEN DERIVED INFORMATION SUPPLIED BY FARLEY, SMITH AND DENIS SURVEYING LTD. (FILE No.26-23) AND CANNOT BE RELIED UPON TO BE ACCURATE OR COMPLETE. THE PRECISE LOCATION OF THE CURRENT PROPERTY BOUNDARIES AND EASEMENTS CAN ONLY BE DETERMINED BY AN UP-TO-DATE LAND TITLES SEARCH AND A SUBSEQUENT CADASTRAL SURVEY PERFORMED AND CERTIFIED BY AN ONTARIO LAND SURVEYOR.
3. THE CONTRACTOR IS TO OBTAIN AND PAY FOR ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY BEFORE COMMENCING CONSTRUCTION.
4. THE CONTRACTOR IS RESPONSIBLE FOR ALL LAYOUT.
5. THE CONTRACTOR IS TO DETERMINE THE EXACT LOCATION, SIZE, MATERIAL AND ELEVATION OF ALL EXISTING UTILITIES PRIOR TO COMMENCING CONSTRUCTION. PROTECT AND ASSUME ALL RESPONSIBILITY FOR EXISTING UTILITIES WHETHER OR NOT SHOWN ON THESE DRAWINGS. IF THERE IS ANY DISCREPANCY THE CONTRACTOR IS TO NOTIFY THE ENGINEER PROMPTLY.
6. RESTORE ALL TRENCHES AND SURFACES OF PUBLIC ROAD ALLOWANCES TO CONDITION EQUAL OR BETTER THAN ORIGINAL CONDITION AND TO THE SATISFACTION OF THE CITY AUTHORITIES.
7. EXCAVATE AND DISPOSE OF ALL EXCESS EXCAVATED MATERIAL, SUCH AS ASPHALT, CURBING AND DEBRIS, OFF SITE AS DIRECTED BY THE ENGINEER AND THE CITY.
8. TOPSOIL TO BE STRIPPED AND STOCKPILED FOR REHABILITATION. CLEAN FILL TO BE PLACED IN FILL AREAS AND COMPACTED TO 95% STANDARD PROCTOR DENSITY.
9. ALL DISTURBED AREAS TO BE RESTORED TO ORIGINAL CONDITION OR BETTER UNLESS OTHERWISE SPECIFIED.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRAFFIC CONTROL AND SAFETY MEASURES DURING THE CONSTRUCTION PERIOD, INCLUDING THE SUPPLY, INSTALLATION, AND REMOVAL OF ALL NECESSARY SIGNAGE, DELINEATORS, MARKERS AND BARRIERS.
11. DO NOT ALTER GRADING OF THE SITE WITHOUT PRIOR APPROVAL OF THE ENGINEER/CITY.
12. ALL ROADWAY, PARKING LOT, AND GRADING WORKS TO BE UNDERTAKEN IN ACCORDANCE WITH CITY STANDARDS AND SPECIFICATIONS. THE CONTRACTOR IS TO PROVIDE POSITIVE DRAINAGE AWAY FROM THE BUILDING.
13. CONTACT THE CITY FOR INSPECTION OF ROUGH GRADING OF PARKING LOTS, ROADWAYS AND LANDSCAPED AREAS PRIOR TO PLACEMENT OF ASPHALT AND TOPSOIL. ALL DEFICIENCIES NOTED SHALL BE RECTIFIED TO THE CITY'S SATISFACTION PRIOR TO PLACEMENT OF ANY ASPHALT, TOPSOIL, SEED & MULCH AND/OR SOD.
14. ALL DIMENSIONS AND INVERTS MUST BE VERIFIED PRIOR TO CONSTRUCTION, IF THERE IS ANY DISCREPANCY THE CONTRACTOR IS TO NOTIFY THE ENGINEER PROMPTLY.
15. ELECTRICAL, GAS, TELEPHONE AND TELEVISION SERVICE LOCATIONS ARE SUBJECT TO THE INDIVIDUAL AGENCY:
    - ELECTRICAL SERVICE - HYDRO OTTAWA,
    - GAS SERVICE - ENBRIDGE,
    - TELEPHONE SERVICE - BELL CANADA,
    - TELEVISION SERVICE - ROGERS.
16. INSTALLATION TO BE IN ACCORDANCE WITH CURRENT CODES AND STANDARDS OF APPROVAL AGENCIES HYDRO ONE, BELL AND THE CITY.
17. CONTRACTOR TO ENSURE ALL APPLICABLE OPS SPECIFICATIONS ARE FOLLOWED DURING CONSTRUCTION
18. ALL PROPOSED CURB TO BE CONCRETE BARRIER CURB UNLESS OTHERWISE SPECIFIED.
19. THIS PLAN MUST BE READ IN CONJUNCTION WITH THE GEOTECHNICAL INVESTIGATION COMPLETED BY PATERSON GROUP, DATED DECEMBER 12, 2022.

LOCATION PLAN

LEGEND

═ DC	BARRIER CURB & CURB DEPRESSION	┗┻┻┻┛	SLOPING AT 3:1 UNLESS SPECIFIED
▭	PROPOSED CONCRETE WALKWAY	×95.94 93.20	PROPOSED ELEVATION EXISTING ELEVATION
○MH#	STORM MANHOLE	×95.94 (S)	SWALE ELEVATION
■ CB CICB DI	CATCHBASIN, CURB INLET OR DITCH INLET	×T/W100.50 B/W90.50	TOP/BOTTOM WALL FACE ELEVATIONS
●MH#A	SANITARY MANHOLE	⇨	PROPOSED EMERGENCY OVERLAND FLOW ROUTE
		⇨	EXISTING DRAINAGE PATTERN
— — —	PROPERTY LINE		
⊖	WATER VALVE/CHAMBER	╱╲╱╲	HEAVY DUTY SILT FENCE BARRIER PER OPSD 219.130
⊕	FIRE HYDRANT	⬆	BUILDING ENTRANCE
▬	PROPOSED WALL	▭	PROPOSED GRASS
◇	PROPOSED SIAMESE CONNECTION	▦	PROPOSED PAVERS
Ⓜ RM	PROPOSED WATER METER AND REMOTE METER	— · —	CENTRELINE OF SWALE
▨	OUTLINE OF EXCAVATION FOR PROPOSED SERVICES	▒	PROPOSED ROADCUT AND REINSTATEMENT PER CITY R10
▒	PROPOSED CONCRETE SIDEWALK	○○○	TEMPORARY CONSTRUCTION MUD MAT PER DETAIL

SUBJECT TO APPROVAL

No.	Revisions	Date
1	ISSUED FOR SITE PLAN CONTROL	JUNE 09, 2023

Check and verify all dimensions before proceeding with the work

Do not scale drawings

SCALE 1 : 250

0 5 10 15 20 25 Metres

McINTOSH PERRY

115 Walgreen Road, RR3, Carp, ON K0A 1L0
Tel: 613-836-2184 Fax: 613-836-3742
www.mcintoshperry.com

Stamp:

Client:

THEBERGE DEVELOPMENTS LTD.
1600 LAPPERRIERE AVE
OTTAWA, ON K1Z 8P5

Project:

780 BASELINE - PHASE 1

OTTAWA ON

Drawing Title:

PRE-DEVELOPMENT DRAINAGE PLAN

Scale: 1:250	Project Number: CCO-22-0952
Drawn By: R.R.R.	
Checked By: A.M.	Drawing Number: PRE
Designed By: R.R.R.	

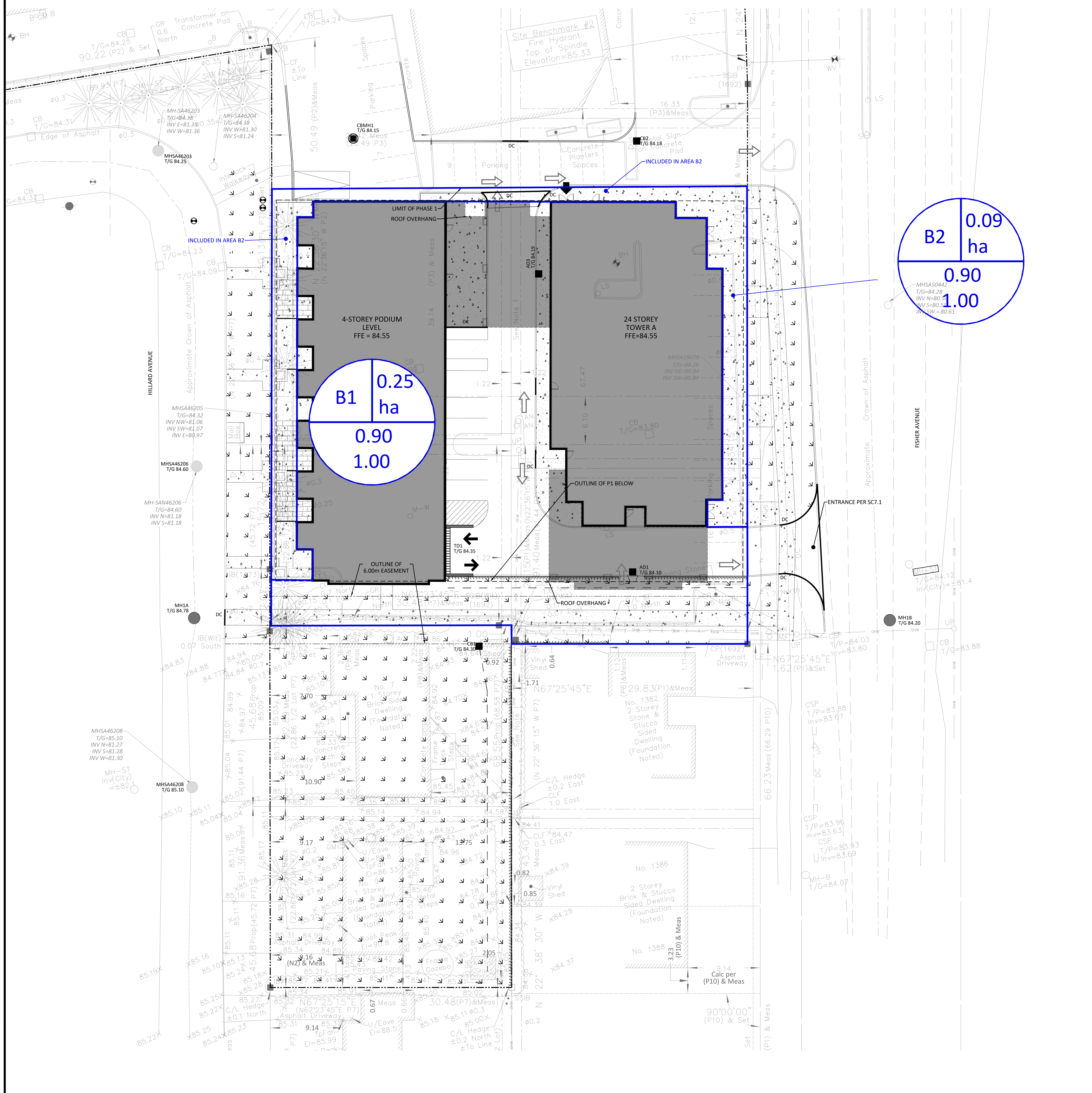
D07-12-XX-XXXX

#XXXXX

FILENAME: U:\Ottawa\01 Project - Proposals\2022 Jobs\CCO\CCO-22-0952 Joey Theberge_780 Baseline Road\12 - Drawings\CCO-22-0952_PRESENTATION.dwg
LAST SAVED: Friday, June 02, 2023 LAST SAVED BY: r.robineau
LAST PLOTTED: Friday, June 09, 2023 CTB FILE USED: MP-CV-STANDARD.ctb

APPENDIX F
POST-DEVELOPMENT DRAINAGE PLAN

McINTOSH PERRY



GENERAL NOTES

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19. THIS PLAN MUST BE READ IN CONJUNCTION WITH THE GEOTECHNICAL INVESTIGATION COMPLETED BY PATERSON GROUP, DATED DECEMBER 12, 2022.

LOCATION PLAN

LEGEND

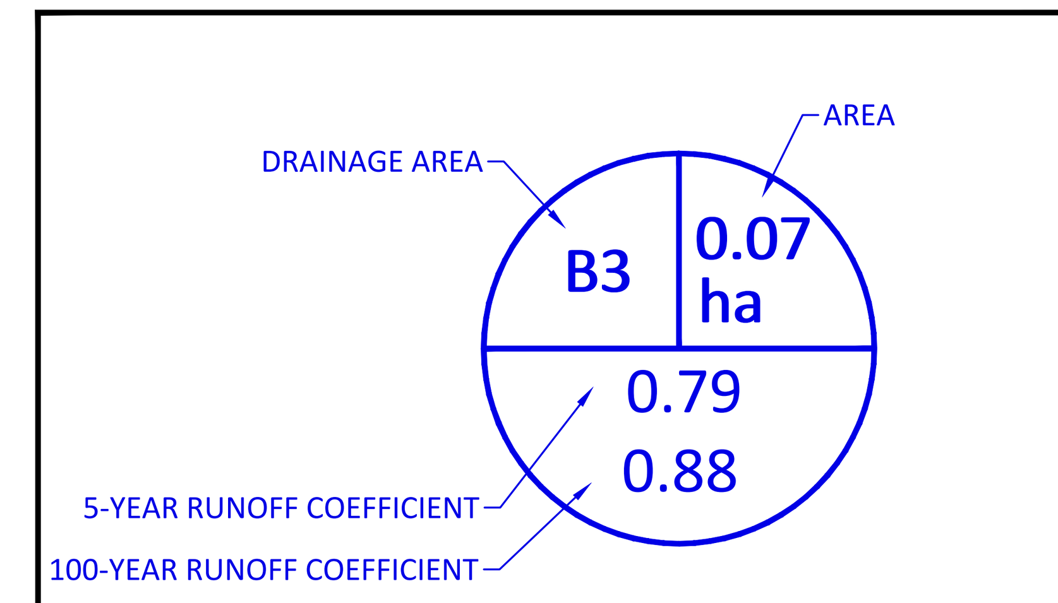
- BARRIER CURB & CURB DEPRESSION (DC)
- PROPOSED CONCRETE WALKWAY
- STORM MANHOLE (MH#)
- CATCHBASIN, CURB INLET OR DITCH INLET (CB, CICB, DI)
- SANITARY MANHOLE (MH#A)
- PROPERTY LINE
- WATER VALVE/CHAMBER
- FIRE HYDRANT
- PROPOSED WALL
- PROPOSED SIAMESE CONNECTION
- PROPOSED WATER METER AND REMOTE METER
- OUTLINE OF EXCAVATION FOR PROPOSED SERVICES
- PROPOSED CONCRETE SIDEWALK
- SLOPING AT 3:1 UNLESS SPECIFIED
- PROPOSED ELEVATION / EXISTING ELEVATION (95.94 / 93.20)
- SWALE ELEVATION (95.94 (S))
- TOP/BOTTOM WALL FACE ELEVATIONS (T/W100.50 B/W90.50)
- PROPOSED EMERGENCY OVERLAND FLOW ROUTE
- EXISTING DRAINAGE PATTERN
- HEAVY DUTY SILT FENCE BARRIER PER OPSD 219.130
- BUILDING ENTRANCE
- PROPOSED GRASS
- PROPOSED PAVERS
- CENTRELINE OF SWALE
- PROPOSED ROADCUT AND REINSTATEMENT PER CITY R10
- TEMPORARY CONSTRUCTION MUD MAT PER DETAIL

SUBJECT TO APPROVAL

No.	Revisions	Date
1	ISSUED FOR SITE PLAN CONTROL	JUNE 09, 2023

Check and verify all dimensions before proceeding with the work — Do not scale drawings

SCALE 1 : 250 (0, 5, 10, 15, 20, 25 Metres)



McINTOSH PERRY
115 Walgreen Road, RR3, Carp, ON K0A 1L0
Tel: 613-836-2184 Fax: 613-836-3742
www.mcintoshperry.com

Stamp:

Client: THEBERGE DEVELOPMENTS LTD.
1600 LAPPERRIERE AVE
OTTAWA, ON K1Z 8P5

Project: 780 BASELINE - PHASE 1
OTTAWA ON

Drawing Title: POST-DEVELOPMENT DRAINAGE PLAN

Scale:	1:250	Project Number:	CCO-22-0952
Drawn By:	R.R.R.		
Checked By:	A.M.	Drawing Number:	POST
Designed By:	R.R.R.		

D07-12-XX-XXXX
#XXXXX

APPENDIX G
STORMWATER MANAGEMENT CALCULATIONS

McINTOSH PERRY

CO-22-0952 - 780 Baseline Phase 1 - SWM Calculations

Tc (min)	Intensity (mm/hr)		
	5-Year	100-Year	
10	104.2	178.6	PRE-DEVELOPMENT
10	104.2	178.6	POST-DEVELOPMENT

C-Values	
Impervious	0.90
Gravel	0.60
Pervious	0.20

Pre-Development Runoff Coefficient

Drainage Area	Impervious Area (m^2)	Gravel (m^2)	Pervious Area (m^2)	Average C (5-year)	Average C (100-year)
A1	3,167	0	228	0.85	0.95

Pre-Development Runoff Calculations

Drainage Area	Area (ha)	C 5-Year	C 100-Year	Tc (min)	Q (L/s)	
					5-Year	100-Year
A1	0.34	0.85	0.95	10	83.88	160.04
Total	0.34				83.88	160.04

Post-Development Runoff Coefficient

Drainage Area	Impervious Area (m^2)	Gravel (m^2)	Pervious Area (m^2)	Average C (5-year)	Average C (100-year)
B1	2,250	0	278	0.82	0.92
B2	867	0	0	0.90	1.00

Post-Development Runoff Calculations

Drainage Area	Area (ha)	C 5-Year	C 100-Year	Tc (min)	Q (L/s)		
					5-Year	100-Year	
B1	0.25	0.82	0.92	10	60.27	115.15	Restricted
B2	0.09	0.90	1.00	10	22.60	43.03	Unrestricted
Total	0.34				82.87	158.18	

Required Restricted Flow

Drainage Area	Area (ha)	C 5-Year	Tc (min)	Q (L/s)
				5-Year
A1	0.34	0.50	10	49.17

Post-Development Restricted Runoff Calculations

Drainage Area	Unrestricted Flow (L/S)		Restricted Flow (L/S)		Storage Required (m^3)		Storage Provided (m^3)	
	5-year	100-Year	5-Year	100-Year	5-Year	100-Year	5-Year	100-Year
B1	60.27	115.15	3.21	6.14	58.6	110.0	110.0	110.0
B2	22.60	43.03	22.60	43.03				
Total	82.87	158.18	25.81	49.17				

Storage Requirements for Area B1

5-Year Storm Event

Tc (min)	I (mm/hr)	Runoff (L/s) B1	Allowable Outflow (L/s)	Runoff to be Stored (L/s)	Storage Required (m^3)
70	29.4	17.01	3.21	13.80	57.95
80	26.6	15.39	3.21	12.18	58.45
90	24.3	14.06	3.21	10.85	58.57
100	22.4	12.96	3.21	9.75	58.49
110	20.8	12.03	3.21	8.82	58.23

Maximum Storage Required 5-year =	59	m^3

100-Year Storm Event

Tc (min)	I (mm/hr)	Runoff (L/s) B1	Allowable Outflow (L/s)	Runoff to be Stored (L/s)	Storage Required (m^3)
30	91.9	59.26	6.14	53.12	95.62
40	75.1	48.43	6.14	42.29	101.50
50	64.0	41.27	6.14	35.13	105.40
60	55.9	36.05	6.14	29.91	107.67
70	49.8	32.12	6.14	25.98	109.10
80	45.0	29.02	6.14	22.88	109.82
90	41.1	26.50	6.14	20.36	109.97
100	37.9	24.44	6.14	18.30	109.81
110	35.2	22.70	6.14	16.56	109.29
120	32.9	21.22	6.14	15.08	108.55

Maximum Storage Required 100-year =	110	m^3

5-Year Storm Event Storage Summary

Storage Available (m^3) = 110.0 *
Storage Required (m^3) = 58.6

100-Year Storm Event Storage Summary

Storage Available (m^3) = 110.0 *
Storage Required (m^3) = 110.0

* Available Storage calculated from Cistern

Time of Concentration Pre-Development

Drainage Area ID	Sheet Flow Distance (m)	Slope of Land (%)	Tc (min) (5-Year)	Tc (min) (100-Year)
A1	67	2.30	5	3

Therefore, a Tc of 10 can be used

Tc= (3.26(1.1-c)L^0.5/S^0.33)

c = Balanced Runoff Coefficient

L = Length of drainage area

S= Average slope of watershed

STORM SEWER DESIGN SHEET

PROJECT: 780 Baseline - Phase 1
LOCATION: 780 Baseline
CLIENT: Theberg Developments Ltd.

McINTOSH PERRY

LOCATION				CONTRIBUTING AREA (ha)				RATIONAL DESIGN FLOW										SEWER DATA									
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
STREET	AREA ID	FROM	TO	C-VALUE	AREA	INDIV AC	CUMUL AC	INLET (min)	TIME IN PIPE	TOTAL (min)	i (5) (mm/hr)	i (10) (mm/hr)	i (100) (mm/hr)	5yr PEAK FLOW (L/s)	10yr PEAK FLOW (L/s)	100yr PEAK FLOW (L/s)	FIXED FLOW (L/s)	DESIGN FLOW (L/s)	CAPACITY (L/s)	LENGTH (m)	PIPE SIZE (mm)			SLOPE (%)	VELOCITY (m/s)	AVAIL CAP (5yr)	
																					DIA	W	H			(L/s)	(%)
Hillard Ave	B1	BLDG	450mm CONC	0.82	0.25	0.21	0.21	10.00	0.23	10.23	104.19	122.14	178.56	59.38				60.27	62.04	16.70	250			1.00	1.224	1.77	2.85%

Definitions:
Q = 2.78CiA, where:
Q = Peak Flow in Litres per Second (L/s)
A = Area in Hectares (ha)
i = Rainfall intensity in millimeters per hour (mm/hr)
[i = 998.071 / (TC+6.053)^0.814] 5 YEAR
[i = 1174.184 / (TC+6.014)^0.816] 10 YEAR
[i = 1735.688 / (TC+6.014)^0.820] 100 YEAR

Notes:
1. Mannings coefficient (n) = 0.013

Designed: RP

Checked: RDF

Project No.: CCO-22-0952

No.	Revision	Date
1		

Sheet No: 1 of 1

APPENDIX H
CITY OF OTTAWA DESIGN CHECKLIST

McINTOSH PERRY

City of Ottawa

4. Development Servicing Study Checklist

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

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

4.1 General Content

Criteria	Location (if applicable)
☐ Executive Summary (for larger reports only).	N/A
☐ Date and revision number of the report.	On Cover
☐ Location map and plan showing municipal address, boundary, and layout of proposed development.	Appendix A
☐ Plan showing the site and location of all existing services.	N/A
☐ Development statistics, land use, density, adherence to zoning and official plan, and reference to applicable subwatershed and watershed plans that provide context to which individual developments must adhere.	1.1 Purpose 1.2 Site Description 6.0 Stormwater Management
☐ Summary of pre-consultation meetings with City and other approval agencies.	Appendix B
☐ Reference and confirm conformance to higher level studies and reports (Master Servicing Studies, Environmental Assessments, Community Design Plans), or in the case where it is not in conformance, the proponent must provide justification and develop a defendable design criteria.	1.1 Purpose 1.2 Site Description 6.0 Stormwater Management
☐ Statement of objectives and servicing criteria.	3.0 Pre-Consultation Summary

☐ Identification of existing and proposed infrastructure available in the immediate area.	N/A
☐ Identification of Environmentally Significant Areas, watercourses and Municipal Drains potentially impacted by the proposed development (Reference can be made to the Natural Heritage Studies, if available).	N/A
☐ Concept level master grading plan to confirm existing and proposed grades in the development. This is required to confirm the feasibility of proposed stormwater management and drainage, soil removal and fill constraints, and potential impacts to neighbouring properties. This is also required to confirm that the proposed grading will not impede existing major system flow paths.	N/A
☐ Identification of potential impacts of proposed piped services on private services (such as wells and septic fields on adjacent lands) and mitigation required to address potential impacts.	N/A
☐ Proposed phasing of the development, if applicable.	N/A
☐ Reference to geotechnical studies and recommendations concerning servicing.	Section 2.0 Background Studies, Standards and References
☐ All preliminary and formal site plan submissions should have the following information: ○ Metric scale ○ North arrow (including construction North) ○ Key plan ○ Name and contact information of applicant and property owner ○ Property limits including bearings and dimensions ○ Existing and proposed structures and parking areas ○ Easements, road widening and rights-of-way ○ Adjacent street names	N/A

4.2 Development Servicing Report: Water

Criteria	Location (if applicable)
☐ Confirm consistency with Master Servicing Study, if available	N/A
☐ Availability of public infrastructure to service proposed development	N/A
☐ Identification of system constraints	N/A
☐ Identify boundary conditions	Appendix C
☐ Confirmation of adequate domestic supply and pressure	N/A
☐ Confirmation of adequate fire flow protection and confirmation that fire flow is calculated as per the Fire Underwriter's Survey. Output should show available fire flow at locations throughout the development.	Appendix C
☐ Provide a check of high pressures. If pressure is found to be high, an assessment is required to confirm the application of pressure reducing valves.	N/A
☐ Definition of phasing constraints. Hydraulic modeling is required to confirm servicing for all defined phases of the project including the ultimate design	N/A
☐ Address reliability requirements such as appropriate location of shut-off valves	N/A
☐ Check on the necessity of a pressure zone boundary modification.	N/A
☐ Reference to water supply analysis to show that major infrastructure is capable of delivering sufficient water for the proposed land use. This includes data that shows that the expected demands under average day, peak hour and fire flow conditions provide water within the required pressure range	Appendix C, Section 4.2

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

4.3 Development Servicing Report: Wastewater

Criteria	Location (if applicable)
☐ Summary of proposed design criteria (Note: Wet-weather flow criteria should not deviate from the City of Ottawa Sewer Design Guidelines. Monitored flow data from relatively new infrastructure cannot be used to justify capacity requirements for proposed infrastructure).	N/A
☐ Confirm consistency with Master Servicing Study and/or justifications for deviations.	N/A
☐ Consideration of local conditions that may contribute to extraneous flows that are higher than the recommended flows in the guidelines. This includes groundwater and soil conditions, and age and condition of sewers.	N/A
☐ Description of existing sanitary sewer available for discharge of wastewater from proposed development.	Section 5.2 Proposed Sanitary Sewer

☐ Verify available capacity in downstream sanitary sewer and/or identification of upgrades necessary to service the proposed development. (Reference can be made to previously completed Master Servicing Study if applicable)	Section 5.3 Proposed Sanitary Design
☐ Calculations related to dry-weather and wet-weather flow rates from the development in standard MOE sanitary sewer design table (Appendix 'C') format.	N/A
☐ Description of proposed sewer network including sewers, pumping stations, and forcemains.	Section 5.2 Proposed Sanitary Sewer
☐ Discussion of previously identified environmental constraints and impact on servicing (environmental constraints are related to limitations imposed on the development in order to preserve the physical condition of watercourses, vegetation, soil cover, as well as protecting against water quantity and quality).	N/A
☐ Pumping stations: impacts of proposed development on existing pumping stations or requirements for new pumping station to service development.	N/A
☐ Forcemain capacity in terms of operational redundancy, surge pressure and maximum flow velocity.	N/A
☐ Identification and implementation of the emergency overflow from sanitary pumping stations in relation to the hydraulic grade line to protect against basement flooding.	N/A
☐ Special considerations such as contamination, corrosive environment etc.	N/A

4.4 Development Servicing Report: Stormwater Checklist

Criteria	Location (if applicable)
☐ Description of drainage outlets and downstream constraints including legality of outlets (i.e. municipal drain, right-of-way, watercourse, or private property)	Section 6.0 Stormwater Sewer Design & Section 7.0 Proposed Stormwater Management
☐ Analysis of available capacity in existing public infrastructure.	N/A
☐ A drawing showing the subject lands, its surroundings, the receiving watercourse, existing drainage patterns, and proposed drainage pattern.	N/A
☐ Water quantity control objective (e.g. controlling post-development peak flows to pre-development level for storm events ranging from the 2 or 5-year event (dependent on the receiving sewer design) to 100-year return period); if other objectives are being applied, a rationale must be included with reference to hydrologic analyses of the potentially affected subwatersheds, taking into account long-term cumulative effects.	Section 6.0 Stormwater Sewer Design & Section 7.0 Proposed Stormwater Management
☐ Water Quality control objective (basic, normal or enhanced level of protection based on the sensitivities of the receiving watercourse) and storage requirements.	Section 6.0 Stormwater Sewer Design & Section 7.0 Proposed Stormwater Management
☐ Description of the stormwater management concept with facility locations and descriptions with references and supporting information.	Section 6.0 Stormwater Sewer Design & Section 7.0 Proposed Stormwater Management
☐ Set-back from private sewage disposal systems.	N/A
☐ Watercourse and hazard lands setbacks.	N/A
☐ Record of pre-consultation with the Ontario Ministry of Environment and the Conservation Authority that has jurisdiction on the affected watershed.	N/A
☐ Confirm consistency with sub-watershed and Master Servicing Study, if applicable study exists.	N/A
☐ Storage requirements (complete with calculations) and conveyance capacity for minor events (1:5-year return period) and major events (1:100-year return period).	Appendix G

☐ Identification of watercourses within the proposed development and how watercourses will be protected, or, if necessary, altered by the proposed development with applicable approvals.	N/A
☐ Calculate pre-and post development peak flow rates including a description of existing site conditions and proposed impervious areas and drainage catchments in comparison to existing conditions.	Section 7.0 Proposed Stormwater Management Appendix G
☐ Any proposed diversion of drainage catchment areas from one outlet to another.	Section 6.0 Stormwater Sewer Design & Section 7.0 Proposed Stormwater Management
☐ Proposed minor and major systems including locations and sizes of stormwater trunk sewers, and stormwater management facilities.	Section 6.0 Stormwater Sewer Design & Section 7.0 Proposed Stormwater Management
☐ If quantity control is not proposed, demonstration that downstream system has adequate capacity for the post-development flows up to and including the 100-year return period storm event.	N/A
☐ Identification of potential impacts to receiving watercourses	N/A
☐ Identification of municipal drains and related approval requirements.	N/A
☐ Descriptions of how the conveyance and storage capacity will be achieved for the development.	Section 6.0 Stormwater Sewer Design & Section 7.0 Proposed Stormwater Management
☐ 100-year flood levels and major flow routing to protect proposed development from flooding for establishing minimum building elevations (MBE) and overall grading.	N/A
☐ Inclusion of hydraulic analysis including hydraulic grade line elevations.	N/A

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

4.5 Approval and Permit Requirements: Checklist

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

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

4.6 Conclusion Checklist

Criteria	Location (if applicable)
☐ Clearly stated conclusions and recommendations	Section 8.0 Summary Section 9.0 Recommendations
☐ Comments received from review agencies including the City of Ottawa and information on how the comments were addressed. Final sign-off from the responsible reviewing agency.	All are stamped
☐ All draft and final reports shall be signed and stamped by a professional Engineer registered in Ontario	All are stamped