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Proposed Redevelopment 485 Ancaster Avenue, Ottawa

Assessment of Adequacy of Existing Municipal Services

City File No: D02-02-18-005

Proposed Redevelopment
485 Ancaster Avenue
Assessment of Adequacy of
Existing Municipal Services

Prepared By:

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

May 16, 2018
Revised November 19, 2018
Revised August 8, 2019

City File No: D02-02-18-005

Novatech File: 118035
Ref: R-2018-066

August 8, 2019

Colonnade BridgePort
100 Argyle Avenue, Suite 100
Ottawa, ON K2P 1B6

Attention: Bonnie Martell – Development Project Coordinator

Dear Ms. Martell:

**Reference: Assessment of Adequacy of Existing Municipal Services
Proposed Redevelopment
485 Ancaster Avenue, Ottawa
Our File No.: 118035
City File No: D02-02-18-005**

Enclosed is a copy of the 'Assessment of Adequacy of Existing Municipal Services' for the proposed development located 485 Ancaster Avenue in the City of Ottawa. This report has been revised to address comments issued by the City of Ottawa on August 16, 2018 and on January 2, 2019.

This report addresses the adequacy of the existing municipal services regarding the proposed residential and commercial building and is submitted in support of a re-zoning application.

Please contact the undersigned, should you have any questions or require additional information.

Yours truly,

NOVATECH



Alex McAuley, P.Eng.
Project Manager | Land Development Engineering

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1.0 INTRODUCTION

Novatech has been retained by Colonnade BridgePort to complete an assessment of adequacy of existing municipal services for the proposed mixed-use residential and commercial development located at 485 Ancaster Avenue, in the City of Ottawa.

1.1 Purpose

The purpose of this assessment is to confirm that the proposed development can be adequately serviced by the existing municipal services within the vicinity of the site. This assessment has been prepared in support of a re-zoning application to allow two mixed-use residential towers (4 and 22 storeys) with ground floor commercial.

The City of Ottawa design guidelines for sewer systems and water distribution including relevant technical bulletins have been used to estimate the theoretical servicing requirements of the site. GeoOttawa, and City of Ottawa Record Drawings have been used to establish the existing municipal services adjacent to the subject site.

1.2 Location and Site Description

The subject site is located at 485 Ancaster Avenue, at the intersection of Woodroffe Avenue and Carling Avenue in the City of Ottawa, as shown in **Figure 1 (Aerial Plan)**. The site is approximately 0.60 hectare (ha) in area.

Generally, the site is bound by private residential dwellings to the north, Ancaster Avenue to the west, Carling Avenue to the south and Woodroffe Avenue to the east. To the south-west of the site there are two existing commercial buildings with associated parking areas.

Figure 1 – Aerial Plan provides an aerial view of the site.



The subject site is currently occupied by a one to two-storey commercial building with a variety of retail uses, including home furnishing stores, a restaurant, a pharmacy, a dental clinic, and various small business offices. There are surface parking lots at the front and rear of the site.

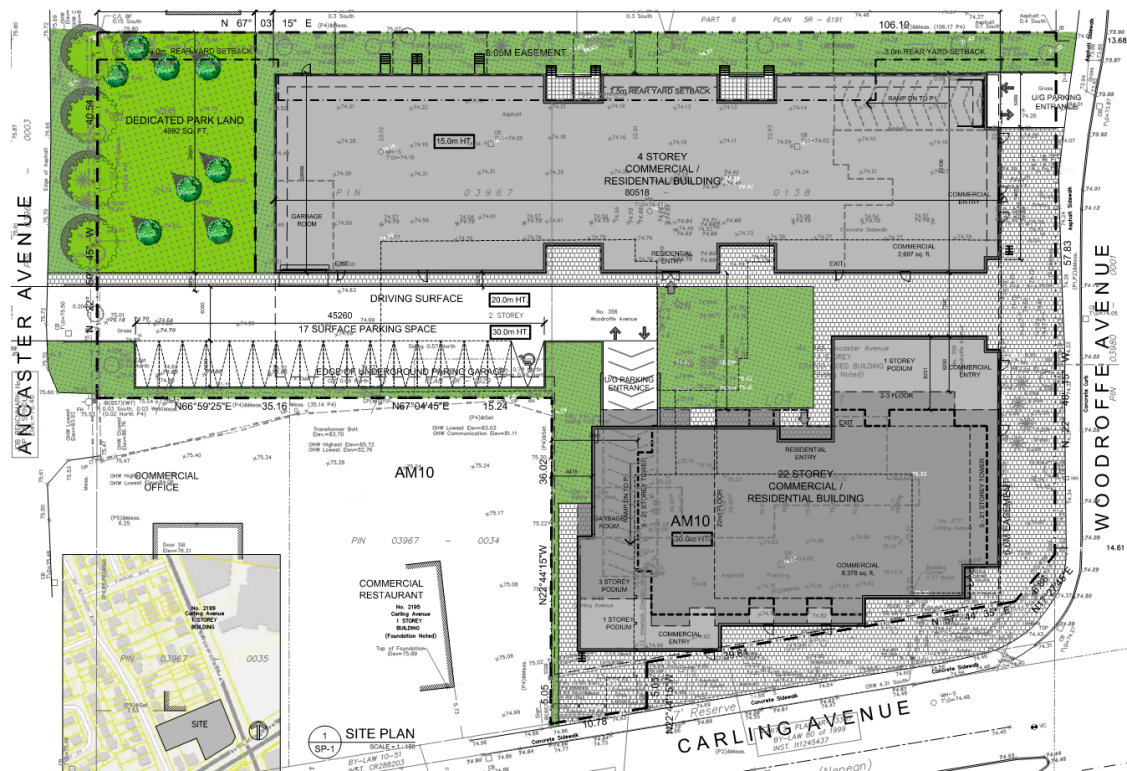
The legal description of the site is Part of Lots 1 and 8, Registered Plan 461, City of Ottawa.

1.3 Proposed Redevelopment

The proposed redevelopment is intended to be a new multi-storey mixed-use residential and commercial development. In total approximately 290 residential units are anticipated, and approximately 1022 m² (11,007 ft²) of commercial floor space on the building's ground floor is proposed. **Figure 2 (Conceptual Site Plan)** shows the proposed development.

A combination of underground and surface parking is proposed. Two accesses to the site are proposed from Ancaster Avenue and from Woodroffe Avenue. A separate Transportation Impact Assessment has been prepared and submitted with this application.

Figure 2 – Conceptual Site Plan (by Roderick Lahey Architects Inc) provides a conceptual layout of the proposed redevelopment.



2.0 SANITARY SEWER

2.1 Existing Conditions

The following municipal sanitary sewers are located adjacent to the site:

- A 225mm dia. sanitary sewer in Ancaster Ave;
- A 225mm dia. sanitary sewer on the northern side of Carling Ave;
- A 900mm dia. trunk sanitary sewer in Woodroffe Ave.

Based on sewer invert information obtained from City of Ottawa record drawings, the estimated capacities of these segments of the sewer segments are given in **Table 2.1-A**. Refer to **Figure 3 (Existing Conditions Plan)** for existing sewer inverts.

Table 2.1-A: Existing Sanitary Sewer Capacities

Sanitary Sewer (Diameter – Street)	Approximate Sewer Slope (%)	Approximate Sewer Capacity ¹ (L/s)
225mm dia. – Ancaster Ave	0.29%	25 L/s
225mm dia. – Carling Ave	0.70%	38 L/s
900mm dia. – Woodroffe Ave	0.24%	925 L/s

¹ Capacities calculated per Manning's equation with $n=0.013$

The theoretical sanitary flows from the existing site are summarized below in **Table 2.1-B**.

Table 2.1-B: Theoretical Sanitary Sewer Flows for the Existing Site

Use	Commercial Floor Area / # of seats / # of staff / patients per day	Average Flow ¹ (L/s)	Peak Flow ¹ (L/s)
Commercial (incl. restaurant and dental office)	2,300 m ² office / retail, 20 restaurant seats, 4 medical staff / 20 patients	0.15 L/s	0.38 L/s

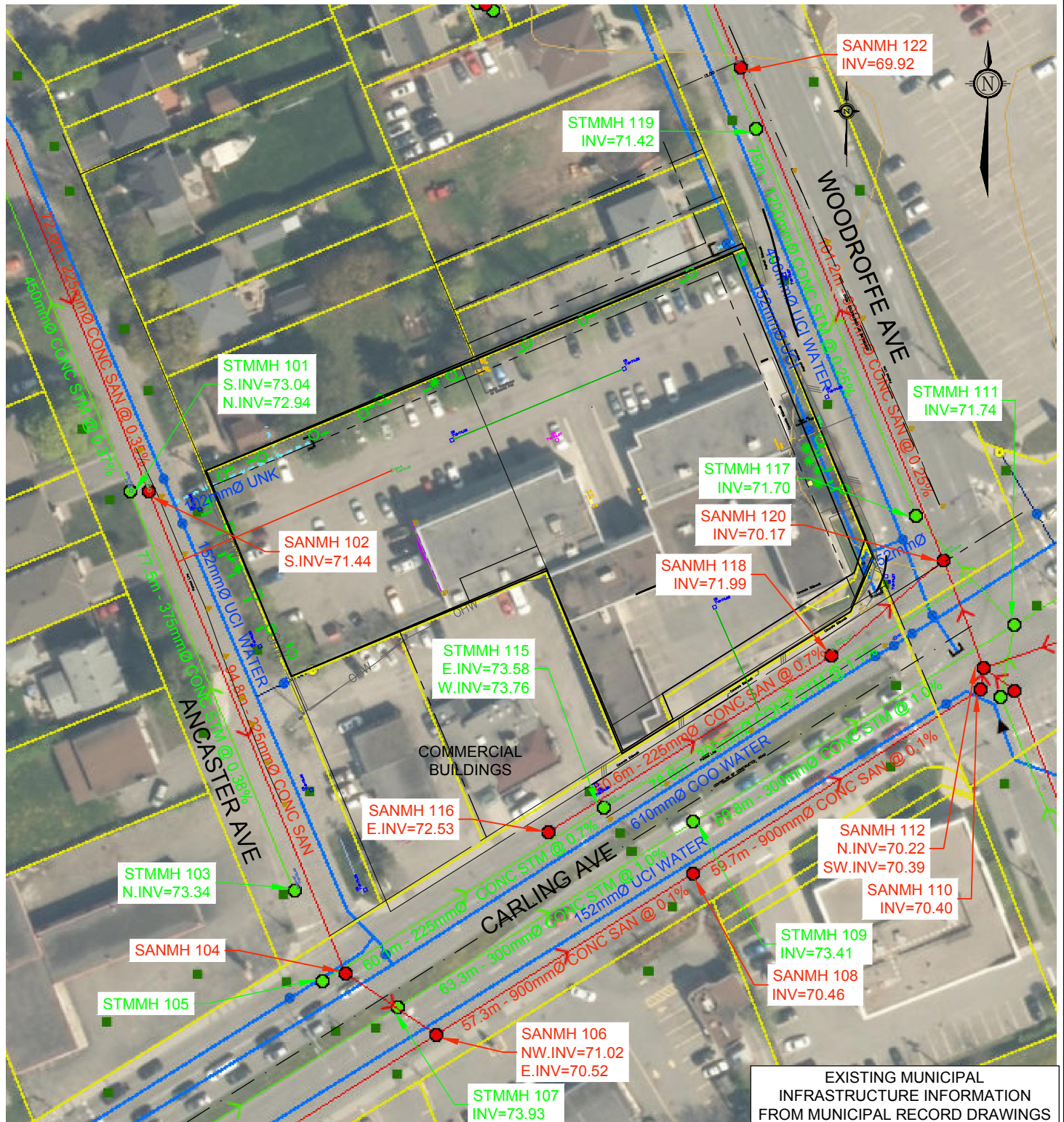
¹ Flows are Average Dry Weather (DW) and Peak Wet Weather (WW) Flows which include infiltration allowances of 0.05 L/s/gross ha and 0.33 L/s/gross ha respectively.

2.2 Proposed Sanitary Servicing

It is anticipated to service the proposed development via a new sanitary service to the existing 225mm dia. sanitary sewer in Carling Ave. The exact connection point, sanitary service size and slope would be confirmed during the detailed design stage.

Refer to **Figure 4 (Conceptual Servicing)** for the approximate location of the proposed sanitary service.

Based on sewer invert information from City of Ottawa record drawings, gravity drainage to the existing trunk sewer would be provided. Sanitary sewage collected from the underground parking



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LEGEND

EXISTING MUNICIPAL SERVICES:

- EX WATERMAIN
- EX SANITARY
- EX STORMWATER

485 ANCASTER AVE

EXISTING CONDITIONS PLAN

SCALE 1 : 1000

DATE AUG 2019 JOB 118035 FIGURE 3



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LEGEND

EXISTING MUNICIPAL SERVICES:

EX WATERMAIN

EX SANITARY

EX STORMWATER

PROPOSED PRIVATE SERVICES:

PR WATERMAIN

PR SANITARY

PR STORMWATER

485 ANCASTER AVE

CONCEPTUAL SERVICING

SCALE 1 : 1000

DATE **AUG 2019**

JOB 118035

FIGURE 4

garage floor drains would require pumping. The theoretical sanitary flows from the proposed development are summarized below in **Table 2.2**.

Table 2.2: Theoretical Sanitary Sewer Flows for the Proposed Development

Use	Unit Count / Commercial Floor Area	Design Population (people)	Average Flow (L/s)	Peak Flow (L/s)
Residential	181 x 1-bdrm, 109 x 2-bdrm	482	1.56	5.29 ¹
Commercial	1022 m ²	-	0.03	0.05 ²
Total			1.59 L/s ²	5.34 L/s ³

¹ Residential Peaking Factor = 3.39 (per Harmon Equation) with K=0.8.

² Commercial Peaking Factor = 1.5

³ Total site flows are Average Dry Weather and Peak Wet Weather Flows which include infiltration allowances of 0.05 L/s/gross ha and 0.33 L/s/gross ha respectively.

A sewer design sheet has been provided in **Appendix A** which indicates that the existing 225mm sanitary sewer in Carling Ave has approximate residual capacity of 37.4L/s which is sufficient for the proposed development. It is anticipated that the existing 225mm sanitary sewer can adequately service the proposed development.

3.0 WATER SUPPLY

3.1 Existing Conditions

The following municipal watermains are located adjacent to the site:

- A 150mm dia. watermain in Ancaster Ave;
- A 610mm dia. backbone watermain in Carling Ave;
- A 150mm dia. watermain within an easement over private properties along the western side of Woodroffe Ave;
- A 400mm dia. watermain within the right-of-way of Woodroffe Ave;

The theoretical water demands for the site as existing are summarized in **Table 3.1**. Refer to **Appendix B** for detailed calculations.

Table 3.1: Theoretical Water Demands for the Existing Site

Demand Type	Average Day Demand	Maximum Day Demand	Peak Hour Demand
Commercial	0.19 L/s	0.29 L/s	0.51 L/s

3.2 Proposed Water Demand

Due to the size of the proposed development (145m³/day) redundant water services will be required. It is anticipated to service the proposed development with a twinned water service connected to the existing 150mm dia. watermain in Woodroffe Ave. The proposed water service will be sized to provide both the required domestic water demand and fire flow during the detailed design stage.

Refer to **Figure 4 (Conceptual Servicing)** for details of the existing municipal watermains and the proposed water service.

The theoretical water demands for the proposed development are summarized in **Table 3.2**. Refer to **Appendix B** for detailed calculations.

Table 3.2: Theoretical Water Demands for the Proposed Development

Demand Type	Average Day Demand	Maximum Day Demand	Peak Hour Demand
Residential and Commercial	1.99 L/s	4.95 L/s	10.86 L/s

3.3 Water Supply for Fire Fighting

The Fire Underwriter's Survey (FUS) was used to estimate fire flow demands for the proposed expanded building. It is anticipated that the proposed buildings will be sprinklered. The calculated fire flow demand for the proposed development is 117 L/s (7,000 L/min). Refer to **Appendix B** for detailed calculations and **Figure 6 (Fire Hydrant Coverage Plan)** which shows exposure distances, existing and proposed hydrants which are considered available for fire protection. Based on the preliminary analysis, the existing hydrants are sufficient to provide the required fire flow. A proposed hydrant is shown to be able to support the buildings sprinkler connection.

3.4 Municipal Boundary Conditions

Preliminary water demand and fire flow calculations were provided to the City of Ottawa. These values were used to generate municipal watermain network boundary conditions.

Table 3.4-A summarizes the boundary conditions provided by the City of Ottawa for the existing municipal watermain network. Refer to **Appendix B** for email correspondence with the City of Ottawa.

pTable 3.4-A: Hydraulic Boundary Conditions Provided by the City

Condition	Municipal Watermain Boundary Condition	
	Ancaster Ave (150mm dia.)	Woodroffe Ave (150mm dia.)
Minimum HGL	108.5m	108.5m
Maximum HGL	115.2m	115.2m
Max Day + Fire Flow	94.3m	94.3m

The proposed development will require booster pumps to increase pressure for the upper floors. At this stage it is assumed that hydraulic losses in the water service will be negligible.

Table 3.4-B summarizes the water demands for the proposed development under the various operating conditions and compares the anticipated operating pressures at the proposed water service connection to the normal operating pressures outlined in the City of Ottawa Design Guidelines.

Table 3.4-B: Preliminary Water Analysis Results Summary

Condition	Total Water Demand (L/s)	Approximate Design Operating Pressures (psi) / (Relative Head) (m)	Normal Municipal Operating Pressures (psi)
Average Demand	1.99	58 psi (40.7m)	40-80 psi
Max Day + Fire Flow Demand	121.95	28 psi (20.0m)	20 psi (Min.)
Peak Hour Demand	10.86	48 psi (34.0m)	40-80 psi

Based on the preceding analysis, it is expected that the existing municipal watermains can provide adequate water supply to the proposed development.

4.0 STORM DRAINAGE AND STORMWATER MANAGEMENT

4.1 Existing Conditions

The existing site is highly impervious and relatively flat. Several existing catch basins drain the front and rear parking lots. It is unknown if there are any existing stormwater management controls on the site. Refer to **Figure 5 (Pre-Development Drainage Area Plan)**.

The following municipal storm sewers are located adjacent to the site:

- A 375mm dia. storm sewer in Ancaster Ave;
- A 300mm dia. storm sewer on the westbound side of Carling Ave;
- A 1200mm dia. trunk storm sewer in Woodroffe Ave.

4.2 Design Criteria

The design criteria and objectives for the proposed stormwater management design would be as follows:

- Provide a dual drainage system (i.e. minor and major system flows).
- Major overland flow to be directed to Woodroffe Ave.
- Control the post-development flows from the subject site to the allowable release rate specified by the City of Ottawa (to be calculated using the Rational Method with a runoff coefficient (C) of 0.5 for the 2-year design storm).
- Control post-development flows for storms up to and including the 100-year design event, prior to being released into the municipal storm sewer system.
- Any requirements for stormwater quality treatment would be confirmed with Rideau Valley Conservation Authority (RVCA) at the detailed design stage.

4.3 Proposed Drainage Design Philosophy

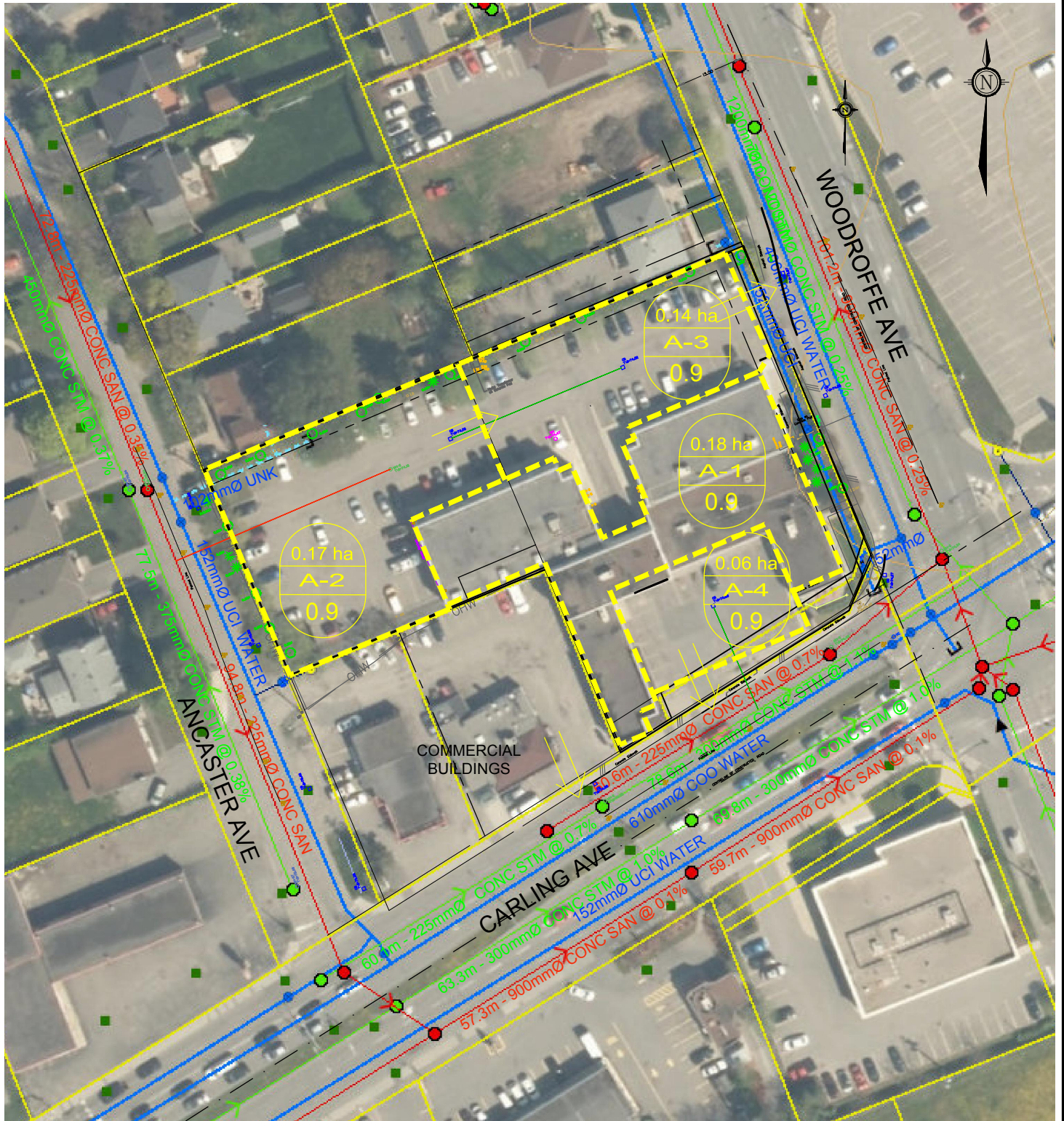
The following stormwater management measures are anticipated to provide adequate flow attenuation to control post-development flows to the allowable release rate:

- Flat roofs with controlled rooftop drains, where possible;
- Surface ponding in the exterior parking lot and landscaped areas with the use of inlet control devices;
- Underground storage where required, with storage pipes and/or a stormwater storage tank.

The approximate locations of the anticipated storm services are shown on **Figure 4 (Conceptual Servicing)**. Foundation drainage may require pumping.

Stormwater flows from the redeveloped site are anticipated to be less than or equal to the stormwater flows from the existing site.

M:\2018\118035\CAD\Design\Figures\118035-Report Figures.dwg, FIG 5, Aug 08, 2019 - 1:39pm, Seely



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LEGEND

EXISTING MUNICIPAL SERVICES:

- EX WATERMAIN
- EX SANITARY
- EX STORMWATER

15.47 ha
C-01
0.45

OVERLAND FLOW
DIRECTION

485 ANCASTER AVE

PRE-DEVELOPMENT DRAINAGE AREA PLAN

SCALE 1 : 1000

DATE AUG 2019

JOB 118035

FIGURE 5

SHT&X11.DWG - 216mmx279mm

5.0 CONCLUSIONS

This assessment of adequacy of existing municipal services has been prepared in support of a re-zoning application for the proposed development located at 485 Ancaster Avenue in the City of Ottawa.

The conclusions are as follows:

- The existing commercial building and parking lots are proposed to be redeveloped into a mixed-use residential and commercial multi-storey development. The proposed development is anticipated to include approximately 290 residential units and approximately 1022m² of street level commercial floor space, with a combination of underground and surface parking.
- The theoretical peak sanitary flow from the proposed development represents approximately 15% of the total estimated capacity of the existing 225mm dia. sanitary sewer adjacent to the site in Carling Ave.
- Boundary conditions in two of the existing municipal watermains adjacent to the site were received from the City based on preliminary domestic water demand and fire supply calculations. These indicate that the existing municipal watermains can adequately service the development.
- Stormwater management would be provided to control post-development flows from the subject site to the allowable release rate specified by the City of Ottawa prior to being discharged to the municipal storm sewer system.
- As the existing site is highly impervious and it is unknown if any stormwater management controls currently exist, stormwater flows from the redeveloped site are anticipated to be less than or equal to the stormwater flows from the existing site.
- Based on the above, it is anticipated that the proposed development can be adequately serviced by the existing sanitary, stormwater and water municipal services.

It is recommended that the assessment of adequacy of existing municipal services be approved in support of the re-zoning application.

NOVATECH

**Lydia Bolam, B.Eng.
E.I.T.**



**Alex McAuley, P.Eng.
Project Manager | Land Development
Engineering**

Appendix A

Sanitary Flow Calculations

SANITARY SEWER DESIGN SHEET
(EXISTING vs. PROPOSED SITE)



Engineers, Planners & Landscape Architects

LOCATION			RESIDENTIAL FLOW						COMMERCIAL FLOW						EXTRANEIOUS FLOW		TOTAL FLOWS			
Area ID	Use		Number of Units		Design Population	Avg Flow	Peak Factor	Res. Peak Flow	Usage				Avg Flow	Peak Factor	Comm. Peak Flow	Infiltration Allowance		Average Dry Weather Flow (ADWF)	Peak Dry Weather Flow (PDWF)	Peak Wet Weather Flow (PWWW)
		Retail / Office Gross Floor Space							Restaurant	Dentist - Medical staff	Dentist - Patients	Dry Weather (I/I dry)				Wet Weather (I/I wet)				
		Total Area	1-bdrm	2-bdrm																
		(ha)	-	-	(persons)	(l/s)	-	(l/s)	(m2)	(seats)	(persons)	(persons)	(l/s)	-	(l/s)	(l/s)	(l/s)	(l/s)	(l/s)	(l/s)
THEORETICAL PRE-DEVELOPMENT																				
Site	Commercial building and parking lots	0.61	0	0	0	0.00	N/A	0.0	2300	20	4	20	0.12	1.5	0.18	0.03	0.17	0.15	0.21	0.38
THEORETICAL POST-DEVELOPMENT																				
Building	Residential / Commercial	0.29	181	109	482				1022											
Exterior	Parking / Landscaping	0.31	0	0	0				0											
Total Post-Development		0.61	181	109	482	1.56	3.39	5.29	1022	0	0	0	0.03	1.5	0.05	0.03	0.17	1.63	5.37	5.54
<div><div>Design Parameters:</div><div><div><div>Residential Population Densities</div><div>1-bedroom/Studio Apartment1.40 people / unit</div><div>2-bedroom Apartment2.10 people / unit</div><div>Average Sanitary Flows</div><div>Residential280 L/c/d</div><div>Commercial - General office/retail28,000 L/gross ha/d</div><div>Commercial - Restaurant125 L/seat/d</div><div>Commercial - Dentist - Medical staff275 L/person/d</div><div>Commerical - Dentist - Patients25 L/person/d</div><div>Peaking Factors</div><div>ResidentialHarmon Equation, K=0.8</div><div>Commercial1.0 if commercial contribution <20%</div><div>1.5 if commercial contribution >20%</div></div><div><div>Peak Extraneous Flows</div><div>Infiltration Allowance (Dry Weather)0.05 L/s/effective gross ha (for all areas)</div><div>Infiltration Allowance (Wet Weather)0.28 L/s/effective gross ha (for all areas)</div><div>Infiltration Allowance (Total I/I)0.33 L/s/effective gross ha (for all areas)</div></div></div></div>															<div><div>Designed: LGB</div><div>Checked: ARM</div></div> <div><div>Date: May 10, 2018</div><div>Revised: November 14, 2018</div><div>Revised: August 8, 2019</div></div>					



LOCATION			RESIDENTIAL FLOW								COMMERCIAL FLOW						EXTRANEEOUS FLOW		TOTAL FLOWS	PIPE					
Manhole	Use		Number of Units		Design Population	Avg Flow	Peak Factor	Res. Peak Flow	Accum. Res. Flow	Usage		Avg Flow	Peak Factor	Comm. Peak Flow	Accum. Comm. Flow	Infiltration Allowance		Peak Design Flow	Size	Slope	Length	Capacity	Full Flow Velocity	Q/Qfull	
		Total Area	1-bdrm	2-bdrm						Retail / Office Gross Floor Space	Restaurant					Total I/I	Accum. Infil. Flow								
		(ha)	-	-	(persons)	(l/s)	-	(l/s)	(l/s)	(m2)	(m2)	(l/s)	-	(l/s)	(l/s)	(l/s)	(l/s)	(l/s)	(mm)	(%)	(m)	(l/s)	(m/s)	(%)	
116-118	2195 Carling Ave (Existing)	0.11	0	0	0	0	N/A	0.0	0.0	0	1130	0.07	1.5	0.10	0.10	0.04	0.04	0.14							
	485 Ancaster Ave (Proposed)	0.61	181	109	482	2	3.41	5.29	5.29	1022	0	0.03	1.5	0.05	0.05	0.20	0.20	5.54							
Total Manhole 116-118		0.72	181	109	482	1.56	3.39	5.29	5.29	1022	1130	0.10	1.5	0.15	0.15	0.24	0.24	5.68	225	0.7	60.6	37.5	0.94	15.1%	
118-120	N/A	0.00	0	0	0	0	N/A	0.0	5.29	0	0	0.00	1.5	0.00	0.15	0.00	0.24	5.68	225	4.0	26.5	89.7	2.26	6.3%	
<div>Design Parameters:</div> <div><div>Residential Population</div><div>1-bedroom/Studio Apartment1.40people / unit</div><div>2-bedroom Apartment2.10people / unit</div><div>Average Sanitary Flows</div><div>Residential280L/c/d</div><div>Commercial - General office/retail28,000L/gross ha/d</div><div>Commercial - Restaurant50,000L/gross ha/d</div><div>Peaking Factors</div><div>ResidentialHarmon Equation, K=0.8</div><div>Commercial1.0if commercial contribution <20%</div><div>1.5if commercial contribution >20%</div></div> <div><div>Peak Extraneous Flows</div><div>Infiltration Allowance (Dry Weather)0.05L/s/effective gross ha</div><div>Infiltration Allowance (Wet Weather)0.28L/s/effective gross ha</div><div>Infiltration Allowance (Total I/I)0.33L/s/effective gross ha</div></div>																			<div>Designed: LKS</div> <div>Checked: ARM</div> <div>Note: Existing sanitary sewer information from City Record Drawing #A19g-6</div> <div>Date: November 15, 2018</div> <div>Revised: August 8, 2019</div>						

Appendix B

Water Demand Calculations, Boundary Conditions Correspondence and FUS Calculations

**485 Ancaster Ave
PRELIMINARY WATER
DEMAND
CALCULATIONS**

JOB NO. 118035

Water Demand (Existing)							
Building	Residential		Total Pop'n (pers)	Commercial	Demands (L/s)		
	Units			Gross Area (ha)	Average Day	Max. Daily	Peak Hour
	1 Bed	2 Bed					
Existing	0	0	0	0.6	0.19	0.29	0.51
Total	0	0	0	0.60	0.19	0.29	0.51

Notes:

Residential Densities (from City of Ottawa data):

- 1 Bedroom Apartment = 1.4 cap/unit
- 2 Bedroom Apartment = 2.1 cap/unit

Avg. Daily Demand:

- Residential = 350 L/cap/day
- Commercial = 28,000 L/gross ha/day

Max. Daily Demand:

- Residential = 2.5 x Avg. Day
- Commercial = 1.5 x Avg. Day

Peak Hourly Demand:

- Residential = 2.2 x Max. Day
- Commercial = 1.8 x Max. Day

**485 Ancaster Ave
PRELIMINARY WATER
DEMAND
CALCULATIONS**

Water Demand (Proposed)							
Building	Residential		Total Pop'n (pers)	Commercial Floor Area (m ²)	Demands (L/s)		
	Units				Average Day	Max. Daily	Peak Hour
	1 Bed	2 Bed					
Proposed	181	109	483	1022	1.99	4.95	10.86
Total	181	109	483	1022	1.99	4.95	10.86

Notes:

Residential Densities (from City of Ottawa data):

- 1 Bedroom Apartment = 1.4 cap/unit
- 2 Bedroom Apartment = 2.1 cap/unit

Avg. Daily Demand:

- Residential = 350 L/cap/day
- Commercial = 2.50 L/m²/day (2500 L/1000m²/day)

Max. Daily Demand:

- Residential = 2.5 x Avg. Day
- Commercial = 1.5 x Avg. Day

Peak Hourly Demand:

- Residential = 2.2 x Max. Day
- Commercial = 1.8 x Max. Day

Prepared By:
NOVATECH
Date: May 10, 2018
Revised: November 15, 2018
Revised: August 8, 2019

Alex McAuley

From: Fraser, Mark <Mark.Fraser@ottawa.ca>
Sent: April-26-18 3:03 PM
To: Alex McAuley
Subject: RE: 485 Ancaster Boundary Conditions
Attachments: 118035-ex water infrastructure.pdf; 485 Ancaster April 2018.pdf

Hi Alex,

Please find below boundary conditions for hydraulic analysis as requested based on the provided anticipated water demands:

Proposed Development Location: **485 Ancaster Ave.**

Average Day = 1.66 L/s

Peak Hour = 9.02 L/s

MaxDay+Fire Flow = 104.11 L/s

City of Ottawa Boundary Conditions:

The following are boundary conditions for hydraulic analysis (Pressure Zone 1W) at the specified connection points:

Specified Connection Points: 152mm dia. watermain on Ancaster Ave. and 152mm dia. watermain on Woodroffe Ave.
[A future watermain is assumed to be looped between Ancaster Ave. and Woodroffe Ave.]

Minimum HGL = 108.5m (same at both connections)

Maximum HGL = 115.2m (same at both connections)

MaxDay + Fire Flow (100L/s) = 94.3m (same at both connections)



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

Please refer to *City of Ottawa, Ottawa Design Guidelines – Water Distribution, First Edition, July 2010, WDG001 Clause 4.2.2* for watermain pressure and demand objectives.

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 watermain 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.

If you have any questions or require any clarification please let me know.

Regards,

Mark Fraser

Project Manager, Planning Services
Development Review West Branch
City of Ottawa | Ville d'Ottawa
Planning, Infrastructure and Economic Development Department
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Mail: Code 01-14
Email: Mark.Fraser@ottawa.ca

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From: Alex McAuley <a.mcauley@novatech-eng.com>
Sent: April 23, 2018 3:00 PM
To: Fraser, Mark <Mark.Fraser@ottawa.ca>
Subject: RE: 485 Ancaster Boundary Conditions

Mark,
I have attached a sketch of the proposed water connection points.

At this time we do not have a site plan to be able to submit.

Thank you,

Alex McAuley, P.Eng., Project Manager | Land Development Engineering

NOVATECH Engineers, Planners & Landscape Architects

240 Michael Cowpland Drive, Suite 200, Ottawa, ON, K2M 1P6 | Tel: 613.254.9643 Ext: 292 | Cell: 613.261.9166 | Fax: 613.254.5867
The information contained in this email message is confidential and is for exclusive use of the addressee.

From: Fraser, Mark [<mailto:Mark.Fraser@ottawa.ca>]
Sent: April-23-18 10:11 AM
To: Alex McAuley <a.mcauley@novatech-eng.com>
Subject: RE: 485 Ancaster Boundary Conditions

Hi Alex,

I'm following up on the below email. Please identify the proposed connection points on the plan and provide a copy of the proposed site plan in order for boundary conditions to be requested.

Regards,

Mark Fraser

Project Manager, Planning Services
Development Review West Branch
City of Ottawa | Ville d'Ottawa
Planning, Infrastructure and Economic Development Department
110 Laurier Avenue West. 4th Floor, Ottawa ON, K1P 1J1
[Tel:613.580.2424](tel:613.580.2424) ext. 27791
Fax: 613-580-2576
Mail: Code 01-14

Email: Mark.Fraser@ottawa.ca

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From: Fraser, Mark
Sent: April 19, 2018 1:23 PM
To: 'Alex McAuley' <a.mcauley@novatech-eng.com>
Subject: RE: 485 Ancaster Boundary Conditions

Hi Alex,

Please identify the proposed connection points on the plan and provide a copy of the proposed site plan.

Regards,

Mark Fraser

Project Manager, Planning Services
Development Review West Branch
City of Ottawa | Ville d'Ottawa
Planning, Infrastructure and Economic Development Department
110 Laurier Avenue West, 4th Floor, Ottawa ON, K1P 1J1
[Tel: 613.580.2424](tel:613.580.2424) ext. 27791
Fax: 613-580-2576
Mail: Code 01-14
Email: Mark.Fraser@ottawa.ca

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From: Alex McAuley <a.mcauley@novatech-eng.com>
Sent: April 19, 2018 10:53 AM
To: Fraser, Mark <Mark.Fraser@ottawa.ca>
Subject: 485 Ancaster Boundary Conditions

Hi Mark,

Our client is looking at a redevelopment of 485 Ancaster Avenue. Attached is a geoOttawa PDF showing the existing City infrastructure in the area. We are requesting water boundary conditions for the site, at both Ancaster Ave and Woodroffe Ave, based on the following demands:

Average Day = 1.66L/s
Peak Hour = 9.02L/s
Max Day + Fire flow = 104.11L/s

Please let me know if you would like to discuss or require further information.

Thank you,

Alex McAuley, P.Eng., Project Manager | Land Development Engineering

NOVATECH Engineers, Planners & Landscape Architects

240 Michael Cowpland Drive, Suite 200, Ottawa, ON, K2M 1P6 | Tel: 613.254.9643 Ext: 292 | Cell: 613.261.9166 | Fax: 613.254.5867

The information contained in this email message is confidential and is for exclusive use of the addressee.

FUS - Fire Flow Calculations

As per 1999 Fire Underwriter's Survey Guidelines



Engineers, Planners & Landscape Architects

Novatech Project #: 118035

Project Name: 485 Ancaster Ave.

Date: 8/1/2019

Input By: LKC

Reviewed By: ARM

Legend

Input by User

No Information or Input Required

Building Description: 22 Storey Building with 4 Storey Podium (Tower A)

Fire Resistive Construction

Step		Choose		Value Used	Total Fire Flow (L/min)	
Base Fire Flow						
1	Construction Material			Multiplier		0.6
	Coefficient related to type of construction C	Wood frame		1.5		
		Ordinary construction		1		
		Non-combustible construction		0.8		
		Modified Fire resistive construction (2 hrs)	Yes	0.6		
		Fire resistive construction (> 3 hrs)		0.6		
2	Floor Area					6,000
	A	Podium Level Footprint (m ²)	1170			
		Total Floors/Storeys (Podium)	4			
		Tower Footprint (m ²)	785			
		Total Floors/Storeys (Tower)	18			
		Protected Openings (1 hr)	Yes			
		Area of structure considered (m ²)			1,755	
	F	Base fire flow without reductions				
		F = 220 C (A) ^{0.5}				
Reductions or Surcharges						
3	Occupancy hazard reduction or surcharge			Reduction/Surcharge		6,000
	(1)	Non-combustible		-25%	0%	
		Limited combustible		-15%		
		Combustible	Yes	0%		
		Free burning		15%		
		Rapid burning		25%		
4	Sprinkler Reduction			Reduction		-2,400
	(2)	Adequately Designed System (NFPA 13)	Yes	-30%	-30%	
		Standard Water Supply	Yes	-10%	-10%	
		Fully Supervised System	No	-10%		
		Cumulative Total		-40%		
5	Exposure Surcharge (cumulative %)			Surcharge		2,100
	(3)	North Side	3.1 - 10 m		20%	
		East Side	> 45.1m		0%	
		South Side	> 45.1m		0%	
		West Side	10.1 - 20 m		15%	
		Cumulative Total		35%		
Results						
6	(1) + (2) + (3)	Total Required Fire Flow, rounded to nearest 1000L/min		L/min	6,000	
		(2,000 L/min < Fire Flow < 45,000 L/min)		or L/s	100	
				or USGPM	1,585	
7	Storage Volume	Required Duration of Fire Flow (hours)			Hours	2
		Required Volume of Fire Flow (m ³)			m ³	720

FUS - Fire Flow Calculations

As per 1999 Fire Underwriter's Survey Guidelines



Engineers, Planners & Landscape Architects

Novatech Project #: 118035

Project Name: 485 Ancaster Ave.

Date: 8/1/2019

Input By: LKC

Reviewed By: ARM

Legend

Input by User

No Information or Input Required

Building Description: 4 Storey Building with 3 Storey Podium (Tower B)
Fire Resistive Construction

Step		Choose		Value Used	Total Fire Flow (L/min)			
Base Fire Flow								
1	Construction Material		Multiplier					
	Coefficient related to type of construction C	Wood frame		1.5				
		Ordinary construction		1				
		Non-combustible construction		0.8				
		Modified Fire resistive construction (2 hrs)	Yes	0.6				
		Fire resistive construction (> 3 hrs)		0.6				
2	Floor Area							
	A	Podium Level Footprint (m ²)	1700					
		Total Floors/Storeys (Podium)	3					
		Tower Footprint (m ²)	1530					
		Total Floors/Storeys (Tower)	1					
		Protected Openings (1 hr)	Yes					
		Area of structure considered (m ²)		2,550				
	F	Base fire flow without reductions			7,000			
	F = 220 C (A)^{0.5}							
Reductions or Surcharges								
3	Occupancy hazard reduction or surcharge		Reduction/Surcharge		7,000			
	(1)	Non-combustible		-25%				
		Limited combustible		-15%				
		Combustible	Yes	0%				
		Free burning		15%				
		Rapid burning		25%				
4	Sprinkler Reduction		Reduction		-2,800			
	(2)	Adequately Designed System (NFPA 13)	Yes	-30%				
		Standard Water Supply	Yes	-10%				
		Fully Supervised System	No	-10%				
	Cumulative Total			-40%				
5	Exposure Surcharge (cumulative %)			Surcharge	2,800			
	(3)	North Side	3.1 - 10 m	20%				
		East Side	> 45.1m	0%				
		South Side	3.1 - 10 m	20%				
		West Side	> 45.1m	0%				
	Cumulative Total			40%				
Results								
6	(1) + (2) + (3)	Total Required Fire Flow, rounded to nearest 1000L/min		L/min	7,000			
		(2,000 L/min < Fire Flow < 45,000 L/min)		or L/s	117			
				or USGPM	1,849			
7	Storage Volume	Required Duration of Fire Flow (hours)		Hours	2			
		Required Volume of Fire Flow (m ³)		m ³	840			



NOVATECH

Engineers, Planners & Landscape Architects
Suite 200, 240 Michael Cowpland Drive
Ottawa, Ontario, Canada K2M 1P6

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

LEGEND

- ROUTE FROM PROPOSED BUILDING TO HYDRANT
- ← 10m → DISTANCE TO ADJACENT BUILDING

485 ANCASTER AVE

FIRE HYDRANT COVERAGE PLAN

SCALE 1 : 1500

DATE AUG 2019 JOB 118035 FIGURE 6

Appendix C

Response to City Comments

November 19, 2018

City of Ottawa
Development Review
110 Laurier Avenue West
Ottawa, Ontario, K1P 1J1
Attention: Stream Shen

Attention: Stream Shen

Dear Ms. Shen:

**Reference: 485 Ancaster Avenue
Zoning By-law Amendment Application – Response to Comments
Assessment of Adequacy of Existing Municipal
Our File No. 118035**

This letter is in response to comments issued by the City of Ottawa on August 16, 2018. This Novatech's response to the comments numbered 14 through 39 are provided in red. All other comments will be addressed separately by Colonnade BridgePort.

Re: Infrastructure Comments (Mark Fraser) -

Assessment of Adequacy of Existing Municipal Services, Proposed Redevelopment, 485 Ancaster Avenue, Ottawa ON, File No.: 118035 prepared by NOVATECH, dated May 16, 2018.

14. Please review and confirm receipt of the attached email dated March 05, 2018 that was provided as a follow-up to the pre-application consultation meeting.
 - *We confirm receipt of the March 5, 2018 email.*
15. Please provide an Existing Conditions Plan to document how the subject site is currently serviced.
 - *Refer to Figure 3 in the Report. Exact locations of existing services will be determined at the detailed design stage.*
16. In addition to GeoOttawa please obtain as-built drawings to establish/confirm the existing municipal services adjacent to the subject site and invert information. Please provide as-built drawings for the adjacent municipal services on Ancaster Ave., Carling Ave. and Woodroffe Ave. These documents can be requested and obtained through the Information Centre.
 - *As-built drawings have been requested and received from the City and are attached to this response letter. The as-built inverts have been added to Figure 3 in the Report.*
17. The Conceptual Servicing Figure [Figure 3] and Section 2.2 *Proposed Sanitary Servicing* indicate that it is anticipated to service the proposed development via. a new sanitary service to the existing 900mm dia. trunk sanitary sewer in Woodroffe Ave. As per the attached email dated March 05, 2018 it was indicated that a sanitary sewer connection to

the 900mm dia. Woodroffe Trunk Sewer is not permitted. Local sewers are available on Carling Ave. and Ancaster Ave. to service the subject site. A service connection to the local 225mm dia. sanitary sewer in Carling Ave. shall be investigated as it appears that this sewer was installed to service these lands.

- *The sanitary service is proposed to connect to the existing 225mm sanitary sewer on Carling Ave.*

18. The sanitary peak flow is documented to increase from 0.38 L/s to 4.75L/s. Analysis and demonstration that there is sufficient **residual capacity** to accommodate the proposed increase in wastewater flows in the receiving and downstream sewer system is required to be documented. Identifying the full flow capacity of the sewer pipes based on inverts obtained from GeoOttawa does not establish that the receiving sewer and downstream network have residual capacity to support the increase in wastewater.

- *A sewer design sheet using as-built information obtained from the City has been included in the Report.*

19. Please provide a sanitary sewer design sheet to analyze and document that the receiving sewer to the Woodroffe Trunk Sewer has sufficient residual capacity to service the subject site proposal.

- *A sewer design sheet has been included in the Report for the 225mm sanitary sewer on Carling Ave to the Woodroffe Trunk Sewer. The existing 225mm sanitary sewer has sufficient residual capacity to accommodate the proposed development.*

20. Sanitary and storm sewer monitoring maintenance holes are not permitted within the registered 6m wide easement [CR339366] granted to the City. The proposal and shall adhere to the conditions identified in the easement agreement.

- *Sanitary and storm sewer monitoring ports have been included on the building services within the underground parking level. This is consistent with the City of Ottawa's Sewer Use By-law for Monitoring Devices.*

21. The water service connection on Woodroffe Ave. is subject to review at Site Plan.

- *Noted.*

22. The private watermain to be looped from Woodroffe Ave. to Ancaster Ave. behind the building shall not encroach within the registered 3m wide easement [CR339366] granted to the City. With a building setback of only 3m the placement of a private watermain at the proposed located as identified on the Conceptual Servicing Figure is not possible. This easement is identified on the project property survey how is not shown/identified on the Site Plan. Please review as all easements respected by the development proposal and shall adhere to the conditions identified in the easement agreement.

- *The private watermain loop is no longer proposed.*

23. A private fire hydrant is required within the subject site.

- *A fire hydrant is proposed along Woodroffe Ave within the site. The exact location will be confirmed at the detailed design stage.*

24. As per Technical Bulletin ISTB-2018-02 dated March 21, 2018 Appendix I: *Guideline on Coordination of Hydrant Placement with Required Fire Flow* clause 18.5.4.3 (pg.7of7) the maximum fire flow capacity for which a fire hydrant shall be credited is specified in Table 18.5.4.3 *Maximum Fire Flow Hydrant Capacity*. It needs to be documented that there are a sufficient number of private and municipal fire hydrants at sufficient distances to provide the required fire flow for the structure. The capacity of the fire hydrants and their proximity to the structure must be considered. Hydrant flow capacity is dependent on the distance to the building and the hydrant class. Please review Technical Bulletin ISTB-2018-02 and document that adequate fire protection is available. Please note that municipal hydrants on the other side of Woodroffe Ave. and Carling Ave. are not to be considered as available hydrants for the subject site due to the classification of the roads and direction from Fire Services. A fire hydrant coverage plan is anticipated.
- *A fire hydrant is proposed along Woodroffe Ave. The exact location of the proposed fire hydrant(s) will be determined at the detailed design stage.*
25. The private watermain is conceptually proposed through land to be dedicated as parkland. Private services through parkland to be dedicated to the City are not permitted as any services and easements would constrain the developable area of the land.
- *The private watermain loop is no longer proposed.*
26. An adjacent residential property, 473 Ancaster Ave., is shown to be serviced by a 100mm dia. water service through the subject site and through the dedicated parkland. Please verify. Is there an agreement in place for this property to have services on the subject property? Is there a registered easement agreement on title? The City requests that an easement be negotiated prior to Site Plan Approval with this adjacent owner of these services or negotiate the relocation of these services as part of the approved works. Again, private services through parkland to be dedicated to the City are not permitted as any services and easements would constrain the developable area of the land.
- *The adjacent residential property is serviced by the existing 100mm watermain located within the City's watermain easement. Private services are no longer proposed though the dedicated parkland.*
27. Please note that a District Metering Area (DMA) Chamber is required to be installed as per City of Ottawa standard drawing W3 (watermains up to 300mm dia.). As per *Ottawa Design Guidelines Water Distribution* WDG001 July 2010, City of Ottawa, Clause 4.4.7.2. the proposed DMA Chamber(s) shall include a standard isolation valve and two 50mm dia. standard nozzles, one tapped on each side of the valve, and installed as close to the property line as possible so the isolation valve can serve as the curb stop for the property.
- *The watermain loop is no longer proposed, therefore a District Metering Area chamber is no longer required. A twinned watermain service is proposed to service the towers with the water meter to be located within the building.*
28. Only one (1) storm service connection to an available municipal storm sewer system is permitted.
- *One storm sewer connection to Woodroffe Ave is now proposed.*

29. Engineering justification and supporting documentation shall be provided to support the proposed storm sewer outlet as two separate receiving systems are available. Please document where the existing site drains to and sewer connections.
- *One storm sewer connection to Woodroffe Ave is now proposed. Based on the survey, it appears that the existing site drains to Woodroffe Ave. Exact locations of existing services will be determined at the detailed design stage.*
30. The stormwater management design criteria listed in section 4.2 is not in keeping with the criteria provided in the attached email dated March 05, 2018.
- *The stormwater management criteria have been revised.*
31. Post-development flows shall be controlled up to and including the 100-year storm event, to a **2-year allowable release rate**, calculated using a runoff coefficient (C) determined using the smaller of a runoff coefficient of 0.5 or the actual pre-development existing site runoff coefficient (Cl.8.3.7.3), and a justified (computed) time of concentration [T_c] using an appropriate method. *T_c of 20 minutes should be used for all pre-development calculations without engineering justification; T_c of 10 minutes shall be used for all post-development calculations).* The drainage area shall be determined based on pre-development conditions.
- *Noted.*
32. Please provide a Pre-Development Drainage Area Plan to define the pre-development drainage areas/patterns.
- *Refer to Figure 5 in the report for pre-development drainage patterns.*
- Please note that the install date of the 375mm dia. storm sewer in Ancaster Ave. (1967) and 1200mm dia. storm sewer in Carling Ave. (1955) are both pre-1970. **These systems were only designed to a 2-year level of service not a 5-year level of service.** Therefore, post-development flows for the subject site are to be controlled up to and including a 100-year storm event to a **2-year allowable release rate**.
- *The stormwater management criteria have been revised to a 2-year level of service.*
33. 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.** Underground storage may be required to satisfy this requirement.
- *Noted.*
34. Please note that when using the modified rational method to calculate the storage requirements for the site any underground storage (pipe storage etc.) should not be included in the overall available storage. The modified rational method assumes that the restricted flow rate is constant throughout the storm which underestimates the storage requirement prior to the 1:100 year head elevation being reached. Please note that if you wish to utilize any underground storage as available storage, the $Q_{(release)}$ must be modified to compensate for the lack of head on the orifice. An assumed average release rate equal to 50% of the peak allowable rate shall be applied. Otherwise, disregard the underground storage as available storage or provide modeling to support SWM strategy.
- *Noted. Detailed storage calculations will be provided at time of detailed design.*

35. Please note that emergency overland flow shall be directed to Woodroffe Ave.

- *Noted.*

36. Please conceptually identify areas within the site plan that are being contemplated to be utilized for underground stormwater storage as space seems to be limited.

- *Refer to Figure 4 within the Report for conceptual stormwater storage locations.*

37. As stormwater treatment is not addressed offsite, onsite measures may be required. Please consult with the local conservation authority regarding water quality criteria prior to submission of a Site Plan Control Proposal application.

- *Noted.*

38. Please be advised that Capital Construction road resurfacing is currently planned in 2018 for Woodroffe Ave. from Saville ROW to Carling Ave. A 3-year road cut moratorium will be imposed.

- *Noted.*

Yours truly,

NOVATECH

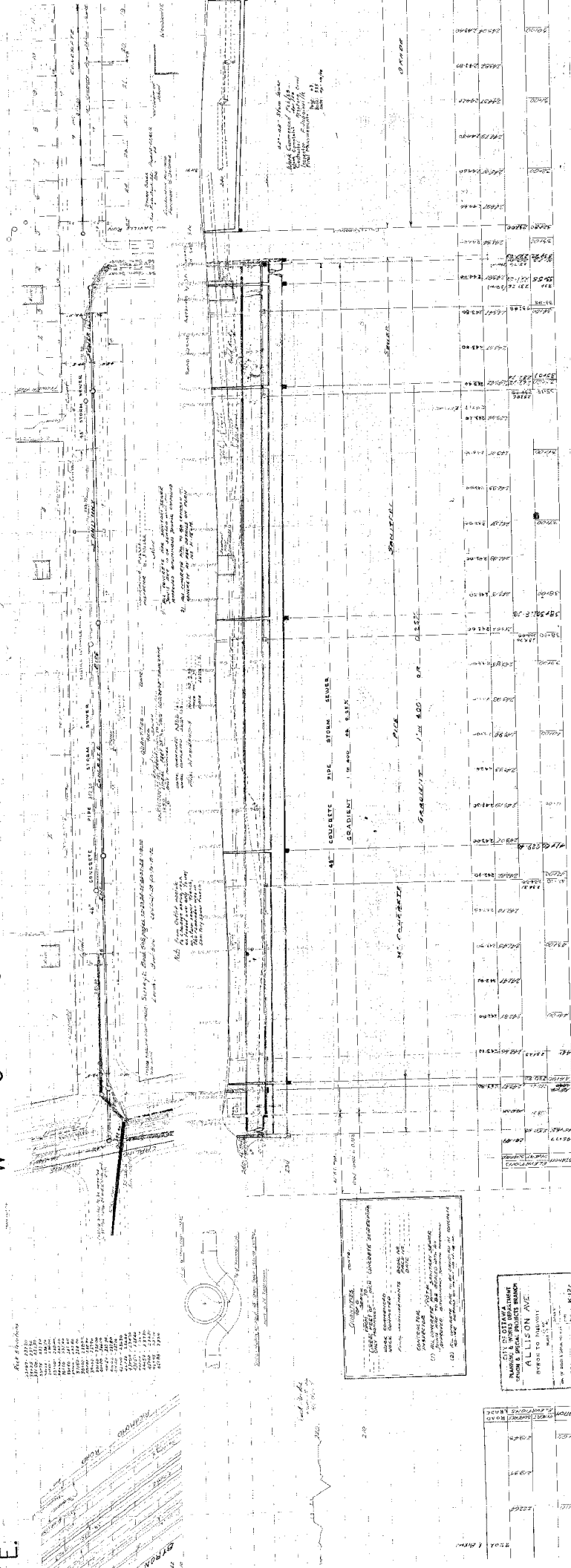


Alex McAuley, P.Eng.
Project Manager | Land Development Engineering

Attachments: Record Drawings as obtained from City of Ottawa (reduced to 8.5x11):

- 214p&p5
- 413p&p3-01
- 2175p&p
- 5960p&p6
- 6047p&p07
- 6669p&p03
- 6669p&p04
- 6929p&p-02
- 14031p&p2
- A19g-11
- D17e

C **D** **E** **F** **G** **H** **I** **J** **K** **L** **M** **N** **O** **P** **Q** **R** **S** **T** **U** **V** **W** **X** **Y** **Z**

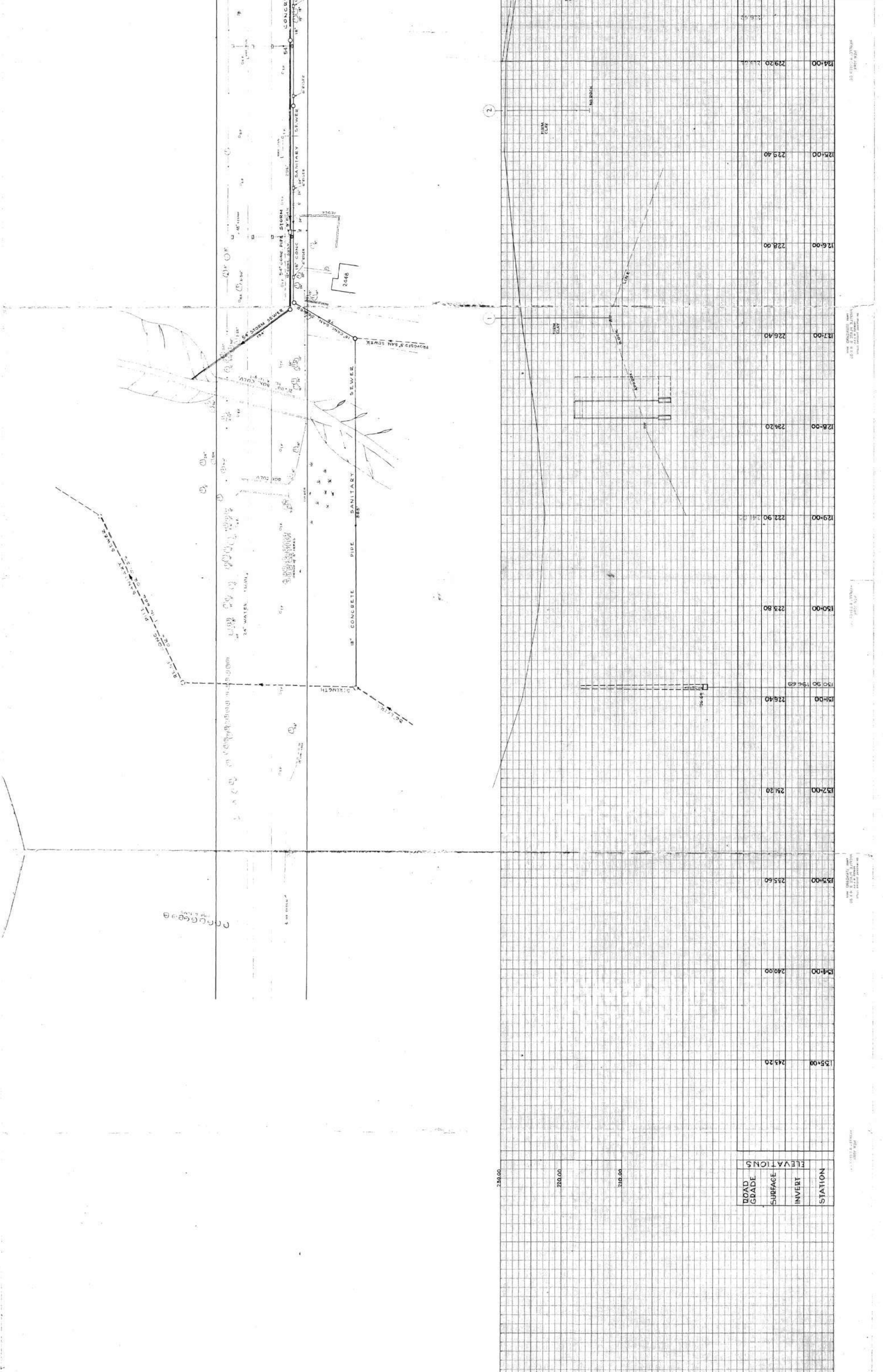


12-22-25 - 5th Ave
Mark commenced Feb 1930 -
Wm Emmelich - 1st job -
Contractor - 1st job -
Inspector - 1st job -
Final Measurement

[illegible]

Age Group	2006 (%)	2008 (%)
18-29	~85	~75
30-49	~80	~70
50-69	~75	~65
70+	~65	~55

1997

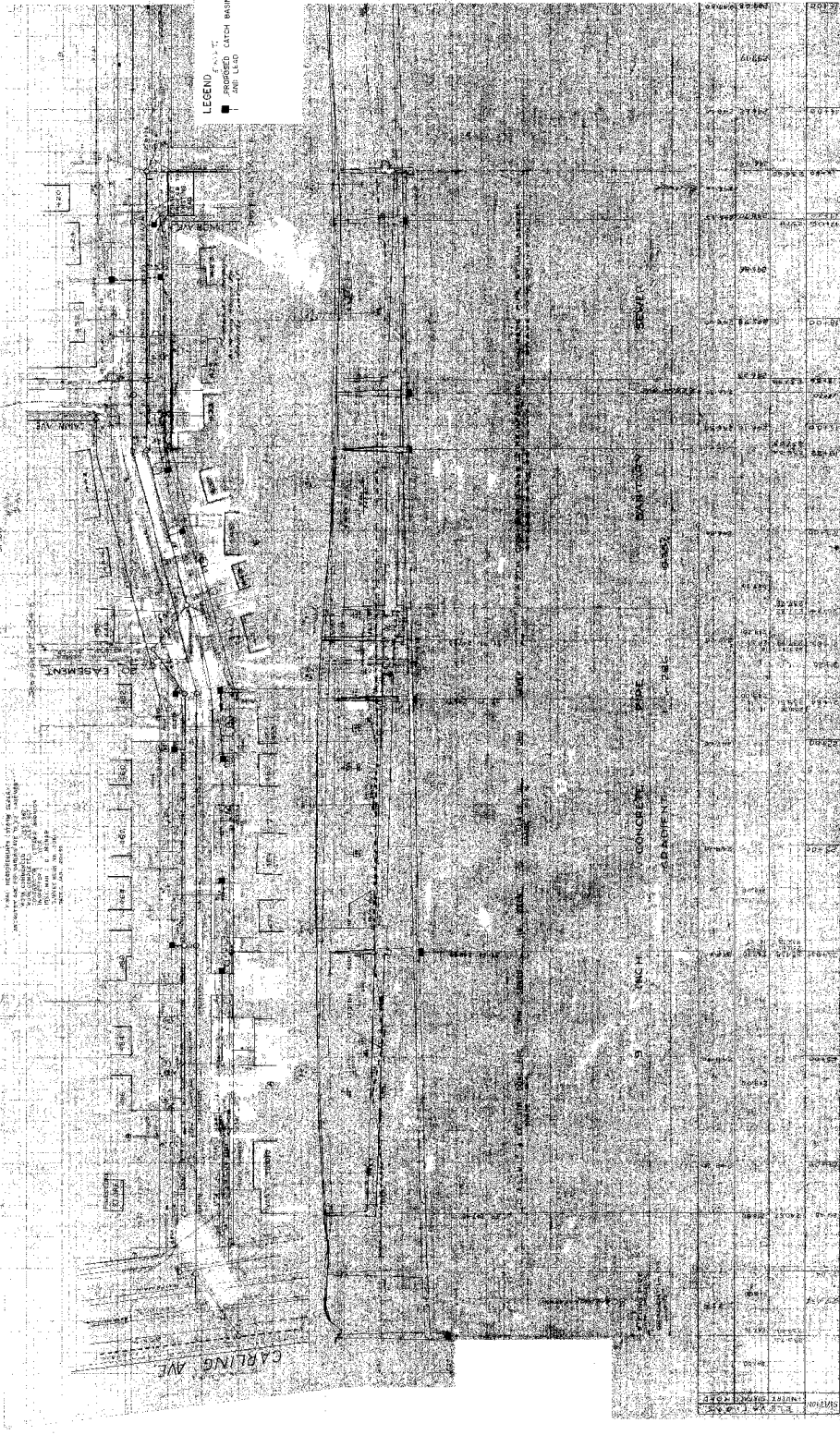


ANCASTER ROAD



ALL WORK SUBJECT TO
THE REQUIREMENTS OF THE
MUNICIPALITY OF
TORONTO

ANCASTER ROAD
SECTION 1
FROM CARLING AVE. TO
KILGORE AVE.

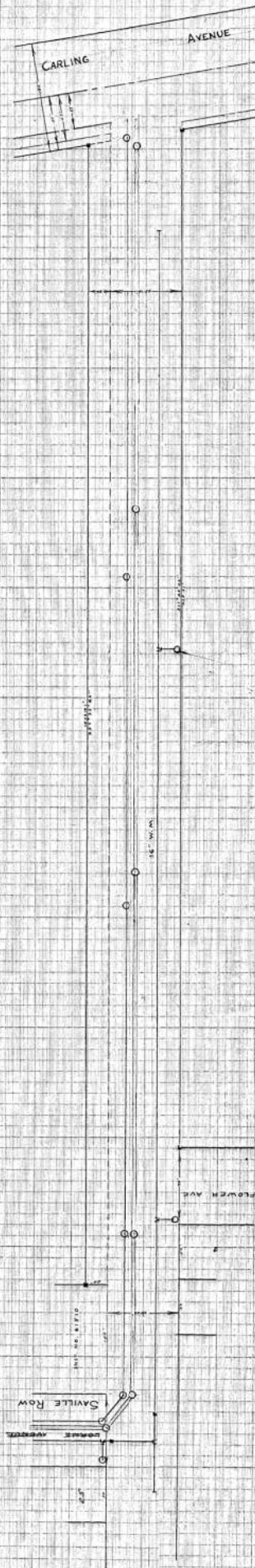


LEGEND
Paved Catch Basin
Paved Catch Basin



WOODROFFE

AVENUE

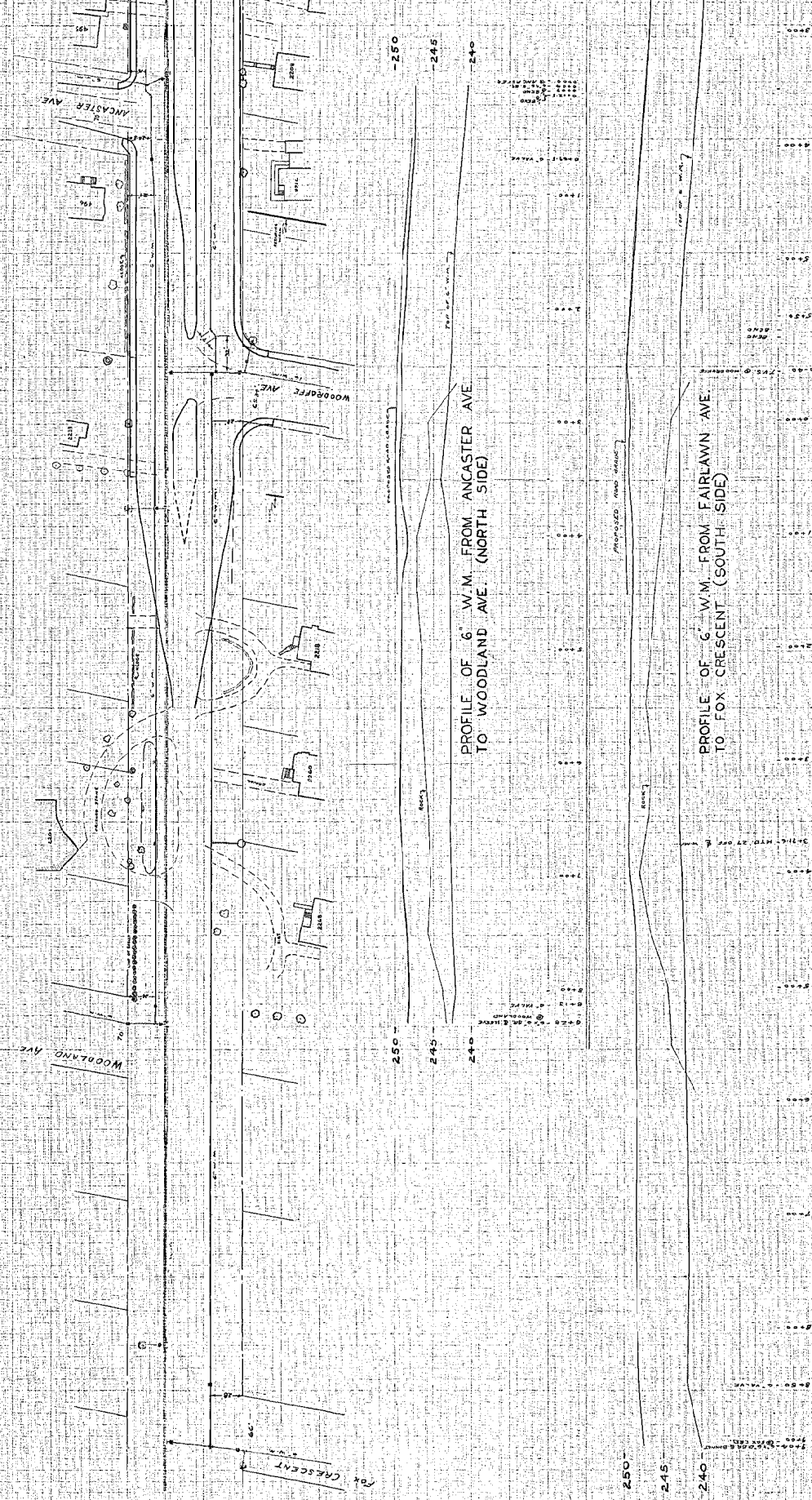


245.00
240.00
235.00
230.00

RECONSTRUCTED, FENCE CANTILEVER
AND FENCED, 1800' WIDE
NEW CATTLE, OFFSHORE

PLAN 333-B
BOOK AND 5, 11, 14, 16, 17, 20, 29
105, 107

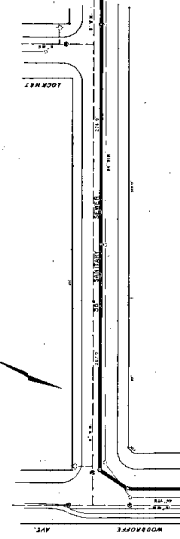
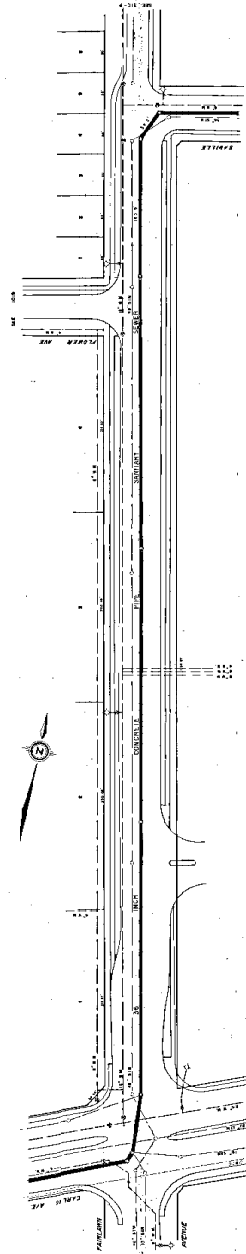
CARLING



WOODROFFE

AVE.

SAVILLE ROW



NOTE: DISTANCE CALCULATED FROM
TO THE "SIGHTING DISTANCE"
MEASUREMENT



DATE: 10/1/1914

BY: J. H. HARRIS

FOR: THE CITY OF WASHINGTON

PROJECT: IMPROVEMENT OF WOODROFFE AVE

SECTION: 1

SCALE: 1" = 10'

DATE: 10/1/1914

BY: J. H. HARRIS

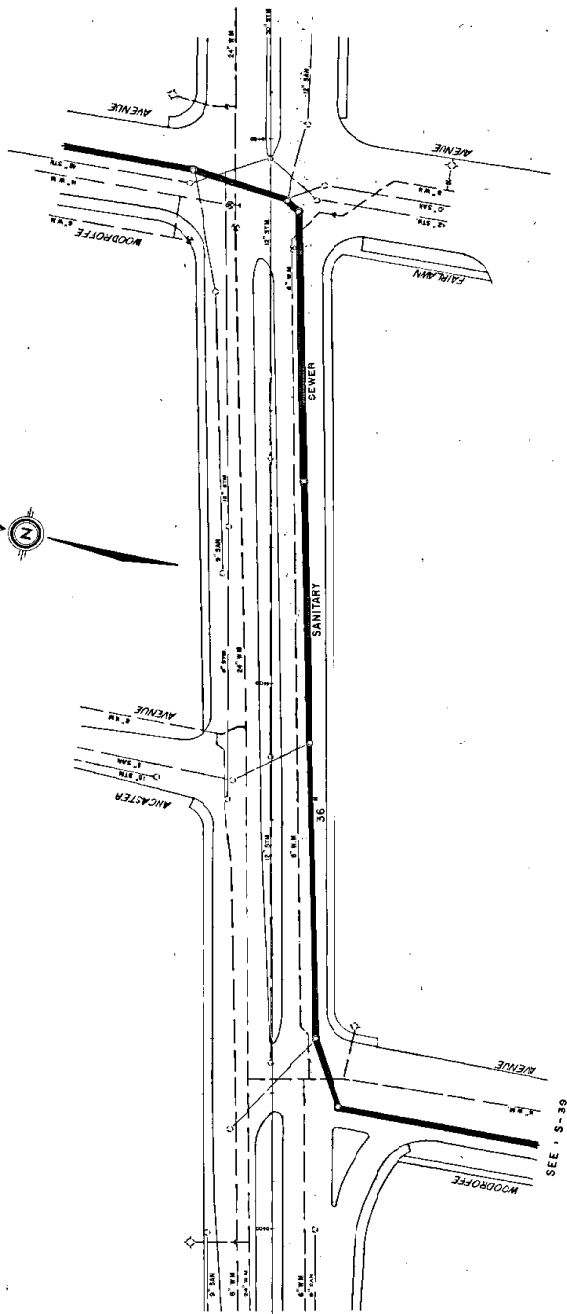
FOR: THE CITY OF WASHINGTON

PROJECT: IMPROVEMENT OF WOODROFFE AVE

SECTION: 1

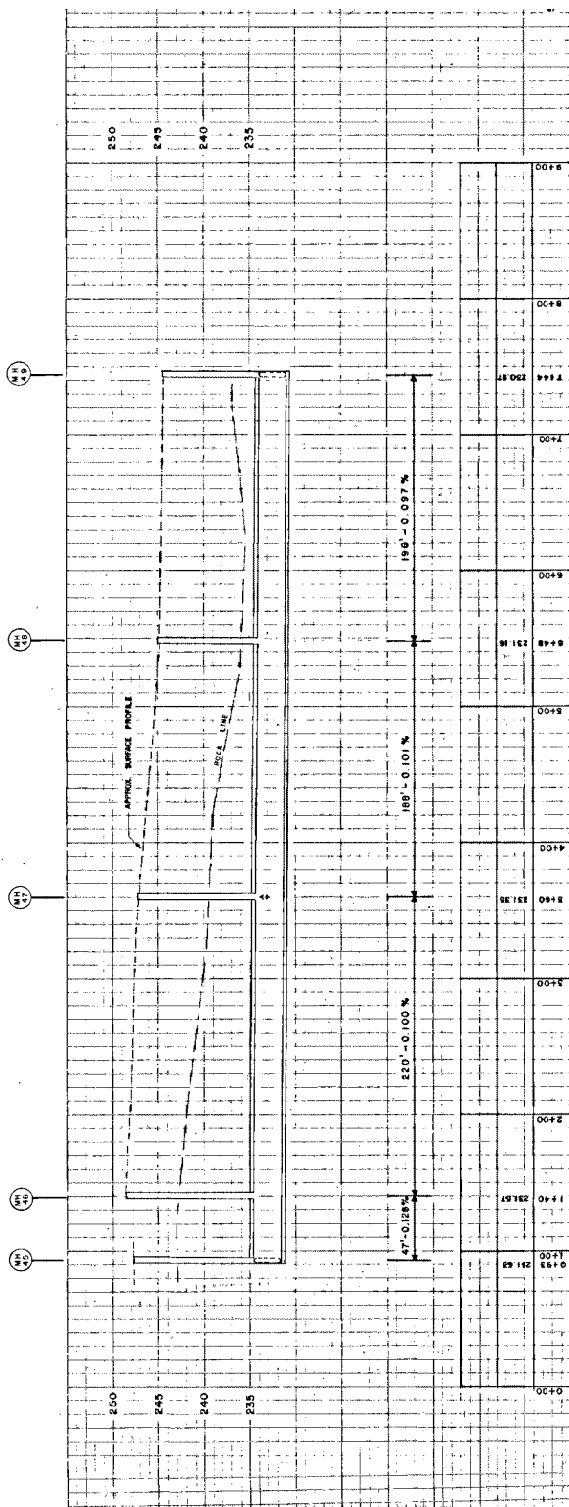
SCALE: 1" = 10'

CARLING AVE



SEE S-39

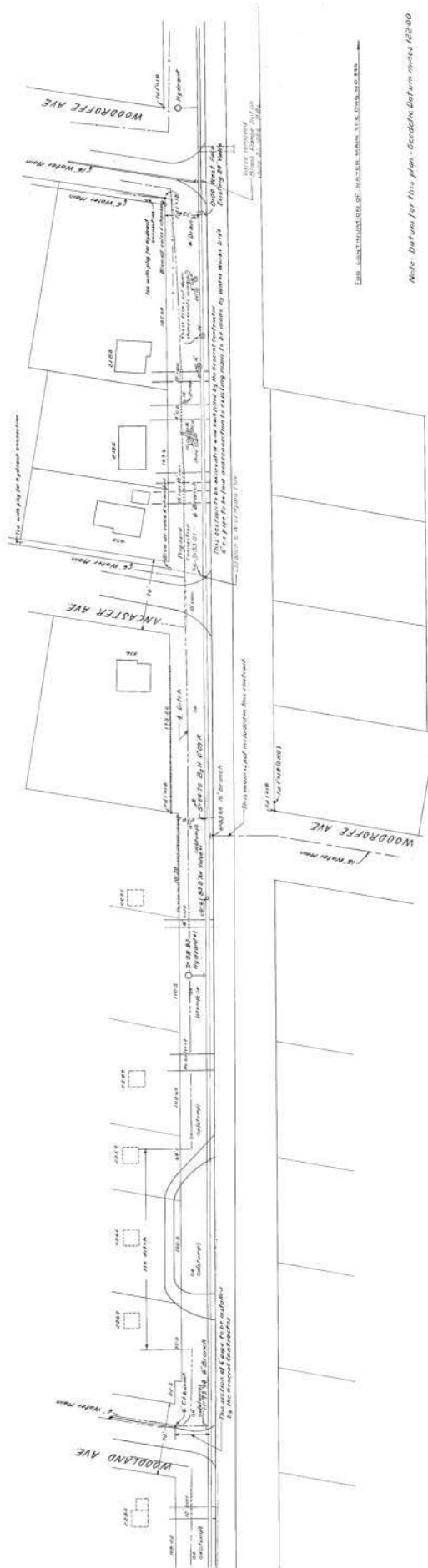
NOTE: GRADIENTS CALCULATED FROM
AS BUILT ELEVATIONS AND
MEASUREMENTS.



PROJECT PLAN S-39

PROJECT PLAN S-39

PROJECT PLAN S-39



Note: Datum for this plan - Canadian Datum minus 162.00

Scale: 1 inch = 100 feet

As indicated

Intersection of Woodroffe Ave. & Ancaster Ave.

Intersection of Woodroffe Ave. & Woodland Ave.

Intersection of Woodroffe Ave. & 1st Ave.

Intersection of Woodroffe Ave. & 2nd Ave.

Intersection of Woodroffe Ave. & 3rd Ave.

Intersection of Woodroffe Ave. & 4th Ave.

Intersection of Woodroffe Ave. & 5th Ave.

Intersection of Woodroffe Ave. & 6th Ave.

Intersection of Woodroffe Ave. & 7th Ave.

Intersection of Woodroffe Ave. & 8th Ave.

Intersection of Woodroffe Ave. & 9th Ave.

Intersection of Woodroffe Ave. & 10th Ave.

Intersection of Woodroffe Ave. & 11th Ave.

Intersection of Woodroffe Ave. & 12th Ave.

Intersection of Woodroffe Ave. & 13th Ave.

Intersection of Woodroffe Ave. & 14th Ave.

Intersection of Woodroffe Ave. & 15th Ave.

Intersection of Woodroffe Ave. & 16th Ave.

Intersection of Woodroffe Ave. & 17th Ave.

Intersection of Woodroffe Ave. & 18th Ave.

Intersection of Woodroffe Ave. & 19th Ave.

Intersection of Woodroffe Ave. & 20th Ave.

Intersection of Woodroffe Ave. & 21st Ave.

Intersection of Woodroffe Ave. & 22nd Ave.

Intersection of Woodroffe Ave. & 23rd Ave.

Intersection of Woodroffe Ave. & 24th Ave.

Intersection of Woodroffe Ave. & 25th Ave.

Intersection of Woodroffe Ave. & 26th Ave.

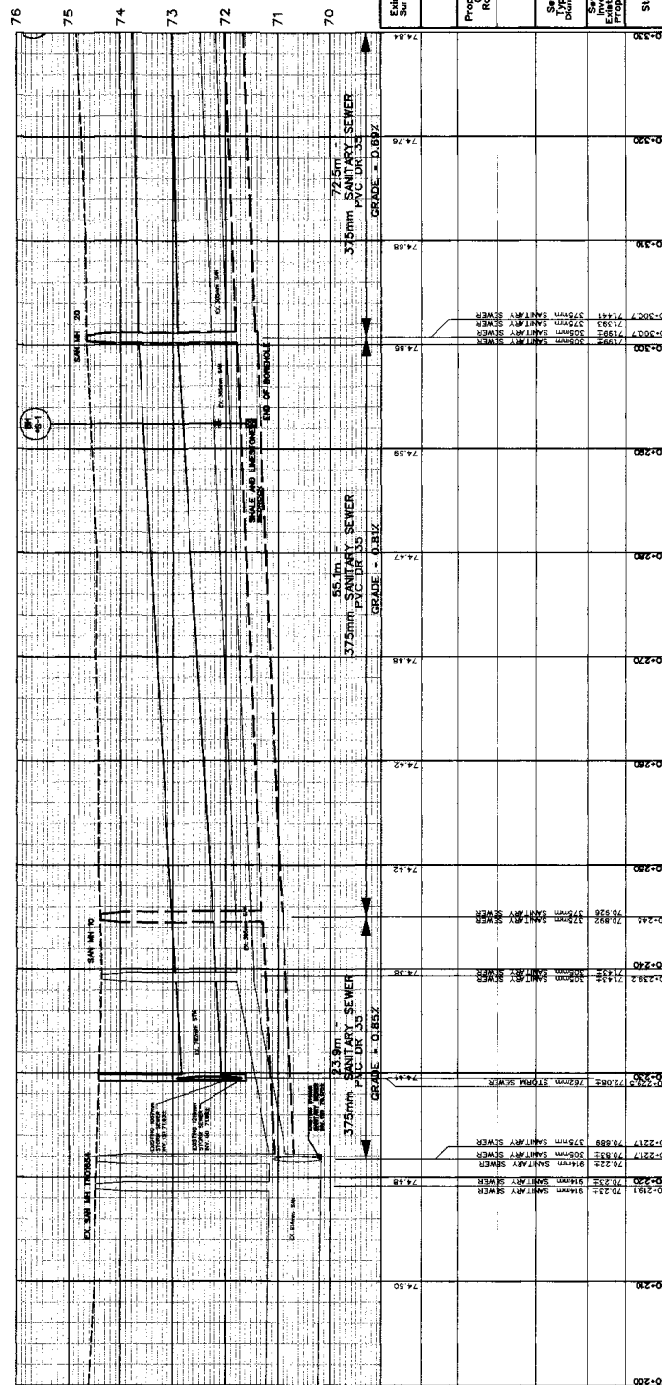
Intersection of Woodroffe Ave. & 27th Ave.

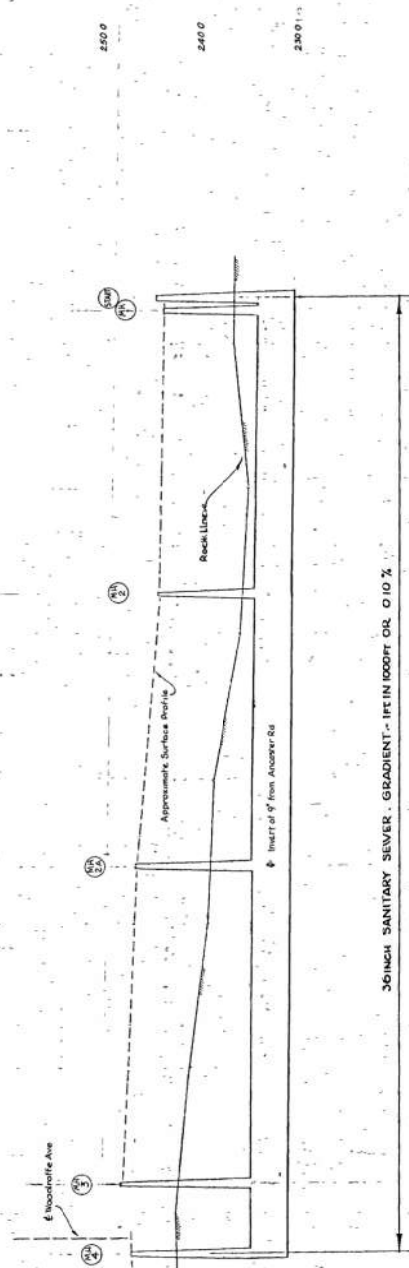
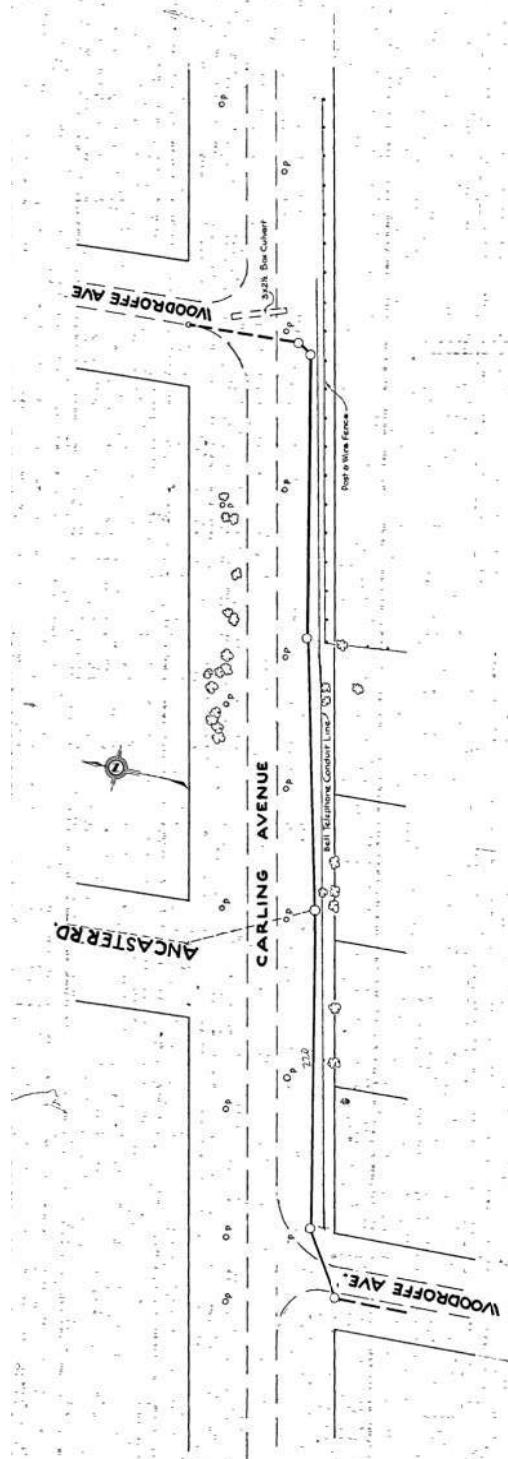
Intersection of Woodroffe Ave. & 28th Ave.

CITY OF OTTAWA WATER WORKS DEPARTMENT	
PLANS FOR THE RECONSTRUCTION OF THE MAIN CARLING AVE SEWERAGE SYSTEM FROM WOODROFFE AVE TO CHANDLER AVE	
Drawn By: J. J. [Signature]	Scale: 1 inch = 100 feet
Checked By: [Signature]	Date: 30 Jan 54
Approved By: [Signature]	Project No: 1105
Engineer: [Signature]	

SANITARY SEWER MAINTENANCE HOLE SCHEDULE		
MANHOLE NO.	TYPE & SIZE (mm)	COORDINATES
30	ØP50, 750.000, 1300mm DA	X = -361982.90 Y = -5255889.71
20	ØP50, 750.000, 1300mm DA	X = -862001.67 Y = -5255870.36

NOTE:
TOP OF GRATE / FRAME AND COVER ELEVATION TO MATCH EXISTING
TOP OF PAVEMENT ELEVATION, UNLESS OTHERWISE DIRECTED BY
THE CONTRACT ADMINISTRATOR.





STATION	CHASSIS	INVERT
113+00		
114+00		
115+00		
116+00		
117+00		
118+00		
119+00		
120+00		
121+00		
122+00		
123+00		

CITY OF OTTAWA
 (DEPT. OF PLANNING AND WORKS)
 J.L. RICHARDS & ASSOCIATES LTD.
 (CONSULTING ENGINEERS)
 PLAN AND PROFILE OF
 CARLING AVENUE
 SANITARY SEWER AS INSTALLED
 FROM CHAINAGE 113+00 TO WOODROFFE AVE
 SCALE - 1" = 40' HORIZ. 1" = 10' VERT.
 DATE - JUNE 1956

D17e

D-17-c

August 8, 2019

City of Ottawa
Development Review
110 Laurier Avenue West
Ottawa, Ontario, K1P 1J1
Attention: Stream Shen

Attention: Stream Shen

Dear Mr. Shen:

**Reference: 485 Ancaster Avenue
Zoning By-law Amendment Application – Response to Comments
Assessment of Adequacy of Existing Municipal
Our File No. 118035
City File No: D02-02-18-005**

This letter is in response to comments issued by the City of Ottawa on August 16, 2018. This Novatech's response to the comments numbered 14 through 39 are provided in red. All other comments will be addressed separately by Colonnade BridgePort.

Re: Infrastructure Comments (Mark Fraser) -

Assessment of Adequacy of Existing Municipal Services, Proposed Redevelopment, 485 Ancaster Avenue, Ottawa ON, File No.: 118035 prepared by NOVATECH, dated May 16, 2018
REVISED November 19, 2018.

1. Please be aware that the receiving storm system is uncontrolled and therefore subject to surcharge conditions. This condition may impact the proposed underground storage system. This shall be taken into consideration at detailed design in support of a Site Plan Control application. It shall be demonstrated at that time that the downstream storm system does not backup into the site and fill the underground storage before it can be utilized as available internal site drainage.
 - *Acknowledged – this will be addressed at Site Plan.*
2. Please have the engineer of record sign and seal the report and provide the Zoning By-law Amendment application number D02-02-18-0055 on the cover sheet.
 - *The report has been stamped and signed. The city file number has been included on the cover page.*
3. Please describe the proposed Zoning By-law Amendment in section 1.1. The proposal is to permit the development of two mixed-use apartment buildings with heights of 6 and 12 storeys. The zoning is proposed to be amended to allow for an increase in permitted building heights.
 - *Section 1.1 has been revised to provide additional information on the re-zoning.*

4. A 152mm dia. public watermain is located outside of the Woodroffe Ave. ROW within a registered 6m wide easement [CR339366] on the subject site. All easements on the subject site shall be identified and documented in the report. The Conceptual Site Plan (p.2) identifies this easement as only 5m wide. All easements shall be respected by any development proposal and shall adhere to the conditions identified in the easement agreement. Please perform a title search provide a copy of all easement agreements in the Appendix.
 - *The easements are shown on the conceptual plans per the legal plan. A copy of the easement agreement with the City of Ottawa for CR 339366 is attached to this letter for reference.*
5. The water service connections on Woodroffe Ave. are subject to review at Site Plan.
 - *Acknowledged – this will be addressed at Site Plan.*
6. A single connection to the water distribution system for a new hydrant is subject to review at site plan.
 - *Acknowledged – this will be addressed at Site Plan.*
7. (Comment shortened for brevity) A fire hydrant coverage plan is to be provided to document which hydrants are being considered as available hydrants for fire protection. The exposure distances applied in the FUS calculations shall be documented on this plan.
 - *Figure 6 (Fire Hydrant Coverage Plan) has been created to indicate the exposure distances and hydrants considered for fire protection.*
8. The response comments indicate that the private watermain loop is no longer proposed. The conceptual plan shows an existing 100mm dia. watermain at the rear of the property. This watermain does not exist as per City records.
 - *The existing 100mm watermain is no longer being shown, except for the section as identified on City of Ottawa Infrastructure mapping. This watermain does not impact the conclusions of the report.*
9. It is indicated that a fully supervised sprinkler system reduction was applied to the FUS calculation. A reduction of -50% is only permitted for monitored systems. If 50% reduction is being sought for sprinkler protection, a letter from the mechanical engineer will be required in order to receive the full reduction in the fire flow calculation for use of a fully supervised sprinkler system. (Comment shortened for brevity)
 - *The FUS calculations have been revised to exclude the reduction for a supervised system. The resulting required fire flow does not change and will be confirmed at Site Plan.*
10. Occupancy type of Limited combustible is not appropriate due to the commercial component of the building. As per FUS commercial should not have any increase or decrease adjustment for occupancy.
 - *The FUS calculations have been revised. The resulting required fire flow does not change and will be confirmed at Site Plan.*

11. Please identify which building (Building A or Building B) the FUS calculations on the conceptual site plan the FUS calculations are being applied. FUS calculations shall be provided for both buildings to establish and document which building governs.

- *The FUS calculations have been revised to provide separate values. The resulting required fire flow does not change and will be confirmed at Site Plan.*

12. Please note that a CCTV inspection of the 225mm dia. sanitary sewer will be required in support of a site plan control application to determine the condition of the sewer and determine if there are any other service connections.

- *Acknowledged – this will be addressed at Site Plan.*

13. On the Pre-Development Drainage Area Plan please identify the direction of overland flow.

- *Additional overland flow arrows have been provided on Figure 5.*

Yours truly,

NOVATECH



Alex McAuley, P.Eng.
Project Manager | Land Development Engineering

Attachments: Easement Agreement [CR339366]

339366
DAY OF October

339366

DIRECTOR, THE VETERANS' LAND ACT

- to -

I hereby certify that this instrument
has duly entered and registered
in the Registry Office for the
Division of the City of Ottawa
Book 0 for the Municipality of
Ottawa at 11:58 AM
of this 25 day of Oct. 1955
Number 339366
for R. D. BRAY
Registrar

THE CORPORATION OF THE CITY OF OTTAWA

EASEMENT

THIS INDENTURE made in triplicate this 17th day of October 1955.

BETWEEN:

THE DIRECTOR, THE VETERANS' LAND ACT,
hereinafter called the Grantor,

OF THE FIRST PART:

AND

THE CORPORATION OF THE CITY OF OTTAWA,
hereinafter called the Grantee,

OF THE SECOND PART:

WHEREAS the Grantor is the owner of certain lands and premises shown on a plan registered in the Registry Office for the Registry Division of the City of Ottawa as Number 461, commonly known as the Woodroffe Avenue Subdivision;

AND WHEREAS the Grantee requires an easement over part of the said lands for use in the maintenance of a water main or water mains situate thereon.

NOW THEREFORE THIS INDENTURE WITNESSETH that in consideration of the sum of One Dollar (\$1.00) now paid by the Grantee to the Grantor (the receipt whereof is hereby by him acknowledged) the Grantor doth grant, convey and confirm unto the Grantee, its successors and assigns,

(1) the right of ingress, egress and regress at any and at all times with persons, animals, vehicles, material, machinery, apparatus and equipment upon, over, under, along and across

ALL AND SINGULAR those certain parcels or tracts of land and premises situate, lying and being in the City of Ottawa in the Province of Ontario and being composed of part of Lots Numbers One (1), Two (2), Three (3), Four (4), Seven (7) and Eight (8), according to a Plan registered in the Registry Office for the Registry Division of the City of Ottawa as Number 461 as shown coloured red on the attached Plan of Survey and being a strip of Twenty feet (20') in rectangular width which said strip of land may be more particularly described as follows:-

FIRSTLY - Being a strip of land Twenty feet (20') in width lying west of and adjacent to the easterly boundaries of Lots 1 to 4, inclusive, on

Plan 461.

SECONDLY - Being a strip of land lying Ten feet (10') on each side of the division line between Lots Numbers One (1), Two (2) and Seven (7) and Ten feet (10') on each side of the division line between Lots Numbers Seven (7) and Eight (8).

For the purpose of constructing, reconstructing, inspecting, repairing, removing, replacing and forever maintaining the water main situate thereon and any other water mains to be constructed and connections thereto and therefrom.

The Grantee agrees and undertakes to exercise the said easement with due care and to make full compensation to the Grantor, his successors and assigns, for any damage caused to the lands of the Grantor through the act or default of the said Grantee its agents or servants,

The Grantee further covenants that wherever in the course of the exercise of the rights granted hereunder it becomes necessary for the Grantee to construct, reconstruct, repair or restore any water main installation which requires the excavation or other disturbance of the land in, over, under, along or upon which the work is done, the Grantee undertakes and agrees to restore the said land to the condition in which it was at the time of the disturbance.

Provided, however, that nothing herein contained shall be construed so as to require the Grantee to cut or cultivate the grass on the said lands after such restoration.

IN WITNESS WHEREOF the parties hereto have hereunto affixed their corporate seals under the hands of their proper officers in that behalf.

SIGNED, SEALED and DELIVERED

Harold A. Taylor
As to execution by The Director,
The Veterans' Land Act.

The Director, The Veterans' Land Act

T. P. Rutherford

per J. J. [unclear]

The Clerk of the Board of Veterans' Affairs

Charles H. [unclear]

W. J. [unclear]
CLERK

PROVINCE OF ONTARIO)

COUNTY OF CARLETON)

TO WIT:)

Affidavit required by

Section 34, The Registry

Act, Ontario.

I, Herbert Omar Weatherley, of the City of Ottawa, in the Province of Ontario, Civil Servant, make oath and say:

1. I am an Official in the employ of The Director, The Veterans' Land Act, and as such have a knowledge of the facts hereinafter deposed to.
2. The Director, The Veterans' Land Act, is a corporation sole by virtue of the Veterans' Land Act, and the seal affixed to the within document is the corporate seal of The Director, The Veterans' Land Act.
3. H.R. Holmes whose signature is affixed to the within document, is the Superintendent of the Securities Division of the Veterans' Land Act.
4. Under and by virtue of the Veterans' Land Regulations, established by Order in Council, H.R. Holmes was duly authorized by authority in writing, to sign for the Director documents requiring execution by the Director in his corporate capacity, including execution on behalf of The Director, The Veterans' Land Act, of all deeds and other instruments requiring the corporate seal of The Director, The Veterans' Land Act.
5. I am well acquainted with the said H.R. Holmes and did see him execute the within document and I am a subscribing witness thereto.

SWORN before me at the City of
Ottawa, in the County of Carleton,
and Province of Ontario, this
24th day of October A.D. 1955.

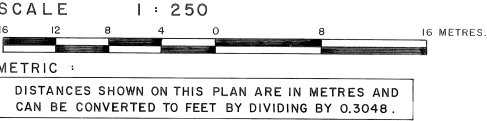
A. S. Morton

A Notary Public in and for the
County of Carleton,
Province of Ontario.

Herbert Omar Weatherley

BUILDING LOCATION SURVEY OF
PARTS OF LOTS 1 & 8
REGISTERED PLAN 461
(formerly in the Township of Nepean)
NOW IN THE CITY OF OTTAWA
REGIONAL MUNICIPALITY OF OTTAWA-CARLETON

Surveyed by Annis, O'Sullivan, Vollebakk Ltd.
1986.



SURVEYOR'S CERTIFICATE

I HEREBY CERTIFY THAT :

- The field survey represented on this plan was completed on the 25th day of November, 1986.
- The buildings and appurtenances connected therewith are wholly within the limits of the said lands unless otherwise shown hereon.
- There are no encroachments on or with respect to the said lands unless otherwise indicated hereon.
- The above certification does not apply to structures which are underground or cannot readily be seen by on site inspection.

Nov 27, 1986
Date

E. H. Herweyer
Ontario Land Surveyor

This is not an original copy unless embossed with seal.

NOTES & LEGEND

Bearings are astronomic, derived from the westerly limit of Woodroffe Avenue as shown on Registered Plan 461 to have a bearing of N22°11'00" W.

Survey Monument Planted shown thus

Survey Monument Found shown thus

S.I.B.	denotes	Standard Iron Bar.
S.S.I.B.	"	Short Standard Iron Bar.
I.B.	"	Iron Bar.
I.B. Ø	"	Iron Bar Round.
C.C.	"	Cut Cross.
Wit.	"	Witness.
Acc.	"	Accepted.
Plan	"	Registered Plan 461.
B.F.	"	Board Fence.
(632)	"	G. C. McRostie O.L.S.
(647)	"	H. R. Farley O.L.S.
(725)	"	R. W. Arnett O.L.S.
(857)	"	Fairhall, Moffatt & Woodland Ltd.

FROM THE OFFICE OF
ANNIS O'SULLIVAN VOLLEBEKK LTD.
ONTARIO LAND SURVEYORS
NEPEAN (Ottawa) & EMBRUN, ONTARIO.
© Annis, O'Sullivan, Vollebakk Ltd., 1986.
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