SERVICING & STORMWATER MANAGEMENT REPORT
2830 CARLING AVENUE

Project No.: CCO-21-1191

City File No.: D07-12-20-0163

Prepared for:

1408505 Ontario Inc.
c/o Holzman Consultants Inc.
311 Richmond Rd, Suite 203
Ottawa, ON K1Z 6X3

Prepared by:

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

Revision 1: November 2020
Revision 2: June 2021

McINTOSH PERRY

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1.0 PROJECT DESCRIPTION

1.1 Purpose

McIntosh Perry (MP) has been retained by Holzman Consultants Inc to prepare a Servicing and Stormwater Management Report in support of the Site Plan Control process for the proposed development at 2830 Carling Avenue. The proposed development consists of a three storey back to back stacked townhome building, and a three-storey triplex connected through a common underground parking garage.

The main purpose of this report is to present the servicing design for the proposed 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 addresses the proposed 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-21-1191, C101 – Site Grading and Drainage Plan, and
- CCO-21-1191, C102 – Site Servicing Plan.

This site is subject to approval by the Ministry of the Environment, Conservation and Parks (MECP), City of Ottawa and Rideau Valley Conservation Authority (RVCA).

1.2 Site Description

The property is located at 2830 Carling Avenue and 810 Vick Avenue which are to be amalgamated. It is described as Lot 1 & 2, Registered Plan 231, and Lots 2 & 4 Registered Plan 250, City of Ottawa, Ontario. The land in question covers approximately 0.169 ha and is bounded by Judge Street to the west, Vick Avenue to the east, Carling Avenue to the north and existing residential development to the south. See Appendix 'A' for a Site Location Plan.

The existing site is currently developed with two single family homes. Existing retaining walls and vegetated areas are located around the perimeter of the property.

The proposed development consists of one three storey stacked townhome building with 28 units and a 3-unit apartment building. The proposed buildings will be connected via an underground parking garage with access from Judge Street.

2.0 BACKGROUND STUDIES

Background studies that have been completed for the site include review of the City of Ottawa as-built drawings, and a topographical survey of the site.

As-built drawings of the existing services within the vicinity of the site were obtained from the City of Ottawa Information Center and were reviewed in order to determine proper servicing and stormwater management schemes for the site. A topographic survey of the site was completed by Fairhall Moffatt & Woodland Limited.

3.0 PRE-CONSULTATION SUMMARY

City of Ottawa Staff have been pre-consulted regarding the proposed development in person on October 2, 2018. Specific design parameters to be incorporated within this design include the following:

- Pre-development and post-development flows shall each be calculated using a time of concentration (Tc) of 10 minutes.
- Control post-development flows up to the 100-year event to the 5-year pre-development flow rate using a calculated time of concentration up to a maximum 'C' value of 0.5.
- Through correspondence with RVCA, it was noted that due to the lack of surface parking the site has no specific quality control requirements. However, opportunities for best management practices are encourage and supported.

Correspondence can be found in Appendix 'B'.

4.0 EXISTING SERVICES

The following subsections describe the existing services within the Carling Avenue, Vick Avenue and Judge Street right-of-ways. Hydro, cable and Bell service locations shall be confirmed by contractor. Catch basins are present within the surrounding ROWs.

4.1 Carling Avenue

Existing services within Carling Avenue ROW west bound lanes:

- 600mm diameter concrete storm sewer
- 1050mm and 400mm diameter CI watermain

Existing services within Carling Avenue ROW east bound lanes:

- 225mm diameter concrete sanitary sewer

4.2 Vick Avenue

Existing services within Vick Avenue ROW:

- 150mm diameter DI watermain
- 225mm diameter concrete sanitary sewer

4.3 Judge Street (Previously known as Moore Street)

Existing services within Judge Street ROW:

- 200mm diameter DI watermain
- 250mm diameter concrete sanitary sewer
- 300mm diameter UNK storm stub

5.0 SERVICING PLAN

5.1 Proposed Servicing Overview

Proposed servicing will be provided via service connections to the local services within Judge Street. The water service will be extended from the 200 mm diameter watermain within Judge Street. Similarly, the storm and sanitary services will be connected to the 300 mm storm sewer stub and the 250 mm diameter sanitary sewer within Judge Street. Details pertaining to the final proposed servicing locations have been reviewed and are shown on the proposed Site Servicing Plan (C102) included within the submission package.

5.2 Proposed Water Design

A new 150mm diameter PVC watermain is proposed to service the site complete with a water valve and will be connected to the existing 200 mm diameter watermain within Moore Avenue. The watermain is designed to have a minimum of 2.4m cover.

The Fire Underwriters Survey 1999 (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 1.0 (ordinary construction). The total floor area ('A' value) for the FUS calculation was determined to be 2,094 m^2. The results of the calculations yielded a required fire flow of 11,000 L/min. A fire flow of 9,000 L/min was calculated using the Ontario Building Code (OBC) requirements. The detailed calculations for the FUS and OBC 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 below:

Table 1: Water Demands

Average Day Demand (L/s)	0.33
Maximum Daily Demand (L/s)	0.82
Peak Hourly Demand (L/s)	1.80
OBC Fire Flow Requirement (L/s)	150.00
FUS Fire Flow Requirement (L/s)	183.33
Max Day + Fire Flow (FUS) (L/s)	184.15

The City provided both the estimated minimum and maximum water pressures, as well as the estimated water pressure during fire flow demand for the demands indicated by the correspondence in Appendix 'C'. As shown by ***Table 2*** below, the minimum and maximum pressures fall within the required range identified in the City of Ottawa Water Supply guidelines.

Table 2: Boundary Conditions Results

Scenario	m H2O	Pressure (kPa)
Average Day Demand (L/s)	34.4	337.7
Maximum Daily + Fire Flow Demand (L/s) (200 L/s Max)	-	140.0
Peak Hourly Demand (L/s)	26.8	263.1

To confirm the adequacy of fire flow to protect the proposed development, public and private fire hydrants within 150 m of the proposed building were accounted for per ***ISTB 2018-03*** *Table 3 Appendix I*, as demonstrated below in Table 3.

Table 3: Fire Protection Confirmation

Building	Fire Flow Demand (L/min.)	Fire Hydrant(s) within 75m	Fire Hydrant(s) within 150m	Combined Fire Flow (L/min.)
2830 Carling Avenue	11,000	3	7	32,300

The number of hydrants within specified distances from the building shown in Table 3 have been acquired from GeoOttawa. An arial view of the hydrants located within 75 m and 150 m from the site can be seen below in Figure 1.

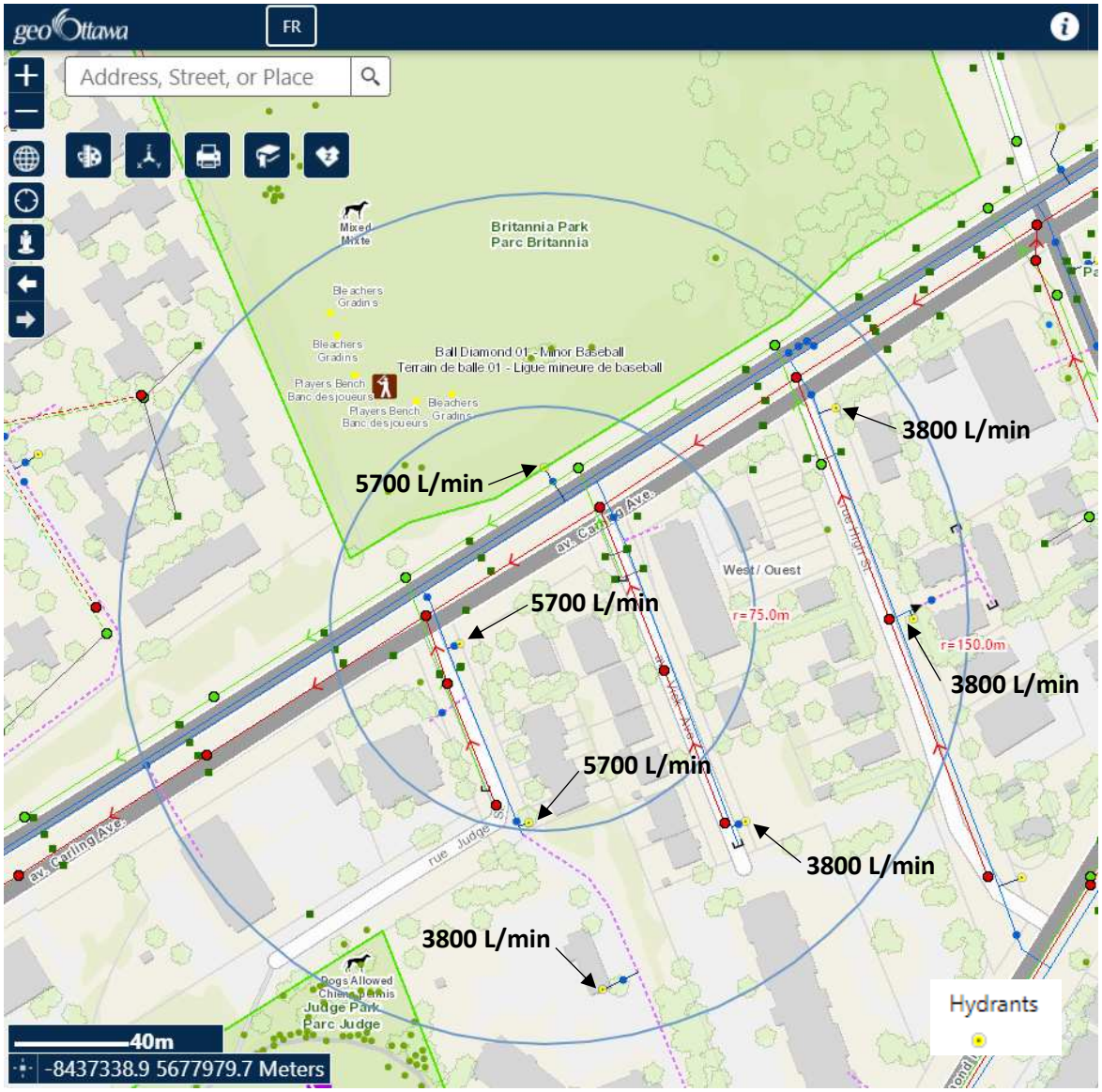

Figure 1: Hydrant Locations

5.3 Proposed Sanitary Design

A new 200 mm diameter gravity sanitary service will be connected to the existing 225 mm diameter sanitary sewer within Judge Street.

The proposed development consists of Back to Back townhomes and a three-storey apartment building. The total area of the building is 1,008 m^2. The peak design flows for the proposed buildings were calculated using criteria from the City of Ottawa – Sewer Design Guidelines, October 2012. The proposed site development area (0.169 ha) will generate a flow of 0.38 L/s.

The proposed 200 mm diameter gravity sanitary service will be installed with a minimum full flow target velocity (cleansing velocity) of 0.6 m/s and a full flow velocity of not more than 3.0 m/s. Design parameters for the site include an infiltration rate of 0.33l/s/ha.

The proposed service for the site will be connected to existing 225 mm diameter sanitary sewer within Judge Street. The existing sanitary sewer appears to be servicing 6 townhomes and possibly an apartment complex. The flow capacity for the existing 225mm diameter sewer at 1.99% (per City of Ottawa as-built drawings) is 66.08 L/s therefore it is anticipated that there is sufficient capacity within the existing sanitary sewer within Judge Street.

The local sanitary sewer is tributary to the 225 mm diameter sanitary sewer within Carling Avenue. Due to the complexity of the network the City of Ottawa will need to confirm capacity in the sewers downstream of the development.

See *Sanitary Flow Calculations* and *Sanitary Sewer Design Sheet* in Appendix 'D' of this report for more details.

5.4 Proposed Storm Design (Conveyance and Management)

Uncontrolled stormwater runoff will be conveyed by way of overland sheet flow which will be collected via the existing catchbasins and piped infrastructure within Judge Street, Carling Avenue and Vick Avenue. Runoff from the stacked townhomes roof will be collected and discharged to surface where feasible to controlled drainage area B2. Stormwater will be attenuated via an internal cistern within the developments parking garage.

A new 250 mm diameter storm service will be connected to the existing 300 mm diameter storm main within Judge Street.

From discussions with the City of Ottawa and the Rideau Valley Conservation Authority (RVCA), quality control will not be required due to the lack of surface parking onsite. Correspondence with the RVCA is available in Appendix 'B'. Further details and calculations pertaining to the quantity and quality of the stormwater management system are provided in Section 6.0.

6.0 PROPOSED STORMWATER MANAGEMENT

6.1 Design Criteria and Methodology

Stormwater management for this site will be maintained through an internal cistern and positive drainage away from the proposed building. Stormwater runoff from the proposed roof and landscaped areas will be directed to the proposed internal cistern before reaching the existing storm sewer within Carling Avenue. Overland flow will be directed towards the Judge Street, Carling Avenue and Vick Avenue right-of-way. Stormwater Best Management Practices (SWM BMP's) will be implemented where possible. These concepts will be explained further in Section 6.4. 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

- No specific quality control is required for the site as per the RVCA. However, opportunities for best management practices are encourage and supported.

Quantity Control

- Control post-development flows up to the 100-year event to the 5-year pre-development flow rate using a calculated time of concentration up to a maximum 'C' value of 0.5.

6.2 Runoff Calculations

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

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

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 by-product of using extremely conservative prediction method, any facilities that are sized using these results are expected to function as intended in real world conditions.

The following coefficients were used to develop an average C for each area:

Roofs/Concrete/Asphalt	0.90
Gravel	0.60
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.

As per correspondence with City of Ottawa Staff the time of concentration (Tc) used for pre-development flows is to be calculated or no less than 10 minutes.

6.2.1 Pre-Development Drainage

The existing site drainage limits are demonstrated on the Pre-Development Drainage Area Plan. The existing site has been shown as drainage areas A1. See drawing COO-21-1191– PRE within Appendix 'E' of this report for more details. Existing conditions have the overland stormwater runoff flowing from high points located across the northern area of the property and draining south towards Vicks Avenue's Right-of-Way (ROW) and the existing catch basins. A summary of the Pre-Development Runoff Calculations can be found below.

Table 4: Pre-Development Runoff Summary

Area ID	Drainage Area (ha)	Balanced Runoff Coefficient (C) 5-year	Balanced Runoff Coefficient (C) 100-year	5-Year Flow Rate (l/s)	100-Year Flow Rate (l/s)
A1	0.169	0.39	0.45	18.81	37.52
Total	**0.169**			18.81	37.52

(See Appendix 'G' for Calculations)

6.2.2 Post-Development Drainage

The proposed site drainage limits are demonstrated on the Post-Development Drainage Area Plan. See CCO-21-1191 - POST in Appendix 'F' of this report for more details. A summary of the Post-Development Runoff Calculations can be found below.

Table 5: Post-Development Runoff Summary

Area ID	Drainage Area (ha)	Balanced Runoff Coefficient (C) 5-year	Balanced Runoff Coefficient (C) 100-year	5-year Flow Rate (L/s)	100-year Flow Rate (L/s)
B1	0.026	0.79	0.88	5.86	11.21
B2	0.143	0.68	0.76	28.16	54.24
Total	**0.169**			**34.02**	**65.45**

(See Appendix 'G' for Calculations)

Runoff from area B2 will be collected through the use of area drains to direct flow to an internal cistern where stormwater will be detained and released at a controlled rate. The cisterns outlet will restrict both the 5-year and 100-year runoff to the 5-year pre-development flow rate with a combined C value of while accounting for the proposed unrestricted flow from drainage area B1. See Appendix 'G' for calculations. This restriction will be further detailed in Section 6.3.

6.3 Quantity Control

After discussing the stormwater management criteria for the site with City of Ottawa staff, the 5 and 100-year post-development runoff for this site has been restricted to match the 5-year pre-development flow rate with a combined C value of 0.39 (See Appendix 'B' for correspondence). These values create the following allowable release rates and storage volumes for the development.

Table 6: Allowable Release Rate

Area ID	Drainage Area (ha)	Balanced Runoff Coefficient (C) 5-year	Balanced Runoff Coefficient (C) 100-year	5-Year Flow Rate (l/s)	100-Year Flow Rate (l/s)
A1	0.169	0.39	0.45	18.81	37.52
Total	**0.169**			**18.81**	**37.52**

(See Appendix 'G' for Calculations)

Runoff from area B2 will be restricted as detailed below.

Table 7: Post-Development Stormwater Management Summary

Area ID	Area (ha)	Restricted Flow (L/s)		Storage Required (m^3)		Storage Provided (m^3)		Restriction Device	
		5-yr	100-yr	5-yr	100-yr	5-yr	100-yr	Type	Location
B1	0.026	5.86	11.21						
B2	0.143	3.80	7.60	19.55	36.72	40.00	40.00	Cistern – Pumped to the specified release rate	Under-ground parking garage
Total	**0.169**	**9.66**	**18.18**						

(See Appendix 'G' for Calculations)

Area B1 is the uncontrolled portion of the site. Runoff from Area B1 will run off towards the City of Ottawa rights-of-way. Area B2 is the attenuated portion of the site. Area B2 will be restricted by an internal cistern located within the parking garage with a controlled outlet rate of 7.60 L/s in a 100-year event. Roof drainage will be directed to area B2. Refer to drawing CCO-21-1191 – POST plan available within Appendix 'F'.

In the event that there is a rainfall event above the 100-year storm event, or a blockage within the storm sewer system, emergency flow routes will direct stormwater runoff towards the City of Ottawa rights-of-way as indicated by the emergency flow arrows shown on drawing C101. In the event of failure of the cistern controls or surcharge of the City system, CBMH1 will be equipped with a CB style lid to allow emergency overflow to be directed towards Judge Street at a maximum of elevation of 81.00.

Additional details of the cistern are shown by the detail prepared by the mechanical engineer included in Appendix 'G'.

6.4 Quality Control

The development of this lot will employ Best Management Practices (BMP's) wherever possible. The intent of implementing stormwater BMP's is to ensure that water quality and quantity concerns are addressed at all stages of development. Lot level BMP's typically include temporary retention of the lot runoff, minimizing ground slopes and maximizing landscaped areas.

Roof runoff is to be directed to area B2 where feasible to allow for infiltration and sedimentation prior to being directed to the internal cistern. Additionally, as shown by the cistern detail a sump will allow for additional sedimentation before stormwater is discharged to the City network.

Some of these BMP's cannot be provided for this site due to site constraints and development requirements. As per the discussions with the RVCA, there are no specific quality control requirements for the site. Please refer to Appendix 'B' for correspondence with the RVCA. The combination of the above BMP's and the proposed flow control measures will aid in the protection of the natural environment.

7.0 EROSION AND SEDIMENT CONTROL

7.1 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 are 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 Servicing and Sediment & Erosion Control Plan* for additional details regarding the temporary measures to be installed and their appropriate OPSD references.

7.2 Permanent Measures

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.

8.0 SUMMARY

- A new three-storey stacked townhome and residential triplex is proposed to be constructed on the site located at 2830 Carling Avenue.
- A new 250 mm diameter sanitary service is proposed to be installed and connected to the existing 300 mm diameter sanitary sewer within Judge Street.
- A new 150 mm diameter water lateral is proposed to be extended from the existing 200 mm diameter main within Judge Street.
- A new 250 mm storm service is proposed to be installed and connected to the existing 300 mm diameter storm sewer within Judge Street.
- As discussed with City of Ottawa staff, the stormwater management design will ensure that post-development flows are controlled up to the 100-year event to the 5-year pre-development flow rate using a calculated time of concentration up to a maximum ‘C’ value of 0.5.
- Storage for the 5 and 100-year storm events will be provided via an internal cistern.

9.0 RECOMMENDATIONS

Based on the information presented in this report, we recommend that City of Ottawa approve this Servicing and Stormwater Management Report in support of the proposed development located at 289 Carling Avenue.

This report is respectfully being submitted for approval.

Regards,

McIntosh Perry Consulting Engineers Ltd.

Charlotte Kelly, EIT
Engineering Intern, Land Development
McIntosh Perry Consulting Engineers
T: 613.714.6209
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Robert Freel, P.Eng.
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10.0 STATEMENT OF LIMITATIONS

This report was produced for the exclusive use of Holzman Consultants Inc. 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, Conservation and Parks, 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

LEGEND

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

800 400 0 800

Scale 1:25,000 Metres

REFERENCE

GIS data provided by the Ontario Ministry of Natural Resources and Forestry, 2020.

CLIENT: HOLTZMAN CONSULTANTS INC.

PROJECT: RESIDENTIAL DEVELOPMENT
2830 CARLING AVENUE

TITLE: SITE LOCATION

McINTOSH PERRY
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Tel: 613-836-2184 Fax: 613-836-3742
www.mcintoshperry.com

PROJECT NO: CCO-21-1191	
Date	Oct., 27, 2020
GIS	EU
Checked By	CH

FIGURE: 1

C:\Users\e.ungun\McIntosh Perry\GIS - Documents\Projects\2021\CCO\CCO-21-1191 First Bay Properties Inc 2380 Carling\GIS\aprx\Phase1\CCO-21-1191-Phase1_ESA.aprx

Robert Freel

From: Eric Lalande <eric.lalande@rvca.ca>
Sent: October 28, 2020 2:05 PM
To: Robert Freel
Subject: RE: 2830 Carling Ave - Quality Controls

Hi Bobby,

Based on the plan, The RVCA would not require on-site water quality protection, and the proposed site design and bmp's appear to be acceptable for the project. Rooftop collection is considered clean.

Let me know if you require anything else.

Thank you,

Eric Lalande, MCIP, RPP
Planner, Rideau Valley Conservation Authority
613-692-3571 x1137

From: Robert Freel <r.freel@mcintoshperry.com>
Sent: Thursday, October 22, 2020 11:26 AM
To: Eric Lalande <eric.lalande@rvca.ca>
Subject: RE: 2830 Carling Ave - Quality Controls

Thanks Eric,

The proposed development (see attached) will consist of two buildings with landscaped areas and a ramp to an underground garage with no surface parking. Roof drainage and landscaped areas will be directed to an internal cistern. Would the RVCA be looking for specific quality controls (hydro separator) or would directing roof areas to landscaped areas to allow for infiltration and sedimentation be acceptable to the RVCA as a best management practice to provide quality?

Thank you,
Bobby

Robert Freel,P.Eng.
Senior Project Manager, Land Development
T.613.714.6174|**C.**613.915.3815
McINTOSH PERRY

From: Eric Lalande <eric.lalande@rvca.ca>
Sent: October 22, 2020 10:40 AM
To: Robert Freel <r.freel@mcintoshperry.com>
Subject: RE: 2830 Carling Ave - Quality Controls

Hi Bobby,

The RVCA requires enhanced water quality protection (80% TSS Removal) on-site where there is no intervening Storm Water Management prior to the outlet. Best management practices should be implemented to minimize reliance on engineered solutions. i.e. elimination of surface parking, maximizing infiltration on site.

Thank you,

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

From: Robert Freel <r.freel@mcintoshperry.com>
Sent: Thursday, October 22, 2020 8:44 AM
To: Eric Lalande <eric.lalande@rvca.ca>
Subject: 2830 Carling Ave - Quality Controls

Good morning Eric,

Hope you are doing well,

We are working on a proposed development at 2830 Carling Avenue. The existing storm sewers travel approximately 900m before discharging to the Ottawa River as shown by the map below.

Can you provide any comment regarding quality controls that may be required for this site.

Please feel free to give me a call if there are any questions.

Thank you,
Bobby

Robert Freel,P.Eng.
Senior Project Manager, Land Development
115 Walgreen Road, Carp, ON K2E 6L5
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r.freel@mcintoshperry.com|www.mcintoshperry.com

McINTOSH PERRY

We have been informed that a number of our clients have received phishing emails from scammers pretending to be McIntosh Perry. We take information security very seriously and ask that you also be vigilant in order to prevent fraud. If you have any concerns, please let your contact at McIntosh Perry know or email us at **info@mcintoshperry.com**

APPENDIX B
BACKGROUND DOCUMENTS

McINTOSH PERRY

Charlotte Kelly

From: Jonah Bonn <j.bonn@holzmanconsultants.com>
Sent: August 4, 2020 10:36 AM
To: Thomas Gryz
Cc: Curtis Melanson; Dan Arnott
Subject: FW: 2830 Carling Avenue
Attachments: TIA Screening_2830 Carling, Ottawa.pdf

Follow Up Flag: Follow up
Flag Status: Completed

See below. I prepared the attached and the City responded as per below…..

Jonah Bonn, MCIP, RPP
Holzman Consultants Inc.
Land Development Consultants
311 Richmond Road, Suite 203 | Ottawa, ON | K1Z 6X3
613.226.1386

From: Gervais, Josiane [mailto:josiane.gervais@ottawa.ca]
Sent: July-28-20 2:55 PM
To: Jonah Bonn <j.bonn@holzmanconsultants.com>
Cc: McCreight, Laurel <Laurel.McCreight@ottawa.ca>
Subject: RE: 2830 Carling Avenue

Hi Jonah,

A full TIA is not required for this site. Please submit the completed Screening Form as part of your application.
In addition, please provide a sightline analysis for the proposed accesses on Judge St as part of the submission, this will be reviewed with the site plan at the time of submission.

Regards,

Josiane Gervais, P.Eng.
Project Manager, Infrastructure Approvals | GPRJ Approbation des demandes d'infrastructure
Development Review Branch | Dir Examen des projets d'aménagement
City of Ottawa | Ville d'Ottawa
Tel | Tél. : 613-580- 2424 ext. | poste 21765
web | Site Web : www.ottawa.ca

From: Jonah Bonn <j.bonn@holzmanconsultants.com>
Sent: July 27, 2020 1:03 PM
To: Gervais, Josiane <josiane.gervais@ottawa.ca>
Cc: McCreight, Laurel <Laurel.McCreight@ottawa.ca>
Subject: 2830 Carling Avenue

Hi Josiane

I hope you had a good weekend.

Please find attached a complete TIA Screening form for 2830 Carling Avenue.

Thanks

Jonah Bonn, MCIP, RPP
Holzman Consultants Inc.
Land Development Consultants
311 Richmond Road, Suite 203 | Ottawa, ON | K1Z 6X3
613.226.1386

From: McCreight, Laurel [mailto:Laurel.McCreight@ottawa.ca]
Sent: July-17-20 11:46 AM
To: Jonah Bonn <j.bonn@holzmanconsultants.com>
Subject: Pre-Consultation Follow-Up: 2830 Carling Avenue

Hi Jonah,

Please refer to the below regarding the Pre-Application meeting held on July 13, 2020 for the property at 2830 Carling Avenue for a Site Plan Control Application, and potential minor variances for a townhouse development. I have also attached the required Plans & Study List for application submission. Despite the amount of hard copies identified in the list, they may not be required- please confirm with the Planner prior to submission.

Below are staff's preliminary comments based on the information available at the time of the pre-consultation meeting:

Planning / Urban Design

- The site is considered a corner through lot as per Section 135 of the Zoning By-law.
- If minor variances are required, please reach out to Cameron Hodgins, Committee of Adjustment Planner, to discuss.
- The site is within a Design Priority Area, however, the proposed development is exempted from Urban Design Review Panel review due to the proposed height (4-storeys).
- There are concerns regarding the amount of driveway and parking ramps proposed (a total of 3 off Judge)
    - It is encouraged to remove the proposed surface parking and its associated driveway.
- Please carefully consider the grading of the site and the building.
    - The first floor of the building should be related to the sidewalks comfortably from the perspectives of both the residents and the pedestrians. It should be separate to offer relief from public realm and privacy. At the same time, it should be close enough to be perceived as the ground floor from the street. Generally speaking, the first floor of the building should be less than 0.9m above the sidewalk. Blank wall conditions resulting from a higher ground floor (the exposed basement walls) must be avoided.
- Please review the Building Code to make sure the proposed development will meet the accessibility requirements.
- Please review the Urban Design Guidelines for Development along Arterial Mainstreet and Urban Design Guidelines for Low-Rise Infill Housing for general design guidance.

- A scoped Design Brief is required for the site plan application. The Terms of Reference of the Design Brief is attached to provide guidance.
- You are encouraged to contact the Ward Councillor, Councillor Theresa Kavanagh, about the proposal.

Engineering

- The Servicing Study Guidelines for Development Applications are available here.
- Servicing and site works shall be in accordance with the following documents:
    - Ottawa Sewer Design Guidelines (October 2012)
    - Ottawa Design Guidelines – Water Distribution (2010)
    - Geotechnical Investigation and Reporting Guidelines for Development Applications in the City of Ottawa (2007)
    - City of Ottawa Slope Stability Guidelines for Development Applications (revised 2012)
    - City of Ottawa Environmental Noise Control Guidelines (January 2016) City of Ottawa Park and Pathway Development Manual (2012)
    - City of Ottawa Accessibility Design Standards (2012)
    - Ottawa Standard Tender Documents (latest version)
    - Ontario Provincial Standards for Roads & Public Works (2013)
- Record drawings and utility plans are also available for purchase from the City (Contact the City's Information Centre by email or by phone at (613) 580-2424 x.44455).
- For the re-zoning application, please provide a site serviceability study proving the site can be serviced by the existing municipal infrastructure and discuss any improvements that may be required to service the proposed site.

General

- The retaining wall along Judge Street was renewed in 2018 by the City.

Sanitary

- A 300mm dia. storm sewer is available for connection along Judge Street (previously known as Moore Street).
- A 250/300mm dia. sanitary sewer is available for connection along Judge Street. A 225mm dia san is available along Vick Street
- Connection to either sanitary sewer is fine.

Watermain

- 250mm dia WM available along Judge St, and a 150mm dia WM available along Vick St.
- Water Frontage Charges may apply to a WM connection on Judge Street.
- If 50m^3/day is required (approximately 50+ homes) then WM looping to Judge and Vick Street will be required.
- A boundary condition request is required. Please provide to following information:
    - Location of service
    - Type of development
    - (Draft) Site Plan
    - The amount of fire flow required (as per FUS, 1999)
    - Average daily demand: ___ L/s.
    - Maximum daily demand: ___ L/s.
    - Maximum hourly daily demand: ___ L/s.
    - RFF and domestic demand supporting calculations

Storm/Stormwater Management

- Since there will be an increase in the site's overall runoff coefficient, the designer must ensure that there will be no adverse impact to the existing storm system. On-site stormwater management measures may be required if the existing system is at or near capacity. Hence, 100-year post to 100-year pre, and 5-year post to 5-year pre.

Storm sewer connection limited to 5-year pre rate. STM connection available from Judge St and Carling Ave. Preference is to connect to Judge Street.
- Site is located within Inlet Protection Zone-2
- Contact the Rideau Valley Conservation Authority for quality control requirements.

MECP ECA Requirements
- An Environmental Compliance Approval (Private Sewage Works) may be required for the proposed development. Clarity is required regarding stacked townhomes' ownership (i.e. freehold, condominium, or apartment) over the shared underground garage with shared sanitary and stormwater services and likely a shared stormwater management system. Please contact Ontario Ministry of Environment, Conservation and Parks, Ottawa District Office to arrange a pre-submission consultation:

For residential applications: Charlie Primeau
(613) 521-3450, ext. 251
Charlie.Primeau@ontario.ca

Please contact Infrastructure Project Manager Gabrielle Schaeffer for follow-up questions.

Transportation

- Follow Traffic Impact Assessment Guidelines
  - Submit the Screening form to start, a full Traffic Impact Assessment if any of the triggers on the screening form are satisfied.
  - Start this process asap. The application will not be deemed complete until the submission of the draft step 1-4, including the functional draft RMA package (if applicable) and/or monitoring report (if applicable).
  - Request base mapping asap if RMA is required. Contact Engineering Services (https://ottawa.ca/en/city-hall/planning-and-development/engineering-services)
- ROW protection on Carling between Holly Acres and Richmond Rd is 37.5m even.
- Corner triangles as per OP Annex 1 - Road Classification and Rights-of-Way at the following locations on the final plan will be required (measure on the property line/ROW protected line; no structure above or below this triangle):
  - Local Road to Arterial Road: 5 m x 5 m
- Sight triangle as per Zoning by-law is 6 m x 6 m measure on the curb line.
- Carling Ave is a cycling Spine Route, as per TMP.
- The three accesses proposed do not meet the private approach bylaw:
  - Number of accesses: the bylaw indicates: "20 metres to 34 metres of frontage, one (1) two-way private approach or two (2) one-way private approaches;"
  - Separation between accesses: The garage access immediately next to the surface parking access is not acceptable. "The distance between the nearest limits of a private approach intended for two-way vehicular traffic and any other private approach to the same property shall be a minimum of 9 metres measured at the street line, and at the curb line or roadway edge."
- Pedestrian pathways should be reviewed, staircase from Units 4/8 go straight into surface parking.
- Sidewalk required along site frontage on Judge, Carling and Vick. Ensure sidewalk is to be continuous across access as per City Specification 7.1.
- On site plan:
  - Show all details of the roads abutting the site up to and including the opposite curb; include such items as pavement markings, accesses and/or sidewalks.
  - Turning movement diagrams required for all accesses showing the largest vehicle to access/egress the site.
  - Turning movement diagrams required for internal movements (loading areas, garbage).
  - Show all curb radii measurements; ensure that all curb radii are reduced as much as possible

    - Show lane/aisle widths.
    - Grey out any area that will not be impacted by this application.
- AODA legislation is in effect for all organizations, please ensure that the design conforms to these standards.
- Noise Impact Studies required for the following:
    - Road
    - Stationary (due to the proximity to neighboring exposed mechanical equipment) or (if there will be any exposed mechanical equipment due to the proximity to neighboring noise sensitive land uses)

Please contact Transportation Project Manager, Josiane Gervais for follow-up questions.

Other

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

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

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

Regards,
Laurel

Laurel McCreight MCIP, RPP
Planner
Development Review West
Urbaniste
Examen des demandes d'aménagement ouest

City of Ottawa | Ville d'Ottawa
613.580.2424 ext./poste 16587
ottawa.ca/planning / ottawa.ca/urbanisme

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APPENDIX C
WATERMAIN CALCULATIONS

McINTOSH PERRY

Charlotte Kelly

From: Charissa Hampel
Sent: November 16, 2020 11:32 AM
To: Robert Freel; Charlotte Kelly
Subject: FW: Water Boundary Conditions - 2830 Carling Ave
Attachments: 2830 Carling Avenue November 2020.pdf

Hey Guys,
Carling boundary conditions below.

Thanks,

Charissa Hampel, P.Eng
Project Engineer
T. 613.714.4625 | **F.** 613.836.3742 | **C.** 613.401.6530
McINTOSH PERRY

From: Rasool, Rubina <Rubina.Rasool@ottawa.ca>
Sent: November 16, 2020 11:09 AM
To: Charissa Hampel <c.hampel@mcintoshperry.com>
Subject: FW: Water Boundary Conditions - 2830 Carling Ave

Hi Charissa,

Please see Matt's analysis and comment below. Also, the City discontinued providing hydrant flow data this summer.

Rubina

Rubina Rasool, E.I.T.
Project Manager
Planning, Infrastructure and Economic Development Department - Services de la planification, de l'infrastructure et du développement économique
Development Review - West Branch
City of Ottawa | Ville d'Ottawa
110 Laurier Avenue West Ottawa, ON | 110, avenue Laurier Ouest. Ottawa (Ontario) K1P 1J1 rubina.rasool@ottawa.ca

From: Steele, Matt <Matt.Steele@ottawa.ca>
Sent: November 16, 2020 11:02 AM
To: Rasool, Rubina <Rubina.Rasool@ottawa.ca>
Subject: RE: Water Boundary Conditions - 2830 Carling Ave

Hi Rubina,

Do you mean Judge Street? If so please see the boundary condition below.

Our group does not provide hydrant flow data – please note hydrant flow data is a point in time and does not reflect system operations.

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

The following are boundary conditions, HGL, for hydraulic analysis at 2830 Carling (zone 1W) assumed to be connected to the 203mm on Judge Street (see attached PDF for location).

Minimum HGL = 107.6m

Maximum HGL = 115.2m

Available Fire Flow @ 20psi = 200 L/s

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

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

'

'

McINTOSH PERRY

CCO-21-1191 - 2830 Carling Ave - Water Demands

Project:	2830 Carling Ave		
Project No.:	CCO-21-1191		
Designed By:	C.D.H.		
Checked By:	R.D.F.		
Date:	November 19, 2020		
Site Area:	0.17 gross ha		
Stacked Towns	28	2.7 Persons per unit	76
1-Bedroom Apartments	3	1.8 Persons per unit	5
		Total	81

AVERAGE DAILY DEMAND

DEMAND TYPE	AMOUNT	UNITS
Residential	350	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 Parks 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
Othe Commercial	28,000	L/gross ha/d
AVERAGE DAILY DEMAND	0.33	L/s
	19.69	L/min

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	0.82	L/s
	49.22	L/min

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	1.80	L/s
	108.28	L/min

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

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info@mcintoshperry.com | www.mcintoshperry.com

McINTOSH PERRY

CCO-21-1191 - 2830 Carling Ave - OBC Fire Calculations

Project:	2830 Carling Ave
Project No.:	CCO-21-1191
Designed By:	C.D.H.
Checked By:	R.D.F.
Date:	November 19, 2020

Ontario 2006 Building Code Compendium (Div. B - Part 3)

Water Supply for Fire-Fighting - Residential

Building is classified as Group : C and F2 up to 2 Storeys
Building is of combustible construction with fire separations and fire resistance ratings provided in accordance with Subsection 3.2.2., including loadbearing walls, columns and arches. Noncombustible construction may be used in lieu of fire-resistance rating

From Div. B A-3.2.5.7. of the Ontario Building Code - 3. Building On-Site Water Supply:

(a) Q = K x V x Stot

where:

Q = minimum supply of water in litres

K = water supply coefficient from Table 1

V = total building volume in cubic metres

Stot = total of spatial coefficient values from the property line exposures on all sides as obtained from the formula:

Stot = 1.0 + [Sside1+Sside2+Sside3+..etc.]

K	18	(from Table 1 pg A-31)
V	10,830	(Total building volume in m³.)
Stot	1.5	(From figure 1 pg A-32)
Q =	292,410.00	L

From Table 2: Required Minimum Water Supply Flow Rate (L/s)

9000 L/min (if Q> 270,000 L)
2378 gpm

			From Figure 1 (A-32)
Snorth	50	m	0.0
Seast	26	m	0.0
Ssouth	3	m	0.5
Swest	36	m	0.0

* approximate distances

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info@mcintoshperry.com | www.mcintoshperry.com

CCO-21-1191 - 2830 Carling Ave - Fire Underwriters Survey (FUS) Fire Calculations

Project:	2830 Carling Ave
Project No.:	CCO-21-1191
Designed By:	CMK
Checked By:	RDF
Date:	November 19, 2020

From the Fire Underwriters Survey (1999)

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

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 Ordinary Construction

C 1 **A** 2,094.00 m^2

Caluclated Fire Flow	**10067.3 L/min**
	10000.0 L/min

B. REDUCTION FOR OCCUPANCY TYPE (No Rounding)

From note 2, Page 18 of the Fire Underwriter Survey:

Limited Combustible -15%

Fire Flow	**8500.0 L/min**

C. REDUCTION FOR SPRINKLER TYPE (No Rounding)

Non-Sprinklered 0%

Reduction	**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	<45	Non-Combustible	20	2	40	0%
Exposure 2	20.1 to 30	Wood frame	25	2	50	8%
Exposure 3	3.1 to 10	Wood frame	25	2	50	18%
Exposure 4	30.1 to 45	Wood frame	30	1	30	5%
					% Increase*	**31%**

Increase*	**2635.0 L/min**

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

Fire Flow	**11135.0 L/min**
Fire Flow Required**	**11000.0 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

McINTOSH PERRY

CCO-21-1191 - 2830 Carling Ave - CITY OF OTTAWA BOUNDARY CONDITION RESULTS

Project:	2830 Carling Ave
Project No.:	CCO-21-1191
Designed By:	CMK
Checked By:	RDF
Date:	November 19, 2020

Boundary Conditions Unit Conversion

Scenario	Height (m)	Elevation (m)	m H_2O	PSI	kPa
Avg. DD	115.2	80.78	34.4	49.0	337.7
Fire Flow (200 L/s)				20.0	140.0
Peak Hour	107.6	80.78	26.8	38.2	263.1

APPENDIX D
SANITARY CALCULATIONS

McINTOSH PERRY

McINTOSH PERRY

Project:	CCO-21-1191 – 2830 Carling Avenue
Designed By:	CDH
Checked By:	RPK
Date:	November 9, 2020

Re: Sanitary Flow Calculations

1. Building Occupancy

The maximum number of bedroom units will be 48 units as per the floors plans and the attached unit break down from the Architect.

- 28 Stacked Townhomes
- 3 One-bedroom apartments

2. Daily Volume in Litres

As per the extract of the City of Ottawa Sewer Design Guidelines, Appendix 4-A; Daily Sewage Flow for Dwellings;

- Townhomes and Apartments
  = 350 Liters/Person/Day
- Infiltration Allowance
  = 0.33 Liters/Second/Hectare

3. Peak Flow (Q/p)

- $Q_{APT}(p) = F_{APT} \times P_{APT}$ Where:
  F_{APT} = 350 Litres/Dwelling/Day (as per City of Ottawa Sewer Design Guidelines)
  P_{APT} = 3 Units X 1.8 Persons per unit = 5
- Therefore, $Q_{APT}(p) = (350) \times (5) =$ 1,750 L/Day (0.020 L/sec)

- $Q_{TOWN}(p) = F_{TOWN} \times P_{TOWN}$ Where:
  F_{TOWN} = 350 Litres/Dwelling/Day (as per City of Ottawa Sewer Design Guidelines)
  P_{TOWN} = 3 Units x 28 Persons per unit = 76
- Therefore, $Q_{TOWN}(p) = (350) \times (76) =$ 26,600 L/Day (0.308 L/sec)

- $Q_{INF}(p) = A \times I$ Where:
  $A = 0.17$ Ha
  $I = 0.33$ L/s
- Therefore, $Q_{TOWN}(p) = (0.17) \times (0.33) =$ 0.056 L/sec)

- $Q_{TOTAL}(p) = Q_{APT} + Q_{TOWN} + Q_{INF}$ Where:
  $Q_{APT} = 0.020$ L/sec
  $Q_{TOWN} = 0.308$ L/sec
  $Q_{INF} = 0.056$ L/sec
- Therefore, $Q_{TOTAL}(p) = (0.020) + (0.308) + (0.056) =$ 0.384 L/sec

SANITARY SEWER DESIGN SHEET

PROJECT: Residential Development
LOCATION: 2830 Carling Ave
CLIENT: Holtzman Consultants Inc.

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				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	
				SF	SD	TH	APT	(ha)	IND	CUM			INSTITUTIONAL		COMMERCIAL		INDUSTRIAL			IND	CUM								L/s	(%)
													IND	CUM	IND	CUM	IND	CUM											
		Bldg.	Main			28	3	0.17	81.0	81.0	4.00	1.31		0.00		0.00		0.00	0.00	0.17	0.17	0.06	1.37	48.39	16.90	200	2.00	1.492	47.02	97.17
		Bldg.	Main			6	100	0.17	196.2	196.2	4.00	3.18		0.00		0.00		0.00	0.00	0.17	0.17	0.06	3.23	66.08	45.70	225	1.99	1.610	62.85	95.10

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	1.8	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): 350 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

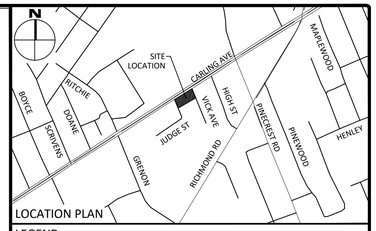
Designed: CDH
Checked: RDF
Project No.: CCO-21-1191

No.	Revision	Date
1.	Township Submission No. 1	2020-11-19

Sheet No: 1 of 1

APPENDIX E
PRE-DEVELOPMENT DRAINAGE PLAN

McINTOSH PERRY



LOCATION PLAN

LEGEND

AREA NAME

A1 | 0.250 — AREA (Ha)

0.90
1.00 — 5yr & 100yr COEFFICIENT

OVERLAND DRAINAGE FLOW

FOR REVIEW ONLY
NOT FOR CONSTRUCTION

No.	Revisions	Date
1	ISSUED FOR MUNICIPAL REVIEW	NOV.20.2020

Check and verify all dimensions before proceeding with the work

Do not scale drawings

SCALE 1 : 150

0 5 10 15 Metres

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Tel: 613-836-2184 Fax: 613-836-3742
www.mcintoshperry.com

N

Stamp:

Client:

1408505 Ontario Inc.
c/o Holzman Consultants Inc.
311 RICHMOND ROAD, Suite 203
OTTAWA, ON K1Z 6X3

Project:

RESIDENTIAL DEVELOPMENT
2830 CARLING AVENUE

Drawing Title:

PRE-DEVELOPMENT AREA DRAINAGE PLAN

Scale: 1:150	Project Number: CCO-21-1191
Drawn By: C.M.K.	
Checked By: R.P.K.	Drawing Number: PRE
Designed By: C.D.H.	

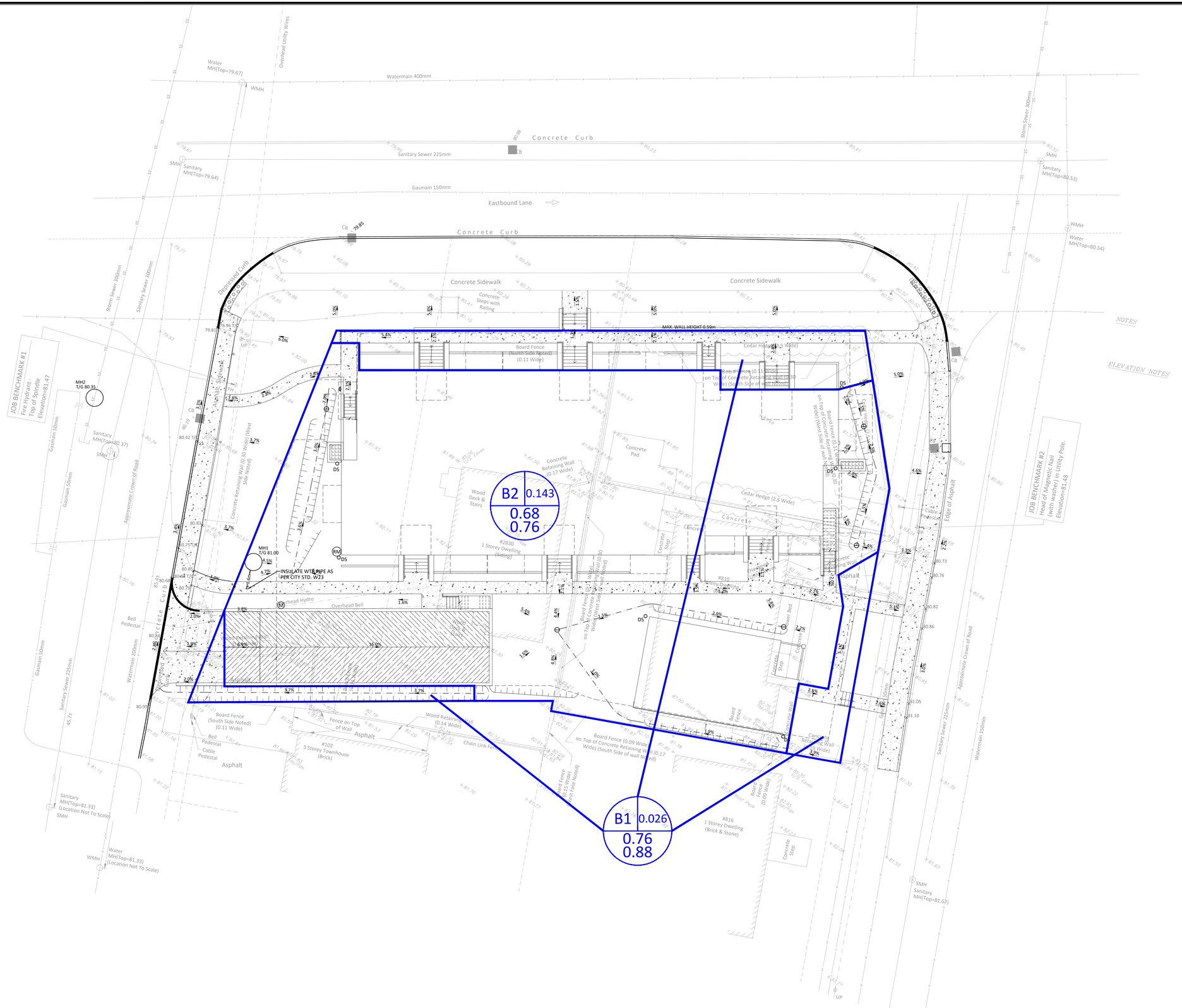
D07-12-20-0163

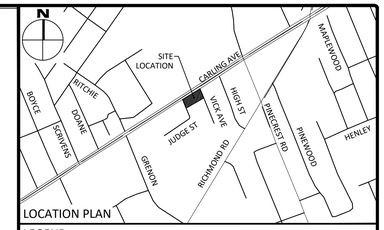
#18307

FILENAME: U:\Ottawa\01 Project - Proposals\2021 Jobs\CCO\CCO-21-1191 First Bay Properties Inc_Stacked Towns_2830 Carling AVE\Civil\12 - Drawings\CCO-21-1191 - Presentation2.dwg
LAST SAVED: Wednesday, April 28, 2021 LAST SAVED By: B.Short
LAST PLOTTED: Wednesday, April 28, 2021 13:51 PLOTTED BY:

APPENDIX F
POST-DEVELOPMENT DRAINAGE PLAN

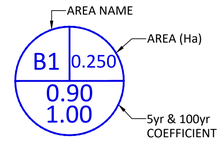
McINTOSH PERRY





LOCATION PLAN

LEGEND



FOR REVIEW ONLY
NOT FOR CONSTRUCTION

No.	Revisions	Date
1	ISSUED FOR MUNICIPAL REVIEW	NOV.20.2020

Check and verify all dimensions before proceeding with the work

Do not scale drawings

SCALE 1 : 150

0 5 10 15 Metres

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

Stamp:

Client:

1408505 Ontario Inc.
c/o Holzman Consultants Inc.
311 RICHMOND ROAD, Suite 203
OTTAWA, ON K1Z 6X3

Project:

RESIDENTIAL DEVELOPMENT
2830 CARLING AVENUE

Drawing Title:

POST DEVELOPMENT AREA DRAINAGE PLAN

Scale: 1:150	Project Number: CCO-21-1191
Drawn By: C.D.H.	
Checked By: R.P.K.	Drawing Number: POST
Designed By: C.D.H.	

D07-12-20-0163

#18307

FILENAME: U:\Ottawa\201 Project - Proposals\2021 Jobs\CCO\CCO-21-1191 First Bay Properties Inc_Stacked Towns_2830 Carling Ave\Civil\12 - Drawings\[CCO-21-1191 - Presentation2.dwg
LAST SAVED: Wednesday, April 28, 2021 LAST SAVED BY: B.Sluyt
LAST PLOTTED: Wednesday, April 28, 2021 PLOTTED BY:

APPENDIX G
STORMWATER MANAGEMENT CALCULATIONS

McINTOSH PERRY

CCO-21-1191 - 2830 Carling Ave - Runoff Calculations

Pre-Development Runoff Coefficient

Drainage Area	Area (ha)	Impervious Area (m^2)	C	Gravel Area (m^2)	C	Pervious Area (m^2)	C	C_{AVG} 2&5-Year	C_{AVG} 100-Year
A1	0.169	445.84	0.90	0.00	0.60	1,240.32	0.20	0.39	0.45

Pre-Development Runoff Calculations

Drainage Area	Area (ha)	C 2&5-Year	C 100-Year	Tc (min)	I (mm/hr)			Q (L/s)		
					2-Year	5-Year	100-Year	2-Year	5-Year	100-Year
A1	0.169	0.39	0.45	10	76.8	104.2	178.6	13.86	18.81	37.52
Total	**0.169**							**13.86**	**18.81**	**37.52**

Post-Development Runoff Coefficient

Drainage Area	Area (ha)	Impervious Area (m^2)	C	Gravel Area (m^2)	C	Pervious Area (m^2)	C	C_{AVG} 2&5-Year	C_{AVG} 100-Year	
B1	0.026	215.44	0.90	0.00	0.60	41.38	0.20	0.79	0.88	UNRESTRICTED
B2	0.143	980.43	0.90	0.00	0.60	448.91	0.20	0.68	0.76	CONTROLLED

Post-Development Runoff Calculations

Drainage Area	Area (ha)	C 2&5-Year	C 100-Year	Tc (min)	I (mm/hr)			Q (L/s)		
					2-Year	5-Year	100-Year	2-Year	5-Year	100-Year
B1	0.026	0.79	0.88	10	76.8	104.2	178.6	4.32	5.86	11.21
B2	0.143	0.68	0.76	10	76.8	104.2	178.6	20.76	28.16	54.24
Total	**0.169**							**25.07**	**34.02**	**65.45**

Required Restricted Flow

Drainage Area	Area (ha)	C 2&5-Year	C 100-Year	Tc (min)	I (mm/hr)			Q (L/s)		
					2-Year	5-Year	100-Year	2-Year	5-Year	100-Year
A1	0.169	0.39	0.45	10	76.8	104.2	178.6	13.86	18.81	37.52

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	5.86	11.21	5.86	11.21				
B2	28.16	54.24	12.95	7.60	9.12	36.72	15.00	40.00
Total	**34.02**	**65.45**	**18.81**	**18.81**	**9.12**	**36.72**	**15.00**	**40.00**

CCO-21-1191 - 2830 Carling Ave - STORAGE REQUIREMENTS

Storage Requirements for Area B2

5-Year Storm Event

Tc (min)	I (mm/hr)	B2 Runoff (L/s)	Allowable Outflow (L/s)	Runoff to be Stored (L/s)	Storage Required (m^3)
2	182.7	49.37	12.95	36.42	4.37
4	152.5	41.21	12.95	28.26	6.78
6	131.6	35.56	12.95	22.60	8.14
8	116.1	31.38	12.95	18.43	8.84
10	104.2	28.16	12.95	15.21	9.12
12	94.7	25.59	12.95	12.64	9.10
14	86.9	23.49	12.95	10.54	8.85

Maximum Storage Required 5-Year (m^3) =	9.12

100-Year Storm Event

Tc (min)	I (mm/hr)	B2 Runoff (L/s)	Allowable Outflow (L/s)	Runoff to be Stored (L/s)	Storage Required (m^3)
5	242.7	73.72	7.60	66.12	19.84
10	178.6	54.24	7.60	46.64	27.98
15	142.9	43.41	7.60	35.81	32.22
20	120.0	36.44	7.60	28.84	34.60
25	103.8	31.54	7.60	23.94	35.92
30	91.9	27.91	7.60	20.31	36.55
35	82.6	25.08	7.60	17.48	36.72
40	75.1	22.83	7.60	15.23	36.54
45	69.1	20.97	7.60	13.37	36.11
50	64.0	19.43	7.60	11.83	35.48
55	59.6	18.11	7.60	10.51	34.69

Maximum Storage Required 100-Year (m^3) =	36.72

5-Year Storm Event

Storage Available (m^3) =	15.00	*
Storage Required (m^3) =	9.12	

100-YEAR STORM EVENT

Storage Available (m^3) =	40.00	*
Storage Required (m^3) =	36.72	

Goodkey, Weedmark & Associates Limited

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J. Moffat, P.Eng.
E. Pérusse, P.Eng., ing.
R. Boivin, P.Eng., ing.
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M. Sarasin, P.Eng.

Executive Consultants
A. Bogdanowicz, P.Eng.
M.G. Carriere, C.E.T.
R.J. McIntyre, P.Eng.

June 2, 2021

VIA E-MAIL

Holzman Consultants Inc.
Land Development Consultants
311 Richmond Road, Suite 203
Ottawa, ON
K1Z 6X3

ATTENTION: MR. JONAH BONN, MCIP, RPP

SUBJECT: 2830 CARLING AVE./810 VICK AVE.
SITE PLAN CONTROL APPLICATION NO. D07-12-20-0163
OUR PROJECT NO. 2020-543

Dear Sir:

We have reviewed your comments on Site Plan Control Application No. D07-12-20-0163, dated January 2021, and offer the following response to mechanical items:

Item 47: Upon acceptance of the site's stormwater management design, a signed, sealed, and dated memo will need to be provided from the mechanical consultant indicating that the cistern pump will be designed as per the specifications outlined in the Servicing & Stormwater Management Report.

Response: The cistern pump system will be designed as per the specifications outlined in the Servicing & Stormwater Management Report. See attached revised cistern schematic.

Yours very truly,

GOODKEY, WEEDMARK & ASSOCIATES LIMITED

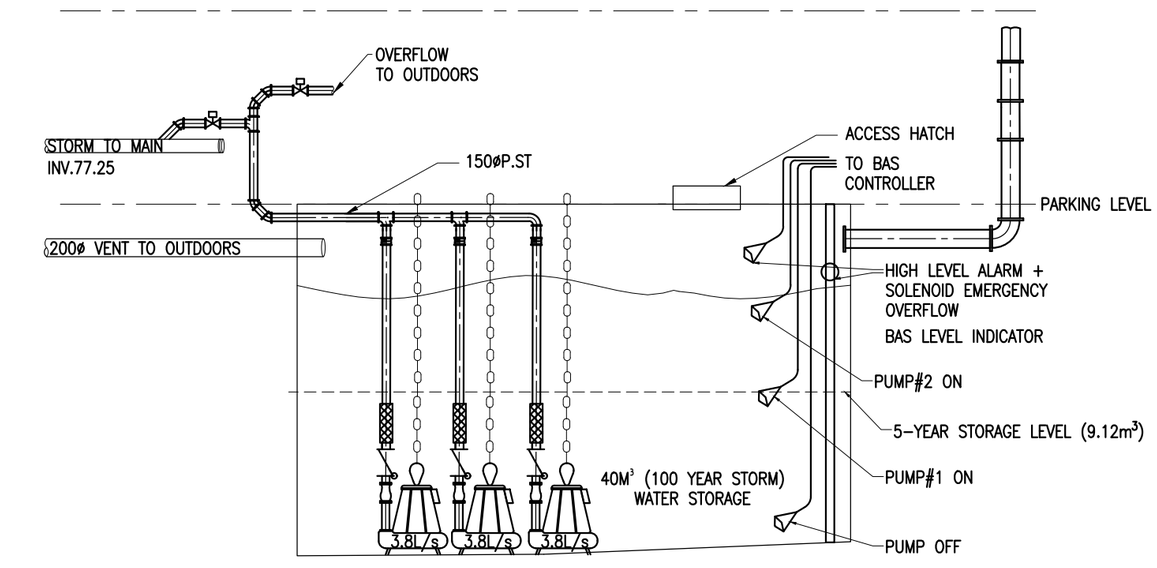
Mark Sarasin, P.Eng.
Senior Associate
Senior Mechanical Engineer

MS/cb

Enclosure: Sketch SK1

Goodkey Weedmark 65 years 1956 – 2021

CISTERN DETAIL – 2830 CARLING



DUPLEX STORM PUMP & BACKUP STANDBY
TO STORM MAIN

5-YR RATE (PUMP 1): 3.8L/s
100-YR RATE (PUMP 1 + 2): 7.6L/s

LICENSED PROFESSIONAL ENGINEER
Mark Sarasin
M. P. W. SARASIN
100120867
June 02, 2021
PROVINCE OF ONTARIO

DATE	REVISION	REF

Goodkey Weedmark
Consulting Engineers

GOODKEY WEEDMARK & ASSOCIATES LIMITED
1688 Woodward Dr. 613 727-5111 Voice
Ottawa Ontario 613 727-5115 Fax
Canada K2C 3R8 www.gwal.com Web

PROJECT/PROJET

2830 CARLING AVE.
RESIDENTIAL DEVELOPMENT

TITLE/TITRE

MECHANICAL
CISTERN DETAIL

Scale / Échelle	NTS
Design by / Conçu par	M.SARASIN
Drawn by / Dessiné par	S.FERGUSON
Reviewed by / Examiné par	M.SARASIN
Date	NOV 2020
GWAL No.	
DWG. No. / No. DESSIN	SK1

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 E
☐ Plan showing the site and location of all existing services.	Site Servicing Plan (C102)
☐ 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 A
☐ 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).	Site Grading, Drainage, Sediment & Erosion Control Plan (C101)
☐ 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.	Site Grading, Drainage, Sediment & Erosion Control Plan (C101)
☐ 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 Backround Studies
☐ All preliminary and formal site plan submissions should have the following information: o Metric scale o North arrow (including construction North) o Key plan o Name and contact information of applicant and property owner o Property limits including bearings and dimensions o Existing and proposed structures and parking areas o Easements, road widening and rights-of-way o Adjacent street names	Site Grading, Drainage, Sediment & Erosion Control Plan (C101)

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	N/A
☐ 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 B
☐ 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	N/A

☐ 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 B
☐ 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 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)	N/A
☐ 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 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 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.	Pre & Post-Development Plans
☐ 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 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 Management
☐ Description of the stormwater management concept with facility locations and descriptions with references and supporting information.	Section 6.0 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 F

☐ Identification of watercourses within the proposed development and how watercourses will be protected, or, if necessary, altered by the proposed development with applicable approvals.	Site Grading, Drainage, Sediment & Erosion Control Plan
☐ 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 6.0 Stormwater Management Appendix F
☐ Any proposed diversion of drainage catchment areas from one outlet to another.	Section 6.0 Stormwater Management
☐ Proposed minor and major systems including locations and sizes of stormwater trunk sewers, and stormwater management facilities.	Section 6.0 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.	Appendix 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 Management
☐ 100-year flood levels and major flow routing to protect proposed development from flooding for establishing minimum building elevations (MBE) and overall grading.	Site Grading, Drainage, Sediment & Erosion Control Plan (C101)
☐ 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.	Section 7.0 Sediment & Erosion Control
☐ Identification of floodplains – proponent to obtain relevant floodplain information from the appropriate Conservation Authority. The proponent may be required to delineate floodplain elevations to the satisfaction of the Conservation Authority if such information is not available or if information does not match current conditions.	N/A
☐ Identification of fill 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