REPORT
PROJECT: 124829-7.0.3

SITE SERVICING & STORMWATER MANAGEMENT DESIGN BRIEF
1995 CARLING AVENUE
CITY OF OTTAWA

Prepared for Claridge Homes
by Arcadis/IBI Group
APRIL 2020
REVISED MAY 2025

Table of Contents

List of Appendices

1 INTRODUCTION

1.1 Scope

ARCADIS/IBI Group has been retained by Claridge Homes to prepare the necessary engineering plans, specifications and documents to support development of the subject lands in accordance with the policies set out by the Planning and Development Branch of the City of Ottawa. The developer is proposing to construct a 18 story apartment building with 6 levels of underground parking complete with associated landscape and vehicle access areas. The design brief is prepared in support of a Site Plan Application for the proposed development.

This brief will present a detailed servicing scheme to support the development of the property including sections on water supply, wastewater management, minor and major stormwater management along with erosion and sediment control.

A pre-consult meeting was held with City of Ottawa staff on January 23, 2020 to outline the requirements for development of the site, notes of that meeting can be found in **Appendix A**.

This brief has been prepared in accordance with current Servicing Study guidelines for development applications in the City of Ottawa.

1.2 Subject Property

The existing site is contained within the City of Ottawa and is located at the north-west corner of the Carling Avenue and Bromley Road intersection. Please refer to **Figure 1** for location details.

The site is bound to the north by a private drive lane, to the east by Bromely Road, to the south by Carling Avenue and to the west by an existing 25 storey apartment building.

Existing municipal services adjacent to the site include a 152 mm watermain and a 300 mm dia storm sewer, located within the Bromley Road ROW, and two 225mm sanitary sewers, 152mm and 610mm watermains and a 300mm storm sewer located within the Carling Avenue ROW.

Given the above, sufficient services exist along the perimeter of the subject lands to adequately service the site. Further information regarding the servicing of the site can be found in the applicable sections below. Design and as-built information for the adjacent sewers within the Carling and Bromley ROWs can be found in **Appendix E**.

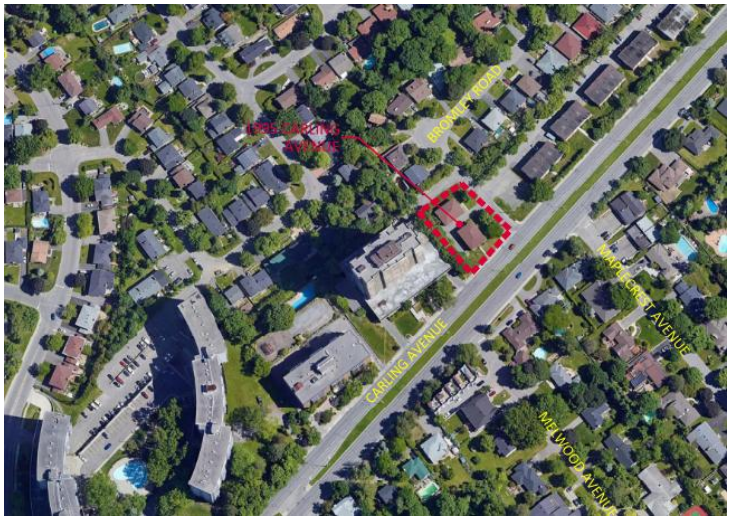


Figure 1: Property Location

2 WATER SUPPLY

2.1 Existing Conditions

The subject site is located within Pressure Zone 1W of the City of Ottawa's water distribution system. Existing 610mm and 152mm watermains are located within the Carling Avenue ROW and a 152mm watermain is located within the Bromley Road ROW. It is proposed for the subject site to be connected to the 152mm watermain within Bromley Road.

2.1.1 Water Demands

Water demands are based on Table 4.2 of the Ottawa Design Guidelines – Water Distribution. As previously noted, the development consists of a 18 storey apartment building with 133 apartments. The breakdown of the units is 91 – 1 bedroom units, 36 – 2 bedroom units and 6 studio units.

The population for 1 bedroom units is assumed at 1.4 persons per unit, 2 bedroom units at 2.1 persons per unit and studio units as 1.8 persons per unit as found in Table 4.1 of the Design Guidelines. A watermain demand calculation sheet is included in **Appendix B** and the total water demands are summarized as follows:

	1995 Carling Ave.
Average Day	0.69 l/s
Maximum Day	1.73 l/s
Peak Hour	3.81 l/s

2.1.2 System Pressure

The 2010 City of Ottawa Water Distribution Guidelines states that the preferred practice for design of a new distribution system is to have normal operating pressures range between 345 kPa (50 psi) and 552 kPa (80 psi) under maximum daily flow conditions. Other pressure criteria identified in the guidelines are as follows:

Minimum Pressure	Minimum system pressure under peak hour demand conditions shall not be less than 276 kPa (40 psi)
Fire Flow	During the period of maximum day demand, the system pressure shall not be less than 140 kPa (20 psi) during a fire flow event.
Maximum Pressure	Maximum pressure at any point in the distribution system shall not exceed 689 kPa (100 psi). In accordance with the Ontario Building/Plumbing Code, the maximum pressure should not exceed 552 kPa (80 psi). Pressure reduction controls may be required for buildings where it is not possible/feasible to maintain the system pressure below 552 kPa.

2.1.3 Fire Flow Rate

The fire flow rate has been calculated using the Fire Underwriters Survey (FUS) method. The method takes into account the type of building construction, the building occupancy, the use of sprinklers and the exposures to adjacent structures. A calculation was performed for the proposed 18 storey residential apartment building. Assuming fire resistive construction and a sprinkler system a fire flow rate of 4,000 l/min or 66.7 l/s has been calculated. A copy of the calculation is included in **Appendix B**.

2.1.4 Boundary Conditions

A boundary condition has been provided by the City of Ottawa at the 152 mm diameter watermain on Bromley Road for the development. A copy of the boundary conditions are included in **Appendix A** and summarized as follows:

BOUNDARY CONDITIONS	
SCENARIO	**RESULT**
Maximum HGL	115.0m
Minimum HGL (Peak Hour)	108.6m
Max Fire Flow Available	Satisfactory as per Multi-Hydrant Analysis

During the preparation of the boundary conditions the City of Ottawa completed a multi-hydrant analysis, including a new hydrant proposed within the Bromley Road ROW to service the fire department connection of the proposed development, which resulted in a total aggregate fire flow which is greater than the calculated required fire flow noted in section 2.1.3. The boundary conditions received from the city can be located in **Appendix B**.

2.2 Proposed Water Plan

The minimum water pressure inside the building at the connection is determined by the difference between the water entry elevation of 79.50m and the minimum HGL condition, resulting in a pressure 285.5 kPa which exceeds the minimum requirement of 276 kPa per the guidelines. Because the pressure at the 18th floor under minimum HGL conditions is less than the minimum requirement of 276 kPa, a domestic water pump will be necessary for this building.

Maximum water pressure is determined by the difference between the water entry elevation elevation of 79.50m and the maximum HGL condition resulting in a pressure of 387.5 kPa, which is less than the 552 kPa threshold in the guideline in which pressure control is required. Based on this result, pressure control is not required for this building.

The City of Ottawa has requested a double water service connections to provide service redundancy. To facilitate the double service connection separated by a valve box is proposed on the 152mm watermain within the Bromley Road ROW. The water service connection locations, proposed new hydrant and details are shown on the site servicing plan C-001 located in **Appendix A**

.

3 WASTEWATER DISPOSAL

3.1 Existing Conditions

The site is bound by 225mm concrete sanitary sewers located in both the Carling and Bromley ROWs. The City of Ottawa has confirmed that both sewers have adequate capacity to service the development, an email confirmation of this can be found in **Appendix C.** Given the proximity and elevation of the existing sewers, the sewer within the Carling ROW has been chosen as the outlet for the subject development.

3.2 Criteria

In accordance with the City of Ottawa's Sewer Design Guidelines, the following design criteria has been utilized in order to predict wastewater flows generated by the subject site.

- Minimum Velocity 0.6 m/s
- Maximum Velocity 3.0 m/s
- Manning Roughness Coefficient 0.013
- Total # residential of units 133
    - 1 Bedroom Units @ (1.4 p/p/u) 91
    - 2 Bedroom Units @ (2.1 p/p/u) 36
    - Studio Units @ (1.8 p/p/u) 6
- Residential Average Flow 280 l/p/d
- Residential Peaking Factor Harmon Formula (max 4, min 2)
- Infiltration Allowance 0.33 L/s/Ha
- Minimum Sewer Slopes - 200 mm diameter 0.32%

Given the above criteria, total wastewater flow from the proposed development will be 2.49 l/s, the detailed sanitary sewer calculations are included in **Appendix C**.

3.3 Sanitary Sewer Design

Please refer to the site servicing plan C-001 in **Appendix A** for details.

4 STORMWATER MANAGEMENT

4.1 Existing Conditions

Currently adjacent to the site is a 300mm dia storm sewer draining northward within the Bromley Road ROW and a 300mm dia storm sewer draining eastward in the Carling ROW. The sewer in the Bromley Road ROW is the pre-development outlet for the subject lands and as such will be the post development outlet as well. As built drawings obtained from the City for the adjacent storm sewers can be found in **Appendix D**.

Based upon the topographical survey the existing drainage flows south west to north east, with the majority of the water from the site traveling via surface flows towards the storm sewers within Bromley Road.

4.2 Design Criteria

Criteria for the stormwater management on this site has been provided by the City of Ottawa during the pre-consultation meeting, notes are included in **Appendix A**, and are as follows;

- Existing adjacent storm sewers were designed to a 2 year level of service
- Site to be designed to limit the 100 year post development flow to a maximum of the 2 year pre development flow
- Pre development flow to use a maximum C of 0.5 and a minimum TC of 10 min. Both values to be justified.

The stormwater system was designed following the principles of dual drainage, making accommodations for both major and minor flow.

Some of the key criteria include the following:

- Design Storm — 1:2 year return (Ottawa)
- Rational Method Sewer Sizing
- Initial Time of Concentration — 10 minutes
- Runoff Coefficients
  - Landscaped Areas — C = 0.30
  - Asphalt/Concrete — C = 0.90
  - Roof — C = 0.90
- Pipe Velocities — 0.80 m/s to 6.0 m/s
- Minimum Pipe Size — 250 mm diameter (200 mm CB Leads)

4.3 Proposed Minor System

The detailed design for this site shows a storm sewer connection along with some uncontrolled surface drainage entering into the 300mm sewer within Bromley Road ROW. A limited amount of uncontrolled surface flow will also enter the 300mm storm sewer within the Carling Avenue ROW.

Using the above-noted criteria, the proposed on-site storm sewers were sized accordingly. A detailed storm sewer design sheet and the associated storm sewer drainage area plan are included in **Appendix D**.

4.4 Stormwater Management

The subject site will be limited to a release rate established using the criteria described in section 4.2. This will be achieved through an inlet control device (ICD) at the outlet of the cistern.

Flows generated that are in excess of the site's allowable release rate will be stored within the cistern located in the buildings P1 parking level. The cistern has been sized at 36.5 cubic metres.

It is expected that groundwater infiltration which does pass through the exterior foundation waterproofing will also be directed to the cistern. The cistern is sized to accommodate peak flows from the 100 year storm event. It is not anticipated that flows from groundwater infiltration will coincide with peak flows from the 100 year storm, as such the cistern is sized appropriately.

At certain locations within the site, the opportunity to store runoff is limited due to grading constraints and building geometry. These locations are generally located at the perimeter of the site where it is necessary to tie into public boulevards and adjacent properties, and it is not always feasible to capture or store stormwater runoff. These "uncontrolled" areas, 0.010 hectares in total, have a weighted average C value of 0.8. Based on 1:100 year storm uncontrolled flows, the uncontrolled areas generate 3.97 l/s runoff (refer to Section 4.5 for calculation). It should be noted that the parking garage ramp is uncovered and will discharge via the building STM outlet, as such we have included the garage ramp and an uncontrolled, 100yr flow.

The cistern has been designed to control water generated during the 1:100-year event, with no overflow leaving the site. Please refer to the SWM calculations in **Appendix D**.

4.5 Inlet Controls

The allowable release rate for the 0.125 Ha site can be calculated as follows:

$\mathbf{Q_{allowable}}$	= **2.78** x **C** x $\mathbf{i_{2yr}}$ x **A** where:
C	= 0.5 (pre-development C*)
$\mathbf{I_{2yr}}$	= Intensity of 5-year storm event (mm/hr)
	= $732.951 \times (T_c + 6.199)^{0.81}$ = 76.81 mm/hr; where T_c = 10 minutes*
A	= Area = 0.125 Ha
	= **13.34 L/s**

*based on pre development calculations, see Appendix D

As noted in Section 4.4, a portion of the site will be left to discharge to the surrounding boulevards and roadways at an uncontrolled rate.

Based on a 1:100 year event, the flow from the 0.010 Ha uncontrolled area can be determined as:

$\mathbf{Q_{uncontrolled}}$	= **2.78** x **C** x $\mathbf{i_{100yr}}$ x **A** where:
C	= Average runoff coefficient of uncontrolled area = 0.80
$\mathbf{i_{100yr}}$	= Intensity of 100-year storm event (mm/hr)
	= $1735.688 \times (T_c + 6.014)^{0.820}$ = 178.56 mm/hr; where T_c = 10 minutes
A	= Uncontrolled Area = 0.010 Ha

Therefore, the uncontrolled release rate can be determined as:

$Q_{uncontrolled}$ = **2.78** x **C** x i_{100yr} x **A**

= 2.78 x 0.80 x 178.56 x 0.010

= **3.97 L/s**

The maximum allowable release rate from the remainder of the site can then be determined as:

$Q_{max\ allowable}$ = $Q_{restricted} - Q_{uncontrolled}$

= 13.34 L/s – 3.97 L/s

= **9.37 L/s**

4.6 On-Site Detention

As noted in section 4.4 any excess storm water up to the 100-year event is to be stored on-site within the building cistern in order to not surcharge the downstream municipal storm sewer system.

4.6.1 Site Inlet Control

The following Table summarizes the on-site storage requirements during both the 1:5-year and 1:100-year events.

ICD AREA	TRIBUTARY AREA	AVAILABLE STORAGE (M^3)	100-YEAR STORM		5-YEAR STORM	
			RESTRICTED FLOW (L/S)	REQUIRED STORAGE (M^3)	RESTRICTED FLOW (L/S)	REQUIRED STORAGE (M^3)
L1 and R1	0.114	36.50	9.36	36.42	9.36	17.11
Unrestricted	0.010					
TOTAL	**0.125**	**36.50**	**9.36**	**36.42**	**9.36**	**17.11**

In all instances the required storage is met with the building cistern. It should be noted that when sizing the cistern as per City of Ottawa accepted convention the release rate was reduced by 50% to calculate the storage required using the modified rational method, resulting in a calculated flow rate of 4.68 L/s.

4.6.2 Overall Release Rate

As demonstrated above, the site uses an inlet control device to restrict the 100 year storm event to the criteria approved by the City of Ottawa. Restricted stormwater will be contained onsite by the building cistern. In the 100 year event, there will be no overflow off-site from restricted areas.

The sum of restrictions on the site is 9.37 l/s, which is less than the allowable release of 9.36 l/s noted in section 4.5.

5 SEDIMENT AND EROSION CONTROL

During construction, existing stream and storm water conveyance systems can be exposed to significant sediment loadings. A number of construction techniques designed to reduce unnecessary construction sediment loadings may be used such as;

- Filter socks will remain on open surface structures such as manholes and catchbasins until these structures are commissioned and put into use;
- Installation of silt fence, where applicable, around the perimeter of the proposed work area.

During construction of the services, any trench dewatering using pumps will be fitted with a “filter sock.” Thus, any pumped groundwater will be filtered prior to release to the existing surface runoff. The contractor will inspect and maintain the filter sock as needed including sediment removal and disposal.

All catchbasins, and to a lesser degree manholes, convey surface water to sewers. Consequently, until the surrounding surface has been completed these structures will be protected with a sediment capture filter sock to prevent sediment from entering the minor storm sewer system. These will stay in place and be maintained during construction and build-out until it is appropriate to remove them.

The Sediment and Erosion Control Plan 124829-C-010 is included in **Appendix E**.

6 CONCLUSIONS

In summary, this report demonstrates that the proposed 1995 Carling apartment building can be serviced by the adjacent existing municipal infrastructure. All municipal infrastructure designs have been done in conformance with current City of Ottawa guidelines.

Based on the information provided herein, the development can be serviced to meet City of Ottawa requirements.

Prepared by:

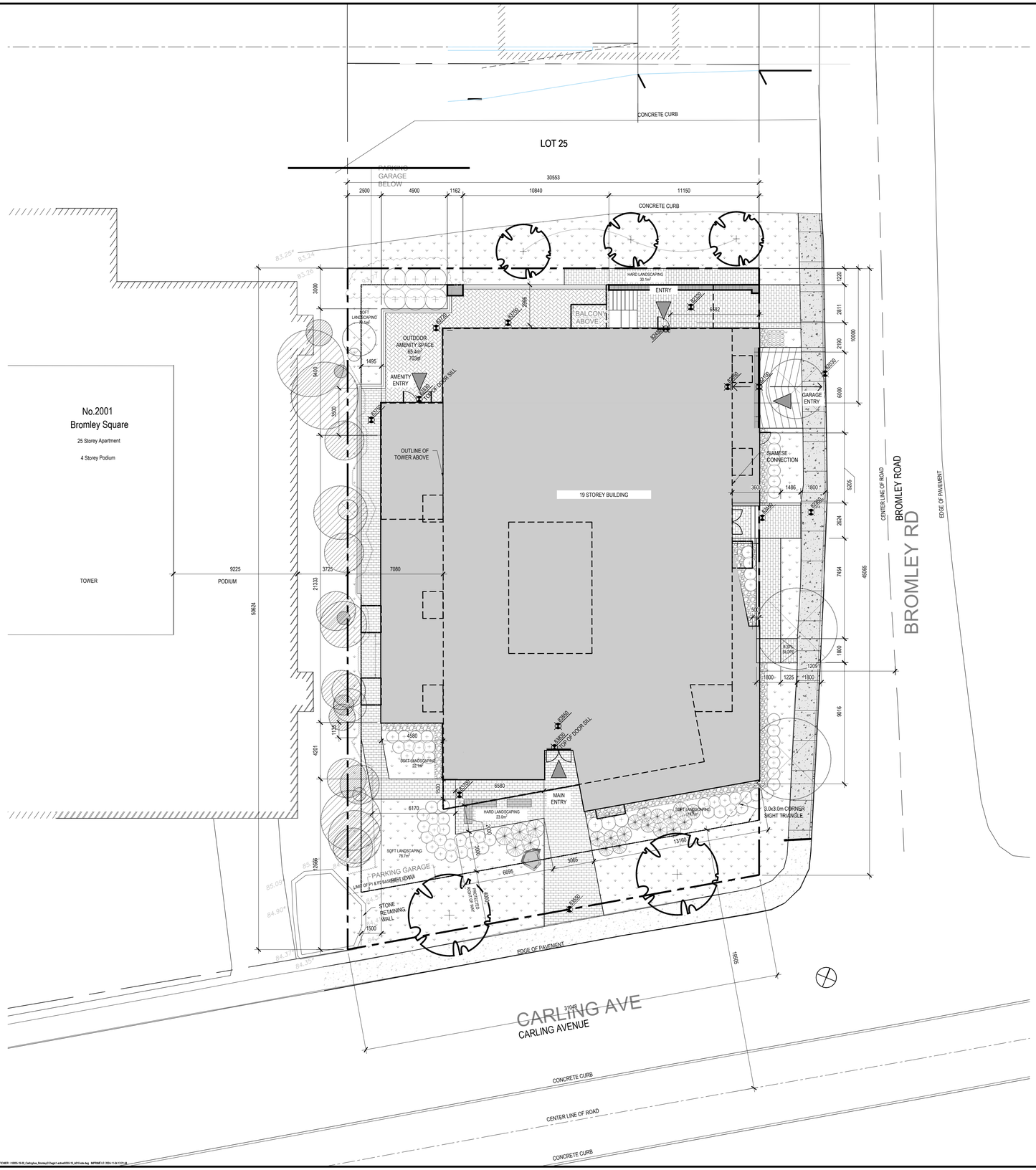
ARCADIS/IBI GROUP

Terry Brulé, P. Eng.

Principal

APPENDIX A

- Site Plan
- Site Servicing and Grading Plan Drawing No. 124829-C-001
- Pre-consult Meeting Notes
- Key Plan



1 SITE PLAN PLAN (A-010) 1:150

PROPERTY DESCRIPTION	
Municipal Address:	1995 Carling
Legal Description:	Part of Block A, Registered Plan 4M-98 Surveyor: Annis, O'Sullivan, Vollebekk Ltd. 14 Concourse Gate, Suite 500 Nepean, ON, K2E 7S6 613-727-0850 Plan of Survey updated January 23, 2020
Zoning:	AM10
Lot Area:	1,461 square metres
Lot Frontage:	30.97 m (Carling)
Lot Depth:	47.83 m

BUILDING INFORMATION					
Building Footprint:	943 square metres				
Tower Floorplate:	710 and 592 square metres				
Building GFA	10 025.7 square metres				
Percentage of Site Landscaping	35%				
Proposed Use:	High-Rise Apartment				
Unit Breakdown	2nd to 3rd Floor	11 UNITS	2-STUDIO	5-1BED	4-2BED
	4th	10 UNITS	2-STUDIO	4-1BED	2-2BED
	5th	9 UNITS	0-STUDIO	7-1BED	2-2BED
	6th to 9th Floor	9 UNITS	0-STUDIO	7-1BED	2-2BED
	10th Floor	7 UNITS	0-STUDIO	5-1BED	2-2BED
	11th to 17th Floor	7 UNITS	0-STUDIO	5-1BED	2-2BED
	18th	4 UNITS	0-STUDIO	2-1BED	0-2BED
	Total:	137	6	91	36

ZONING TABLE - CITY OF OTTAWA ZONING BY-LAW 2008-250		
Provision	**Required**	**Provided**
Front Yard Setback	Minimum: 0 m	3 m (front)
Corner Side Yard Setback	0 m	2 m (corner side)
Minimum Frontage	At least 50% of front and corner side lot lines to be occupied by building within 4.5 m	Front (from Protected Right Line): 42% Corner: 76%
Minimum Transparent Glazing	At least 50% of ground floor façade (up to 4.5 m)	Front: 76% Corner: 56%
Minimum Interior Side Yard	0 m	2.5 m
Minimum Rear Yard	3 m within 20 m of street; 7.5 m otherwise	1.2 m
Minimum Building Height	Ground Floor: 4.5 m (total 7.5 m and 2 storeys)	68.6 m
Maximum Height	30 m	68.6 m
Active Entrances	One facing each of front and corner side lot lines	1 (front) 1 (corner side)
Amenity Area	Total: 6 m2 per unit [137 x 6 = 822] Communal: min. 50% required area: 396 Minimum one area of 54 m2	Total: 1704 m2 Communal: 1 047 m2
Minimum Parking (Area Y)	Residential: 0.5 per unit after first 12 units [120-12 x 0.5 = 54] Visitor: 0.1/unit after the first 12 units = [120-12 x 0.1 = 11] *reduction for 100% below-grade parking: -10 spaces **Total minimum required spaces: 65**	Residential: 118 Visitor: 11 **Total: 129**
Minimum Bicycle Parking	Residential: 0.5/unit[120 x 0.5 = 60]	121
Aisle and Driveway Width	6.0 m (double traffic lane)	MINIMUM 6.0 m MAXIMUM: 6.1 m

	Gross Building Area m2		Parking Spaces Proposed		
			Standard	Barrier Free	Total
P1	1254,33	13489,76	10	3	13
P2	1260,79	13571,02	19	4	23
P3	1381,03	14865,27	31	0	31
P4	1381,03	14865,27	31	0	31
P5	1381,03	14865,27	31	0	31
P6	1381,03	14865,27	31	0	31
TOTAL	8039,24	86521,85	153	7	160

Amenity Space		
Amenity Space Summary		
Required by Zoning Bylaw	Required	
TOTAL 120 Units x 6m2 =720m2	Total	547
3m2 of the req. amenity area is communal	Communal	500

ARCHITECTS:

EVOQ

44 BYWARD MARKET SQUARE, SUITE 210
OTTAWA (ONTARIO) K1N 7A2
T. 613-518-2165
info@evoqarchitecture.com

ENGINEERS:

CLIENT:

CLARIDGE HOMES

210 Gladstone Avenue, Suite 2001
Ottawa, Ontario K2P 0Y6
Tel : (613) 233 6030 Fax : (613) 233 8290

KEY PLAN:

6	ISSUED FOR COORDINATION	NG	2024-08-29
5	ISSUED FOR COORDINATION	NG	2021-10-06
4	ISSUED FOR CLIENT REVIEW	JG	2021-04-20
3	ISSUED FOR COORDINATION	JG	2020-12-24
2	ISSUED FOR COORDINATION	JG	2020-11-30
1	ISSUED FOR COORDINATION	JG	2020-07-07
0	ISSUED FOR SITE PLAN APPLICATION	JG	2020-04-16
N°:	DESCRIPTION:	BY	DATE

REVISION:

THE GENERAL CONTRACTOR :

1. SHALL BE RESPONSIBLE FOR VERIFYING ALL DIMENSIONS ON SITE TO ENSURE COMPLIANCE WITH THE DIMENSIONS GIVEN ON THE DRAWINGS.
2. SHALL BE RESPONSIBLE TO IMMEDIATELY SUBMIT A REPORT TO THE ARCHITECT OR ENGINEER OUTLINING ANY INACCURACIES.
3. SHALL NOT TAKE SCALED MEASUREMENTS OFF THE DRAWINGS.
4. ANY INDIVIDUAL OR FIRM THAT HAVE RECEIVED ELECTRONIC DOCUMENT SHALL USE THEM AT THEIR OWN RISK. ONLY ORIGINAL DRAWINGS, STAMPED BY THE ARCHITECT, MAY BE USED FOR CONSTRUCTION.

SEAL

PROJECT:

1995 CARLING AVE.

NOT FOR CONSTRUCTION

DRAWING TITLE:

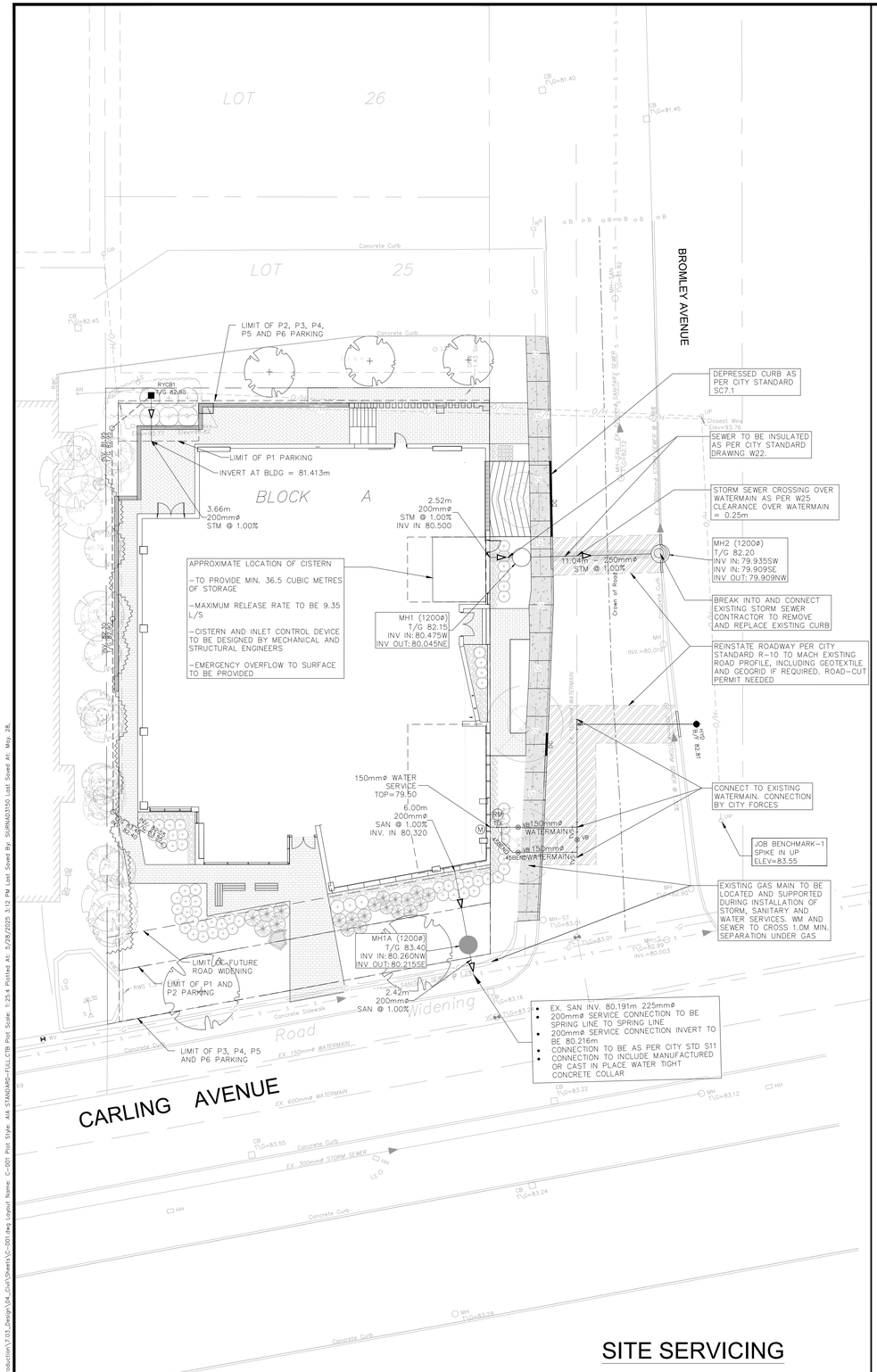
SITE PLAN

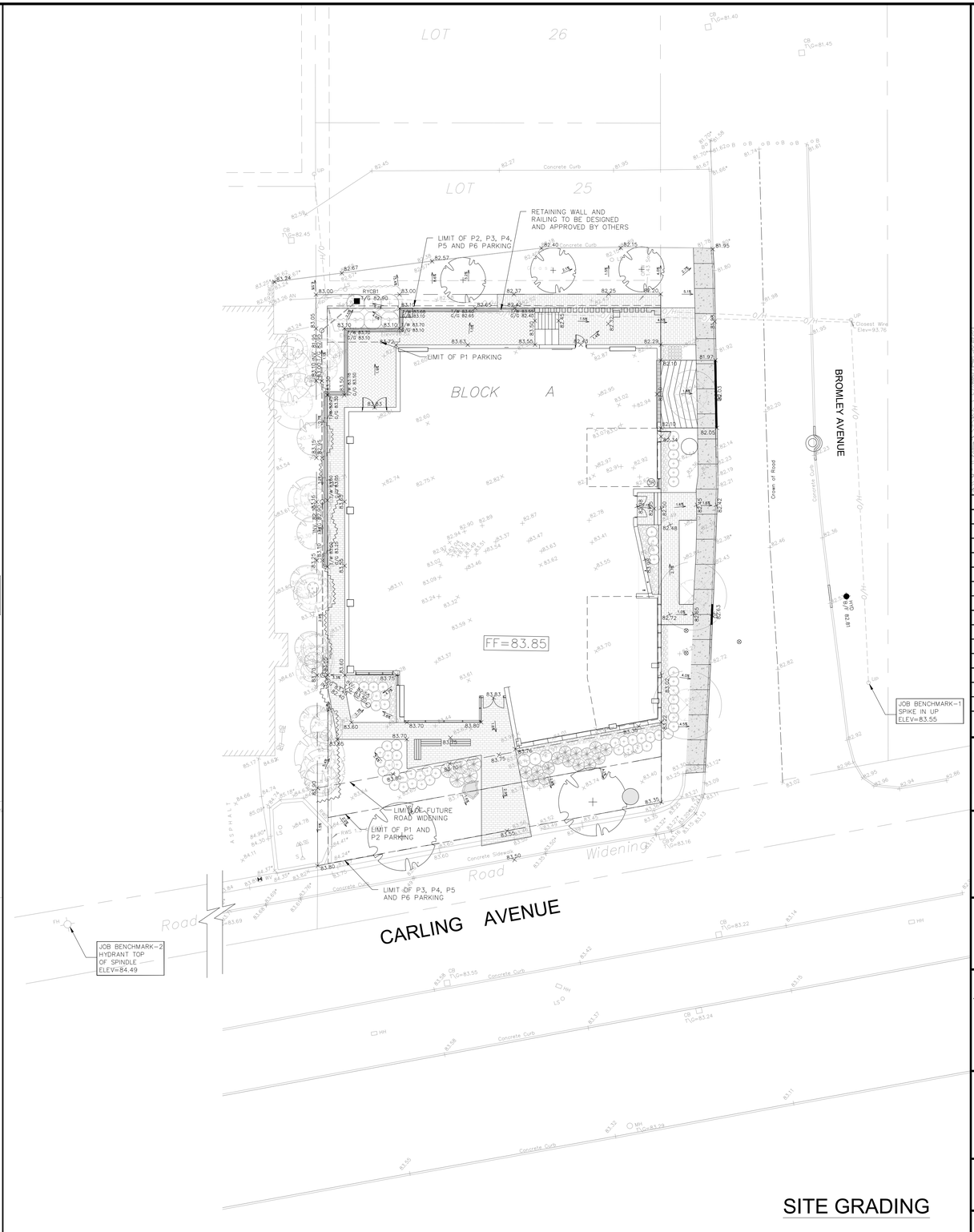
DESIGN:	NG	APPROVED:	XX
DRAWN:	MSTP	DATE:	2020-11-30
VERIFIED:	XX	SCALE:	1:150

PROJECT N°: 9355-19-00

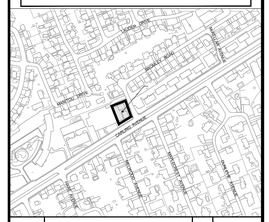
DRAWING N°: A-010

D07-12-20-0044





SEE C-010, FOR NOTES, LEGEND, CB TABLE, AND DETAILS



No.	REVISIONS	By	Date
14			
13			
12			
11			
10			
9			
8			
7			
6			
5			
4	REVISED PER ARCHITECT COORDINATION	T.R.B.	2025.05.28
3	REVISED AS PER NEW SITE PLAN	T.R.B.	2025.01.10
2	REVISED AS PER CITY COMMENTS	T.R.B.	2020.11.20
1	ISSUED FOR SPA	T.R.B.	2020.04.15

CLARIDGE HOMES

IBI GROUP
400 – 333 Preston Street
Ottawa ON K1S 5N4 Canada
tel 613 225 1311 fax 613 225 9868
ibigroup.com

Project Title
1995 CARLING AVENUE

LICENSED PROFESSIONAL ENGINEER
T. R. BRULE
2025-05-28
PROVINCE OF ONTARIO

Drawing Title
SITE SERVICING AND GRADING

Scale
2.5 0 2.5 5
1:200

Design	Date
J.B.	APRIL 2020
Drawn	Checked
D.P.S./J.B.	T.R.B.
Project No.	Drawing No.
124829	C-001

CITY FILE No. D07-12-20-0044
CITY PLAN No. #18140

James Battison

From: Terry Brule
Sent: Monday, March 9, 2020 9:07 AM
To: James Battison
Subject: FW: Pre-Consultation Follow-up - 1995 Carling Avenue
Attachments: Pre-con Applicant's Study and Plan Identification List.pdf

Terry Brule P.ENG., ING.

Associate Director - Practice Lead, Land Engineering
mob +1 819 664 7322

IBI GROUP
400-333 Preston Street
Ottawa ON K1S 5N4 Canada
tel +1 613 225 1311 ext 64068 fax +1 613 225 9868

From: Vincent Denomme <vincent.denomme@claridgehomes.com>
Sent: Tuesday, February 25, 2020 9:43 AM
To: Terry Brule <tbrule@IBIGroup.com>
Subject: Fwd: Pre-Consultation Follow-up - 1995 Carling Avenue

---------- Forwarded message ---------
From: **McCreight, Laurel** <Laurel.McCreight@ottawa.ca>
Date: Tue, Feb 18, 2020 at 1:02 PM
Subject: Pre-Consultation Follow-up - 1995 Carling Avenue
To: Vincent Denomme <vincent.denomme@claridgehomes.com>

Hello Vincent,

Please refer to the below regarding the Pre-Application Consultation Meeting held on January 23, 2020 for the property at 1995 Carling Avenue for a Zoning By-law Amendment and Site Plan Control Applications in order to allow the development of a 27-storey apartment building by Claridge. I have also attached the required Plans & Study List for application submission.

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

Planning / Urban Design

- The application will be subject to the Urban Design Review Panel

- Please review the Section 37 Implementation Guidelines and demonstrate whether Section 37 is applicable to this development

- There are no concerns with the request for a reduced ROW from 7 metres to 0 metres for parking levels P3 – P7 and from 7 metres to 4 metres for parking levels P1 and P2, as well as at-grade

Arterial Mainstreet Policies

- The Arterial Mainstreet policies (from OPA 150) for heights greater than nine storeys requires locational tests, as well as for a development to provide a community amenity and adequate transitioning to adjacent low-rise uses.
- At this time, the proposal does not provide a community amenity or adequate transitioning to the low-rise residential uses to the north.
- Further analysis is required to ensure that adequate transitioning is provided and that a community amenity is provided on site.
- Please be advised that a community amenity is not the same as a community benefit as outlined in the City's Section 37 Guidelines. A community amenity could include a POPS or other spaces or amenities which are accessible to the community.

Density, Height and Massing

- For more detailed feedback on the proposed development, please provide the FSI and a detailed massing analysis that includes the proposed the development, the existing and planned contexts along Carling Avenue, taking into consideration the infilling opportunities on the adjacent property to the north, to demonstrate how transition will occur between buildings along Carling and the low-rise neighbourhood to the north.
- Please refer to Chapter 2 of the High-Rise Guidelines for direction.
- Typically, in a situation like a 45-degree angular plane would be used as a bench mark to determine adequate transition.
- If these are not submitted prior to a development application for feedback, please ensure that the massing analysis and FSI are provided as part of a complete development application.
- The relationship between the adjacent high-rise building needs to be considered and appropriate tower separation is required.
- The tower separation for this proposed building should be accommodated on this site and not reduced because of the greater side yard setback of the adjacent tower.
    - Thus, the side yard setback (westerly) should be 10 metres.
    - If this is not able to be achieved, then a Limiting Distance Agreement with the property owners to the west should be obtained.

Site Design

- The location of the garage entrance from Bromley Road is supported.
- The Bromley edge of the site is the transition area from the planned function of Carling Avenue as an Arterial Mainstreet to the local, low-rise residential function of the neighbourhood to the north.
    - The treatment of the podium, landscaping and the design of the corner side yard should reflect this transition.
- Please ensure a detailed analysis to demonstrate the street cross section and requested reduction in the right-of-way widening (7 metres to 4 metres) is provided as part of a development application in accordance with Schedule D of the City's Official Plan.

Engineering

General:

- It is the sole responsibility of the consultant to investigate the location of existing underground utilities in the proposed servicing area and submit a request for locates. The location of existing utilities and services shall be documented on an **Existing Conditions Plan**.
- All underground and above ground building footprints and permanent walls need to be shown on the plans to confirm that any permanent structure does not encroach within the right-of-way.
- Any easements on the subject site shall be identified and respected by any development proposal and shall adhere to the conditions identified in the easement agreement. A **legal survey plan** shall be provided and all easements shall be shown on the engineering plans.
- Please provide an **Existing Conditions/Removals Plan** as part of the engineering drawing set. Any existing services are to be removed or abandoned in accordance with City standards.
- Please note that the proposed servicing design and site works shall be in accordance with the following documents:
    - Ottawa Sewer Design Guidelines (October 2012)
    - Technical Bulletin PIEDTB-2016-01
    - Technical Bulletins ISTB-2018-01, ISTB-2018-02 and ISTB-2018-03.
    - Ottawa Design Guidelines - Water Distribution (2010)
    - Geotechnical Investigation and Reporting Guidelines for Development Applications in the City of Ottawa (2007)
    - City of Ottawa Slope Stability Guidelines for Development Applications (revised 2012)
    - City of Ottawa Environmental Noise Control Guidelines (January 2016)
    - City of Ottawa Accessibility Design Standards (2012) (City recommends development be in accordance with these standards on private property)
    - Ottawa Standard Tender Documents (latest version)
    - Ontario Provincial Standards for Roads & Public Works (2013)
    - Record drawings and utility plans are also available for purchase from the City (Contact the City's Information Centre by email at InformationCentre@ottawa.ca or by phone at (613) 580-424 x.44455).

Stormwater Management Criteria and Information:

- Based on the install year, the **storm sewer system within this area was only designed to a 2-year level of service** not a 5-year level of service [pre-1970 the design of the storm sewers were based on a 2-year storm].
- **Water Quantity Control:** In the absence of area specific SWM criteria please control post-development runoff from the subject site(s), up to and including the 100-year storm event, to a **2-year allowable release rate**

calculated using an allowable runoff coefficient (C) determined using the pre-development (exiting) runoff coefficient or a maximum equivalent 'C' of 0.5 (whichever is less) [If 0.5 applies it needs to be clearly demonstrated in the report that the pre-development runoff coefficient is greater than 0.5], and a calculated time of concentration (T_c) using an appropriate method to justify the parameter selection or Tc of minutes [*T_c of 20 minutes should be used for all pre-development calculations without engineering justification, Tc should not be less than 10 min. since IDF curves become unrealistic at less than 10 min; T_c of 10 minutes shall be used for all post-development calculations*].

- Any storm events greater than the established 2-year allowable release rate, up to and including the 100-year storm event, shall be detained on site. The SWM solution will be subject to review.
- **Water Quality Control:** Please consult with the local conservation authority regarding water quality criteria prior to submission of a Site Plan Control Proposal application to establish any water quality control restrictions, criteria and measures for the site. Correspondence and clearance shall be provided in the Appendix of the report.
- Please note that foundation drain is to be independently connected to sewermain unless being pumped with appropriate back up power, sufficient sized pump and back flow prevention.
- Please note that as per *Technical Bulletin PIEDTB-2016-01 section 8.3.11.1 (p.12 of 14)* **there shall be no surface ponding on private parking areas during the 2-year storm rainfall event**. Depending on the SWM strategy proposed underground or additional underground storage may be required to satisfy this requirement.
- **Underground Storage:** Please note that the Modified Rational Method for storage computation in the Sewer Design Guidelines was originally intended to be used for above ground storage (i.e. parking lot) where the change in head over the orifice varied from 1.5 m to 1.2 m (assuming a 1.2 m deep CB and a max ponding depth of 0.3 m). This change in head was small and hence the release rate fluctuated little, therefore there was no need to use an average release rate.
- When underground storage is used, the release rate fluctuates from a maximum peak flow based on maximum head down to a release rate of zero. This difference is large and has a significant impact on storage requirements. **We therefore require that an average release rate equal to 50% of the peak allowable rate shall be applied to estimate the required volume. Alternatively, the consultant may choose to use a submersible pump in the design to ensure a constant release rate.**
- In the event that there is a disagreement from the designer regarding the required storage, The City will require that the designer demonstrate their rationale utilizing dynamic modelling, that will then be reviewed by City modellers in the Water Resources Group.
- Note that the above will added to upcoming revised Sewer Design Guidelines to account for underground storage, which is now widely used.
- Provide sufficient details and information on any proposed underground storage system. A cross-section of any underground storage system is to be provided with sufficient details and information. In case of a pump failure or blockage an overflow should be provided. Backup power supply is required if using a pump.
- Please note that the minimum orifice dia. for a plug style ICD is 83mm and the minimum flow rate from a vortex ICD is 6 L/s in order to reduce the likelihood of plugging.
- Post-development site grading shall match existing property line grades in order to minimize disruption to the adjacent residential properties. A **topographical plan of survey** shall be provided as part of the submission and a note provided on the plans.
- Please provide a **Pre-Development Drainage Area Plan** to define the pre-development drainage areas/patterns. **Existing drainage patterns shall be maintained and discussed as part of the proposed SWM solution**.
- If rooftop control and storage is proposed as part of the SWM solutions sufficient details (Cl. 8.3.8.4) shall be discussed and document in the report and on the plans. Roof drains are to be connected downstream of any incorporated ICDs within the SWM system and not to the foundation drain system.

Storm Sewer:

- Storm sewer monitoring maintenance holes are required to be installed at the property line (on the private side of the property) as per City of Ottawa Sewer-Use By-Law 2003-514 (14) *Monitoring Devices*.
- As-built drawings of the existing services within the vicinity of the site shall be obtained and reviewed in order to determine proper servicing and SWM plan for the subject site(s).
- Storm service connections are to have backwater valves.

Sanitary Sewer:

- **An analysis and demonstration that there is sufficient/adequate residual capacity to accommodate any increase in wastewater flows in the receiving and downstream wastewater system is required to be provided**. **It is suggested to calculate the total wastewater demand for the proposed development and send it to the City as soon as possible, as an initial step to determine whether or not there is enough capacity in the city system to accommodate the proposed wastewater flow.** Please note that it takes approx. 10 business days to get a response back from the internal circulation.
- Please apply the wastewater design flow parameters *in Technical Bulletin PIEDTB-2018-01.*
- Sanitary sewer monitoring maintenance holes are required to be installed at the property line (on the private side of the property) as per City of Ottawa Sewer-Use By-Law 2003-514 (14) *Monitoring Devices*.
- Sanitary service connections are to have backwater valves.

Water:

- **Water Supply Redundancy:** Residential buildings with a basic day demand greater than $50m^3$/day (0.57 L/s) are required to be connected to a minimum of two water services separated by an isolation valve to avoid a vulnerable service area as per the *Ottawa Design Guidelines - Water Distribution, WDG001, July 2010 Clause 4.3.1 Configuration.* The basic day demand for each site anticipated to exceed $50m^3$/day therefore 2 water services will be required. There shall be primary water service and a secondary connection.
- Please review Technical Bulletin ISTB-2018-0, maximum fire flow hydrant capacity is provided in Section 3 Table 1 of Appendix I. A **hydrant coverage figure** shall be provided and **demonstrate there is adequate fire protection**.
- Boundary conditions are required to confirm that the require fire flows can be achieved as well as availability of the domestic water pressure on the City street in front of the development. Use Table 3-3 of the MOE Design Guidelines for Drinking-Water System to determine Maximum Day and Maximum Hour peaking factors for 0 to 500 persons and use Table 4.2 of the Ottawa Design Guidelines, Water Distribution for 501 to 3,000 persons. Please provide the following information to the City of Ottawa via email to request water distribution network boundary conditions for the subject site. Please note that once this information has been provided to the City of Ottawa it takes approximately 5-10 business days to receive boundary conditions.
    - Type of Development and Units
    - Site Address
    - A plan showing the proposed water service connection locations.
    - **Average Daily Demand** (L/s)
    - **Maximum Daily Demand** (L/s)
    - **Peak Hour Demand** (L/s)
    - **Fire Flow** (L/min)
    - [*Fire flow demand requirements shall be based on Fire Underwriters Survey (FUS) Water Supply for Public Fire Protection*
    - *1999*]
    - *Exposure separation distances shall be defined on a figure to support the FUS calculation and required fore flow (RFF).*

- Hydrant capacity shall be assessed to demonstrate the RFF can be achieved. Please identify which hydrants are being considered to meet the RFF on a fire hydrant coverage plan as part of the boundary conditions request.

- The subject site is located within the 1E Pressure Zone.

Snow Storage:

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

Permits and Approvals:

- The consultant shall determine if this project will be subject to an Environmental Compliance Approval (ECA) for Private Sewage Works. It shall be determined if the exemptions set out under Ontario Regulation 525/98: *Approval Exemptions* are satisfied. All regulatory approvals shall be documented and discussed in the report.

Geotechnical Investigation:

- A Geotechnical Study/Investigation shall be prepared in support of this development proposal.
- Reducing the groundwater level in this area can lead to potential damages to surrounding structures due to excessive differential settlements of the ground. The impact of groundwater lowering on adjacent properties needs to be discussed and investigated to ensure there will be no short term and long term damages associated with lowering the groundwater in this area.
- Geotechnical Study shall be consistent with the **Geotechnical Investigation and Reporting Guidelines for Development Applications**.
- https://documents.ottawa.ca/sites/default/files/documents/cap137602.pdf

Exterior Site Lighting:

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

Please contact Infrastructure Project Manager, Ahmed Elsayed, for follow-up questions.

Transportation

- Follow Traffic Impact Assessment Guidelines
    - Submit a screening form. If a TIA is warranted proceed to scoping.
    - Start this process as soon as possible.
    - 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 is 44.5 metres.
    - A reduction in the road widening was requested from 7 metres to 4 metres (parking levels P1 and P2, as well as at-grade) and from 7 metres to 0 metres (parking levels P3 – P7)
    - No issues with this request
- A Noise Impact Study is required.
- Be aware of possible transit priority measure son Carling- see Ottawa website for plans.

Please contact Transportation Project Manager, Mike Giampa, for follow-up questions.

Parkland

- Cash-in-lieu of parkland will be required equivalent to ten per cent of the value of the land area of the site being developed.

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 also encouraged to contact us for a follow-up meeting if the plan/concept will be further refined. It is recommended to reach out to the local ward Councillor (Theresa Kavanagh) to discuss the proposal prior to submitting any formal applications.

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

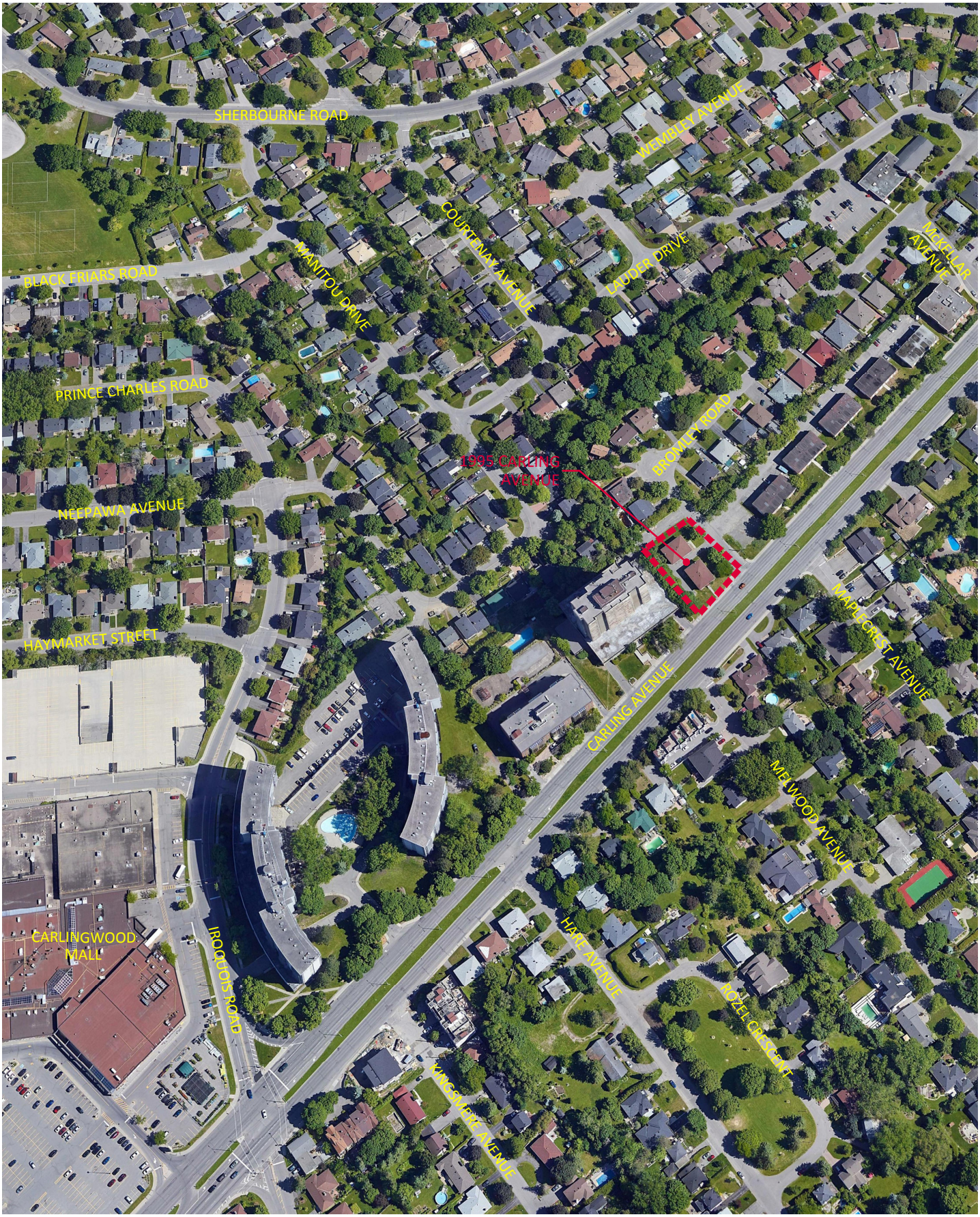
ottawa.ca/planning / ottawa.ca/urbanisme

'

'

--
Vincent Dénommé
613-233-6030 ex 247

www.claridgehomes.com



J: \124829_1995Carling\7.0_Production\7.03_Design\04_Civil_Land\Figures\Figure-1.dwg Layout Name: FIGURE 1

IBI

Project Title	Drawing Title	Sheet No.
1995 CARLING AVENUE	KEY PLAN	FIGURE 1

APPENDIX B

- Water Demand Calculation
- Fire Underwriters Survey - Fire Flow Calculation
- Fire Underwriters Survey – Declaration
- Watermain Boundary Conditions from City of Ottawa

IBI GROUP
500-333 Preston Street
Ottawa, Ontario K1S 5N4 Canada
ibigroup.com

WATERMAIN DEMAND CALCULATION SHEET
1995 Carling Ave. | Claridge Homes
124829-6.0 | Rev #2 | 2024-11-04
Prepared By: AB | Checked By: TB

NODE	RESIDENTIAL				NON-RESIDENTIAL (ICI)			AVERAGE DAILY DEMAND (l/s)			MAXIMUM DAILY DEMAND (l/s)			MAXIMUM HOURLY DEMAND (l/s)			FIRE DEMAND (l/min)
	1 BEDROOM UNITS	2 BEDROOM UNITS	STUDIO UNITS	POPULATION	INDUST. (ha)	COMM. (ha)	INSTIT. (ha)	RESIDENTIAL	ICI	TOTAL	RESIDENTIAL	ICI	TOTAL	RESIDENTIAL	ICI	TOTAL	
Current	91.00	36	6	213.80				0.69		0.69	1.73		1.73	3.81		3.81	4,000
TOTAL	**91**	**36**	**6**	**213.80**						**0.69**			**1.73**			**3.81**	

ASSUMPTIONS

POPULATION DENSITY

1 Bedroom Units	1.4	persons/unit
2 Bedroom Units	2.1	persons/unit
Studio Units	1.8	persons/unit

WATER DEMAND RATES

Residential	280	l/cap/day
Commercial Shopping Center	2,500	L/(1000m2)/day

PEAKING FACTORS

Maximum Daily		
Residential	2.5	x avg. day
Commercial	1.5	x avg. day
Maximum Hourly		
Residential	2.2	x max. day
Commercial	1.8	x max. day

FIRE DEMANDS

Single Family	10,000 l/min (166.7 l/s)
Semi Detached & Townhouse	10,000 l/min (166.7 l/s)
Medium Density	15,000 l/min (250 l/s)

ARCADIS IBI GROUP
500-333 Preston Street
Ottawa, Ontario K1S 5N4 Canada
ibigroup.com

FIRE UNDERWRITERS SURVEY
1995 Carling Ave. | Claridge Homes
124829-6.0 | Rev #2 | 2024-11-04
Prepared By: AB | Checked By: TB

STEP	Contents	Description		Adjustment Factor		Result	
1	**Building A** (18-storey)	1st Floor Area	846		1	846	m2
		2nd Floor Area	810		0.25	202.5	m2
		3rd Floor Area	826		0.25	206.5	m2
	Total Effective Floor Area					**1255**	m2
2	**Type of Construction**	**Type V** Wood Frame	1.5	Type II Noncombustible Construction	0.8		
		Type III Ordinary Construction	1.0				
		Type II Noncombustible Construction	0.8				
		Type I Fire Resistive Construction	0.6				
3	**Required Fire Flow**	RFF = 220C√A, rounded to nearest 1000 L/min				**6000**	L/min
4	**Occupancy and Contents**	Noncombustible Contents	-25%	Limited Combustible Contents	-15%	-900	L/min
		Limited Combustible Contents	-15%				
		Combustible Contents	0%				
		Free Burning Contents	15%				
		Rapid Burning Contents	25%				
	Fire Flow					**5100**	L/min
5	**Automatic Sprinkler Protection**	Automatic Sprinkler Conforming to NFPA 13	-30%	Yes	-30%	-1530	L/min
		Standard Water Supply for both the system and Fire Department Hose Lines	-10%	No		0	L/min
		Fully Supervised System	-10%	No			
	Total Sprinkler Adjustment					**-1530**	L/min
6	**Exposure Adjustment**	Based on **Table 6** Exposure Adjustement Charges for Subject Building					
	North	Separation (m)	20.0	With unprotected opening	4%	204	L/min
		Length X Height Factor (m.storeys)	26				
		Construction Type	Type II				
	South	Separation (m)	>30	With unprotected opening	0%	0	L/min
		Length X Height Factor (m.storeys)	0				
		Construction Type	Type II				
	East	Separation (m)	>30	With unprotected opening	0%	0	L/min
		Length X Height Factor (m.storeys)	0				
		Construction Type	Type II				
	West	Separation (m)	5	With unprotected opening	11%	561	L/min
		Length X Height Factor (m.storeys)	612				
		Construction Type	Type II				
	Total Exposure Adjustment					**765**	L/min
7	**Total Required Fire Flow**					**4335**	L/min
		Rounded to Nearest 1000 L/min				**4000**	L/min
						67	L/s

Notes
1. Fire flow calculation are based on Fire Underwriters Survey version 2020.
2. If any vertical opening in the building are unprotected (e.g. interconnected floor spaces, elevators etc.), consider the two largest adjoining floor area plus 50% of all floors immediately above them up to a maximum of eight.

FUS CLASSIFICATION DECLARATION FOR MULTI-STOREY BUILDINGS

Project Name and Civic Address: 1995 Carling Avenue Number of Floors: 22

Development Review PM: Justin Armstrong City File No. D07-12-20-0044

The building's FUS calculation has been determined using the following criteria: (check one of the following).

C = 1.5 ☐	**Type V Wood Frame Construction** A building is considered to be of Wood Frame construction (Type V) when structural elements, walls, arches, floors, and roofs are constructed entirely or partially of wood or other material. Note: Includes buildings with exterior wall assemblies that are constructed with any materials that do not have a fire resistance rating that meets the acceptance criteria of CAN/ULC-S114. May include exterior surface brick, stone, or other masonry materials where they do not meet the acceptance criteria. Total Effective Area (A) = 100% of all Floor Areas
C = 0.8 ☐ C = 0.9 ☐ C = 1.0 ☐ C = 1.5 ☐	**Type IV Mass Timber** Mass timber construction, including Encapsulated Mass Timber, Heavy Timber and other forms of Mass Timber are considered as one of the following sub-types relating to the fire resistance ratings of assemblies as follows: • Type IV-A Mass Timber Construction (Encapsulated Mass Timber) • Type IV-B Mass Timber Construction (Rated Mass Timber) • Type IV-C Mass Timber Construction (Ordinary Mass Timber) • Type IV-D Mass Timber Construction (Un-Rated Mass Timber) *Refer to Water Supply for Public Fire Protection, latest revision, for further Mass Timber Construction definitions and how to calculate Total Effective Area (A).
C = 1.0 ☐	**Type III Ordinary Construction** A building is considered to be of Ordinary construction (Type III) when exterior walls are of masonry construction (or other approved material) with a minimum

	1-hour fire resistance rating, but where other elements such as interior walls, arches, floors and/or roof do not have a minimum 1 hour fire resistance rating. Total Effective Area (A) = 100% of all Floor Areas
C = 0.8 ☒	**Type II Noncombustible Construction** A building is considered to be of Noncombustible construction (Type II) when all structural elements, walls, arches, floors, and roofs are constructed with a minimum 1-hour fire resistance rating and are constructed with noncombustible materials. Total Effective Area (A) = 1349,5 m^2 ($910,6m^{2\,(ground)}$ + ($880,0\ m^{2\,(2nd)}$ + $998,0\ m^{2\,(3rd)}$)/4) ☐ if any vertical openings in the building (ex. interconnected floor spaces, atria, elevators, escalators, etc.) are unprotected**, consider the two largest adjoining floor areas plus 50% of all floors immediately above them up to a maximum of eight; or ● if all vertical openings and exterior vertical communications are properly protected* in accordance with the National Building Code, consider only the single largest Floor Area plus 25% of each of the two immediately adjoining floors.
C = 0.6 ☐	**Type I Fire Resistive Construction** A building is considered to be of Fire-resistive construction (Type I) when all structural elements, walls, arches, floors, and roofs are constructed with a minimum 2-hour fire resistance rating, and all materials used in the construction of the structural elements, walls, arches, floors, and roofs are constructed with noncombustible materials. Total Effective Area (A) = ☐ if any vertical openings in the building (ex. interconnected floor spaces, atria, elevators, escalators, etc.) are unprotected**, consider the two largest adjoining floor areas plus 50% of all floors immediately above them up to a maximum of eight; or ☐ if all vertical openings and exterior vertical communications are properly protected* in accordance with the National Building Code, consider only the single largest Floor Area plus 25% of each of the two immediately adjoining floors.

Note: If a building cannot be defined within a single Construction Coefficient, the Construction Coefficient is determined by the predominate Construction Coefficient that makes up more than 66% of

the Total Floor Area.
*Protected openings:

a) Enclosures shall have walls of masonry or other limited or non-combustible construction with a fire resistance rating of not less than one hour.
b) Openings including doors shall be provided with automatic closing devices
c) Elevator doors shall be of metal or metal-covered construction, so arranged that the doors must normally be closed for operation of the elevator.

**Unprotected openings:

a) Any opening through horizonal separations that are unprotected or otherwise have closures that do not meet the minimum requirements for protected openings, above.

The building's FUS calculation has been determined using the following criteria: (check all that apply)

30% ☒	**Automatic sprinkler protection designed and installed in accordance with NFPA 13** The initial credit for Automatic Sprinkler Protection is a maximum of 30% based on the system being designed and installed in accordance with the applicable criteria of NFPA 13, Standard for Installation of Sprinkler Systems, NFPA 13R, Standard for the Installation of Sprinkler Systems in Low-Rise Residential Occupancies, or NFPA 13D, Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes and being maintained in accordance with the applicable criteria of NFPA 25, Standard for the Inspections, Testing and Maintenance of Water-Based Fire (see Recognition of Automatic Sprinkler Protection).
10% ☐	**Water supply is standard for both the system and Fire Department hose lines** a) Sprinkler system is supplied by a pressurized water supply system (public or private) that is designed and built with no major non-conformance issues (i.e. water supply system is designed in accordance with Part 1 of the Water Supply for Public Fire Protection to qualify for fire insurance grading recognition). b) Calculated demand for maximum sprinkler design area operation in addition to hose stream requirements are below the available water supply curve (at the corresponding flow rate and pressure). An appropriate safety margin is used to take into account the difference between the available water supply curve at the time of hydrant flow testing as compared to the available water supply curve during Maximum Day Demand. c) Volume of water available is adequate for the total flow rate including the maximum sprinkler design area operation plus required hose streams plus Maximum Day Demand for the full duration of the design fire event. d) Residual pressure at all points in the water supply system can be maintained at not less than 150 kPa during the flowing of the sprinkler and required hose streams (plus Maximum Day Demand).
10% ☐	**Fully supervised system** a) a distinctive supervisory signal to indicate conditions that could impair the satisfactory operation of the sprinkler system (a fault alarm), that is to sound and be displayed, either at a location within the building that is constantly attended by qualified personnel (such as a security room), or at an approved remotely located receiving facility (such as a monitoring facility of the sprinkler system manufacturer); and

	b) a water flow alarm to indicate that the sprinkler system has been activated, which is to be transmitted to an approved, proprietary alarm-receiving facility, a remote station, a central station, or the fire department.

Note: Where only part of a building is protected by Automatic Sprinkler Protection, credit should be interpolated by determining the percentage of the Total Floor Area being protected by the automatic sprinkler system.

☐ Fully Supervised sprinkler system (per above description)

PROFESSIONAL SEAL APPLIED BY:

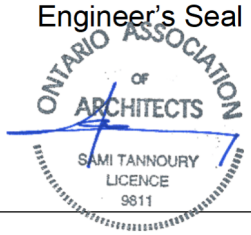
Civil Consultant:	Lance Erion, P.Eng
Consultancy:	Arcadis IBI Group Inc.
Phone Number:	613 225 1311
Address:	500-333 Preston Street

LE **(initial)**	The FUS design parameters will be carried into the building's design

PROFESSIONAL SEAL APPLIED BY:

Architect or Building Engineer:	Sami Tannoury
Consultancy:	Architecture EVOQ Inc.
Phone Number:	514-393-9490
Address:	1435, rue St-Alexandre suite 1000, Montréal

Architect's or Building Engineer's Seal



ST **(initial)**	The FUS design parameters will be carried into the building's design

Outlook

RE: 1995 Carling Ave - City PM & Water Boundary Request Update

From Roy, Jean-Miguel <Jean-Miguel.Roy@ottawa.ca>
Date Fri 2024-12-20 8:23 AM
To Beresniewicz, Arthur <arthur.beresniewicz@arcadis.com>

Good morning Arthur,

The following are boundary conditions, HGL, for hydraulic analysis at 1995 Carling Avenue (zone 1W) assumed to be connected via two connections to the 152 mm on Bromley Avenue (see attached PDF for location).

Minimum HGL: 108.6 m
Maximum HGL: 115.0 m

A multi-hydrant analysis was performed with three existing hydrants within 150 m of the property, located on the north side of Carling Avenue. The total aggregate flow assuming three hydrants running simultaneously provides the required fire flow of 66.67 L/s for the site.

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.

Let me know if you have any questions.

Happy Holidays!
Jean-Miguel

From: Beresniewicz, Arthur <arthur.beresniewicz@arcadis.com>
Sent: December 12, 2024 3:43 PM
To: Roy, Jean-Miguel <Jean-Miguel.Roy@ottawa.ca>
Subject: Re: 1995 Carling Ave - City PM & Water Boundary Request Update

Hi Jean-Miguel,

Thank you for the boundary conditions!

As for the fireflow and multi hydrant analysis, I looked back at our previous boundary conditions from March 2023. In that BC request Justin had preformed a multi-hydrant analysis for the building with hydrants 362025H031, 362026H052 and 362026H094 for a fireflow demand of 83.3 L/s. He confirmed that the total aggregate flow assuming three hydrants running simultaneously provides the required fire flow for the site. Would this satisfy the need for a new hydrant analysis with a lower fireflow demand of 67.7 l/s? I have attached the email from Justin with his correspondence confirming the multi-point hydrant analysis.

Best,

Arthur Beresniewicz EIT
Engineering Intern
Suite 500, 333 Preston Street | Ottawa | ON | K1S 5N4 | Canada
T: +1 613 225 1311 ext 64073

www.arcadis.com

From: Roy, Jean-Miguel <Jean-Miguel.Roy@ottawa.ca>
Sent: Thursday, December 12, 2024 12:17 PM
To: Beresniewicz, Arthur <arthur.beresniewicz@arcadis.com>
Subject: RE: 1995 Carling Ave - City PM & Water Boundary Request Update

Hi Arthur,

We heard back from the Infrastructure Planning Unit about the WBC for the above noted development.

A fire flow demand of 66.67l/s was not met from a point load analysis. We can provide a multi-hydrant analysis if you identify the hydrants and provides distances from the hydrants to the building.

The following are boundary conditions, HGL, for hydraulic analysis at 1995 Carling Avenue (zone 1W) assumed to be connected via two connections to the 152 mm on Bromley Avenue (see attached PDF for location).

Minimum HGL: 108.6 m

Maximum HGL: 115.0 m

Available Fire Flow at 20 (psi): 61.0 L/s, assuming ground elevation of 82.4 m

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

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

Let me know if you have any questions.

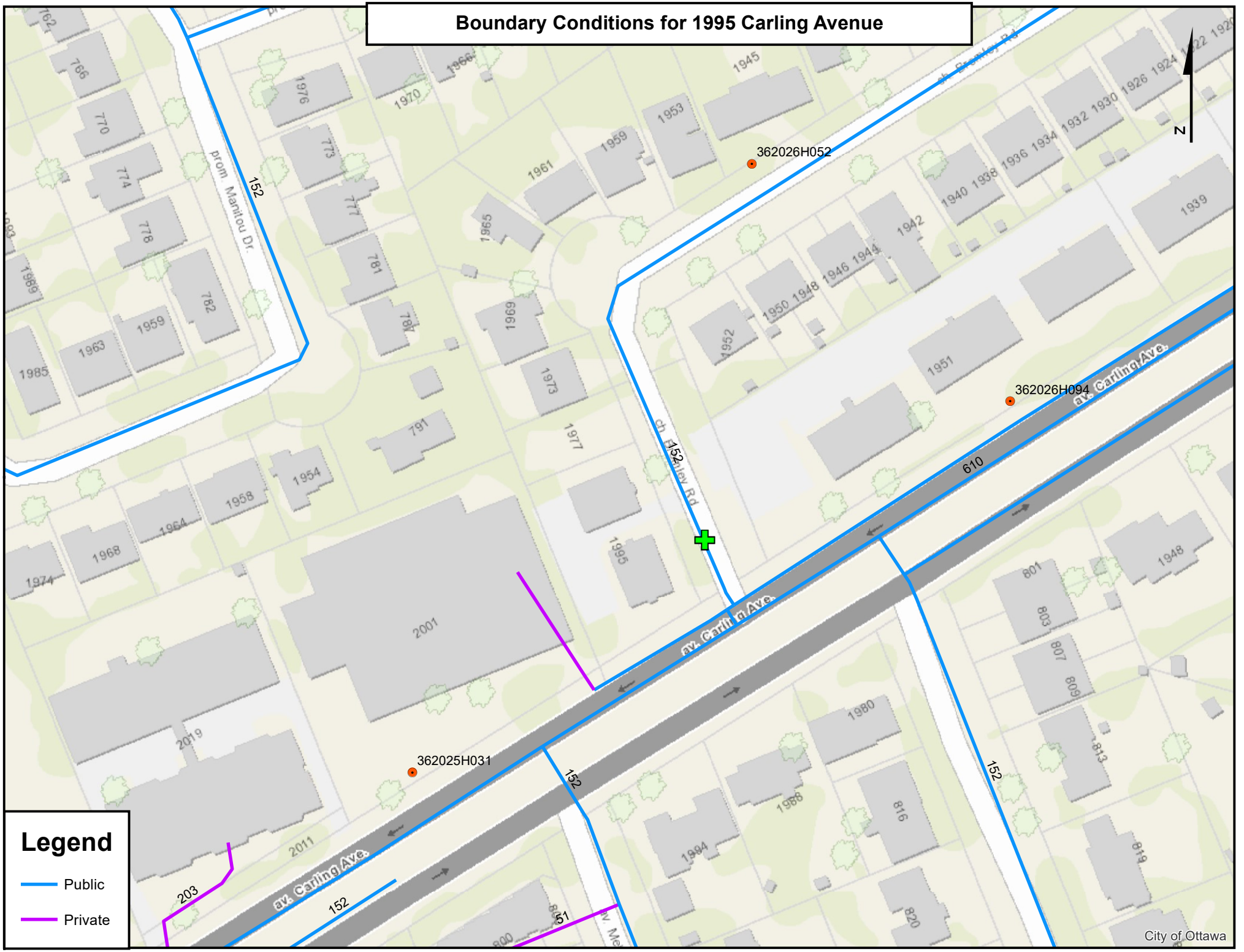
Regards,

Jean-Miguel Roy

Project Manager, Infrastructure Approvals

Planning, Real Estate and Economic Development Department

Boundary Conditions for 1995 Carling Avenue



APPENDIX C

- Sanitary Sewer Design Sheet
- Sanitary and Storm Confirmation email from City Engineer

IBI GROUP
400-333 Preston Street
Ottawa, Ontario K1S 5N4 Canada
tel 613 225 1311 fax 613 225 9868
ibigroup.com

SANITARY SEWER DESIGN SHEET

1995 Carling Ave
CITY OF OTTAWA
Claridge Homes

LOCATION				RESIDENTIAL										ICI AREAS								INFILTRATION ALLOWANCE			FIXED FLOW (L/s)		TOTAL FLOW	PROPOSED SEWER DESIGN						
				AREA w/ Units (Ha)	UNIT TYPES				AREA w/o Units (Ha)	POPULATION		RES PEAK FACTOR	PEAK FLOW (L/s)	AREA (Ha)						ICI PEAK FACTOR	PEAK FLOW (L/s)	AREA (Ha)		FLOW				CAPACITY	LENGTH	DIA	SLOPE	VELOCITY (full)	AVAILABLE CAPACITY	
STREET	AREA ID	FROM MH	TO MH		1 BED	2 BED	STD	OTHER		IND	CUM			INSTITUTIONAL		COMMERCIAL		INDUSTRIAL				IND	CUM	(L/s)	IND	CUM	(L/s)	(L/s)	(m)	(mm)	(%)	(m/s)	L/s	(%)
														IND	CUM	IND	CUM	IND	CUM														
1995 Carling Ave.		Building	MH1A	0.13	91	36	6			215.6	215.6	3.51	2.45									0.13	0.13	0.04			2.49	34.22	6.00	200	1.00	1.055	31.72	92.71%
1995 Carling Ave.		MH1A	Main							0.0	215.6	3.51	2.45									0.00	0.13	0.04			2.49	34.22	2.41	200	1.00	1.055	31.72	92.71%

Design Parameters:

Residential			ICI Areas			
1 BED	1.4	p/p/u	INST	28,000	L/Ha/day	
2 BED	2.1	p/p/u	COM	28,000	L/Ha/day	
STUDIO	1.8	p/p/u	IND	35,000	L/Ha/day	MOE Chart
Other	60	p/p/Ha		17000	L/Ha/day	

Notes:
1. Mannings coefficient (n) = 0.013
2. Demand (per capita): 280 L/day 200 L/day
3. Infiltration allowance: 0.33 L/s/Ha
4. Residential Peaking Factor:
   Harmon Formula = 1+(14/(4+(P/1000)^0.5))0.8
   where K = 0.8 Correction Factor
5. Commercial and Institutional Peak Factors based on total area,
   1.5 if greater than 20%, otherwise 1.0

Designed: JEB/AB

Checked: TRB

Dwg. Reference: 124829-C-400

No.	Revision	Date
1.	Issued for Site Plan Application	2020-04-15
2.	Revised for 2nd Submission	2020-04-15
3.	Revised for 3rd Submission	2023-05-01
4.	Revised for 4th Submission	2024-11-04

File Reference: 124829.7.03 **Date:** 2020-04-15 **Sheet No:** 1 of 1

James Battison

From: Elsayed, Ahmed <ahmed.elsayed@ottawa.ca>
Sent: Tuesday, March 17, 2020 12:42 PM
To: James Battison
Cc: Terry Brule; Vincent Denomme; McCreight, Laurel
Subject: Re: Pre-Consultation Follow-up - 1995 Carling Avenue

Hi James,

Concerning your request below are the comments;

For the storm system, both Carling avenue and Bromley Road have 300 mm storm sewers from 1958. This means that the level of service for these storm systems is 2 year. This is a partially separated area, which means that there are no basements connected to the storm system. This gives us a bit of flexibility. They can therefore connect to either Bromley or Carling (Bromley would be easier) and they will have to provide SWM to control the 100 year to the 2 year using a release rate based on the lesser of C=0.5 or existing. The TC can be computed and should not be less than 10 minutes.

As for Sanitary, they can again go to either Carling or Bromley, but I think that Carling would be a better option.

If you have any more questions, please let me know.

From: James Battison <James.Battison@ibigroup.com>
Sent: Tuesday, March 10, 2020 9:13 AM
To: Elsayed, Ahmed <ahmed.elsayed@ottawa.ca>
Cc: Terry Brule <tbrule@IBIGroup.com>; Vincent Denomme <vincent.denomme@claridgehomes.com>
Subject: RE: Pre-Consultation Follow-up - 1995 Carling Avenue

Hi Ahmed,

We (IBI Group) have been retained as the civil engineering consultant for Claridge's proposed development at 1995 Carling Avenue.

Per the pre-consultation notes below, the City has requested we confirm the available sanitary sewer capacity.

We have calculated the peak sanitary flow from the proposed 210 apartment building as being 4.24 L/s. We are proposing to outlet to the 225mm concrete sanitary sewer located on the north side of the Carling Ave. ROW.

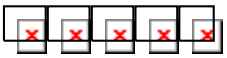
We would appreciate your confirmation that this sewer can accept these flows.

The water demand calculations are nearly complete and we will forward a boundary condition request later today.

Looking forward to working with you on this file.

James Battison

IBI GROUP
Suite 400, 333 Preston Street
Ottawa ON K1S 5N4 Canada
tel +1 613 225 1311 ext 64039 fax +1 613 225 9868



---------- Forwarded message ---------
From: **McCreight, Laurel** <Laurel.McCreight@ottawa.ca>
Date: Tue, Feb 18, 2020 at 1:02 PM
Subject: Pre-Consultation Follow-up - 1995 Carling Avenue
To: Vincent Denomme <vincent.denomme@claridgehomes.com>

Hello Vincent,

Please refer to the below regarding the Pre-Application Consultation Meeting held on January 23, 2020 for the property at 1995 Carling Avenue for a Zoning By-law Amendment and Site Plan Control Applications in order to allow the development of a 27-storey apartment building by Claridge. I have also attached the required Plans & Study List for application submission.

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

Planning / Urban Design

- The application will be subject to the Urban Design Review Panel
- Please review the Section 37 Implementation Guidelines and demonstrate whether Section 37 is applicable to this development
- There are no concerns with the request for a reduced ROW from 7 metres to 0 metres for parking levels P3 – P7 and from 7 metres to 4 metres for parking levels P1 and P2, as well as at-grade

Arterial Mainstreet Policies

- The Arterial Mainstreet policies (from OPA 150) for heights greater than nine storeys requires locational tests, as well as for a development to provide a community amenity and adequate transitioning to adjacent low-rise uses.
- At this time, the proposal does not provide a community amenity or adequate transitioning to the low-rise residential uses to the north.
- Further analysis is required to ensure that adequate transitioning is provided and that a community amenity is provided on site.

APPENDIX D

- Storm Sewer Design Sheet
- Stormwater Management Calculations
- Pre-development Calculations
- Storm Drainage Area Plan Drawing No. 124829-C-500

IBI GROUP
400-333 Preston Street
Ottawa, Ontario K1S 5N4 Canada
tel 613 225 1311 fax 613 225 9868
ibigroup.com

STORM SEWER DESIGN SHEET

1995 Carling Ave.
City of Ottawa
Claridge Homes

LOCATION				AREA (Ha)										RATIONAL DESIGN FLOW													SEWER DATA								
STREET	AREA ID	FROM	TO	C= 0.20	C= 0.25	C= 0.30	C= 0.50	C= 0.57	C= 0.65	C= 0.69	C= 0.70	C= 0.76	C= 0.90	IND 2.78AC	CUM 2.78AC	INLET (min)	TIME IN PIPE	TOTAL (min)	i (2) (mm/hr)	i (5) (mm/hr)	i (10) (mm/hr)	i (100) (mm/hr)	2yr PEAK FLOW (L/s)	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) DIA	W	H	SLOPE (%)	VELOCITY (m/s)	AVAIL CAP (2yr) (L/s)	(%)
Site	L1	RYCB1	BLDG			0.02								0.02	0.02	10.00	0.06	10.06	76.81	104.19	122.14	178.56	1.28	1.74	2.04	2.98		1.28	34.22	3.66	200			1.00	1.055	32.94	96.26%
Site	R1	BLDG	MH1										0.09	0.23	0.24	10.06	0.04	10.10	76.58	103.89	121.78	178.03	18.52	25.13	29.45	43.06		18.52	34.22	2.52	200			1.00	1.055	15.69	45.87%
Site		MH1	Main											0.00	0.24	10.10	0.17	10.27	76.43	103.68	121.54	177.67	18.49	25.08	29.40	42.97		18.49	34.22	11.04	200			1.00	1.055	15.73	45.97%

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 = 732.951 / (TC+6.199)^0.810] 2 YEAR
[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: JEB/AB

Checked: TRB

Dwg. Reference: 124829-C-500

No.	Revision	Date
1.	Issued for Sitye Plan Application	2020-04-15
2.	Revised as per New Site Plan	2024-11-04

File Reference: 124829.7.03
Date: 2024-11-04
Sheet No: 1 of 1

IBI GROUP
333 PRESTON STREET
OTTAWA, ON
K1S 5N4

PROJECT: 1995 Carling Ave.
DATE: 2025-05-20
FILE: 124829.7.03
REV #: 43,936
DESIGNED BY: JB
CHECKED BY: TB/AB

STORMWATER MANAGEMENT

Formulas and Descriptions

i_{2yr} = 1:2 year Intensity = 732.951 / $(T_c+6.199)^{0.810}$
i_{5yr} = 1:5 year Intensity = 998.071 / $(T_c+6.053)^{0.814}$
i_{100yr} = 1:100 year Intensity = 1735.688 / $(T_c+6.014)^{0.820}$
T_c = Time of Concentration (min)
C = Average Runoff Coefficient
A = Area (Ha)
Q = Flow = 2.78CiA (L/s)

Maximum Allowable Release Rate

Flow Allocation

C =	0.5	(Pre-Development)
T_c =	10	min
i_{2yr} =	76.81	mm/hr
A_{TOTAL} =	0.125	Ha
Q_{TOTAL} =	13.34	L/s

Uncontrolled Release ($Q_{uncontrolled} = 2.78*C*i_{100yr}*A_{uncontrolled}$)

C =	0.8	
T_c =	10	min
i_{100yr} =	178.56	mm/hr
$A_{uncontrolled}$ =	0.010	Ha
$Q_{uncontrolled}$ =	3.97	L/s

Maximum Allowable Release Rate ($Q_{max\ allowable} = Q_{restricted} - Q_{uncontrolled}$)

$Q_{max\ allowable}$ =	9.37	L/s

Pre-Existing C Value

	C	Area (m^2)	Share of Lot	Weighted C
Hard Surface	0.9	724	57.55%	0.52
Soft Surface	0.3	534	42.45%	0.13
		1258	100.00%	**0.65**

As the pre-development weighted average C is greater than 0.5, than the maximu
C=0.5 shall be used for the calculations

Pre-existing TC
Using Bransby Wiliam Formula as C > 0.4

$tc = (0.057*L)/(sw^{0.2} * a^{0.1})$
where

L = catchment watershed length	=	43.75 m
sw = slope of catchment	=	2
a = area of catchment	=	750 m^2

tc = 1.26 min
As the pre-development tc isless than 10 min, than the maximum
tc = 10 min shall be used for the calculations

Uncontrolled Average C

	Area (m^2)	Weight	C	Weighted C
UN1	25.06	0.244083	0.8	0.20
UN2	77.61	0.755917	0.8	0.60
Total	**102.67**	**1**		**0.80**

Tributary to Cistern Average C

	Area (m^2)	Weight	C	Weighted C
L1	197.99	0.173261	0.47	0.08
R1	944.74	0.826739	0.9	0.74
Total	**1142.73**	**1**		**0.83**

MODIFIED RATIONAL METHOD (100-Year & 5-YearPonding)

Drainage Area	*L1, R1*			
Area (Ha)	0.114			
C =	0.83	Restricted Flow Q_r (L/s)=	4.68	9.36

100-Year Ponding

T_c Variable (min)	***i_{100yr} (mm/hour)***	***Peak Flow Q_p=2.78xCi$_{100yr}$A (L/s)***	***Q_r (L/s)***	***Q_p-Q_r (L/s)***	***Volume 100yr (m^3)***
46	67.96	17.88	4.68	13.20	36.42
47	66.91	17.60	4.68	12.92	36.43
48	65.89	17.33	4.68	12.65	**36.44**
49	64.91	17.07	4.68	12.39	36.44
50	63.95	16.82	4.68	12.14	36.43

Storage (m^3)

Overflow	Required	Surface	Cistern	Balance
0.00	36.44	0.00	36.50	0.00

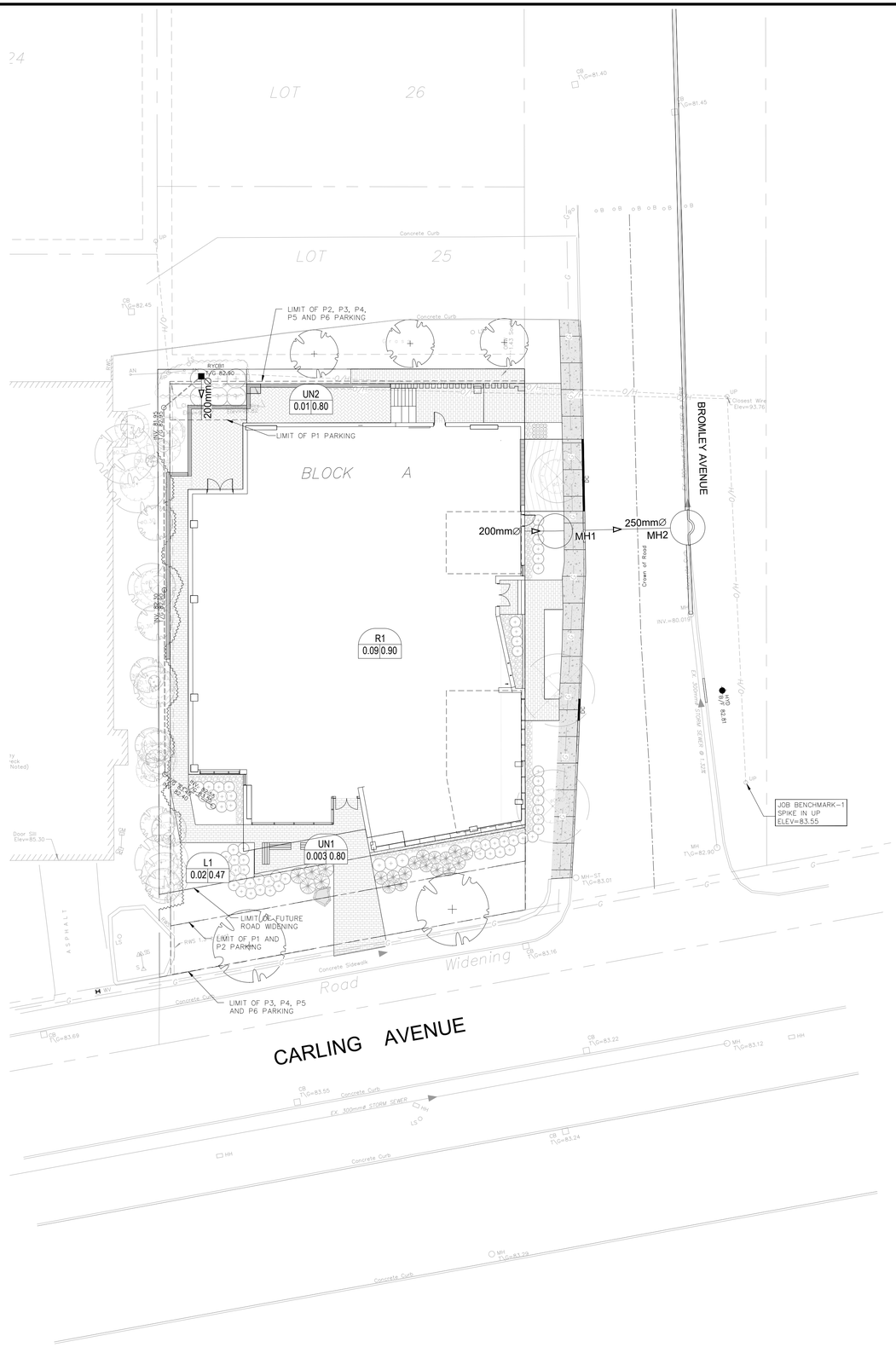
Drainage Area	***L1, R1***		
Area (Ha)	0.114		
C =	0.83	Restricted Flow Q_r (L/s)=	4.68

5-Year Ponding

T_c Variable (min)	***i_{5yr} (mm/hour)***	***Peak Flow Q_p=2.78xCi$_{5yr}$A (L/s)***	***Q_r (L/s)***	***Q_p-Q_r (L/s)***	***Volume 5yr (m^3)***
26	59.35	15.61	4.68	10.93	17.05
28	56.49	14.86	4.68	10.18	17.10
29	55.18	14.51	4.68	9.83	**17.11**
30	53.93	14.19	4.68	9.51	17.11
32	51.61	13.58	4.68	8.90	17.08

Storage (m^3)

Overflow	Required	Surface	Cistern	Balance
0.00	17.11	0.00	36.50	0.00



LEGEND :

- AREA NUMBER
- RUNOFF COEFFICIENT
- AREA IN HECTARES
- DRAINAGE AREA LIMITS
- EXISTING DRAINAGE AREA LIMITS

SEE C-010, FOR NOTES, LEGEND, CB TABLE, AND DETAILS

No.	REVISIONS	By	Date
14			
13			
12			
11			
10			
9			
8			
7			
6			
5			
4	REVISED PER ARCHITECT COORDINATION	T.R.B.	2025:05:28
3	REVISED AS PER NEW SITE PLAN	T.R.B.	2025:01:10
2	REVISED AS PER CITY COMMENTS	T.R.B.	2020:11:20
1	ISSUED FOR SPA	T.R.B.	2020:04:15

CLARIDGE HOMES

IBI GROUP
400 – 333 Preston Street
Ottawa ON K1S 5N4 Canada
tel 613 225 1311 fax 613 225 9868
ibigroup.com

Project Title

1995
CARLING AVENUE

LICENSED PROFESSIONAL ENGINEER
T. R. BRULE
2025-05-28
PROVINCE OF ONTARIO

Drawing Title

STORM DRAINGE
AREA PLAN

Scale

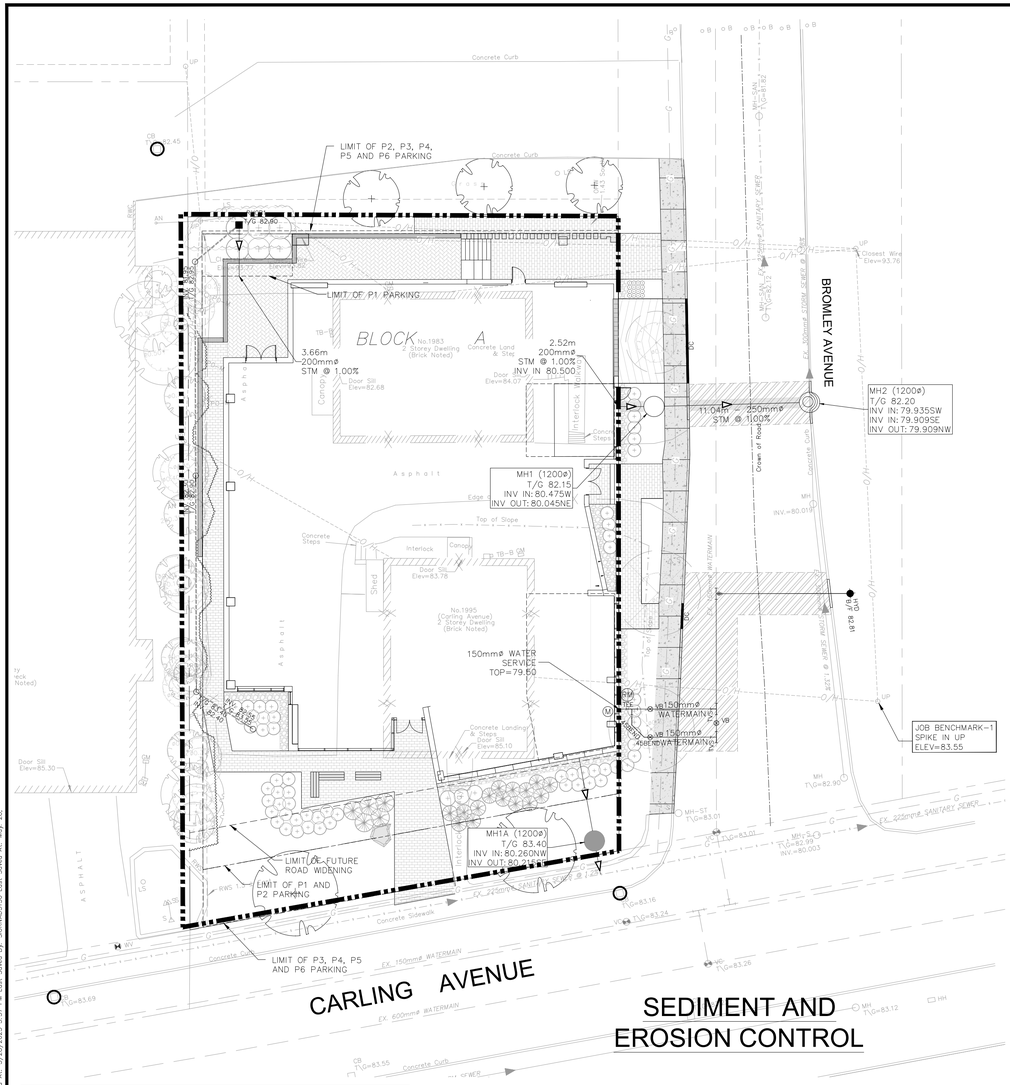
2.5 0 2.5 5
1:200

Design	Date
J.B.	APRIL 2020
Drawn	Checked
D.P.S./J.B.	T.R.B.
Project No.	Drawing No.
124829	C-500

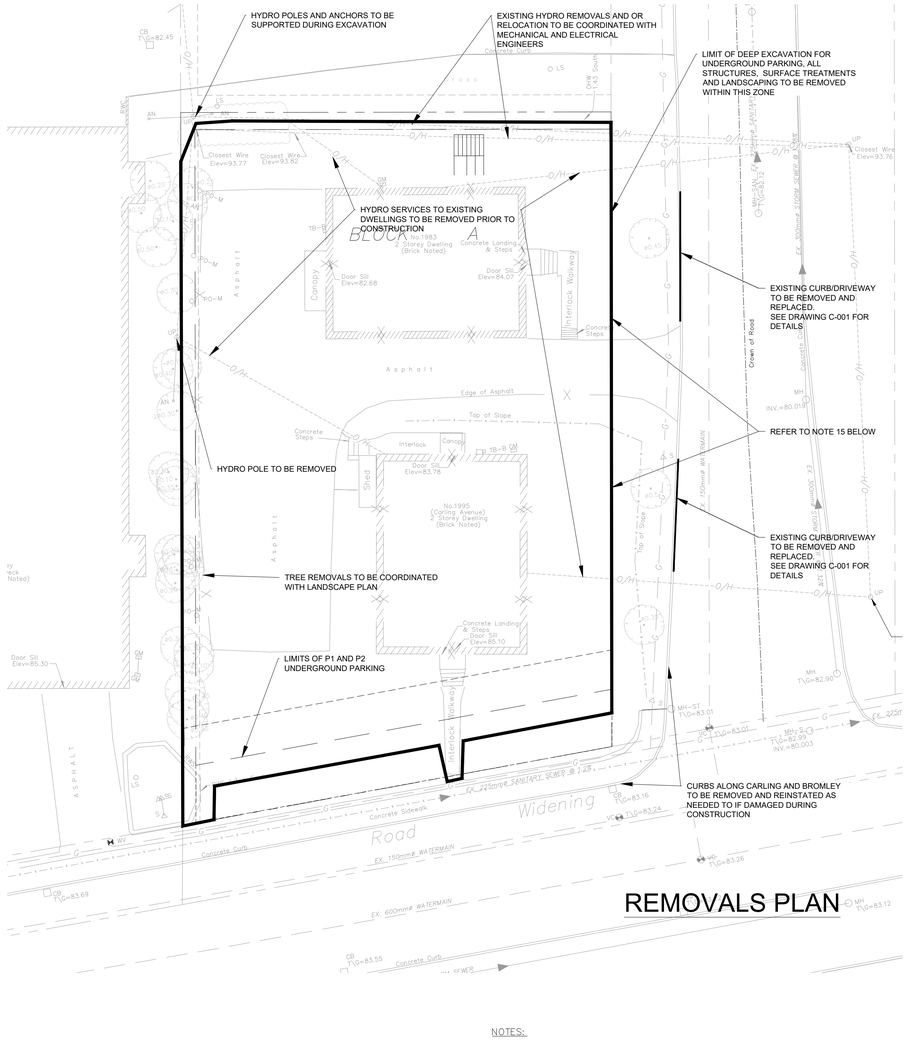
CITY FILE No. D07-12-20-0044
CITY PLAN No. #18140

APPENDIX E

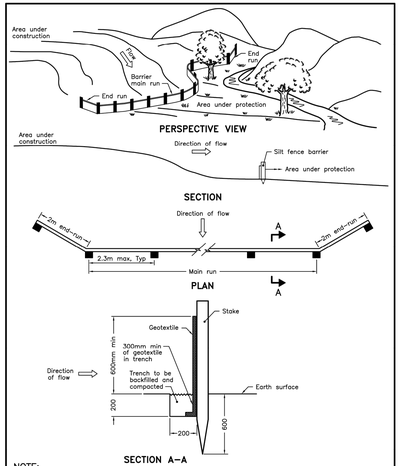
- Sediment Control Plan Drawing No. 124829-C-010
- Adjacent sewer as built drawings



SEDIMENT AND EROSION CONTROL



REMOVALS PLAN



NOTE:
A All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2006	Rev 1
LIGHT–DUTY SILT FENCE BARRIER		OPSD 219.110

NOTES:

1. SILT FENCE TO BE ERECTED PRIOR TO EARTH WORKS BEING COMMENCED. SILT FENCE TO BE MAINTAINED UNTIL VEGETATION IS ESTABLISHED OR UNTIL START OF SUBSEQUENT PHASE.
2. SILT SACK TO BE PLACED AND MAINTAINED UNDER COVER OF ALL CATCHBASINS. GEOTEXTILE SILT SACK IN STREET CBs TO REMAIN UNTIL ALL CURBS ARE CONSTRUCTED. GEOTEXTILE FABRIC IN RYCBs TO REMAIN UNTIL VEGETATION IS ESTABLISHED. ALL CATCHBASINS TO BE REGULARLY INSPECTED AND CLEANED, AS NECESSARY, UNTIL SOD AND CURBS ARE CONSTRUCTED.
3. CONTRACTOR TO PROVIDE DETAILS ON LOCATION(S) AND DESIGN OF DEWATERING TRAP(S) PRIOR TO COMMENCING WORK. CONTRACTOR ALSO RESPONSIBLE FOR MAINTAINING TRAP(S) AND ADJUSTING SIZE(S) IF DEEMED REQUIRED BY THE ENGINEER DURING CONSTRUCTION.
4. CONTRACTOR TO PROTECT EXISTING CATCHBASINS WITH FILTER CLOTH UNDER THE COVERS TO TRAP SEDIMENTATION. REFER TO IDENTIFIED STRUCTURES.

STM STRUCTURE TABLE

NAME	RIM ELEV.	INVERT IN	INVERT IN AS–BUILT	INVERT OUT	INVERT OUT AS–BUILT	DESCRIPTION
MH1	82.15	W80.475		NE80.045		1200mmø OPSD–701.010
MH2	82.20	SW79.935 SE79.909		NW79.909		1200mmø OPSD–701.010
RYCB1	82.90			S81.450		OPSD–705.010

SAN STRUCTURE TABLE

NAME	RIM ELEV.	INVERT IN	INVERT IN AS–BUILT	INVERT OUT	INVERT OUT AS–BUILT	DESCRIPTION
MH1A	83.40	NW80.260		SE80.215		1200mmø OPSD–701.010

LEGEND

- PROPERTY LINE
- FUTURE WIDENING
- F.F.= 80.50 FINISHED FLOOR ELEVATION
- DC PROPOSED DEPRESSED CURB
- (M) WATER METER (SEE MECH. DRWG. FOR EXACT LOCATION)
- (RM) REMOTE WATER METER (SEE MECH. DRWG. FOR EXACT LOCATION)
- SIAMESE CONNECTIONS (SEE MECH. DRWG. FOR EXACT LOCATION)
- G PROPOSED GAS SERVICE
- H EXISTING UNDERGROUND HYDRO
- O/H EXISTING OVERHEAD HYDRO
- HMH EXISTING HYDRO MANHOLE
- H/SL EXISTING HYDRO AND LIGHT POLE
- G EXISTING GAS MAIN
- B EXISTING BELL
- BMH EXISTING BELL MANHOLE
- TMH EXISTING TRAFFIC MANHOLE
- TL EXISTING TRAFFIC LIGHT
- PROPOSED RETAINING WALL
- EXISTING TRAFFIC SIGN
- CB EXISTING CATCH BASIN
- AD1 PROPOSED AREA DRAIN
- MH EXISTING COMBINED MANHOLE
- 300ø COMBINED EXISTING COMBINED SEWER
- 200ø STORM PROPOSED STORM SEWER
- 400ø WATERMAIN EXISTING WATERMAIN
- 200ø SANITARY PROPOSED SANITARY SEWER
- 150ø WATERMAIN PROPOSED WATERMAIN
- 150V&VB PROPOSED VALVE AND VALVE BOX
- 400V&VC PROPOSED VALVE AND VALVE CHAMBER
- FH EXISTING FIRE HYDRANT
- SN EXISTING SIGN
- EXISTING WATER VALVE
- SP EXISTING WATER SERVICE STANDPOST
- VB EXISTING VALVE BOX
- PROPOSED LIMITS OF UNDERGROUND PARKING

NOTES:

1. ALL WORKS TO BE COMPLETED AS PER CURRENT CITY OF OTTAWA STANDARDS AND ONTARIO PROVINCIAL STANDARDS AND SPECIFICATIONS.
2. SEWER LATERALS TO BE PVC DR 35.
3. WATER SERVICES TO BE PVC. DR 18 CL150. MINIMUM COVER OF 2.4m FOR WATER SERVICE IS REQUIRED, USE THERMAL INSULATION AS PER CITY STANDARDS WHEN COVER IS LESS THAN 2.4m.
4. ALL SERVICE LATERAL AND SURFACE RESTORATION WORK IN ACCORDANCE WITH CURRENT CITY OF OTTAWA STANDARDS AND SPECIFICATIONS.
5. FULL PORT BACKWATER VALVE IS REQUIRED ON BOTH THE SANITARY AND STORM SERVICE CONNECTIONS.
6. WATER SERVICE CHLORINATION AND TESTING TO BE COMPLETED BY CITY FORCES.
7. PROPOSED BUILDING INFORMATION TAKEN FROM EVOQ ARCHITECTS DRAWINGS.
8. AN EROSION AND SEDIMENTATION CONTROL PLAN WILL BE IMPLEMENTED ON THIS SITE. AS A MINIMUM THAT PLAN WILL INCLUDE A LIGHT DUTY SILT FENCE BARRIER TO OPSD STANDARD 219.110 SURROUNDING THE SITE WHERE PRACTICAL AND SILT SACKS FITTED UNDER EXISTING STREET CATCH BASINS.
9. ALL SHOWN UTILITIES ARE APPROXIMATE AND ARE TO BE FIELD VERIFIED BY CONTRACTOR, ANY DISCREPANCIES ARE TO BE REPORTED TO IBI GROUP PRIOR TO CONTRACTOR MOBILIZING TO SITE.
10. CONTRACTOR RESPONSIBLE TO SUPPORT EXISTING UTILITIES THAT MAY BE AFFECTED DURING CONSTRUCTION
11. EXISTING CURBS AND SIDEWALKS ARE TO BE REMOVED AND REPLACED AS NOTED ON THE DRAWINGS.
12. THE CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES, TO PROVIDE FOR PROTECTION OF THE AREA DRAINAGE SYSTEM AND THE RECEIVING WATER COURSE, DURING CONSTRUCTION ACTIVITIES. THIS INCLUDES LIMITING THE AMOUNT OF EXPOSED SOIL, USING FILTER CLOTH UNDER THE GRATES OF CATCHBASINS AND MANHOLES AND INSTALLING SILT FENCES AND EFFECTIVE SEDIMENT TRAPS. THE CONTRACTOR ACKNOWLEDGES THAT FAILURE TO IMPLEMENT APPROPRIATE EROSION AND SEDIMENT CONTROL MEASURES MAY BE SUBJECT TO PENALTIES IMPOSED BY ANY APPLICABLE REGULATORY AGENCIES.
13. BEARINGS SHOWN HEREON AND ELEVATIONS ARE INDICATED ON THE LOT SURVEY BY ANNIS, O'SULLIVAN, VOLLEBEKK LTD. DATED DECEMBER 24, 2019.
14. FOR GEOTECHNICAL INFORMATION SEE REPORT PG5211–1 BY PATERSON GROUP
15. CLAY SEAL TO BE INSTALLED IN SERVICE TRENCHES BETWEEN CONNECTION POINT AND CAP.
16. THE EXISTING BUILDING SERVICES ARE TO BE FIELD LOCATED AND DECOMMISSIONED AS PER CURRENT CITY STANDARDS. THE WATER SERVICES ARE TO BE BLANKED AT THE WATERMAIN BY CITY FORCES AS PART OF THE WATER PERMIT. EXISTING SEWERS ARE TO BE CAPPED AT THE PROPERTY LINE BY THE CONTRACTOR TO THE SATISFACTION OF THE CITY'S SEWER OPERATIONS STAFF.

LEGEND :

- LIGHT DUTY SILT FENCE AS PER OPSD-219.110
- SILT SACK PLACED UNDER EXISTING CB COVER

SEE C-010, FOR NOTES, LEGEND, CB TABLE, AND DETAILS

No.	REVISIONS	By	Date
14			
13			
12			
11			
10			
9			
8			
7			
6			
5			
4	REVISED PER ARCHITECT COORDINATION	T.R.B.	2025:05:28
3	REVISED AS PER NEW SITE PLAN	T.R.B.	2025:01:10
2	REVISED AS PER CITY COMMENTS	T.R.B.	2020:11:20
1	ISSUED FOR SPA	T.R.B.	2020:04:15

CLARIDGE HOMES

IBI GROUP
400 – 333 Preston Street
Ottawa ON K1S 5N4 Canada
tel 613 225 1311 fax 613 225 9868
ibigroup.com

Project Title
1995 CARLING AVENUE

PROFESSIONAL ENGINEER LICENSED T. R. BRULE 2025-05-28 PROVINCE OF ONTARIO

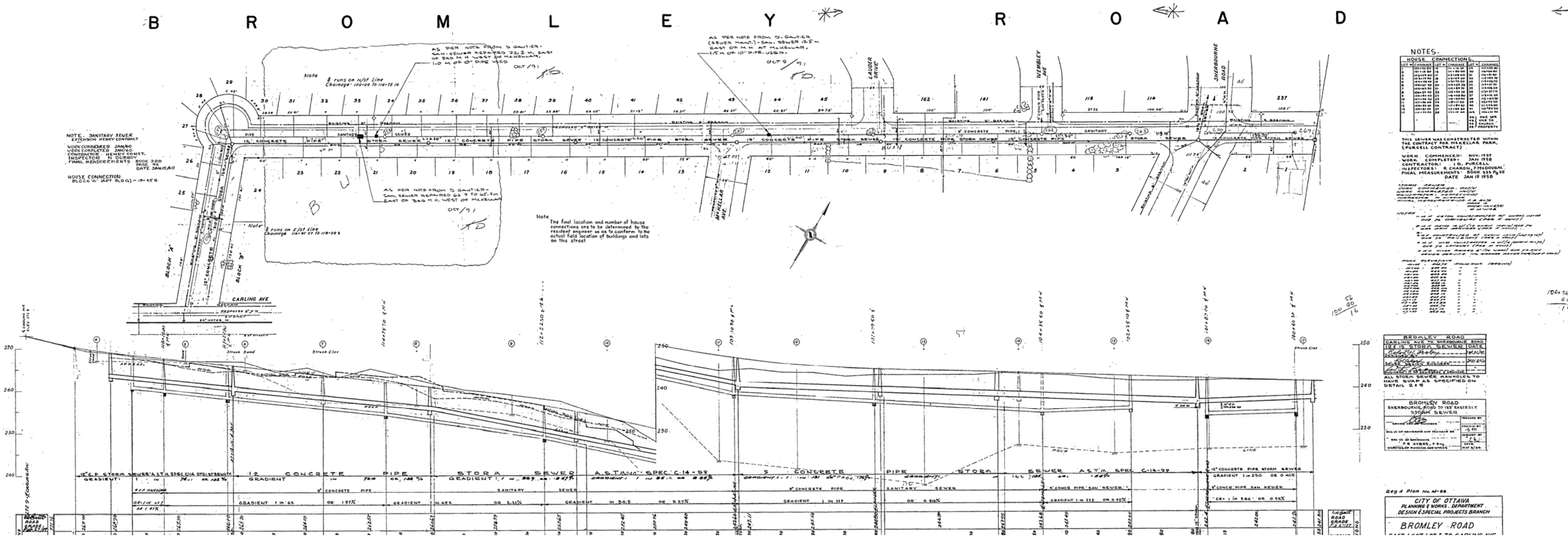
N

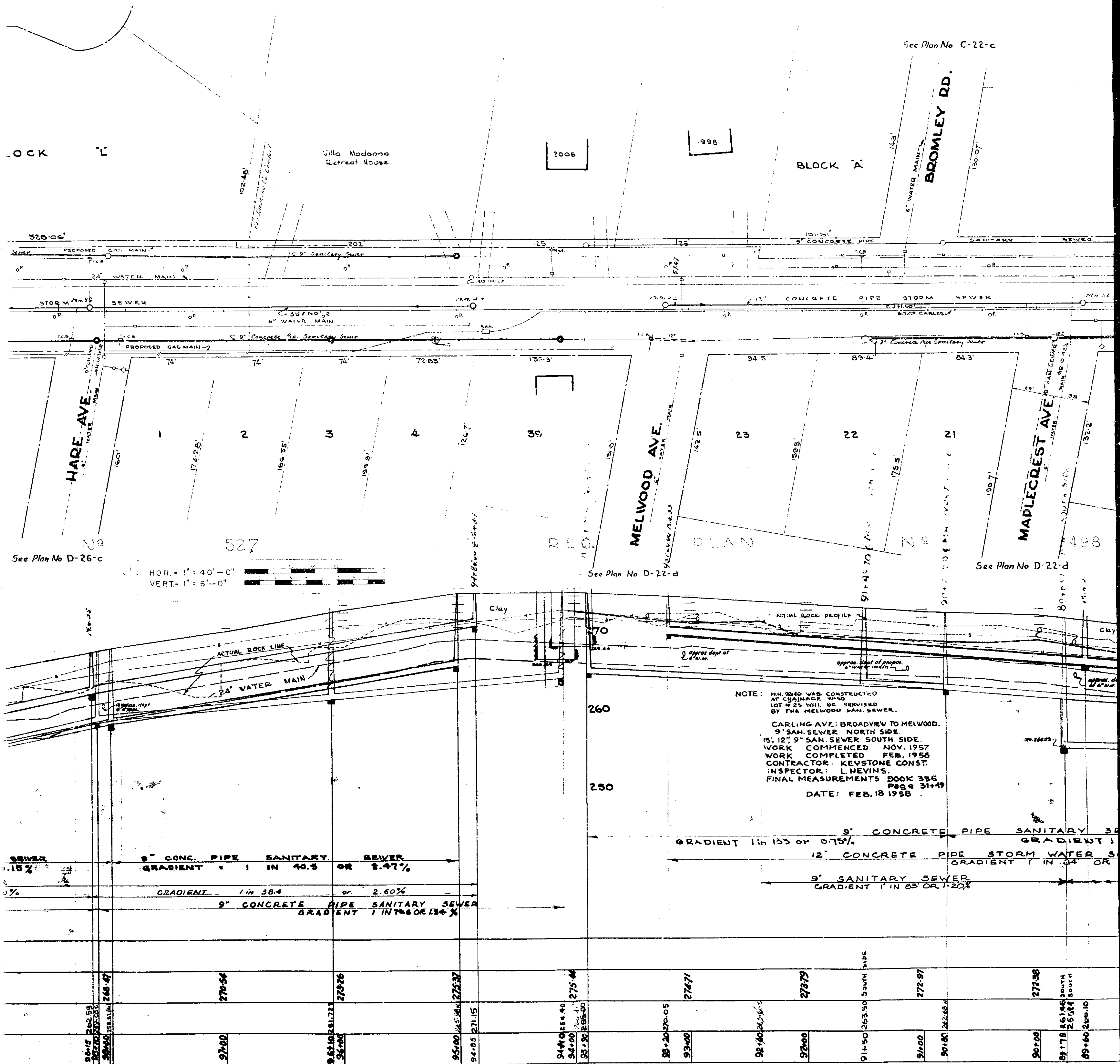
Drawing Title
LEGEND, NOTES, REMOVALS, AND EROSION CONTROL PLAN

Scale
2.5 0 2.5 5
1:200

Design	Date
J.B.	APRIL 2020
Drawn: D.P.S./J.B.	Checked: T.R.B.
Project No. 124829	Drawing No. C-010

CITY FILE No. D07-12-20-0044 CITY PLAN No. #18140


B R O M L E Y R O A D
AS PER NOTE FROM D GAUTIER-
SAN-SEWER REPAIRED 72.2 M. EAST
OF 3RD M H WEST OF McKELLAR.
1.0 M OF 10" PIPE USED
OCT/91
K.D.
Note
℄ runs on N/st Line
Chainage 100+00 To 116+75 16
AS PER NOTE FROM D. GAUTIER
(SEWER MAINT.)-SAN. SEWER 17.5 M
EAST OF M H AT McKELLAR.
1.5 M OF 10" PIPE. USED.
OCT 9/91
K.D.
LAUDER DRIVE
IVEMBLEY AVE
SHERBOURNE ROAD
McKELLAR AVE.
CARLING AVE
BLOCK 'A'
BLOCK 'B'
NOTE. SANITARY SEWER
EXTENSION HENRY CONTRACT
WORK COMMENCED JAN/60
WORK COMPLETED JAN/60
CONTRACTOR HENRY CONST.
INSPECTOR N DUBROY
FINAL MEASUREMENTS BOOK 388
PAGE 46
DATE JAN15/60
HOUSE CONNECTION
BLOCK 'A' (APT BLDG) - 18+65 8
AS PER NOTE FROM D GAUTIER-
SAN. SEWER REPAIRED 62 7 TO 65.7m
EAST OF 3RD M H. WEST OF McKELLAR
OCT/91
KD
Note
℄ runs on E/st Line
Chainage 116+97 57 To 119+29 3
Note
The final location and number of house connections are to be determined by the resident engineer so as to conform to the actual field location of buildings and lots on this street
12" CONCRETE PIPE STORM SEWER
15" CONCRETE PIPE STORM SEWER
9" CONCRETE PIPE SANITARY
EXISTING 2" GASMAIN
PROPOSED 6" WATERM
24" WATER M
NOTES.
HOUSE CONNECTIONS.
THIS SEWER WAS CONSTRUCTED WITHIN THE CONTRACT FOR McKELLAR PARK, (PURCELL CONTRACT)
WORK COMMENCED: NOV. 1957
WORK COMPLETED: JAN 1958
CONTRACTOR: I.B. PURCELL
INSPECTORS: R CHARON, F McDOUGAL
FINAL MEASUREMENTS: BOOK 533 Pg 55
DATE JAN 19 1958
12"C.P STORM SEWER A.S.T.M. SPEC C14 STD STRENGTH
GRADIENT 1 in 76 OR 1.32%
12 CONCRETE PIPE
GRADIENT 1 in 72.0 OR 1.38%
STORM SEWER A.S.T.M. SPEC C-14-59
15 CONCRETE PIPE STORM SEWER A.S.T.M. SPEC C-14-59
12" CONCRETE PIPE STORM SEWER
GRADIENT 1 in 250 OR 0.40%
9" CONCRETE PIPE SANITARY SEWER
GRADIENT 1 in 65 OR 1.57%
GRADIENT 1 in 45.3 OR 2.21%
GRADIENT 1 in 30.5 OR 3.27%
GRADIENT 1 in 111 OR 0.90%
9" CONCR PIPE SAN SEWER
GRADIENT 1 in 222 OR 0.45%
GR. 1 in 286 OR 0.55%
Struck Sand
Struck Clay
ROCK LINE
ROAD GRADE
BROMLEY ROAD
CARLING AVE TO SHERBOURNE ROAD
12 & 15 STORM SEWER
DESIGNED BY
SEWER DESIGN ENGINEER
ALL STORM SEWER MANHOLES TO HAVE SUMP AS SPECIFIED ON DETAIL 2 & 5
BROMLEY ROAD
SHERBOURNE ROAD TO 183' EASTERLY
STORM SEWER
F.B. AYERS, P.Eng.
DIRECTOR OF PLANNING AND WORKS
MAY 8/64
Reg d Plan No. M-98
CITY OF OTTAWA
PLANNING & WORKS. DEPARTMENT
DESIGN & SPECIAL PROJECTS BRANCH
BROMLEY ROAD


See Plan No C-22-c
BLOCK "L"
Villa Madonna Retreat House
2005
1998
BLOCK "A"
BROMLEY RD.
6" WATER MAIN
328·06'
102·48'
202'
125'
125'
101·61'
9" CONCRETE PIPE
SANITARY SEWER
PROPOSED GAS MAIN
9" Sanitary Sewer
24" WATER MAIN
AIR VALVE
STORM SEWER
12" CONCRETE PIPE STORM SEWER
357.60'
6" WATER MAIN
B.T.Co CABLES
9" Concrete Pipe Sanitary Sewer
PROPOSED GAS MAIN
74'
74'
74'
72·83'
135·3'
94·5'
89·4'
84·3'
HARE AVE.
6" WATER MAIN
1
2
3
4
39
23
22
21
160'
173·28'
186·55'
199·91'
126·7'
151·0'
142·5'
159·5'
175·5'
190·7'
132·2'
MELWOOD AVE.
MAPLECREST AVE.
29'
39'
No 527
REG. PLAN No 498
See Plan No D-26-c
See Plan No D-22-d
See Plan No D-22-d
HOR. = 1" = 40'–0"
VERT = 1" = 6'–0"
Clay
ACTUAL ROCK LINE
24" WATER MAIN
ACTUAL ROCK PROFILE
approx. dept of 6" W.M.
approx. dept of propos. 6" water main
260
250
NOTE: M.H. 92+40 WAS CONSTRUCTED AT CHAINAGE 91+50 LOT # 25 WILL BE SERVISED BY THE MELWOOD SAN. SEWER.
CARLING AVE.: BROADVIEW TO MELWOOD.
9" SAN. SEWER NORTH SIDE.
15", 12", 9" SAN. SEWER SOUTH SIDE.
WORK COMMENCED NOV. 1957
WORK COMPLETED FEB. 1958
CONTRACTOR: KEYSTONE CONST.
INSPECTOR: L. NEVINS.
FINAL MEASUREMENTS BOOK 335 Page 31+49
DATE: FEB. 18 1958
9" CONC. PIPE SANITARY SEWER
GRADIENT = 1 IN 40.5 OR 2.47%
GRADIENT 1 in 38.4 or 2.60%
9" CONCRETE PIPE SANITARY SEWER
9" CONCRETE PIPE SANITARY SEWER
GRADIENT 1 in 133 or 0.75%
12" CONCRETE PIPE STORM WATER
9" SANITARY SEWER
GRADIENT 1' IN 83' OR 1·20%
268·47
270·54
273·26
275·37
275·44
274·71
273·79
272·97
272·38
262.59
261.72
271.15
263.50
98+15
97+00
96+00
95+00
94+85
94+00
93+20
93+00
92+00
91+50
91+00
90+80
90+00
89+78
89+60

A19g -5