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District Realty
200 Elgin Street
Serviceability Report

200 Elgin Street

City of Ottawa

Serviceability Report

Prepared By:

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

January 9, 2024
Revised: March 8th, 2024
Revised: June 18th, 2024

Novatech File: 123101
Ref: R-2024-004

June 18, 2024

City of Ottawa
Planning, Infrastructure and Economic Development Department
Planning and Infrastructure Approvals Branch
110 Laurier Avenue West, 4th Floor
Ottawa ON, K1P 1J1

Attention: **Adrian Wyk, Planner**
Development Review, Central

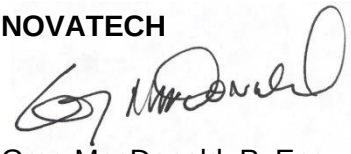
Reference: **200 Elgin Street**
Serviceability Report
Our File No.: 123101

Please find enclosed the Serviceability Report for the above-noted development located at 200 Elgin Street in the City of Ottawa. This report is being submitted in support of a site plan application to convert the 2nd to 11th floors of the existing building from office space to residential units.

Should you have any questions or require additional information, please contact the undersigned.

Yours truly,

NOVATECH



Greg MacDonald, P. Eng.
Director, Land Development and Public Sector Infrastructure

Suite 200, 240 Michael Cowpland Drive, Ottawa ON K2M 1P6 Tel: 613.254.9643 Fax: 613.254.5867 www.novatech-eng.com

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Appendices`

Tables

Figures

1.0 INTRODUCTION

Novatech has been retained to prepare a Serviceability Report on behalf of District Realty to assess the site services to the existing building located at 200 Elgin Street. The report is in support of a site plan application for the conversion of offices to residential units on floors 2 to 11. The ground floor will remain commercial. **Figure 1 - Key Plan** shows the site location.

1.1 Existing Conditions

The subject site is located at 200 Elgin and is approximately 0.18 hectares (ha.) in size.

Presently the site is occupied by an existing 11-storey office tower, addressed 200 Elgin Street, along the Elgin Street and Lisgar Street frontages. The building contains commercial spaces on the ground floor, currently an RBC bank, a restaurant, and offices on floors 2 to 11.

The subject site is bound by Elgin Street to the east, Lisgar Street to the south, and Nepean Street to the north. Existing infrastructure on the surrounding streets is described in Section 2 and is shown in **Figure 2 – Existing Conditions Plan.**

1.2 Proposed Development

It is proposed to convert the existing office building at 200 Elgin Street to a mixed-use building containing commercial units on the ground floor and residential units on floors 2-11. The converted building will contain a total of 126 residential units, and 718m^2 of commercial area on the ground floor as shown in **Figure 3 – Proposed Site Plan.**

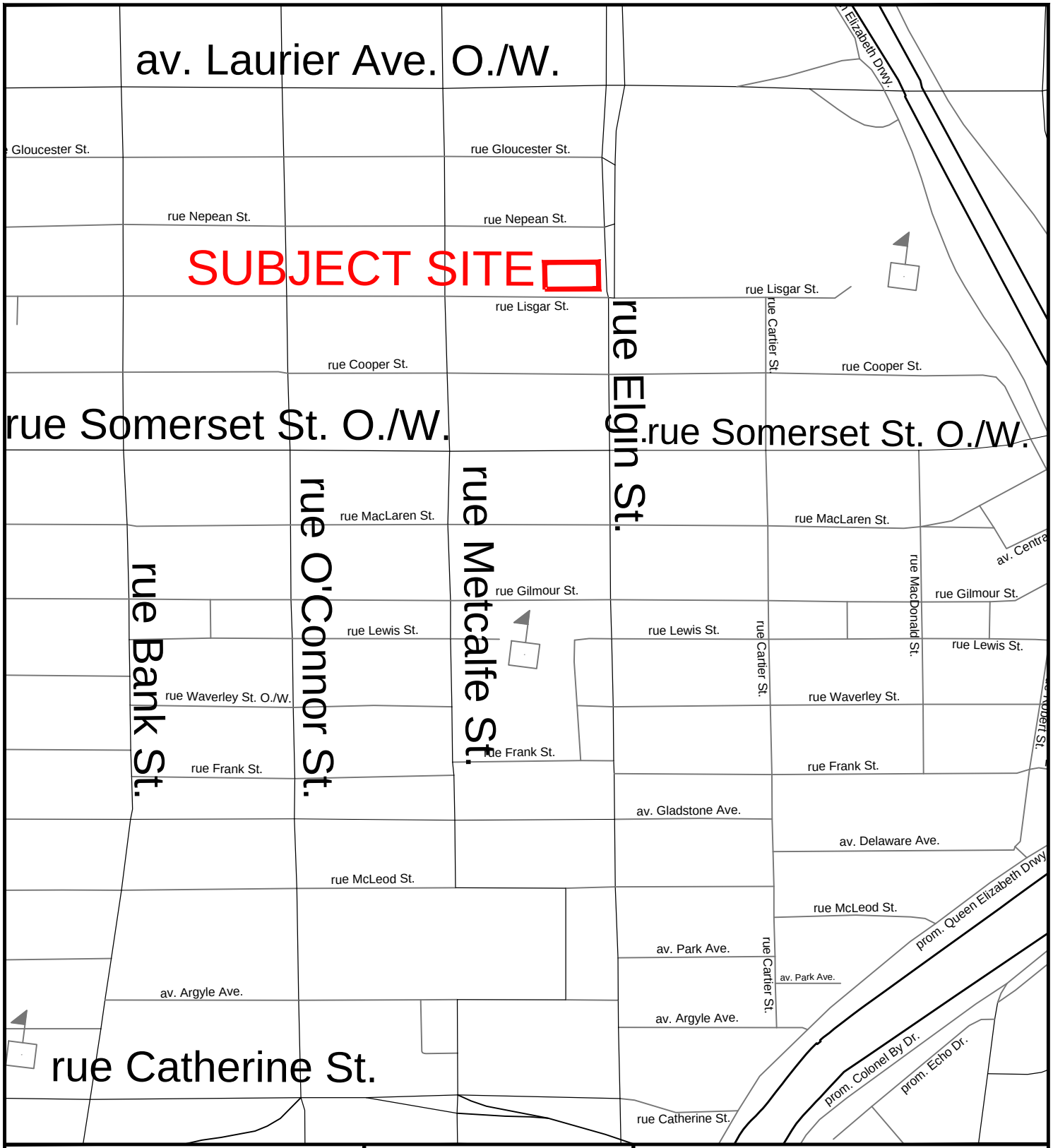
2.0 WATER SERVICING

There are existing City watermains in all rights-of-way fronting the proposed site. There is an existing 300mm diameter watermain within Elgin Street, a 300mm diameter watermain within Nepean Street, and a 200mm diameter watermain within Lisgar Street.

Currently, 200 Elgin Street and 169 Lisgar are serviced by a single 200mm service from the 200mm diameter watermain within Lisgar Street. The basic day demand was calculated to be greater than 50m^3 per day (**74.4m^3/day**). City of Ottawa Design Guidelines – Water Distribution, WDG001 July 2010 Clause 4.3.1 requires two services separated by an isolation valve when demand is greater than 50m^3/day. We are proposing an additional 200mm diameter watermain to service 200 Elgin Street to accommodate clause 4.3.1. The service will be interconnected to the existing watermain servicing 169 Lisgar by mechanical. The 18 Nepean building is serviced by a 200 watermain to Nepean Street which will not be affected.

The building is sprinkled and is equipped with an existing Siamese connection located near the existing entrance on Lisgar Street at the south-west corner of the building.

Water demand calculations have been calculated using criteria from Section 4 of the City of Ottawa Water Distribution Guidelines and the Ontario Building Code as provided in **Table 2.1 – Watermain Design Parameters and Criteria.** Demand is shown **in Table 2.2 – Estimated Water Demands.**



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Website www.novatech-eng.com

CITY OF OTTAWA
200 ELGIN STREET

KEY PLAN

SCALE: N.T.S

DATE: JAN 2024 | JOB: 123101 | FIGURE: FIGURE 1

M:\2023\123101\CAD\Civil\Figures\Servicing\123101 - Key Plan.dwg, 8x11 Keyplan, Jan 09, 2024 - 12:00pm, cferguson

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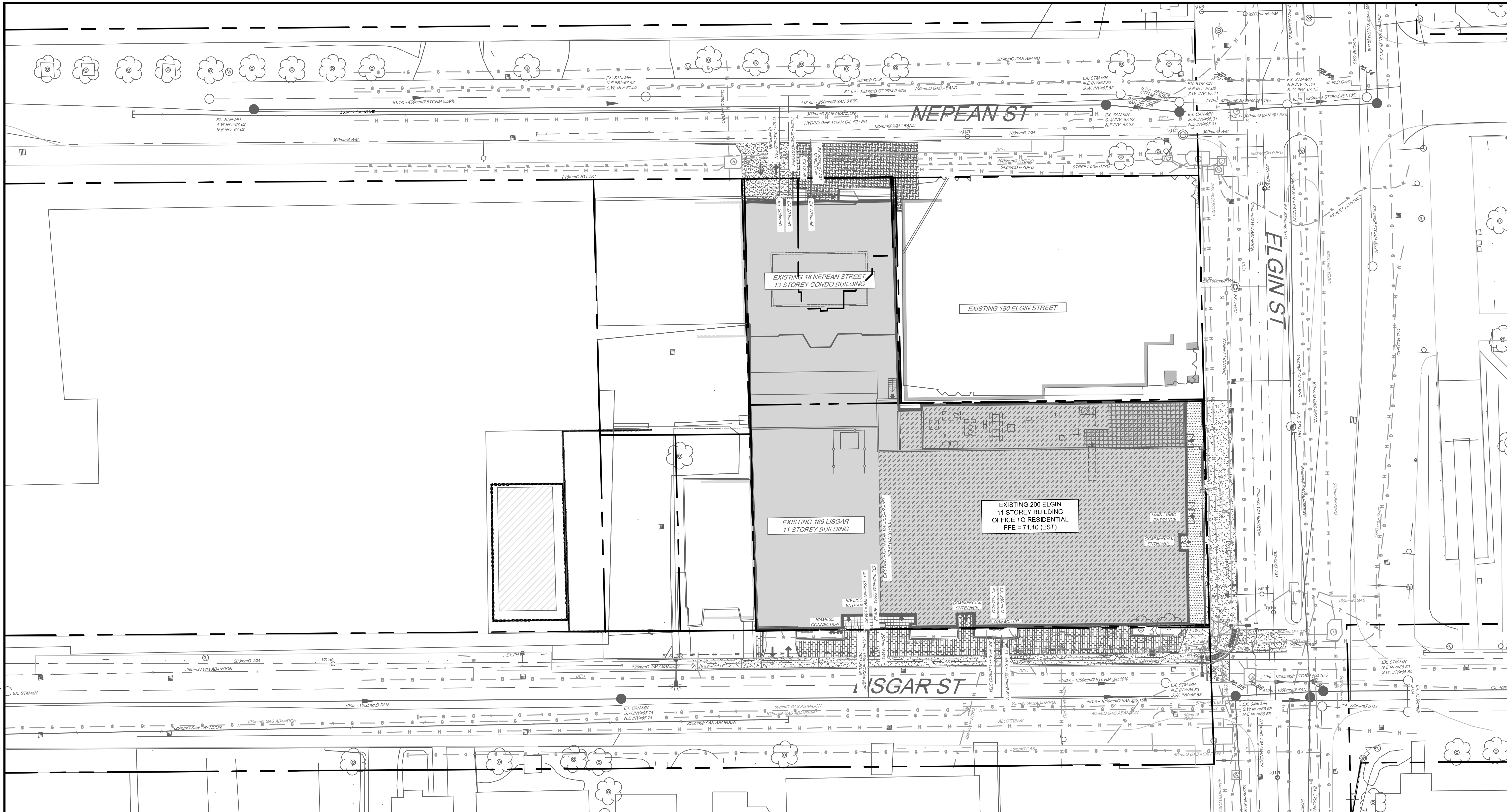

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CITY OF OTTAWA
200 ELGIN STREET

EXISTING CONDITIONS

SCALE 1 : 500 (0 5m 10m 20m)

DATE	JOB	FIGURE
MAR 2024	123101	FIGURE 2

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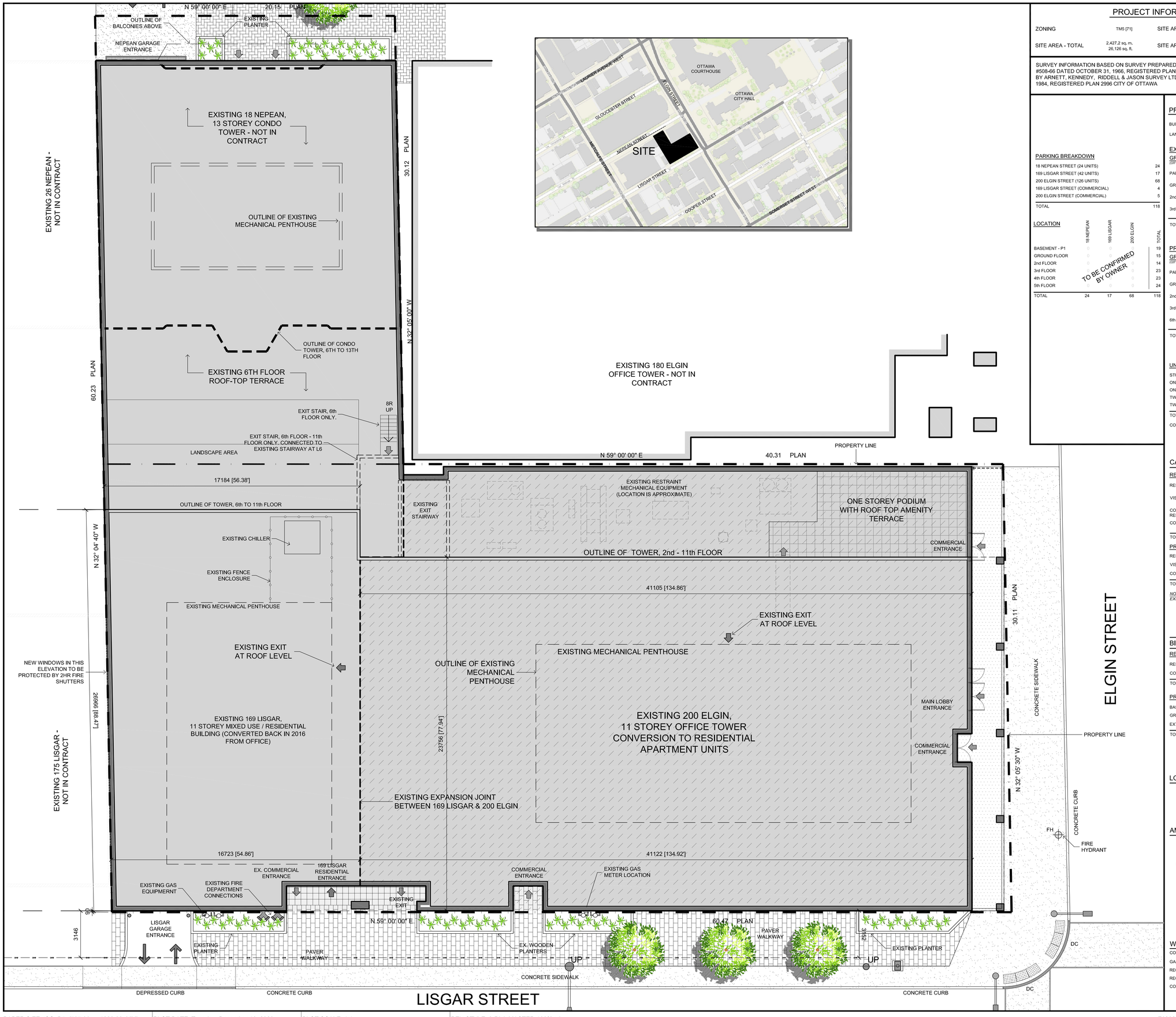


PROJECT INFORMATION

ZONING	TM5 [71]	SITE AREA - 169 LISGAR / 200 ELGIN	1,820,0 sq. m. 19,590 sq. ft.
SITE AREA - TOTAL	2,427,2 sq. m. 26,126 sq. ft.	SITE AREA - 18 NEPEAN	607,2 sq. m. 6,535 sq. ft.

SURVEY INFORMATION BASED ON SURVEY PREPARED BY ARNETT & MARTIN OLS REFERENCE #508-66 DATED OCTOBER 31, 1966, REGISTERED PLAN 2996 CITY OF OTTAWA & SURVEY PREPARED BY ARNETT, KENNEDY, RIDDELL & JASON SURVEY LTD. REFERENCE #600-34, DATED OCTOBER 30 1984, REGISTERED PLAN 2996 CITY OF OTTAWA

PARKING BREAKDOWN

18 NEPEAN STREET (24 UNITS)	24
169 LISGAR STREET (42 UNITS)	17
200 ELGIN STREET (126 UNITS)	68
169 LISGAR STREET (COMMERCIAL)	4
200 ELGIN STREET (COMMERCIAL)	5
TOTAL	118

LOCATION

	18 NEPEAN	169 LISGAR	200 ELGIN	TOTAL
BASEMENT - P1	0	0	19	19
GROUND FLOOR	0	0	15	15
2nd FLOOR	0	0	14	14
3rd FLOOR	0	0	23	23
4th FLOOR	0	0	23	23
5th FLOOR	0	0	24	24
TOTAL	24	17	68	118

TO BE CONFIRMED BY OWNER

PROJECT STATISTICS (200 ELGIN)

BUILDING HEIGHT		33,5 M
LANDSCAPE OPEN SPACE	(3,5%)	65,0 sq. m, (700) sq. ft,

EXISTING

GROSS BUILDING AREA (CITY OF OTTAWA ZONING AREA) — COMMERCIAL AREA

PARKING LEVEL P1		0,0 sq. m, 000 sq. ft,
GROUND FLOOR - COMMERCIAL		718,2 sq. m, 7,731 sq. ft,
2nd FLOORS - OFFICE		850,2 sq. m, 9,152 sq. ft,
3rd - 11th FLOORS - OFFICE	9 x 850,2 sq. m, 9 x 9,152 sq. ft.	7,652,2 sq. m, 82,368 sq. ft,
TOTAL		9,220,7 sq. m, 88,251 sq. ft,

PROPOSED

GROSS BUILDING AREA (CITY OF OTTAWA ZONING AREA) — RESIDENTIAL AREA

PARKING LEVEL P1		0,0 sq. m, 000 sq. ft,
GROUND FLOOR - COMMERCIAL		718,2 sq. m, 7,731 sq. ft,
2nd FLOORS		801,8 sq. m, 8,630 sq. ft,
3rd - 5th FLOORS	3 x 801,8 sq. m, 3 x 8,630 sq. ft.	2,405,3 sq. m, 44,672 sq. ft,
6th - 11th FLOORS	6 x 801,8 sq. m, 6 x 8,630 sq. ft.	4,810,5 sq. m, 44,672 sq. ft,
TOTAL		8,735,8 sq. m, 94,031 sq. ft,

UNIT STATISTICS

STUDIO UNIT	10
ONE BEDROOM UNIT	10
ONE BEDROOM + DEN UNIT	52
TWO BEDROOM UNIT	0
TWO BEDROOM + DEN UNIT	54
TOTAL	126
COMMERCIAL AREA	718,2 sq. m, 7,731 sq. ft,

CAR PARKING

REQUIRED by ZONING BY-LAW

RESIDENCE	- 0,5 PER DWELLING UNIT (AFTER 12 UNITS)	57
VISITOR	- 0,1 PER DWELLING UNIT (AFTER 12 UNITS)	11
COMMERCIAL RESTAURANT	- 1,25 PER 100m² GFA (OVER 350m² GFA)	0
COMMERCIAL (OTHER)	- 1,25 PER 100m² GFA (OVER 500m² GFA)	0
TOTAL		68

PROVIDED

RESIDENCE	- 0,0 PER DWELLING UNIT	0
VISITOR	- 0,0 PER DWELLING UNIT	0
COMMERCIAL RETAIL	- NON REQUIRED	0
TOTAL		0

NOTE: PROVIDED PARKING IS WITHIN 169 LISGAR AS PER EXISTING AGREEMENTS

BICYCLE PARKING

REQUIRED

RESIDENCE	- 0,5 PER UNIT (120 UNITS)	60
COMMERCIAL	- 1,0 PER 250m² GFA	3
TOTAL		63

PROVIDED

BASEMENT - INTERIOR	44
GROUND FLOOR - INTERIOR	20
EXTERIOR - CITY BOULEVARD	4
TOTAL	68

LOT COVERAGE

PAVED SURFACE =	0,4 sq. m,	0,02%
BUILDING FOOTPRINT =	1,719,5 sq. m,	94,48%
LANDSCAPE OPEN SPACE =	100,1 sq. m,	5,50%
TOTAL =	1,820,0 sq. m,	100,00%

AMENITY SPACE

BASEMENT GYM COMMUNAL =	418,0 sq. m,
BASEMENT PARTY ROOM COMMUNAL =	153,0 sq. m,
BASEMENT THEATER COMMUNAL =	40,0 sq. m,
GROUND GULF SIMULATOR COMMUNAL =	46,0 sq. m,
2nd FL. PRIVATE ROOF TERRACE =	65,0 sq. m,
2nd / 5th FL. COMMUNAL INTERIOR =	100,0 sq. m,
PRIVATE BALCONIES =	440,0 sq. m,
TOTAL =	1,262,0 sq. m,
TOTAL COMMUNAL =	822,0 sq. m,
REQUIRED - 6,0m² PER UNIT (126) =	756,0 sq. m,
REQUIRED COMMUNAL @ 50% =	378,0 sq. m,

WASTE REQUIREMENT (42 + 126 UNITS)

COMBINED GARBAGE ROOM 169 LISGAR & 200 ELGIN

GARBAGE	- 0,11 PER UNIT	19 YARDS
RECYCLING GMP	- 0,018 PER UNIT	3 YARDS
RECYCLING FIBER	- 0,038 PER UNIT	6 YARDS
COMPOST	- 240L PER 50 UNITS	4

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

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

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

DO NOT SCALE DRAWINGS.

NOTATION SYMBOLS:

- (00) INDICATES DRAWING NOTES, LISTED ON EACH SHEET.
- <00> INDICATES ASSEMBLIE TYPE; REFER TO TYPICAL ASSEMBLIES SCHEDULE.
- (00) INDICATES WINDOW TYPE; REFER TO WINDOW ELEVATIONS AND DETAILS ON A900 SERIES.
- (000) INDICATES DOOR TYPE; REFER TO DOOR SCHEDULE AND DETAILS ON A900 SERIES.
- 00 DETAIL NUMBER; A000 TITLE; SCALE; DETAIL REFERENCE PAGE
- DETAIL CROSS REFERENCE PAGE

No.	DESCRIPTION	DATE
6		
5		
4		
3	ISSUED FOR SITE PLAN CONTROL	23
2	ISSUED TO CONSULTANTS	Dec. 20, 23
1	ISSUED FOR PRE CONSULTATION	Sept. 26, 23

REVISIONS:

ARCHITECT SEAL: ONTARIO ASSOCIATION OF ARCHITECTS — RODERICK J. LAHEY LICENCE 4375 — SEAL DATE: STAMP DATE

NORTH ARROW:

CLIENT: DISTRICT REALTY

ARCHITECT:
rla/architecture
roderick lahey architect inc.
56 beech street, ottawa, ontario K1S 3J6
t. 613.724.9932 f. 613.724.1209 rlaarchitecture.ca

PROJECT TITLE:

200 ELGIN STREET

OTTAWA ONTARIO

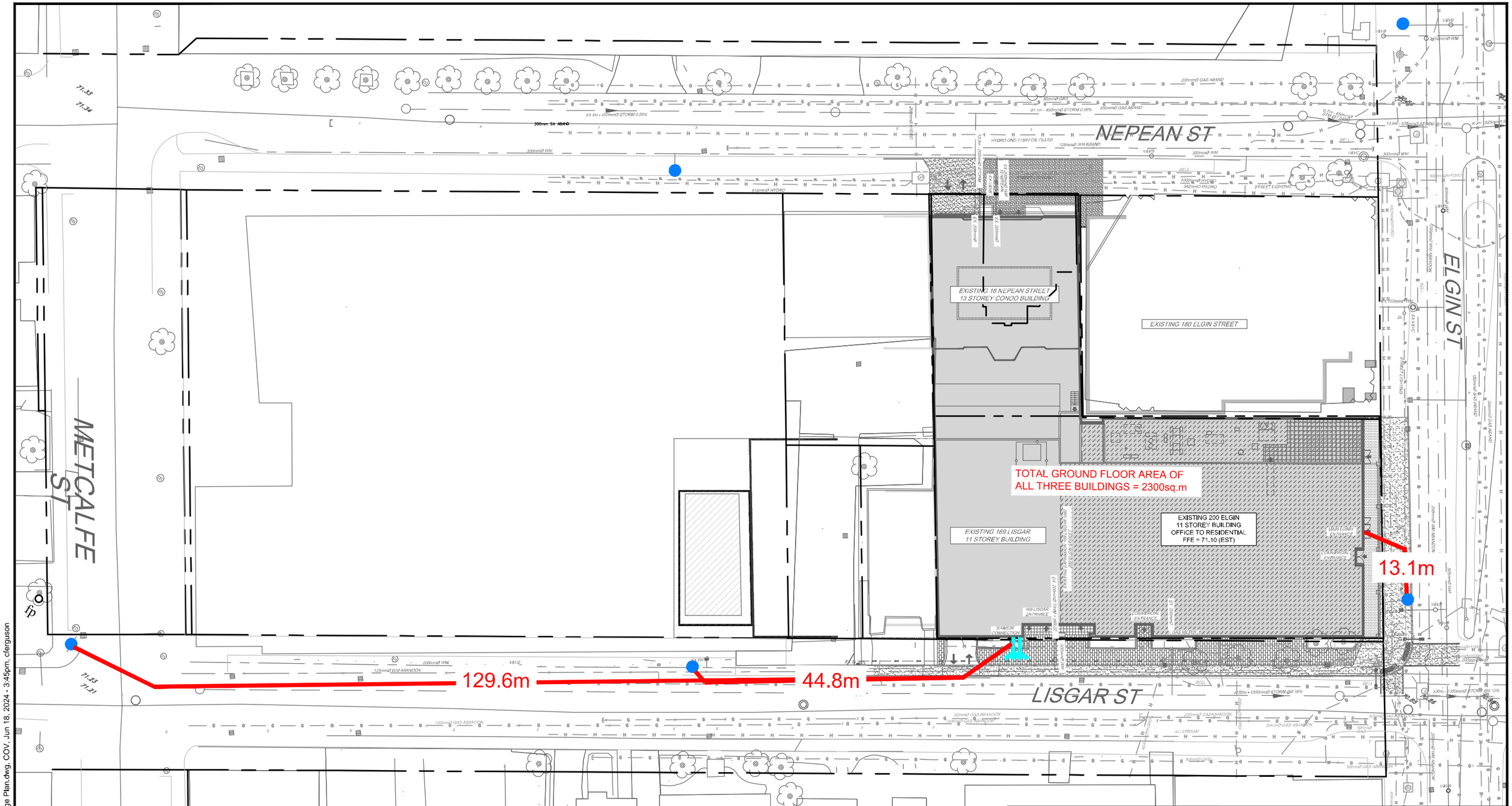
SHEET TITLE:

SITE PLAN

DRAWN: R.V. | CHECKED: R.V.

SCALE: 1:100 | SHEET No. SP-1

PROJECT No. 2215



LEGEND

- PROPERTY LINE
- PROPOSED SIAMESE CONNECTION
- EXISTING CLASS AA HYDRANT
- DISTANCE FROM HYDRANT TO SIAMESE CONNECTION/ BUILDING ENTRANCE

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Website www.novatech-eng.com

CITY OF OTTAWA
200 ELGIN STREET

COVERAGE PLAN

SCALE 1 : 500 (0, 5m, 10m, 20m)
DATE MAY 2024
JOB 123101
FIGURE COV

SHT11X17.DWG - 279mmX432mm

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Table 2.1: Watermain Design Parameters and Criteria

Domestic Demand Design Parameters	**Design Parameters**
Unit Population: 1-Bedroom Apartment 2-Bedroom Apartment	1.4 people/unit 2.1 people/unit
Commercial Demand	28,000 L/gross ha/day
Basic Day Residential Demand (BSDY)	280 L/c/d
Maximum Day Demand (MXDY)	Residential: 2.5 x Basic Day Commercial: 1.5 x Basic Day
Peak Hour Demand (PKHR)	Residential: 2.2 x Maximum Day Commercial: 2.7 x Basic Day
Fire Demand (FF) Design	
Per FUS 2020	
System Pressure Criteria Design Parameters	**Criteria**
Maximum Pressure (BSDY) Condition	< 80 psi occupied areas < 100 psi unoccupied areas
Minimum Pressure (PKHR) Condition	> 40 psi
Minimum Pressure (MXDY+FF) Condition	> 20 psi

The required fire demand was calculated using the Fire Underwriters Survey 2020 (FUS) Guidelines. Through correspondence with the architect and OBC Building Review completed by Morrison and Hershfield (**Appendix A**), it is understood that the proposed building use will be residential occupancy (Limited Combustible), Type-I Fire-Resistive Construction (2hrs) and containing a fully supervised sprinkler system designed as per NFPA 13.

The water demand calculations, fire flow calculations and correspondence for all three buildings (200 Elgin, 169 Lisgar, 18 Nepean) are provided in **Appendix B** for reference.

Table 2.2: Estimated Water Demand (200 Elgin & 169 Lisgar & 18 Nepean)

Population	**Commercial Area (m^2)**	**Ave. Daily Demand (L/s)**	**Max. Daily Demand (L/s)**	**Peak Hour Demand (L/s)**	**Fire Flow (L/s)**
367	718	1.21	3.00	6.58	250

Note as per ITSB-2018-02 the fire flow was distributed among several surrounding hydrants as outlined in **Table 2.3**.

Table 2.3: Maximum Flow to be Considered from a Given Hydrant.

Hydrant Class	Distance to building (m)	Contribution to Fire Flow	
		(L/min)	(L/s)
AA	≤75	5700	95
	>75and ≥150	3800	63.33

Based on City of Ottawa mapping all existing hydrants within the vicinity of the proposed building are Class AA (Blue). As the fire flow is calculated as 250 L/s, three (3) hydrants will be required to achieve the required flow. There are presently 2 existing class AA Hydrants within the boulevards of Lisgar Street, and Elgin Street within 75m of the building wall capable of providing a combined maximum flow of 190L/s as per **Table 2.3**. Additionally, another existing class AA hydrant on Lisgar Street is within 75 to 150 meters of the building wall capable of providing 63.33L/s as per **Table 2.3** for a total of 253.33 L/s. One hydrant is within 45m of the existing siamese connection. Refer to **Appendix B** for calculations. **Figure 4 – Hydrant Coverage** shows the site hydrant coverage plan.

The above water demand information was submitted to the City for boundary conditions from the City's water model. These boundary conditions when received will be used to analyze the performance of the proposed and existing watermain systems for three theoretical conditions:

1) High Pressure check under Average Day conditions
2) Peak Hour demand
3) Maximum Day + Fire Flow demand.

3.0 SANITARY SERVICING

There are existing City sanitary sewers in the rights-of-way fronting the subject property. There is an existing 1050mm diameter sanitary sewer within Lisgar Street, and a 250mm diameter sanitary sewer within Nepean Street.

Currently 200 Elgin is serviced to Lisgar Street with a 200mm diameter sanitary sewer. The condition of the existing service was reviewed using CCTV technology, which report is included within **Appendix C** for reference. Given the age of the service (circa 1966) it is proposed to replace it in the same trench with a 200mm diameter PVC sanitary service at a 1% slope connecting to the existing 1050mm diameter sanitary sewer within Lisgar Street. Additionally, 169 Lisgar Is serviced with a 150mm to Lisgar Street and 18 Nepean is serviced with a 150mm - neither will be affected by the conversion of 200 Elgin.

Sanitary flows for the proposed development were calculated using criteria from Section 4 of the City of Ottawa Sewer Design Guidelines and the Ontario Building Code as follows:

Table 3.1: Sanitary Sewer Design Parameters

Design Component	Design Parameter
Unit Population: 1-Bedroom Apartment 2-Bedroom Apartment	 1.4 people/unit 2.1 people/unit
Residential Flow Rate	Design = 280 L/cap/day
Residential Peaking Factor	Harmon Equation (min=2.0, max=4.0) Harmon Correction Factor = 0.8m (Design)
Commercial Peaking Factor	1.0 (less than 20% of contributing area) 1.5 (more than 20% of contributing area)
Extraneous Flow Rate	Design = 0.33 L/s/ha
Minimum Pipe Size	200mm (Res)
Minimum Velocity[1]	0.6 m/s
Maximum Velocity	3.0 m/s
Minimum Pipe Cover	2.0 m (Unless frost protection provided)

The peak sanitary flow including infiltration for 200 Elgin was calculated to be **3.10 L/s**. The peak sanitary flow including infiltration for 169 Lisgar was calculated to be **1.05 L/s.** The peak sanitary flow including infiltration for 18 Nepean was calculated to be **0.57 L/s.** Detailed sanitary flow calculations are provided in **Appendix C** for reference.

4.0 STORM SERVICING

There are existing City storm sewers in all rights-of-way fronting the proposed site There is a 450mm storm sewer located within the Nepean Street right-of-way, a 300mm storm sewer located in Elgin Street right of-way and a 1350mm storm sewer within the Lisgar Street right-of-way.

Currently 200 Elgin and 169 Lisgar is being serviced by a single 250mm diameter storm service to Lisgar Street. Given the age of the service (circa 1966) it is proposed to replace it with a 250mm diameter PVC storm service connecting to the existing storm sewer in Lisgar Street. The service will continue to take uncontrolled flows from both 169 Lisagr Street and 200 Elgin Street. 18 Nepean is serviced with a 200mm diameter storm and will not be affected by this conversion.

The design criteria used in sizing the storm sewers are summarized below in **Table 4.1.**

Table 4.1: Storm Sewer Design Parameters

Parameter	Design Criteria
Local Roads	100 Year Return Period
Storm Sewer Design	Rational Method
IDF Rainfall Data	Ottawa Sewer Design Guidelines
Initial Time of Concentration (Tc)	15 min
Allowable Runoff Coefficient (C)	0.5
Minimum Velocity	0.8 m/s
Maximum Velocity	3.0 m/s
Minimum Diameter	250 mm

As noted within the pre-consultation minutes there are no stormwater management controls required for the existing building other than those currently in place. As such, it is proposed to replace the existing service and leave all roof drains and connections to continue to function as per existing conditions.

Using a 100-year storm and a time of concentration of 15 mins the uncontrolled storm runoff was determined to be **87.6 L/sec** for 200 Elgin Street and 169 Lisgar Street. The capacity of a 300mm diameter at 2% is 142.7 L/sec.

Refer to **Appendix D** for detailed storm drainage area plans and storm sewer design sheets for all three buildings.

5.0 CONCLUSIONS AND RECOMMENDATIONS

Watermain

The analysis of the existing and proposed watermain network confirms the following:

- The existing 200mm dia. watermain service and the new proposed 200mm diameter service will provided water to the proposed development of 200 Elgin Street and the existing 169 Lisgar Street.
- There are adequate pressures in the existing watermain infrastructure to meet the required domestic demands for the development.
- It is expected that there are adequate flows to service the proposed fire protections system which will be confirmed once boundary conditions are received.

Sanitary Servicing

The analysis of the existing and proposed sanitary system confirms the following:

- It is proposed to service 200 Elgin with a new 200mm sanitary service which will connect to the existing 1050 mm sanitary in Lisgar Street.
- There are no changes to 169 Lisgar Street and 18 Nepean Street sanitary servicing.

Storm Servicing

The analysis of the existing and proposed storm system confirms the following:

- It is proposed to service the development with a proposed 300mm storm service which will connect to the existing 1350 mm storm sewer in Lisgar Street which will take uncontrolled flows from both 169 Lisgar Street and 200 Elgin Street.
- There are no changes to 18 Nepean Street storm servicing.

6.0 CLOSURE

This report is submitted for review and approval in support of the site plan application. Please contact the undersigned should you have questions or require additional information.

NOVATECH

Prepared by:

Curtis Ferguson, E.I.T.
Land Development Engineering

Reviewed by:

Greg MacDonald, P.Eng
Director, Land Development and Public Sector Infrastructure

Appendix A
Correspondence

File No.: PC2023-0265

Lisa Dalla Rosa
Fotenn Planning + Design
Via email: dallarosa@fotenn.com

Subject: **Pre-Consultation: Meeting Feedback**
Proposed Site Plan Control Application – 200 Elgin Street

Please find below information regarding next steps as well as consolidated comments from the above-noted pre-consultation meeting held on November 7, 2023.

Pre-Consultation Preliminary Assessment

1 ☐	**2** ☐	**3** ☒	**4** ☐	**5** ☐

One (1) indicates that considerable major revisions are required while five (5) suggests that the proposal appears to meet the City's key land use policies and guidelines. This assessment is purely advisory and does not consider technical aspects of the proposal or in any way guarantee application approval.

Next Steps

1. A review of the proposal and materials submitted for the above-noted pre-consultation has been undertaken. Please proceed to complete a Phase 2 Pre-consultation Application Form and submit it together with the necessary studies and/or plans to planningcirculations@ottawa.ca.

2. In your subsequent pre-consultation submission, please ensure that all comments or issues detailed herein are addressed. A detailed cover letter stating how each issue has been addressed must be included with the submission materials. Please coordinate the numbering of your responses within the cover letter with the comment number(s) herein.

3. Please note, if your development proposal changes significantly in scope, design, or density before the Phase 3 pre-consultation, you may be required to complete or repeat the Phase 2 pre-consultation process.

Supporting Information and Material Requirements

1. The attached **Study and Plan Identification List** outlines the information and material that has been identified, during this phase of pre-consultation, as either required (R) or advised (A) as part of a future complete application submission.

    a. The required plans and studies must meet the City's Terms of Reference (ToR) and/or Guidelines, as available on Ottawa.ca. These ToR and Guidelines outline

the specific requirements that must be met for each plan or study to be deemed adequate.

Consultation with Technical Agencies

1. You are encouraged to consult with technical agencies early in the development process and throughout the development of your project concept. A list of technical agencies and their contact information is enclosed.

Planning

Comments:

1. Please review the council-approved Staff recommendations (November 8, 2023) as it relates to this office-to-residential conversion proposal and as it relates to the timing of the SPC application.

2. To Staff's knowledge, the applicant team wants to avoid zoning compliance issues based on the proposed change of use and will meet the requirements of the Zoning By-Law provisions that apply to the proposed residential use. As such, Staff have not flagged the requirement for a Zoning By-Law Amendment or Minor Variance.

3. A Standard Site Plan Control application and fee are required for the proposal, given that there are currently no proposed building additions or new storeys being added. If the proposal changes to include a building addition, or add a new storey, then a Complex Site Plan Control application will be required.

4. The subject property is designated Mainstreet Corridor within the Downtown Core Transect Policy Area and further subject to the Central and East Downtown Secondary Plan, where the subject property is similarly designated 'Corridor'. The building's edge should respond appropriately to the Corridor (Elgin Street) and the public realm should be enhanced to recognize the status and importance of Elgin Street.

5. Active transportation choices should be prioritized through the redevelopment of sites within the downtown core.

6. Active uses at the ground floor should be prioritized.

7. The subject property is zoned TM5[71] and the development is subject to the built-form guidelines of the Centretown Community Design Plan (CDP).

8. As it pertains to the building's exterior, the variation in building façade treatments is appreciated.

9. Please clarify the interior connections proposed between buildings as indicated on the floor plans.

10. As it pertains to amenity space:

- Please clarify all proposed amenity spaces. Staff expect the amenity space requirement to be met or exceeded. Once the Zoning By-law has been updated in accordance with Council's November 8th 2023 decision, then amenity space can be provided anywhere on-site and within the building, as long as the total required amenity space is being met.

- Staff have some concerns with lighting (sunlight access), programming, and animation of the outdoor amenity space on the roof-top of the one-storey podium.

- Please consider ways of improving the useability of the proposed amenity space (2nd level). Staff suggest an indoor/outdoor amenity space at the 2nd level to improve access to this area and avoid any dwelling units facing the outdoor terrace area.

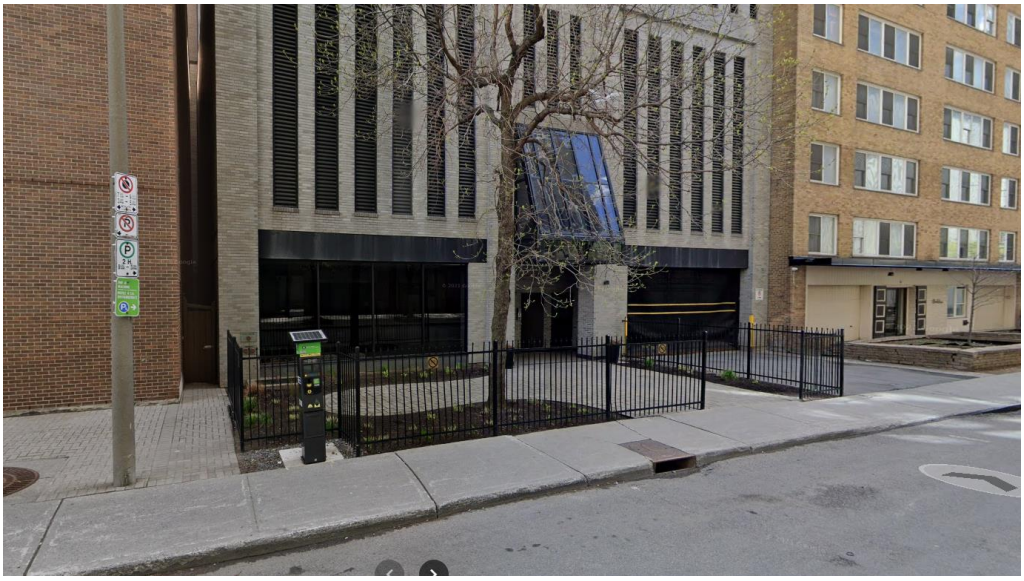
- Please consider using the rooftop of the building as an outdoor amenity space.

11. As it pertains to the programming of the building:

- Please confirm the unit mix.

- Staff appreciate the number of two-bedroom units proposed but ask that the applicant team consider adding three-bedroom units suitable for families.

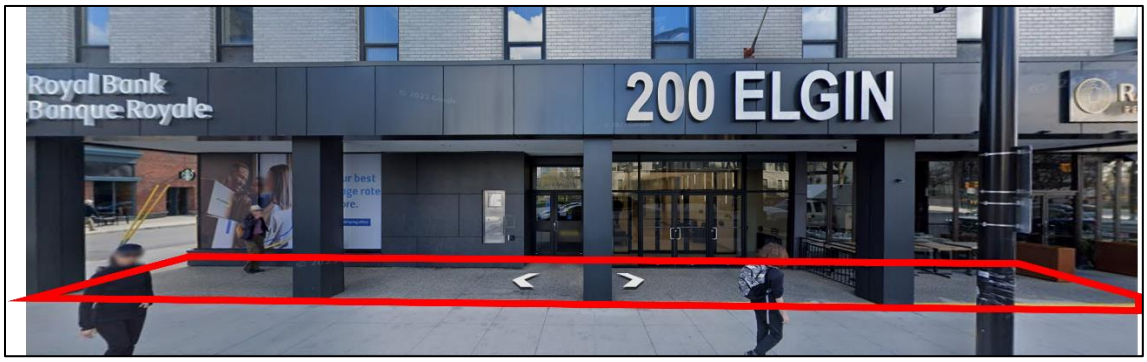
- Please confirm the programming (uses) at the ground floor (see example below) and consider how the ground floor uses may need to respond to the changing needs of the building and the surrounding context.



- Staff expect a 1:1 bike parking-to-dwelling unit ratio to be provided.

12. As it pertains to public realm and sustainability:

    - Please consider strengthening the public realm and addressing the grading along the building's edges to improve accessibility, as well as access to and from the building. Please consider leveling the area underneath the awning along Elgin Street to match the sidewalk, as shown in the image below.



    - Please consider the introduction of sustainable design features, such as the application of green roofs on the rooftops.

    - Tree retention/ conservation is an important consideration for this site.

13. Staff encourage the applicant team to engage with the local Ward Councillor and Community.

14. Staff are looking into the applicant's information request regarding the location of utilities and below-grade infrastructure along the Elgin Street frontage and will provide this information once available and confirmed.

15. Overall, this is a great project. The City is supportive of office-to-residential conversions in the Downtown Core, which will bring much needed housing to the centre of the city.

Feel free to contact Adrian van Wyk and Eric Forhan, File Leads (Development Review – Central), for follow-up questions.

Urban Design

Comments:

16. Scoped Urban Design Brief required – TOR attached. Focus on elevation enhancements and relationship with the public realm.

17. Based on design development shown to-date and that the project seeks to convert an existing office building to residential, a visit to the UDRP is not required.

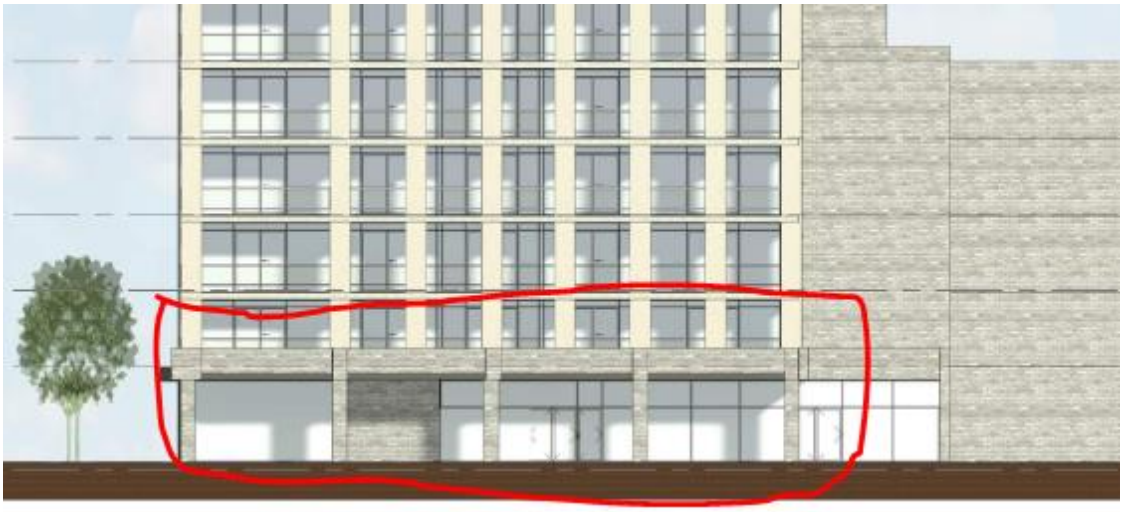
18. Please explore the potential to enhance the public realm experience along Lisgar and Elgin. Is it possible to address the grading issue that currently exists?

19. Please explore the potential for street trees along Elgin.

20. Please refer to the City's bird friendly guidelines for glazing. At-grade glazing needs to be highly transparent to engage with street frontage. Decals should not cover up entire windows.

21. Appreciate the façade updates, and the variation in architectural treatment and materiality across Lisgar. Please provide material details.

22. Along Elgin, where portions of the building are being recessed to accommodate balconies, would it be possible to raise the cantilever past the second level to open up the building to the public realm?



23. Mechanical rooftop details needed.

24. Is it possible to introduce commercial space to the roof top area? There could be the potential for a roof top restaurant/bar with views of the city.

25. Please provide sustainability details with your submission.

Feel free to contact Nader Kadri, Urban Designer, for follow-up questions.

Engineering

Comments:

26. Provide the proposed Sanitary sewer release rate to confirm there is sufficient capacity in the City's sanitary sewer system.

27. Existing buildings service lateral require a CCTV inspection and report to ensure existing services to be re-used are in good working order and meet current minimum size requirements. Located services to be placed on existing condition plan.

28. Water Quantity Control: Strom water quantity control is not required but it is recommended to look at ways to control storm water flow on site.

29. Water Supply Redundancy: Residential buildings with a basic day demand greater than 50m3/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 this site not expected to exceed 50m3/day.

30. Please review Technical Bulletin ISTB-2018-02, 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 for the proposal. Two or more public hydrants are anticipated to be required to handle fire flow.

31. 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 location.
    - 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 ISTB-2021-03]. 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.

32. List of required reports and plans:

    PLANS:
    - Existing Conditions and Removals Plan
    - Site Servicing Plan (if new services are proposed)
    - Road Reinstatement Plan (if new services are proposed)
    - Topographical survey

    REPORTS:
    - Site Servicing Report
    - Noise Control Study
    - Phase I ESA (include discussions on RSC requirement)
    - Phase II ESA (Depending on recommendations of Phase I ESA)

Feel free to contact Nishant Jhamb and John Wu, Infrastructure Project Managers (Engineering), for follow-up questions.

Transportation

Reviewed:

TIA Screening Form, Received October 19, 2023

Site Plan SP-1, Dated September 09, 2023

Comments:

33. The development is proposing to convert existing office building to residential apartments inside the walls of the existing building. The Elgin Street ROW protection limits between Laurier Avenue and Lisgar Street of 40.0 m and site triangle (5 m x 5 m) may not be applicable as the existing building is proposed to be retained.

34. Please correct the TIA Screening Form - Summary section to include the Location and Safety Triggers.

35. The Screening Form has indicated that the both the Location and Safety Triggers have been met. Please proceed with the TIA Step 2 – Scoping Report.

    The following documents the process conducted for the Traffic Impact Assessment (TIA) Guidelines review and the recommended changes to the guidelines to maximize the likelihood of meeting the review timelines associated with Bill 109.

    Revisions to Traffic Impact Assessment Guidelines (ottawa.ca).

    City of Ottawa TIA Guidelines Certification and Screening Form.

36. The Owner shall be required to enter into maintenance and liability agreement for all pavers, plant and landscaping material placed in the City right-of-way and the Owner shall assume all maintenance and replacement responsibilities in perpetuity.

37. Bicycle parking spaces are required as per Section 111 of the Ottawa Comprehensive Zoning By-law. Bicycle parking spaces should be in safe, secure places near main entrances and preferably protected from the weather.

38. Should the property Owner wish to use a portion of the City's Road allowance for construction staging, prior to obtaining a building permit, the property Owner must obtain an approved Traffic Management Plan from the Manager, Traffic Management, Transportation Services Department. The city has the right for any

reason to deny use of the Road Allowance and to amend the approved Traffic Management Plan as required.

Feel free to contact Wally Dubyk, Transportation Project Manager, for follow-up questions.

Environment and Trees

Comments:

39. Please review and integrate bird-safe design measures as per: Bird-Safe Design Guidelines | City of Ottawa

The following requirements have been adapted from the Schedule E of the Urban Tree Protection Guidelines and from the Landscape Plan Terms of Reference.

40. For more information on the process or help with tree retention options, contact Mark Richardson mark.richardson@ottawa.ca or at City of Ottawa

41. a Tree Conservation Report (TCR) must be supplied – it can be combined with the Landscape Plan

42. Any removal of privately-owned trees 10cm or larger in diameter, or city-owned trees of any diameter requires a tree permit issued under the Tree Protection Bylaw (Bylaw 2020 – 340); the permit will be based on an approved TCR and made available at or near plan approval.

43. The information must contain the show proposed development with existing and proposed tree cover information

44. Please list all trees on site, as well as off-site trees if the CRZ extends into the developed area, by species, diameter, ownership, and health condition

45. If trees are to be removed, the TCR must clearly show where they are, and document the reason they cannot be retained

46. All retained trees must be shown, and all retained trees within the area impacted by the development process must be protected as per City guidelines available at Tree Protection Specification

47. Please ensure any retained trees are shown on the LP

48. Tree specifications

    a. Minimum stock size: 50mm tree caliper for deciduous, 200cm height for coniferous.

b. Maximize the use of large deciduous species wherever possible to maximize future canopy coverage

49. Tree planting on city property shall be in accordance with the City of Ottawa's Tree Planting Specification; and if possible include watering and warranty as described in the specification.

50. Adhere to Ottawa Hydro's planting guidelines (species and setbacks) when planting around overhead primary conductors – check with Ottawa Hydro for the latest species list and location limits.

51. Hard surface planting

    a. If there are hard surface plantings, a planting detail must be provided

    b. Curb style planter is highly recommended

    c. No grates are to be used and if guards are required, City of Ottawa standard (which can be provided) shall be used.

    d. Trees are to be planted at grade.

52. Soil Volume

    a. Please demonstrate as per the **Landscape Plan Terms of Reference** that the available soil volumes for new plantings will meet or exceed the following:

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

    b. It is suggested that the proposed species list include a column listing the available soil volume.

Feel free to contact Mark Richardson, Forester, for follow-up questions.

Parkland

Comments:

53. Cash-in-lieu of Parkland (CILP) will be required prior to the registration of a Site Plan Agreement.

54. On November 8, 2023, City Council directed staff to implement a 'Financial Incentive Pilot Program for Office-to-Residential Conversions". Council's direction is as follows:

    - To reduce the CILP cap for residential uses to 8%, on the condition that a building permit for the project is issued within 6 months of a Site Plan Approval, with the possibility of a singular extension of 3 months.
    - The program will apply in Ward 14 only.
    - The program will require a downtown vacancy rate to be above 10%
    - The program will run for 2 years, after which it must be reconsidered by Council.

55. PFP requests the following information to confirm and calculate the parkland dedication:

    - Lot area of the site to be developed, in square meters
    - Number of residential units proposed.
    - Total building Gross Floor Area (GFA)
    - GFA of the area to be converted from office-to-residential.
    - GFA of other uses within the building. Please indicate if the other uses are existing or proposed.

Feel free to contact Kimberley Baldwin, Parks Planner, for follow-up questions.

Centretown Community Association issues

Comments:

56. This is an exciting project, opening the possibility of more conversions to create desperately needed housing.

57. The Centretown Community Association (CCA) encourages the proponent to do everything possible to preserve trees on the site, and to plant new large trees.

58. We encourage the proponent to provide ample indoor bicycle parking, in excess of 1.0 bike parking spaces per unit.

59. We like the proponent's idea of recessing the Elgin Street face to make room for balconies.

60. While the proposed Elgin Street facade is an improvement over what is there now, it is visually pedestrian. This is one of the most prominent locations in Ottawa and this building will help define the character of the city. We would point to the most recent design for 265 Catherine, in which a developer has strived to make a thoroughly modern building respect and reference the architectural heritage of Centretown. We hope the proponents will seize the opportunity to create a building on this very prominent site that will be a joy to behold and will uplift the character of the city.

Other

61. The High-Performance Development Standard (HPDS) is a collection of voluntary and required standards that raise the performance of new building projects to achieve sustainable and resilient design. The HPDS was passed by Council on April 13, 2022.

    a. At this time, the HPDS is not in effect and Council has referred the 2023 HPDS Update Report back to staff with direction to bring forward an updated report to Committee with recommendations for revised phasing timelines, resource requirements and associated amendments to the Site Plan Control By-law by no later than Q1 2024.

    b. Please refer to the HPDS information attached and ottawa.ca/HPDS for more information.

Submission Requirements and Fees

62. Outlines the application type/subtype required and the associated fees

    a. Additional information regarding fees related to planning applications can be found here.

63. The attached **Study and Plan Identification List** outlines the information and material that has been identified as either required (R) or advised (A) as part of a future complete application submission.

    a. The required plans and studies must meet the City's Terms of Reference (ToR) and/or Guidelines, as available on Ottawa.ca. These ToR and Guidelines outline the specific requirements that must be met for each plan or study to be deemed adequate.

64. All of the above comments or issues should be addressed to ensure the effectiveness of the application submission review.

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

Sincerely,

Adrian van Wyk and Eric Forhan
File Leads
Development Review – Central

cc.

- Eric Forhan
- Adrian van Wyk
- Olivia Hayes
- Nader Kadri
- Wally Dubyk
- Kimberley Baldwin
- Nishant Jhamb
- John Wu
- Mark Richardson
- Lisa Dalla Rosa
- Evan Saunders

Application of the Ontario Building Code
200 Elgin Street

Ottawa, Ontario

Rev	Description	Date
0.	Draft Code Report	April 26, 2024
1.		-

Presented to:

Kevin Meranger
Roderick Lahey Architect Inc.
56 Beech Street
Ottawa ON K1S 3J6

Report No. 2401688.00
Date: April 26, 2024
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1. INTRODUCTION

1.1 Background

Morrison Hershfield Limited (MH) has been retained by Elgar Holdings Inc. (Client) to investigate the application of the 2012 Ontario Building Code, as amended (OBC) to a proposed change of major occupancy to the existing 200 Elgin Street tower located in Ottawa, Ontario.

This report is provided to the project team for use during design development. The final report will be suitable for submission to the City of Ottawa in conjunction with the building permit application.

1.2 Scope of Report and Methodology

This report is a presentation of OBC requirements applicable to this project. The scope of this report is limited to the major fire, life safety, accessibility, and occupancy elements as applicable to the renovation of the existing building. The basis for these requirements is OBC Division B, Part 11, and Part 3, where referenced. The 2012 edition of the OBC is applicable, as amended to the date of permit application.

Unless otherwise stated, Division B of the OBC is referenced in this report.

This report and application of the Code is based on our understanding of the proposed building project as presented in drawings by RLA (dated March 26, 2024) and on discussions with the design team.

1.3 Limitations

Reviewed material, furnished by others, is expected to be free of latent deficiencies or inaccuracies. Only design calculations with respect to occupant load, exit capacity and spatial separation were performed and are included in this report.

Comments and conclusions within this report represent our opinion, which has been based on an examination of the documents provided, our Code analysis and our past experiences. This review is limited to technical performance and fire safety related requirements of the building and Codes.

In issuing this report, Morrison Hershfield does not assume any of the duties or liabilities of the designers, builders, owner, or operators of the subject property. Persons who use or rely on the contents of this report do so with the understanding as to the limitations of the documents examined. Such persons understand that Morrison Hershfield cannot be held liable for damages they may suffer in respect to the design, construction, purchase, ownership, use or operation of the subject property.

2. PROJECT SUMMARY

2.1 General Project Description

The project proposes renovations and change of use of the existing 11-Storey office building located at 200 Elgin Street, Ottawa, into a residential apartment building. The existing office building is connected to the adjacent towers at 169 Lisgar Street and 18 Nepean Street via the parking garage. The adjacent building at 169 Lisgar Street was previously converted from offices to residential apartments. The building at 18 Nepean Street contains residential condominiums over an above-ground parking garage.

Office Tower located at 200 Elgin Street primarily consists of residential suites on Floors 2 to 11, with a mechanical penthouse on the roof level. The ground floor consists of two existing mercantile suites, an amenity room and the residential lobby. The basement portion of the tower consists of bike and tenant storage, as well as residential amenities and service spaces. On residential levels (2 to 11), the main corridor is connected to the corridor serving the 169 Lisgar Tower.

Figure 2.1.a. - View looking East from Elgin Street

Add Site Plan when received.

Figure 2.1.b. - Site Plan

2.2 Key Features for Code Application

From a code perspective the development, consisting of the three towers, is a single building due to the interconnections via the parking garage and other floors via a corridor.

3. APPLICABLE CODES

The project is required to comply with the **2012 Ontario Building Code**, as amended to the date of the permit application (O.Reg.332/12). A building permit is required to be obtained in accordance with local by-laws and the Building Code Act. This Report is based on the version in effect on March 28, 2024.

Part 11 of the Ontario Building Code is applicable to the renovations since the existing building is more than 5 years old, as per Division A, Sentence 1.1.2.6.(1). Key elements related to the change of major occupancy from Group D (office) to Group C (residential) and other existing conditions are regulated under Part 11 for renovations. The basis of Part 11 is that the performance level of the building after construction must not be less than the performance level prior to construction. Sentence 11.3.1.1.(1) specifies that any material alteration or repair to an existing building system is required to provide at least an equal level of performance as the existing system.

The new portions of the building will be regulated under Part 3 for new construction. Part 3 of the Ontario Building Code is applicable to the project due to the size of the building.

The existing building and use and operations are subject to the requirements of the **Ontario Fire Code** (O. Reg. 213/07, as amended to date).

4. APPLICATION OF OBC PART 11

4.1 Part 11 Analysis

Part 11 applies to renovations and a change in use in a building more than 5 years old. The basis of Part 11 is that the performance level of the building after construction must not be less than the performance level prior to construction.

The proposed renovations in the existing building are required to comply with OBC Section 11.3 and the performance level of the building is required to be evaluated and any required compensating construction to be undertaken in accordance with OBC Section 11.4.

The analysis in this report considers that the existing 11-Storey building changes its current use from Group D (office) major occupancy to a Group C (residential) major occupancy and will also undergo interior and exterior renovations to create residential suites and amenity spaces.

Unless otherwise noted in this section, construction within the existing building is required to comply with other Parts of the OBC as if the existing building were of new construction. See Section 5 of this report for the application of OBC Part 3.

4.2 Proposed Construction

An extensive renovation occurs when interior walls, ceilings or floor assemblies are substantially removed and new interior walls, ceilings, or floor assemblies are installed in the building. In this case, new wall assemblies are being constructed to create residential suites, amenity spaces, and corridors. The structural and fire-resistance elements for the new work are required to comply with other Parts of the Code.

The proposed renovations to the existing building are considered an “extensive renovation” per Article 11.3.3.2. The existing interior partitions are being demolished and new residential suites are being constructed. Since the building will contain Group C major occupancy, and is over 3 storeys in building height, the building is required to be sprinklered per Sentence 11.3.3.2.(4).

4.3 Reduction in Performance

The performance level must be assessed in the following areas: structural sufficiency, increase in occupant load, change of major occupancy, and plumbing systems. The analysis of the existing plumbing and structural adequacy is outside the scope of this report and is to be assessed by others.

4.3.1 Structural

Per Article 11.4.2.1., there is a reduction in structural performance level if there is a change to a new major occupancy, if the occupant load increases by more than 15%, or if the live load will increase due of a change of use within the same major occupancy, and the existing structural floor and roof framing is not adequate to support the proposed dead and live loads.

The analysis of structural adequacy is outside the scope of this report and must be assessed by others.

4.3.2 Increase in Occupant Load

According to Sentences 11.4.2.2.(1), (2) and (3), the performance level of an existing building is reduced if the proposed renovations will increase the occupant load of the building.

The occupant load is being significantly reduced due to the change of major occupancy from Group D offices to Group C residential apartments.

Since there is no expected increase in occupant load, there is no reduction in performance level and no need for compensating measures due to an increase in occupant load.

4.3.3 Change of Major Occupancy

We understand that the existing building is used as an office building and is classified as a Group D major occupancy. The renovation will change the existing major occupancy for this building to a Group C residential major occupancy.

Sentence 11.4.2.3.(1) identifies that the performance level is reduced if one of the conditions in Clauses (a) to (g) occurs. In this building, only Clause (a) would be applicable if the change of major occupancy is to a new major occupancy with a greater hazard index. The existing office building has a hazard index of 6 per Table 11.2.1.1.J. The proposed residential apartment building has a hazard index of 6 per Table 11.2.1.1.I. As the new occupancy has the same hazard index as the new occupancy, there is no reduction in performance level due to the change of major occupancy.

The performance level of an existing building is reduced under Sentence 11.4.2.3.(3) where the early warning and evacuation systems (EW/EVAC) requirements for other Parts for the proposed major occupancy exceeds those of the existing building. See Table 4.3.3.a. below for the assessment of the EW/EVAC evaluation and Section 4.4.3 for required upgrading.

Table 4.3.3.a.: OBC Table 11.4.3.3. For Evaluation of Early Warning/Evacuation

Early Warning and Evacuation	Code Reference	Evaluation
Access to exit widths based on occupant load	Subsection 3.3.1.	Existing access to exits is acceptable since they meet the minimum widths and can accommodate the proposed occupant load. New paths of egress providing access to exit will be designed to the required Code minimums. To Be Confrimed.
Exit widths based on occupant load	Subsection 3.4.3.	Existing exit widths are new occupant load. To Be Confirmed.
Exit signs	Subsection 3.4.5.	Exit signs are provided in the existing facility. To Be confirmed.
Lighting of exits, lighting of access to exits and emergency lighting	Subsection 3.2.7.	Exit paths are provided with lighting. Emergency lighting is provided in the existing facility. To Be Confirmed. New egress paths providing access to exit will be provided with lighting and emergency lighting.

Early Warning and Evacuation	Code Reference	Evaluation
Fire alarm system	Subsection 3.2.4.	Existing building is provided with a fire alarm system. To Be Confirmed.
Smoke alarms	Subsection 9.10.19	Smoke alarms are required in each dwelling unit and within each sleeping room.
Travel distance and number of exits	Section 3.4.	Travel distance and number of exits are the same regardless of the change of use. See Egress and Exiting Section below.
Door release hardware requirements	Articles 3.3.1.12. and 3.4.6.16.	Existing door hardware provides free egress at all times. To Be Confirmed.

The performance level is reduced per Sentence 11.4.2.3.(4) if the proposed major occupancies is not separated from adjoining major occupancies by fire separations having fire-resistance ratings conforming to OBC Tables 3.1.3.1. and 11.4.3.4.B. **Architect to confirm.**

Sentence 11.4.2.3.(5) is not applicable as the existing building is not of combustible construction.

The performance level is reduced per Sentence 11.4.2.3.(6) since there is a change of major occupancy to Group C in a building over 3 storeys in building height.

4.3.4 Plumbing

The performance level of an existing building is reduced under Sentence 11.4.2.4.(1) where the plumbing is adversely affected by the extension, alteration, or repair of the building. The analysis of plumbing adequacy is outside the scope of this report and must be assessed by others.

4.4 Compensating Construction

4.4.1 Structural

The analysis of structural adequacy is outside the scope of this report and must be assessed by others.

4.4.2 Increase in Occupant Load

Since there is no expected increase in occupant load, there is no reduction in performance level and no need for compensating measures due to an increase in occupant load.

4.4.3 Change of Major Occupancy

The performance level of an existing building is reduced under Sentence 11.4.2.3.(3) where the early warning and evacuation systems (EW/EVAC) requirements for other Parts for the proposed major occupancy exceeds those of the existing building. See Section 4.3.3 for the EW/EVAC evaluation and Table 4.4.3.a. below for required upgrading.

Table 4.3.3.a.: OBC Sentence 11.4.3.4.(2) Additional Requirements for Change of Major Occupancy

Additional Change of Use Requirements Code Reference	Assessment
Subsection 3.2.6.	The existing building was constructed as a high building, in compliance with Subsection 3.2.6. The existing building system will be upgraded where required, in order to comply with Subsection 3.2.6.
Section 3.7.	Existing plumbing fixtures greatly exceeds the number of required washrooms for the proposed change of use. Some existing plumbing fixtures will be removed. Dwelling units will be provided with their own plumbing fixtures. Amenities will be provided with additional plumbing fixtures as required, to accommodate the expected occupant load.
Sections 3.11. and 3.12.	Not applicable as there is no public pool or public spa.
Sentences 6.2.2.1.(2), 6.2.3.9.(1) and 6.2.4.7.(10)	To Be Confirmed.
All Part 9 references in Sentence 11.4.3.4.(2)	Not applicable as this is not a Part 9 building.

Since the performance level of the existing building is being reduced due to a change of major occupancy to Group C in a building over 3 storeys in building height, the storeys subject to change shall be sprinklered in accordance with Sentence 11.4.3.4.(6).

Compensating construction based on the structural and plumbing analysis must be assessed by others.

The construction of new building systems is required to comply with all other Parts of the Code.

> *Building system* means a combination of elements or components that form a complete major division of construction in the design of a building or part of a building, including a structural or framing system, a waterproofing system, a drainage system, an exterior cladding system, a roofing system, a window system, a partition system, a corridor system, a stair system, a fire alarm and detection system, a sprinkler system or a heating, ventilation or air-conditioning system, a foundation system, a standpipe and hose system, a flooring system, a plumbing system, a sewage system or an electrical system.

4.5 Barrier-Free Requirements

The barrier-free requirements of Section 3.8 are applicable to this renovation project per Sentence 11.3.3.2.(2) since the floor areas are accessible by a passenger-type elevator, the area of renovation is more than 300 m^2 and new interior walls are proposed.

4.6 Analysis of Specific Features

4.6.1 Ground Floor Renovations

The ground floor of the existing building is undergoing both basic and extensive renovations including renovations to the public corridor leading from the exit stairs to the exterior. The existing commercial tenant spaces are remaining.

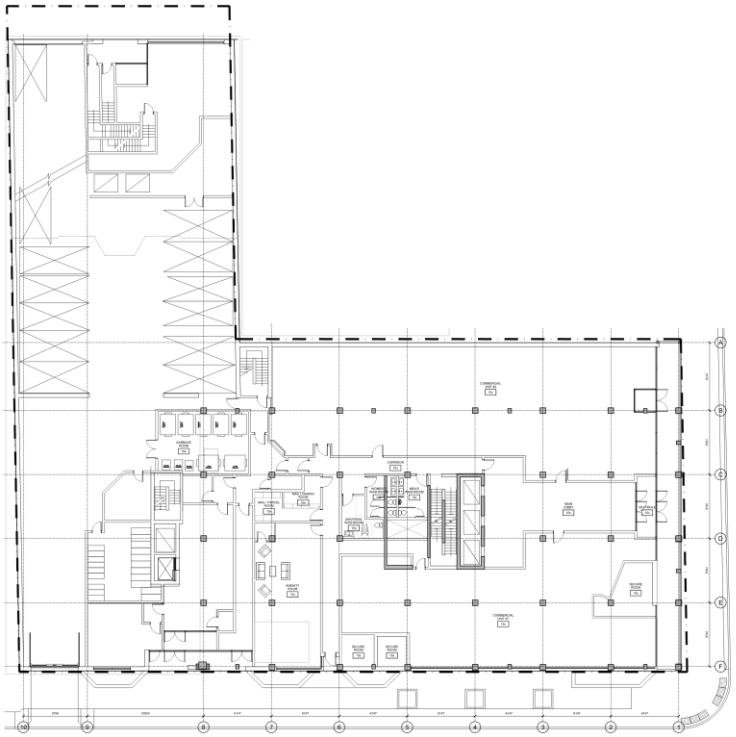


Figure 4.6.1. – Ground Floor Plan

4.6.2 Common Corridors

The 200 Elgin and 169 Lisgar buildings are connected via common public corridors on all floor levels. Since these corridors are considered new building systems (by definition), the requirements of Part 3 apply. See Section 5 for applicable requirements.

5. APPLICATION OF OBC PART 3

5.1 Building Size, Use and Occupancy

5.1.1 Building Concept

The main entrance for 200 Elgin Street is located on the Ground Floor facing North-East and discharging onto Elgin Street. The building includes one below-grade level consisting of amenity spaces such as a Games Room, Party Room and Theater Room as well as Bike Storage, Tenant Storage, an Administration Office, Building Service Rooms, and an existing mercantile tenant space. Part of the basement and floors 1 to 5 are used as a parking garage for the building. The ground floor consists of a main lobby and lounge, as well as building services such as a mail parcel room and garbage room. The ground floor also contains two commercial units with street access. The second floor consists of a gym, party room and residential suites. Floor levels 3 to 11 in 200 Elgin and 169 Lisgar are a single building consisting of residential suites with a common public corridor. A mechanical penthouse is located on the roof level of both 200 Elgin and 169 Lisgar portions of the building. The 200 Elgin portion of the building has a typical floor area of approximately 1300 m^2 and a building area (for the entire building) of approximately 2400 m^2.

5.1.2 Use and Occupancy

The building will contain two major occupancies:

- Group C (residential), one, two, and three-bed residential suites,
- Group E (mercantile) commercial space on the lower floor levels.

Subsidiary occupancies include the following which are complementary to the major occupancies:

- Group A, Division 2 (assembly), amenity rooms and lobbies,
- Group D (office), administrative office,
- Group F, Division 3 (low hazard industrial): storage rooms, mechanical and service rooms.

Subsidiary occupancies do not influence the construction requirements.

5.2 Occupant Load

The occupant load of the building will be based on the number of persons for which each area is designed, or by occupant load factors as per Clause 3.1.17.1.(c)(ii). The occupant load of residential suites is based on two persons per sleeping area, as permitted by Clause 3.1.17.1.(1)(b).

Common spaces are attributed an occupant load based on the use of rooms. The occupant load of the common spaces can be considered to contribute to the requirement for exit capacity but where the spaces are for the exclusive use of occupants, they need not be considered toward washroom calculations (non-simultaneous use). In the case of the amenity spaces, the occupants will be coming from elsewhere in the

building. For the purpose of this report, the occupant loads of these spaces are considered to contribute to the requirement for exit capacity but are not considered to increase the occupant load for washrooms, see Section 5.8.3.

Occupant load calculations are provided in Appendix A.

5.3 Construction Requirements

The building is to follow construction requirements applicable to the major occupancies of the building.

Sentence 11.2.1.1.(3) states that Articles 3.2.2.20. to 3.2.2.83. do not apply to the application of Part 11. As a reference and if the building were constructed new, the following construction requirements per Subsection 3.2.2. would apply.

The construction requirements for Group C (residential) and Group E (mercantile) major occupancies per Article 3.2.2.42. Group C, Any Height, Any Area, and Article 3.2.2.57. Group E, Any Height Any Area, would apply for the entire building if constructed new:

Construction:	Noncombustible construction
Sprinkler System:	Required
Floor assemblies:	Fire separations with a minimum 2-hour fire-resistance rating
Mezzanines:	Fire-resistance rating not less than 1-hour
Load-bearing assemblies:	Fire-resistance rating not less than the supported assembly.
Roof:	No fire-resistance rating required.

Roof top service rooms and load-bearing assemblies for the service rooms are not required to be designed with a fire-resistance rating even when the service room requires a fire separation from the remainder of the building (Sentence 3.1.7.5.(2) and Article 3.2.2.14.).

5.3.1 Noncombustible Construction

As specified in the Construction Requirements above, the building is required to be of noncombustible construction. Although the building is required to be of noncombustible construction, the Code permits the limited use of combustible materials as specified in Subsection 3.1.5. subject to various conditions and limitations. A summary of key components anticipated in this building include the following:

- The use of foamed plastic insulation in exterior walls is subject to the restrictions/permissions in Article 3.2.3.8. including the protection of the foamed plastic on the exterior side. Where foamed plastic insulation is permitted, the foamed plastic insulation must be protected from the adjacent space in the building. One acceptable material is 12.7 mm gypsum board mechanically fastened to an independent supporting assembly.
- In general floor areas, combustible wall finishes are permitted up to 25 mm in thickness and a maximum flame-spread rating of 150 on any exposed surface and any surface that could be exposed by cutting through the material.

- In general floor areas, combustible interior ceiling finishes are permitted up to 25 mm thickness and a maximum flame-spread rating of 25 on any exposed surface and any surface that could be exposed by cutting through the material. There is an exception that up to 10% of the ceiling area in each fire compartment is permitted to have a flame spread rating of up to 150.

Other limited combustible components are also identified in Subsection 3.1.5.

5.4 Fire Department Access

Fire Department Access and Principal Entrances are not changing as a result of the proposed renovations. Fire department access is provided from the fire route on Elgin Street on the North-East side of the building.

5.5 Spatial Separation

5.5.1 Limiting Distance

The limiting distance to the North property line is 6.1m. Table 3.2.3.1.D. permits fire compartments with up to 50 m² of exposing building face area to contain 100% unprotected openings. **Architect to Confirm percentage of unprotected openings.**

Spatial separation on Elgin Street and Lisgar Street sides to be confirmed as limiting distance appears to be greater than 9m. **Architect to Confirm.**

5.5.2 Exposure Conditions

Exposure conditions between compartments are not applicable where both compartments are sprinklered per Sentence 3.2.3.14.(3) and except as required for the protection of exit compartments as described in Section 5.8.8 below.

As the building is fully sprinklered, exposure conditions between non-exit compartments are not applicable.

5.6 Fire Separations and Compartmentation

5.6.1 Required Fire Separations and Fire-resistance Ratings

The applicable fire separations for spaces, based on intended use, are indicated in Table 1 while fire protection ratings of closures are shown in Table 2.

Table 5.6.1.: Location and Type of Fire Separations

Location	Fire Separations / Fire-Resistance Rating
Exit Stairwells	Fire separation with a minimum 2-hour fire-resistance rating per Sentence 3.4.4.1.(1)

Location	Fire Separations / Fire-Resistance Rating
Major Occupancy Fire Separation between Group C and Group E Major Occupancies	Fire separation with a minimum 2-hour fire-resistance rating per Table 3.1.3.1.
Residential Suites to Remainder of Building	Fire separation with a minimum 1-hour fire-resistance rating per Sentence 3.3.4.2.(1)
Public Corridors Serving Residential Suites	Per Sentence 3.3.4.2.(1), a 1-hour fire-resistance rating is required
Public Corridors Not Serving Residential Suites	Unrated fire separation per Sentence 3.3.1.4.(3) since storeys are sprinklered. This will apply where travel distance needs to be measured to a public corridor then to the exit e.g., max 45 m + max 45 m. A fire separation is not required for a public corridor if all parts of the floor area have maximum 45 metres to an exit per Clause 3.3.1.4.(4)(a) (Note: fire separations between the adjacent rooms and corridors are still applicable, for example the 1 hour rated fire separation between suites of residential occupancy and the corridor still apply)
Tenant Storage Rooms	Fire separation with a minimum 1-hour fire resistance rating per Sentence 3.3.4.3.(2) (Note: 1.5-hour where it abuts storage garage)
Janitor's Room	Unrated fire separation per Sentence 3.3.1.20.(3)
Vertical Service Spaces	Fire separation with a minimum 1-hour fire-resistance rating per Table 3.6.3.1.
Elevator Shafts	Fire separation with a minimum 1-hour fire-resistance rating per Table 3.5.3.1.
Elevator Machine Room	Fire separation with a minimum 1-hour fire-resistance rating per Sentence 3.5.3.3.(1)
Electrical Rooms (i.e. Service Room per Ontario Electrical Safety Code)	Fire separation with a minimum 1-hour fire-resistance rating per Sentence 3.6.2.1.(6)
Electrical Rooms for Low Hazard Equipment	No fire separation required where the equipment is not required to be located in a service room based on the Ontario Electrical Safety Code
Electrical Vault	Fire separation with a minimum 2-hour fire-resistance rating per Sentence 3.6.2.7.(2) where protected with an automatic extinguishing system, otherwise 3-hour.
Mechanical Rooms (containing fuel-fired equipment)	Fire separation with a minimum 1-hour fire-resistance rating per Sentence 3.6.2.1.(1)
Mechanical Rooms (not containing fuel-fired equipment)	No fire separation required.

Location	Fire Separations / Fire-Resistance Rating
Garbage Room (with chute discharge)	Fire separation with a minimum 2-hour fire-resistance rating per Sentence 3.6.3.3.(9)
Waste Chute Shaft	Shaft fire-resistance rating with a minimum 1-hour fire-resistance rating if the outlet in the discharge room is protected with an automatic closure held open with a fusible link or a minimum of 2-hour fire-resistance rating if no closure is provided at chute outlet per Sentence 3.6.3.3.(2)
Waste Intake Rooms	Fire separation with a minimum 45-minute fire-resistance rating per Sentence 3.6.3.3.(5)
Central Alarm and Control Facility	Minimum unrated fire separation required, but fire separation with a minimum 1-hour fire-resistance rating recommended best practice.
Room for Fire Alarm Control Panel (if different from CACF)	Fire separation with a minimum 1-hour fire-resistance rating recommended based on ULC-S524
Fire Pump Room	Fire separation with a minimum 2-hour fire-resistance rating recommended (NFPA 20) Sentence 3.2.5.19.(1)
Storage of Flammable and Combustible Liquids	Fire separations required in accordance with the Ontario Fire Code
Parking from other occupancies	Fire separation with a minimum 1.5-hour fire-resistance rating per Sentence 3.3.5.6.(1)
Vestibules to Exits at Parking Level	Unrated fire separation per Sentence 3.3.5.4.(1) where access is provided from the parking garage to an exit stair serving storeys above the parking garage.
Vestibules to Elevators at Parking Level	Unrated fire separation per Sentence 3.3.5.4.(1) where access is provided from the parking garage to an exit stair serving storeys above the parking garage.

Table 5.6.2.: Fire Protection Ratings

Fire-Protection Ratings Applicable to Closures in Fire Separations	
Fire-Resistance Rating of Assembly	**Fire-Protection Rating of Closure**
Unrated	No rating applicable
45-minutes	45-minutes
1-hour (between dwelling units and public corridor)	20-minutes
Other 1-hour	45-minutes
1 ½-hours	1-hour

Fire-Protection Ratings Applicable to Closures in Fire Separations	
Fire-Resistance Rating of Assembly	**Fire-Protection Rating of Closure**
2-hours	1½-hour

5.6.2 Separation of Public Corridors

Public corridors are generally required to be fire-separated from the remainder of the storey by a minimum 45-minute fire-rated separation (per Sentence 3.3.1.4.(2)), except that dwelling units are required to be fire-separated from the remainder of the building by a fire separation having a fire-resistance rating not less than 1-hour.

As permitted by Clause 3.3.1.4.(4)(a) the fire separation between the public corridor and rooms not otherwise required to be fire separated from the remainder of the building is exempted in a sprinklered building provided the travel distance of 45 m is satisfied from any point in the floor area to an exit.

5.6.3 Doors and Windows as Closures

Doors in exit stair shafts require a 1.5-hour fire-protection rating. In accordance with Table 3.1.8.15., a temperature rise limit of 250˚C after 1-hour and limits on the area of wired glass (0.0645 m^2) or glass block apply these doors and any adjacent sidelights except as noted below.

- Temperature rise limits and glass area limits required by Articles 3.1.8.15 and 3.1.8.16. are permitted to be waived waived for a closure between an exit enclosure and an enclosed vestibule or corridor provided,
    - The vestibule or corridor is separated from the remainder of the floor area by a fire separation having a fire-resistance rating not less than 45-minutes,
    - The fire separation contains no wired glass or glass block within 3m of the closure into the exit enclosure, and
    - The vestibule or corridor contains no occupancy.

Residential suite closures are required to have a minimum 20-minute fire-protection rating. Within a dead-end corridor, where the corridor provides the only access to exit in accordance with Table 3.1.8.15., no temperature rise limits or limits on area of wired glass or glass block apply to the suite doors.

All doors and door opening hardware on fire rated doors are to be listed and labeled to indicate that they are appropriate for use as a fire rated door. All doors in fire separations are to be provided with self-closing devices (Sentence 3.1.8.11.(1)) and equipped with positive latching mechanisms which are designed to hold the door in the closed position after each use (Sentence 3.1.8.13.(1)).

5.6.4 Continuity of Fire Separations

All vertical fire separations are to be continuous through horizontal service spaces such as plenums or other horizontal concealed spaces created by construction per Sentence 3.1.8.3.(1) but may terminate at the underside of a continuous horizontal fire separation having the same rating as required for the vertical

assembly as permitted by Sentence 3.6.4.2.(2). Where the vertical assembly is only required to have a maximum 45-minute fire-resistance rating, the vertical assembly may terminate at a horizontal fire rated assembly having a minimum 30-minute fire-resistance rating. The continuity of a vertical fire separation extending through a horizontal service space is to terminate at smoke tight joints where the fire separation abuts a floor, roof slab or roof deck per Sentence 3.1.8.3.(2).

Shafts that penetrate a fire separation are to be continuous through horizontal service spaces and terminate at smoke tight joints where the shaft abuts or intersects with a floor, roof slab or roof deck per Sentence 3.1.8.3.(3).

All fire separations are to be continuous to another fire separation, a floor, a ceiling, a roof, or an external wall assembly per Sentence 3.1.8.3.(4).

5.6.5 Service Penetrations

Service penetrations through fire separations are to be firestopped by a listed firestop system that has an F rating not less than the fire protection rating for closures in the fire separation in conformance with Table 2 above per Subsection 3.1.9 of the OBC.

5.6.6 Fire Dampers

Fire dampers are to be installed in ducts or air transfer openings that penetrate assemblies that are required to be fire separations per Sentence 3.1.8.7.(1) and these dampers are required to be rated as closures per Table 3 above in accordance with Sentence 3.1.8.4.(2) and installed in conformance with Article 3.1.8.9.

Exceptions for fire dampers apply per Article 3.1.8.8. and include exceptions for washroom exhaust ducts, ducts penetrating a fire separation that is not required to have a fire-resistance rating.

5.6.7 Smoke Dampers

Smoke dampers, or combination smoke and fire dampers, are to be installed in conformance with Article 3.1.8.9A. in ducts or air transfer openings that penetrate assemblies that are required to be fire separations per Sentence 3.1.8.7.(2) where the fire separation: separates a public corridor, contains an egress door referred to in Sentence 3.4.2.4.(2) or serves an assembly or residential occupancy.

Exceptions for smoke dampers apply per Article 3.1.8.8A. and include exceptions for ducts serving commercial cooking equipment, ducts in which all inlet and outlet openings serve the same fire compartment, some ducts that penetrate a vertical fire separation and noncombustible branch ducts that satisfy listed criteria.

5.7 High Building Features

Since the building is changing from a Group D major occupancy to a Group C major occupancy, and the floor level of the uppermost storey is more than 18 m above grade, the building is now considered a high building per Clause 3.2.6.1.(1)(d). **Architect to confirm if any high building features are present in the existing building. Office buildings between 18 m and 36 m measured from grade to the uppermost floor level may meet the high building requirements depending upon the number of persons in the building ad the cumulative exit width.**

As such, key fire and life safety features are required to be implemented that are intended to limit the potential for smoke movement between floors, to protect exits for evacuating occupants and for responding firefighters, and to provide additional protection for the integrity of building systems.

The following key building features are applicable per Subsection 3.2.6.:

5.7.1 Limits to Smoke Movement for Exit Stairshafts

5.7.1.1 Separation of Below and Above Grade Exit Stairwells

Exit stair shafts that extend both above and below the lowest exit level of the building are to be fire separated between the above and below grade portions by a fire separation having a minimum fire-resistance rating of 2-hours as required by Supplementary Standard SB-4.

The ground floor is the lowest exit level. The upper portions and lower portions of the stair shafts are separated at the Ground floor level. **Architect to confirm.**

5.7.1.2 Pressurization of Stairwells Below Lowest Exit Level

In accordance with Sentence 3.2.6.2.(2) exit stairwells that serve the storey below the lowest exit level are to be provided with mechanical pressurization designed to limit the potential for smoke infiltration of more than 1% by volume of contaminated air from the fire floor, for a period of not less than 2-hours following the start of a fire. The design basis is prescribed to be the January design temperature on a 2.5% as per Supplementary Standard SB-1.

Pressurization fan design characteristics and other design details are found in Supplementary Standard SB-4 or, alternatively, an engineered approach, using modern smoke movement principles can be applied.

Pressurization fans are to be connected to emergency power per Section 4.9.5 of this report and electrical conductors are to be protected in accordance with Section 4.7.8 of this report.

Pressurization fans and ducts serving the pressurization system are considered to be an extension of the exit enclosure and are intended to be located within the stairwell compartment, or fire separated to the same extent (i.e., 2-hour fire-resistance rating) as the exit itself from the remainder of the building. Fire dampers are not to be installed in the system. Separate pressurization fans and ducts are to serve separate exits.

Exit stairs serving the basement level are required to have pressurization fans as noted above.

5.7.1.3 Natural Pressurization of Above Grade Stairwells

Above grade exit stairwells are required to be provided with a vent to the outdoors at or near the base of the stairwell, opening to the exterior, that has an operable area of not less than 0.05 m^2 per door opening between the stairwell and an adjacent floor area but not less than 1.8 m^2. The opening can be a door that is designed to be able to be opened manually and can remain in the open position (such as a locking self-closing device) or a louvered vent (having sufficient operable area) designed to be opened manually. Exit stairwells that are connected to the exterior by exit corridors

are required to have the 1.8 m^2 open area between the stair and the exit corridor, and between the corridor and the exterior.

Automatic openers can be employed with a means to activate at the CACF room.

Natural pressurization provided at the exit level, as described above, will protect the 1 storey below grade portions of the north stairwells as well.

5.7.1.4 Public Corridor Make-up Air

Air handling systems providing make-up to public corridors are required not to shut down automatically upon activation of the fire alarm system per Sentence 3.2.6.2.(5.1).

5.7.2 Elevator Recall

Although the OBC requires only manual elevator recall in this sprinklered building per Sentence 3.2.6.4.(1), all elevators in the building will be required to obtain an operating permit from the Technical Standards and Safety Authority (TSSA). Per TSSA requirements, which are independent and not compatible with the OBC, all elevators are to be equipped with automatic elevator recall.

Per TSSA Regulations (CSA-B44) the recall function is to be initiated automatically upon actuation of smoke detectors installed in elevator lobbies on all floors. Alternative floor recall is to be provided and initiated in the event of smoke detector activation within the lobby of the main recall level.

5.7.3 Firefighters' Elevator

A designated elevator for use by firefighters is required by Sentence 3.2.6.5.(1).

The firefighters' elevator is required to be designed with a usable platform area of 2.2 m^2 and must be capable of carrying not less than 900 kg from the entry level to the topmost storey served by the elevator in less than 1-minute. The firefighters' elevator is proposed to be protected by providing a 1-hour interlock on each shaft opening on all elevator doors, in accordance with Clause 3.2.6.5.(3)(a).

5.7.4 Venting to Aid Firefighting

Per Article 3.2.6.6., a means of venting each floor area, including floor areas below grade, to the outdoors, is required. Openable window and doors, provided on 1% of the elevation, are proposed to provide venting to aid firefighting. Where the building exhaust system is used for venting, this system will require emergency power and protection of electrical conductors, see Section 5.9.4.

5.7.5 Central Alarm and Control Facility

A central alarm and control facility (CACF) is required to be provided on the same level as the principal entrance designated for firefighter access in a location that is in close proximity to the principal entrance so that it is readily accessible for firefighters (Sentences 3.2.6.7.(1) and (2)).

It is *recommended* that a 1-hour fire-resistance rating be provided to protect the integrity of equipment within the room. If the fire alarm control panel is located within this room, ULC-S524 specifies a 1-hour fire rated

separation between the room containing the fire alarm control panel and the remainder of the building for this reason. This represents good practice in fire protection design and so is *recommended*.

The CACF room is *recommended* to be designed to avoid exposure to background noise that may occur during fire emergency conditions. It is also *recommended* that this room be designed with a separate air supply in the event of fire exposure in the general location of the CACF room.

Features of the CACF include the following (details per Sentence 3.2.6.7.(2)):

- Means to control voice communication systems (both paging and two-way communication)
- Visual indicators for alert and alarm signals
- Switch to silence audible portion of local signals.
- Visual indicator that elevators are on emergency recall.
- Fire alarm annunciator.
- Switch to transmit alert and alarm signals to the Fire Department
- Switch to release hold-open devices.
- Switch to manually activate alarm signals selectively to any zone or zones.
- Means to silence alarm signals.
- Means to actuate auxiliary equipment such as stairwell pressurization, smoke venting, automatic door opener/holder features etc.
- Means for two-way communication with every elevator car.
- Visual indicators for each waterflow signal of the sprinkler system
- Audible and visual indicators for supervisory signals or trouble signals for sprinkler system and standpipe systems.
- Visual indicator that any supervisory or trouble signal has been silenced.

5.7.6 Voice Communication System

A voice communication system is required in accordance with Article 3.2.6.8. as this building will exceed 36 m in overall building height. The voice communication is required to consist of one-way communication to all zones or any single zone, and two-way communication from each floor area to the central alarm and control facility per Article 3.2.4.23.

5.8 Egress and Exits

5.8.1 Number of Exits

Exits are to be provided based on the provisions of Article 3.4.2.1. All floor areas require access to not less than two exits. Door hardware is required to be designed to permit access to two exits in an emergency.

Each storey has access to three exit stairs which discharge to the exterior via exit corridor on the ground floor level. **Architect to confirm exit discharge locations.**

5.8.2 Travel Distance

The maximum travel distance is permitted to be 45 metres per Sentence 3.4.2.5.(1) as the building will be fully sprinklered.

The travel distance is permitted to be measured from an egress door of a room or suite where the room or suite opens to a public corridor that is fire separated from the remainder of the building by a fire separation as described in Section 5.6 of this report.

5.8.3 Exit Capacity and Exit Width

The following exit capacity factors are applicable from Article 3.4.3.2.:

- 6.1 mm/person for doors,
- 8 mm/person for stairs having a maximum rise of 180 mm and a minimum run of 280 mm, and
- 9.2 mm/person for all other stairs (i.e. existing stairs).

Architect to confirm existing stair conditions.

The following minimum exit widths are also applicable:

- Exit stairs are required to have a minimum width of 1,100 mm.
- Exit corridors and passageways leading from exit stairwells to the exterior and to a safe open area protected from a fire originating within the building are required to have a minimum width of 1,100 mm.
- Exit doors are required to have a minimum width of 790 mm (Clause 3.4.3.2.(7)(g)). unless these doors are in a barrier-free path of travel, in which case the doorways are required to provide a clear width, exclusive of panic hardware or door stops, of 860 mm.

See Appendix B for exit capacity calculations.

5.8.4 Distance Between Exits

Where a floor area is not served by a public corridor, the minimum distance between exits on a floor area is to be not less than one half of the maximum diagonal dimension of the floor area and is measured as the shortest distance that smoke will travel between exits per Sentence 3.4.2.3.(1).

Where a public corridor is provided, the minimum distance between exits on that floor is permitted to be reduced to 9 metres as permitted by Clause 3.4.2.3.(1)(a).

5.8.5 Integrity of Exits

In accordance with Article 3.4.4.4., exits are required to be designed with minimal penetrations and openings to reduce the risk of fire spread into the exit.

Fuel-fired appliances are not permitted within an exit stairwell. An exit is not permitted to be used as a plenum for a heating, ventilating or air-conditioning system. An exit is required to be designed for no purpose other than for exiting except that an exit is permitted to be designed to serve as an access to a floor area.

Service rooms, service spaces, storage rooms, washrooms, toilet rooms, laundry rooms and similar ancillary rooms are not permitted to open directly into an exit.

5.8.6 Exit Through a Lobby

In accordance with Article 3.4.4.2., not more than one exit from a floor area is permitted to where the following requirements are satisfied:

- The lobby floor is to be not more than 4.5 m above grade,
- The path of travel through the lobby is to be not more than 15 m,
- Adjacent rooms or premises having direct access to the lobby cannot contain a residential occupancy or an industrial occupancy,
- It cannot be located within an interconnected floor space,
- A fire separation is to be provided between the lobby and the exit leading into the lobby, and
- The lobby is to meet the requirements for exits, except that:
    - rooms other than service rooms and storage rooms are permitted to open onto the lobby,
    - the fire separation between the lobby and adjacent occupancies nee not have a rating where the lobby and adjacent occupancies are sprinklered, and
    - passenger elevator entrances are permitted to open onto the lobby where the elevator entrance doors are designed to remain closed except when loading and unloading.

The proposed exit through a lobby configuration at the base of Stair #2 conforms to the requirements of 3.4.4.2. for an exit through a lobby.

Architect to confirm if existing lobby is designed as an exit. As well as exit path throughout the ground floor. Exit paths on ground floor are not currently clearly shown.

5.8.7 Exit Discharge

Exits are to discharge directly to the exterior, or via an exit corridor or exit lobby, where permitted in accordance with Article 3.4.4.2.

The distance between exterior doors leading from two or more exit stairs serving the same floor area is required to be not less than 9 m, or 6 m in a sprinklered building where the exterior doors are located within 15 m of a street per Sentence 3.4.2.3.(4).

Architect to confirm.

5.8.8 Protection of Exits

Openings in exits, including windows and doors and other ventilation openings are to be protected from openings in adjacent compartments by a distance of not less than 3 metres. This is particularly important in areas adjacent and within 135° of the exit doors leading from exit corridors.

5.8.9 Number of Means of Egress

Residential suites are permitted to have a single egress door leading to a public corridor.

Rooms and spaces used for assembly use that have a maximum occupant load of not more than 60 persons, a maximum travel distance to an egress door of not more than 25 m, and a maximum area of 200 m^2 are permitted to be served by a single egress door.

Storage and service rooms with a maximum travel distance to an egress door of not more than 25 m, and a maximum area of 300 m^2 are permitted to be served by a single egress door.

Where two egress doors are required (i.e., the room or space does not meet the above provisions), the egress doors are required to be situated remote from each other and separated by a distance of not less than 1/3 the maximum diagonal distance of the area served.

5.8.10 Door Swing

The following provisions are applicable to door swing:

- Exit doors are to open in the direction of exit travel and swing about the vertical axis (Sentence 3.4.6.12.(1)).
- Doors serving rooms containing an occupant load more than 60 persons are to swing in the direction of egress travel (Sentence 3.3.1.10.(2)).
- Where double doors are installed in a corridor that provides access to exit in both directions, the door leaves are to swing in opposite directions, with the door on the right-hand side swinging in the direction of travel to the exit per Sentence 3.3.1.10.(4).

5.8.11 Door Hardware

Exit doors (including the principal entrances) are required to be readily opened from the inside with not more than one releasing operation and without requiring keys, special devices or specialized knowledge of the door opening mechanism per Sentence 3.4.6.16.(1).

It is also noted that doors in a barrier-free path of travel are required to be designed so that they can be opened without tight grasping and twisting of the wrist as required by Sentence 3.8.3.3.(3).

Other key door hardware provisions (not applicable to dwelling units) are indicated below in addition to hardware requirements applicable to doors in fire separations (See Section 5.6 of this report):

- Dwelling unit entry doors are required to be designed so as not to lock automatically. (Sentence 3.3.4.5.(1))

- Exit doors leading from exit stairs to the exterior are required to have panic style hardware, since the building has an occupant load of more than 100 persons per Sentence 3.4.6.16.(2).

- Doors from rooms, spaces, or floor areas of assembly occupancy where the occupant load is more than 100 persons, are required to be provided with panic type hardware (Sentence 3.3.2.6.(1)).

- Any dead bolts or supplementary locking hardware on egress doors are required to be interconnected to release with the operation of the hardware per Sentence 3.3.1.12.(3) and 3.4.6.16.(1), with the exception that dwelling units are permitted to have additional releasing devices per Sentence 3.3.1.12.(4).

- Electric strike security hardware is permitted on exit and egress doors provided the doors allow free egress in the direction of egress travel at all times. A door with an electric strike in a fire separation is required to be designed to fail secure in order to maintain the integrity of the fire separation with a positive latching mechanism.

- Electromagnetic locking devices are permitted with release features, reset switch, signage etc. per Article 3.4.6.16.(4). Note that electromagnetic locks are not permitted on the exterior exit doors from exit stairs since the building has an occupant load more than 100 and serves a Group C occupancy other than a retirement home.

5.8.12 Sliding Doors

Sliding doors are provided at the principal entrance to the building. An exit door is permitted to be a sliding door provided it is designed to swing on the vertical axis when pressure is applied to the door in the direction of exit travel and the door is labelled as a swinging door, as per 3.3.1.11.(1) as referenced by 3.4.6.14.(1).

5.8.13 Stair Features

Architect to confirm existing stair conditions if acceptable.

The following stair requirements came into force on January 1, 2022.

As per Subsection 3.4.6., exits serving floor areas are subject to rise/run limits, handrails, guards, and other pedestrian safety features. Stairs are to have a minimum rise of 125 mm and a maximum rise of 180 mm. Stairs are to have a minimum run of 280 mm and a maximum of 355 mm. Stairs are to have uniform rise and run per flight.

Handrails are to be provided on both sides of stairs 1,100 mm or more in width and are to be located at a height between 865 and 1,070 mm. Handrails are to be shaped per one of the options of Sentence 3.4.6.5.(5).

Guards are to be provided on both sides of egress and exit stairs and are to be designed to prevent the passage of a 100 mm sphere and prevent climbing between 140 and 900 mm above the protected surface.

Other stair configuration, handrail and guard requirements apply.

5.8.14 Cross Over Floor Access

Stairwell doors are permitted to be secured against re-entry to the floor areas except that crossover access is required such that the travel distance up or down to an unlocked door from within an exit stair is not more than two storeys, per Sentence 3.4.6.18.(1)

These floors that are required to be accessible are required to permit free egress out of the stair, or these doors are permitted to be equipped with electromagnetic locking hardware openable upon activation of a manual station within the exit and within 600 mm of the latch side of the door equipped with the electromagnetic lock, and signage is provided (3.4.6.16.(4)).

Locking devices are not proposed on stair access doors and cross over access is proposed to be available from within the exit stairs onto all floor levels.

5.8.15 Floor Identification

Floors are to be identified with Arabic numeral and exit stair shafts be designated by upper case letters. The floor and stair identification are to be permanently mounted on each side of doors to exit stair shafts. Numerals and lettering are to be 60 mm high, raised approximately 0.7 mm above the surface, be mounted at a height of 1,500 mm and be contrasting in colour to the background (Sentences 3.4.6.19.(1) and (2)).

5.9 Fire Protection Systems and Emergency Power

5.9.1 Fire Alarm System

A fire alarm is to be provided based on the building height and occupant load (Sentence 3.2.4.1.(2)).

The fire alarm system may be a single stage or a two stage system as per Sentence 3.2.4.3.(1).

Smoke detectors are to be installed in the following locations:

- At the top of each exit stair shaft (Clause 3.2.4.12.(1)(e)) and at every 3rd storey within the exit stair shaft per ULC-S524.
- In public corridors in portions of this building classified as a Group C major occupancy (Clause 3.2.4.12.(1)(d)).
- In each elevator machine room (Clause 3.2.4.12.(1)(g).
- At doors equipped with hold-open devices, serving residential occupancies (Sentence 3.1.8.12.(3)).
- As required to conform to TSSA requirements for elevator recall.

Duct smoke detectors are to be installed where an air handling system serves more than one storey or serves more than one suite in a storey.

Fire detectors and heat detectors are not required as the building will be fully sprinklered and the sprinkler system will be electrically supervised as permitted by 3.2.4.16.(1).

Audible signals are to be installed throughout the floor areas and are required to provide a minimum 75 dBA sound pressure level within dwelling units and otherwise, 65 dBA sound pressure level but not less than a minimum sound pressure level of 10 dBA over the ambient noise level as required by Article 3.2.4.20.

Visual signals are required to supplement audible signals in the following locations:

- in public corridors serving Group A and C occupancies (i.e. in all corridors serving residents),
- in corridors used by the public and floor areas or part thereof where the public may congregate in a Group A occupancy (i.e. throughout the amenity area),
- in universal washrooms, and
- in the living space in residential suites in Group C major occupancy apartment buildings.

Visual signals are also required to supplement audible signals where the ambient noise may be more than 87 dBA.

Manual pull stations are required in the following locations per Sentence 3.2.4.18.(1):

- Near the principal entrance of the building
- Near each required exit of the building.

The fire alarm system is required to have the following features:

- An annunciator is required in the vicinity of the principal entrance per Sentence 3.2.4.9.(1).
- Electrical supervision is required for the fire alarm system including, but not limited to all water flow and valve tamper switches per Article 3.2.4.10.
- The fire alarm system is to be monitored by an independent central station as per Article 3.2.4.8.
- Emergency power for the fire alarm system must be capable of providing supervisory power for a minimum of 24-hours followed by 2-hours under full load per Article 3.2.7.8.

Within every residential suite, smoke alarms are required in each sleeping room and if served by a hallway, in the hallway, unless smoke detectors are installed per Sentence 3.2.4.22.(6). If more than one smoke alarm is within a suite, they are required to be interconnected. The smoke alarms are required to have a visual signaling component.

5.9.2 Sprinkler System

The building is to be sprinklered per the construction requirements of Subsection 3.2.2. of the OBC.

The sprinkler system is to be designed, installed, tested, and commissioned in accordance with NFPA 13 and OBC Articles 3.2.5.13 to 3.2.5.16.

Adequate water supply is to be provided to serve the sprinkler system plus inside and outside hose allowance. It is noted that pumping capacity is not required to serve outside hose allowance but is required to be suitable for the sprinkler system and inside hose allowance per NFPA 13.

Where used, window sprinklers are required to be zoned separately and water supply to serve window sprinklers is required to be in addition to water supply for the sprinkler system on the balance of the floor area per ULC-C263.1. All conditions of the listing and ULC-C263.1 are applicable.

5.9.3 Standpipe System

The building is to be provided with a standpipe system since the building is greater than 3 storeys and 14 metres in building height as per Sentence 3.2.9.1.(1).

Characteristics of the standpipe system include the following (additional requirements apply):

- The standpipe system is to consist of one or more vertical risers to fire hose cabinets located on the floor area.
- Hose cabinets are required to be located within 5 metres of the exits (except on Level 1) and so that there is coverage of all areas of the building within 33 metres of the hose cabinet (based on a 30 meter hose and 3 meter hose stream length).
- The hose cabinets are required to contain a 65 mm hose connection for Fire Department use and 38 mm hose up to 30 metres in length (requirement to depend on location of hose stations).
- Hoses are to be listed and are required to be provided with an adjustable fog nozzle.
- Minimum pressure and flow are subject to the conditions of Article 3.2.9.6. and 3.2.9.7.

Architect to confirm if there is an existing standpipe system.

5.9.4 Emergency Power and Protection of Electrical Conductors

5.9.4.1 Power Supply

An emergency generator is required to be capable of supplying power under full load for not less than 2-hours for this building for the following systems per Article 3.2.7.9:

- Elevators,
- Water supply for firefighting provided by an electric fire pump,
- Fans required to maintain air quality, and
- All fans required for smoke venting as a high building.

The emergency electrical power system is to be installed in conformance with CSA C282 “Emergency Electrical Power Supply for Buildings”. Emergency audible and visual trouble indication are required for the power supply per Article 3.2.7.5.

5.9.4.2 Protection of Electrical Conductors

Electrical conductors for the following systems are required to conform to ULC-S139 to provide a circuit integrity rating of not less than 1-hour, or to be located in service space with a 1-hour rated fire separation and containing no other combustible materials (per Article 3.2.7.10.):

- Fire alarm system,
- Smoke venting fans,
- Fire pump, and
- Emergency lighting.

Electrical conductors for the operation of the firefighters' elevators are to be either installed in fire separated vertical service spaces and which do not contain other combustible material or protected against exposure for a period of not less than 1-hour when exposed to a standard fire exposure (Sentence 3.2.6.5.(6)). Where fire rated conductors are used, the protection must extend from the service entrance of the emergency power supply, or the normal service entrance of the normal power supply, to the equipment used.

5.9.4.3 Emergency Lighting

Emergency lighting is to be provided in the following locations as required by Sentence 3.2.7.3.(1):

- Exits,
- Principal routes provided access to exits in an open floor area,
- Service rooms,
- Corridors used by the public,
- Corridors serving classrooms,
- Public corridors,
- Group A, Division 2 occupancy areas where the public may congregate where these areas have an occupant load greater than 60,
- Food preparation areas in commercial kitchens,
- Internal corridors or aisles serving as principal routes to exits in business and personal services occupancies that is subdivided into rooms or suites of rooms and is not served by a public corridor, and
- Washrooms with fixtures for public use.

A minimum average level of illumination of 10 lx and minimum level of illumination of 1 lx is to be provided per Sentence 3.2.7.3.(1) and (3).

An emergency power supply is to be provided for emergency lighting so as to provide a minimum 2-hour duration following loss of normal power per Sentence 3.2.7.4.(1).

5.9.5 Exit Signs

Exit signs are to be placed over or adjacent to every exit door. Exit signs are to be placed so as to be visible from the exit approach and are to be internally illuminated, externally illuminated, photoluminescent (externally illuminated) or self-luminous.

Exit signs will have the following characteristics:

- Exit signs are to be visible from the exit approach,
- Consist of a green pictogram and white graphic symbol meeting the visibility specifications referred to in ISO 3864-1, "Graphical Symbols – Safety Colours and Safety Signs – Part 1: Design Principles for Safety Signs and Safety Markings" and the dimensions indicated in ISO 7010, "Graphical Symbols – Safety Colours and Safety Signs – Safety Signs Used in Workplaces and Public Areas", and
- Exit signs are to be illuminated continuously while the building is occupied.

An emergency power supply is to be provided for exit illumination (either internal or external except as permitted for photoluminescent or self-luminous signs) so as to provide a minimum 30-minute duration following loss of normal power.

5.10 Washroom Requirements

Water closets and lavatories are required to be provided based on occupant load and type of use of the building in accordance with Subsection 3.7.4.

5.10.1 Residential Suites

All residential suites are provided with their own washroom facilities satisfying the requirements for dwelling units in Article 3.7.4.5.

5.10.2 Amenity Spaces

The amenity spaces are intended to be occupied solely by residents of the building and their guests. As such, an occupant load has not been assigned for washroom calculation purposes since these occupants have access to their suite washroom.

Architect to confirm if washrooms will be provided for amenity.

5.11 Barrier-Free Requirements

5.11.1 Areas Requiring a Barrier-Free Path of Travel

A barrier-free path of travel is to be provided throughout the entrance storey, throughout all normally occupied floor areas (excluding the inside of residential suites, except the designated 15% of barrier-free suites), in corridors on all Group C major occupancy storeys, and to at least one parking level served by a passenger elevator.

The OBC requires 15% of all of the dwelling units in an apartment building to have a barrier-free path of travel extending into the inside of the suites (Sentence 3.8.2.1.(5)) and leading to at least one bedroom, one bathroom, a living room or space, and a dining room or space. Sentence 3.8.2.1.(6) requires that a 1,500 mm diameter circle is required in one washroom in these designated suites. The doors to and inside these suites require an 860 mm clear width as well as the 300mm / 600mm clearances beside the latch.

A barrier-free path of travel is NOT required to the following areas:

- service rooms,
- elevator machine rooms,
- janitors' rooms,
- service spaces, and
- roof spaces.
- Portions of a floor area with fixed seats in an assembly occupancy where these portions are not part of the barrier-free path of travel to spaces designated for wheelchair use, adaptable seating or the storage of wheelchairs and mobility assistive devices,
- On the inside of a suite of residential occupancy, or
- Portions of a floor area that are not at the same level as the entry level, provided amenities and uses provided on any raised or sunken level are accessible on the entry level by means of a barrier-free path of travel.

5.11.2 Protection for Floor Areas with a Barrier-Free Path of Travel

The protection for floor areas with the barrier-free path of travel for every floor area above and below the first storey is provided by the sprinkler protection per Sentence 3.3.1.7.(3).

5.11.3 Barrier-Free Features

Features applicable to the barrier-free path of travel include the following:

- **Entrances**: Per Sentence 3.8.1.2.(1) if the number of entrances is between 1 and 3, one of the entrances is required to be barrier-free. If there are 4 or 5 entrances to the building, 2 are required to be barrier-free. If there are more than 5 entrances to the building, not less than half of the entrances are to be barrier-free. The barrier-free entrance doors are to be equipped with a power door

operator. Power door operators are to be provided on both the inside and the outside of vestibules. There are two existing barrier-free entrances, and three new barrier-free entrances are proposed (five total).

- **Doors**: Doors in a barrier-free path of travel are to be provided with a clear width of not less than 860 mm when in the open position.
- **Doors**: A minimum clearance of 300 mm is to be provided on the push side and a minimum clearance of 600 mm is to be provided on the pull side beside the latch of all doors in a barrier-free path of travel, where the doors are not equipped with power door operators.
- **Doors**: Doors in a barrier-free path of travel are to be designed so that they can be opened without tight grasping and twisting of the wrist.
- **Width**: Every barrier-free path of travel is to have an unobstructed width of at least 1,100 mm for the passage of wheelchairs. All wall mounted fixtures and obstructions are not to project more than 100 mm into a corridor or access aisle unless located above 1,980 mm.
- **Width**: In all corridors less than 1,600 mm in width, an area measuring 1,800 mm by 1,800 mm passing point is to be provided at 30 m intervals.
- **Controls**: The maximum mounting height of all controls such as light fixtures, etc. is to be a minimum of 900 mm and a maximum of 1,100 mm, and at 1,200 mm above finished floor for thermostats or manual pull stations.
- **Path of Travel**: Sills greater than 13 mm in height or other floor obstructions are not permitted in any barrier-free path of travel.
- **Vision Panels**: Where vision panels are provided in doors in a barrier-free path of travel, the vision panel is to be located so that the bottom of the panel is a maximum of 900 mm above the floor.
- **Residential Suites**: 15% of suites in the residential occupancy are to be barrier-free per Sentence 3.8.2.1.(5). These suites require a barrier-free path of travel from the suite entrance door into at least one bedroom, a kitchen, a living space, and an accessible washroom designed to meet Sentence 3.8.2.1.(6), which requires a 1,500 mm clear turning circle.
- **Vestibules**: Vestibules in a barrier-free path of travel are to be arranged so that the distance between two doors in series a minimum of 1,500 mm, plus the width of any door that swings into the space, in the path of travel from one door to another door.
- **Parking Levels**: A barrier-free path of travel is required on the parking levels. The vehicular entrance to and egress from the parking level is to have a minimum vertical clearance of 2,100 mm.

5.11.4 Barrier-Free Washrooms

Barrier-free washroom requirements are as follows:

- At least one universal washroom is required for this building based on the number of floor areas that have amenities. A universal washroom is to be designed to Article 3.8.3.12. and key features are a minimum 1,700 mm dimension, minimum 1,700 mm clear turning circle, and space for an adult change table, and a power door operator.

- Washrooms within dwelling units are not required to be barrier-free except within the 15% of suites that are designated as barrier-free. Key features for this dwelling unit washroom design are an 860 mm clear width doorway, and a 1,500 mm diameter open space for a wheelchair to turn per Sentence 3.8.2.1.(6).

END OF REPORT

Morrison Hershfield Limited

[DRAFT]

Noah Jalbert, P. Eng.
Code Consultant

[DRAFT]

Nicole Lowey, Arch. Tech., CBCO
Code Consultant

[DRAFT]

Glenn Somerton, P. Eng.
Senior Code Specialist

Appendix A: Occupant Load Calculations

Occupant Loads:

Floor Level	Area Name	Area (m2)	Factor (m2/p)	Load
Parking Garage				
	Amenity Theatre	40	See Clause (1)(a)	16
	Games Room	212	N/A	60[1]
	Bike and Tenant Storage	445	46	10
	Service Rooms	103	46	2
	Admin Office	23	9.3	2
	Existing Tenant	246	1.85	133
Subtotal				**225**
Ground Floor				
	Commercial Unit #1	251	3.7	68
	Commercial Unit #2	363	3.7	98
	Mail Room	18	46	0
	Amenity Room	76	1.85	41
Subtotal				**210**
Second Floor				
	1-Bedroom Suites	4	2/bed	8
	2-Bedroom Suites	5	2/bed	20
	Gym	108	4.6	23
	Party Room	90	0.95	95
Subtotal				**147**
3rd to 5th				
	1-Bedroom Suites	6	2/bed	12
	2-Bedroom Suites	6	2/bed	24
Subtotal (Per Storey)				**36**
6th to 11th				
	1-Bedroom Suites	6	2/bed	12
	2-Bedroom Suites	7	2/bed	28
Subtotal (Per Storey)				**40**
MPH				
	Mechanical	257	46	6
Subtotal				**6**
Grand Total				**936**

[1] Room limited to 60 occupants due to single egress door.

Appendix B: Exit Capacity Calculations

Exit Capacity:

Level	Exit facility	Width (mm)	Factor*	Rounded	Total
Basement	Scissor Stair #1	1100	9.2	119	
	Scissor Stair #2	1100	9.2	119	
	Stair (169 Lisgar)	1050	9.2	114	
					352
Ground Floor	Lobby Exit Doors	2700	6.1	442	
	Commercial Unit #2 Exit Doors	1800	6.1	295	
	Exit Door (Single)	900	6.1	147	
	Exit Door (Double)	1800	6.1	295	
					1,179
Level 2 – Level 11	Scissor Stair #1	1100	9.2	119	
	Scissor Stair #2	1100	9.2	119	
	Stair (169 Lisgar)	1050	9.2	114	
					352
Mech. Penthouse	Scissor Stair #1	1100	9.2	119	
	Scissor Stair #2	1100	9.2	119	
					238

Curtis Ferguson

From: Dana Scherf <DScherf@morrisonhershfield.com>
Sent: Friday, June 14, 2024 6:09 PM
To: Curtis Ferguson; Mike Gil; Kevin Fagan; Greg MacDonald
Cc: Glenn Somerton; Nicole Lowey; Eddy Jeannot
Subject: FW: 2215: 200 Elgin
Attachments: 123101-FUSv3.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Curtis and Greg and team
I'm responding on behalf of Nicole. The comment you asked MH to look at is:

> 8. *As per FUS guidelines, the entire area needs to be considered for Fire flow calculations. If not, provide rationale on why the entire area of building was not used for FUS calculation. Please note the Building Code services will need to review how separation requirements in the building are met to satisfy the above requirements. A Building Code Compliance report can be helpful to speed up the approval from Building Code Services if BP application is not ready for submission at this time.*

We took a look at the attached FUS calculation for the question on area and also at the other key steps relative to the Code review, here are our brief comments for your review and consideration. Please let us know if you think any of our assumptions are incorrect, or if you have a different interpretation of the FUS Guide.

- **Step 1 Construction type**: We understand that 200 Elgin is reinforced concrete construction including the roof slab, and based on thickness of slabs and expected cover over concrete, the building is expected to provide 2 hour fire resistance rating for floor and roof assemblies and supporting loadbearing construction, so Type I construction factor could be used unless our assumptions are not correct.

- **Step 2 Floor area**: the 2400 m2 building footprint matches our measurements off plans of the footprint of the overall L-shaped building. The breakdown of 14,400 m2 isn't provided. We disagree with the City that the entire area of the building needs to be included. Our interpretation of Total Effective Area under the 2020 FUS Guide is:
  - The building has a Construction Coefficient below 1.0, so Clause 2 applies.
  - The parking garage storeys are interconnected at the vehicle ramp, and although this interconnection is permitted under the OBC without actual closures, FUS does not consider this a protected opening, so FUS Clause 2a is applicable.
  - Under 2a the Total Effective Area is the 2 largest adjoining floor areas plus 50% of the floors immediately above them up to max 8.
  - We think this is Ground + 2nd floor areas, plus 50% of the floor areas of 3rd through 10th floors taking into account the reduced floor area when the towers split. Our rough total is 13,000 m2 using this approach which is slightly lower than yours.
  - A breakdown similar to the above could go back to the City as part of the response to their question about area.

- **Step 3 Exposure Surcharge:** North and east side exposures to the large brown brick building at 186 Elgin could consider that it would definitely be Type I or II construction, and is most likely sprinklered. If you can confirm it is fully sprinklered then the exposure surcharge factor goes to zero per the FUS Guidelines "Items of Note for Exposures Charge". Same with the north side exposure to 160 Elgin with the same confirmation that 160 Elgin is fully sprinklered.

Dana Scherf, P.Eng.
Senior Code Consultant
2932 Baseline Road | Ottawa ON K1H 1E1
Office: 613 739 3253

From: Curtis Ferguson <c.ferguson@novatech-eng.com>
Sent: Wednesday, June 12, 2024 11:13 AM
To: Nicole Lowey <NLowey@morrisonhershfield.com>
Subject: FW: 2215: 200 Elgin

Hi Nicole,

Just ensuring you have our FUS calculations. Please advise if this is the correct approach based on the OBC Building Review completed at 200 Elgin.

Thanks,
Curtis Ferguson, B.A.Sc., E.I.T. | Land Development
NOVATECH
Engineers, Planners & Landscape Architects
240 Michael Cowpland Drive, Suite 200, Ottawa, ON, K2M 1P6 | Tel: 613.254.9643 EXT: 331

From: Curtis Ferguson
Sent: Friday, May 31, 2024 11:52 AM
To: Kevin Meranger <kmeranger@rlaarchitecture.ca>; Mike Gil <mgil@jbpa.ca>; Kevin Fagan <kfagan@jbpa.ca>
Cc: Greg MacDonald <g.Macdonald@novatech-eng.com>; Eddy Jeannot <ejeannot@rlaarchitecture.ca>
Subject: RE: 2215: 200 Elgin

ALL,

See attached.

Curtis Ferguson, B.A.Sc., E.I.T. | Land Development
NOVATECH
Engineers, Planners & Landscape Architects
240 Michael Cowpland Drive, Suite 200, Ottawa, ON, K2M 1P6 | Tel: 613.254.9643 EXT: 331

From: Kevin Meranger <kmeranger@rlaarchitecture.ca>
Sent: Friday, May 31, 2024 11:51 AM
To: Mike Gil <mgil@jbpa.ca>; Kevin Fagan <kfagan@jbpa.ca>; Curtis Ferguson <c.ferguson@novatech-eng.com>
Cc: Greg MacDonald <g.Macdonald@novatech-eng.com>; Eddy Jeannot <ejeannot@rlaarchitecture.ca>
Subject: FW: 2215: 200 Elgin
Importance: High

Kevin, Mike and Curtis,

Appendix B
Water Servicing

Water Demand Design Sheet

NOVATECH
Engineers, Planners & Landscape Architects

Boundary Condition Request

Novatech Project #: 123101
Project Name: 200 Elgin Street
Date: 3/8/2024
Input By: Curtis Ferguson, E.I.T.
Reviewed By: Greg MacDonald, P.Eng.
Drawing Reference:

Legend: Input by User | No Input Required | Calculated Cells →

Reference: Ottawa Design Guidelines - Water Distribution (2010 and TBs)
MOE Design Guidelines for Drinking-Water Systems (2008)
Fire Underwriter's Survey Guideline (2020)
Ontario Building Code, Part 3 (2012)

Small System = NO

	# of Dwellings	Area (ha.)	Pop. Equiv.	Average Day Demand (L/s)	Maximum Day Demand (L/s)	Peak Hour Demand (L/s)	Basic Day Demand (m^3/day)
Residential Input							
Singles			0.00	0.00	0.00	0.00	0.0
Semis / Townhomes			0.00	0.00	0.00	0.00	0.0
Apartments (2-BR)	106		222.60	0.72	1.80	3.97	44.5
Apartments (1-BR)	20		28.00	0.09	0.23	0.50	5.6
Apartments (Avg)	64		115.20	0.37	0.93	2.05	23.0
Industrial / Commercial / Institutional (ICI) Input							
Industrial Area - Light				0.00	0.00	0.00	0.0
Industrial Area - Heavy				0.00	0.00	0.00	0.0
Commercial Area		0.07		0.02	0.03	0.06	1.2
Institutional Area				0.00	0.00	0.00	0.0
Other Area				0.00	0.00	0.00	0.0
Totals	**190**	**0.07**	**365.80**	**1.21**	**3.00**	**6.58**	**74.4**

Summary

i. Type of Development and Units:	Residential and Commerical - 190 Apartment Units		
ii. Site Address:	200 Elgin Street, 169 Lisgar Street And 18 Nepean		
iv. Average Day Flow Demand:		1.21	L/s
v. Peak Hour Flow Demand:		6.58	L/s
vi. Maximum Day Flow Demand:		3.00	L/s
vii. Required Fire Flow #1:		22000	L/min
viii. Required Fire Flow #2:			L/min
ix. Required Fire Flow #3:			L/min

Water Demand Design Sheet

NOVATECH
Engineers, Planners & Landscape Architects

Design Parameters

Residential					
Unit Type	**Singles**	**Semis/ Towns**	**Apts (2-BR)**	**Apts (1-BR)**	**Apts (Avg)**
Population Equiv.	3.4	2.7	2.1	1.4	1.8
Dailly Demand	L/per person/day				
Average Demand	280				
Basic Demand	200				

Vulnerable Service Area (VSA)
50
< 50 m³/day
> 50 m³/day

Residential Peaking Factors		**Max Day (x Avg Day)**	**Peak Hour (x Avg Day)**
	Pop.		
Small System (If Applicable)	0	9.50	14.30
	30	9.50	14.30
	150	4.90	7.40
Modified	300	3.60	*5.50*
	450	3.00	*5.50*
	500	2.90	*5.50*
Large System (Default)	> 500	2.50	5.50

Institutional / Commercial / Industrial				
Industrial		**Commercial**	**Institutional**	**Other Use**
Light	**Heavy**			
L/gross ha/day				L/m²/day
35,000	55,000	28,000	28,000	5
10,000	17,000	17,000	17,000	3

ICI Peaking Factors	**Max Day (x Avg Day)**	**Peak Hour (x Avg Day)**
	1.50	2.70

NEPEAN ST

ELGIN ST

LISGAR ST

EXISTING 18 NEPEAN STREET
13 STOREY CONDO BUILDING

EXISTING 180 ELGIN STREET

EXISTING 200 ELGIN
11 STOREY BUILDING
OFFICE TO RESIDENTIAL
FFE = 71.10 (EST)

EXISTING 169 LISGAR
11 STOREY BUILDING

0.8m

0.7m

0m

18m

LEGEND

PROPERTY LINE

PROPOSED TACTILE INDICATOR

PROPOSED ENTRANCE

DC

PROPOSED DEPRESSED CURB

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

CITY OF OTTAWA
200 ELGIN STREET

FUS SEPARATION

SCALE 1 : 500 (0, 5m, 10m, 20m)

DATE MAY 2024 | JOB 123101 | FIGURE FUS

SHT11X17.DWG - 279mmX432mm

M:\2023\123101\CAD\CivilFigures\123101-Separation Distances.dwg, SEP, May 03, 2024 - 5:04pm, cferguson

FUS - Fire Flow Calculations

Engineers, Planners & Landscape Architects

Novatech Project #: 123101
Project Name: 200 Elgin Street / 169 Lisgar / 18 Nepean
Date: 5/3/2024
Reviased: 618/2024
Input By: Curtis Ferguson, E.I.T.
Reviewed By: Greg MacDonald, P.Eng.
Drawing Reference:

Legend: Input by User
No Input Required
Reference: Fire Underwriter's Survey Guideline (2020)

Formula Method

Building Description: 11 Storey Mixed Use Tower
Type I - Fire resistive construction (2 hrs)

Step			Choose		Value Used	Total Fire Flow (L/min)
Base Fire Flow						
1	**Construction Material**			**Multiplier**		
	Coefficient related to type of construction **C**	Type V - Wood frame		1.5	0.6	
		Type IV - Mass Timber		Varies		
		Type III - Ordinary construction		1		
		Type II - Non-combustible construction		0.8		
		Type I - Fire resistive construction (2 hrs)	Yes	0.6		
2	**Floor Area**					
	A	Building Footprint (m^2)	2400			
		Number of Floors/Storeys	11			
		Protected Openings (1 hr) if C<1.0	No			
		Area of structure considered (m^2)			**13,000**	
	F	**Base fire flow without reductions**				**15,000**
		F = 220 **C** (**A**)$^{0.5}$				
Reductions or Surcharges						
3	**Occupancy hazard reduction or surcharge**		**FUS Table 3**	**Reduction/Surcharge**		
	(1)	Non-combustible		-25%	-15%	**12,750**
		Limited combustible	Yes	-15%		
		Combustible		0%		
		Free burning		15%		
		Rapid burning		25%		
4	**Sprinkler Reduction**		**FUS Table 4**	**Reduction**		
	(2)	Adequately Designed System (NFPA 13)	Yes	-30%	-30%	**-6,375**
		Standard Water Supply	Yes	-10%	-10%	
		Fully Supervised System	Yes	-10%	-10%	
				Cumulative Sub-Total	**-50%**	
		Area of Sprinklered Coverage (m^2)	26400	100%		
				Cumulative Total	**-50%**	
5	**Exposure Surcharge**		**FUS Table 5**		**Surcharge**	
	(3)	North Side	0 - 3 m		20%	**8,160**
		East Side	0 - 3 m		20%	
		South Side	10.1 - 20 m		8%	
		West Side	0 - 3 m		16%	
				Cumulative Total	**64%**	
Results						
6	**(1) + (2) + (3)**	**Total Required Fire Flow, rounded to nearest 1000L/min**			**L/min**	**15,000**
		(2,000 L/min < Fire Flow < 45,000 L/min)		or	L/s	**250**
				or	USGPM	3,963

FUS - Fire Flow Calculations

Table 6 Worksheet

To be used only if adjacent *Exposed Building* construction is known

Source of Information: Conservative Approach for Downtown Ottawa (Buildings likely Type 1 and Sprinklered - Exposure =0%)
Assumed all buildings Type III - Ordinary with no Sprinklers.

Legend: Input by User
No Input Required

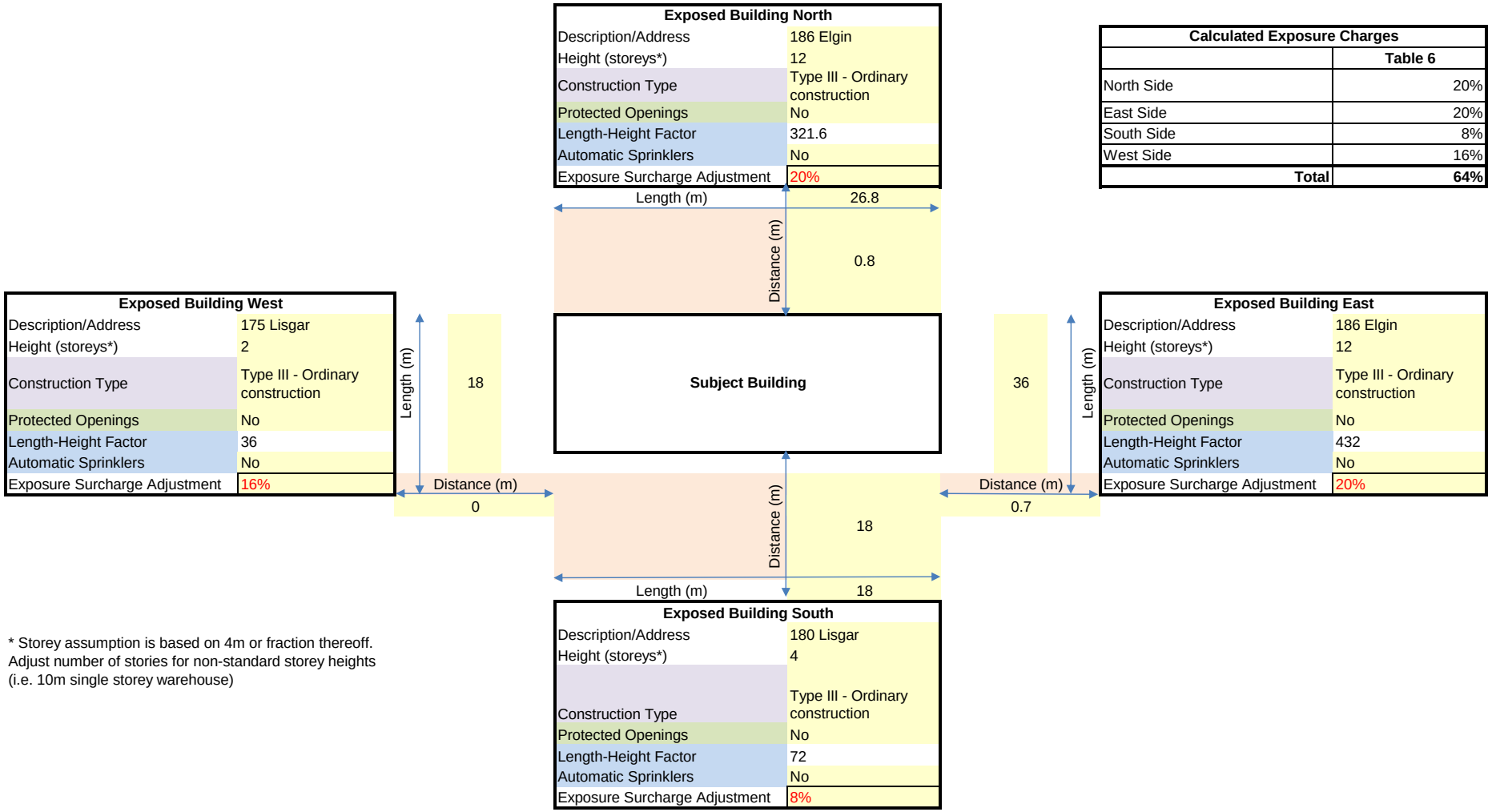
Exposed Building North	
Description/Address	186 Elgin
Height (storeys*)	12
Construction Type	Type III - Ordinary construction
Protected Openings	No
Length-Height Factor	321.6
Automatic Sprinklers	No
Exposure Surcharge Adjustment	20%

Calculated Exposure Charges	
	Table 6
North Side	20%
East Side	20%
South Side	8%
West Side	16%
Total	**64%**

Exposed Building West	
Description/Address	175 Lisgar
Height (storeys*)	2
Construction Type	Type III - Ordinary construction
Protected Openings	No
Length-Height Factor	36
Automatic Sprinklers	No
Exposure Surcharge Adjustment	16%

Exposed Building East	
Description/Address	186 Elgin
Height (storeys*)	12
Construction Type	Type III - Ordinary construction
Protected Openings	No
Length-Height Factor	432
Automatic Sprinklers	No
Exposure Surcharge Adjustment	20%

Exposed Building South	
Description/Address	180 Lisgar
Height (storeys*)	4
Construction Type	Type III - Ordinary construction
Protected Openings	No
Length-Height Factor	72
Automatic Sprinklers	No
Exposure Surcharge Adjustment	8%



* Storey assumption is based on 4m or fraction thereoff.
Adjust number of stories for non-standard storey heights
(i.e. 10m single storey warehouse)

Appendix C
Sanitary Servicing

SANITARY SEWER DESIGN SHEET

NOVATECH
Engineers, Planners & Landscape Architects

Novatech Project #: 123101
Project Name: 200 Elgin Street
Date: 3/8/2024
Input By: Curtis Ferguson, E.I.T.
Reviewed By: Greg MacDonald, P.Eng.
Drawing Reference: 123101-GP

Legend:
- Design Input by User
- As-Built Input by User
- Cumulative Cell
- Calculated Design Cell Output

Reference: City of Ottawa - Sewer Design Guidelines (2012 and TBs)
MOE - Design Guidelines for Sewage Works (2008)

Location			Demand																	Design Capacity								
			Residential Flow										Industrial / Commercial / Institutional (ICI) Flow						Extraneous Flow Area Method		Total Design Flow	Proposed Sewer Pipe Sizing / Design								Design Partial Pipe Proposed Sewer Partial Pipe Flow
Street	From MH	To MH	Singles	Semis / Towns	Apts	Park Area	Population (in 1000's)	Cumulative Population (in 1000's)	Average Pop. Flow Q(q) (L/s)	Design Peaking Factor M	Peak Design Pop. Flow Q(p) (L/s)	Res. Drainage Area (ha.)	Cumulative Res. Drainage Area (ha.)	Industrial Area (ha.)	Cumulative Commercial / Institutional Area (ha.)	Average Design Commercial / Institutional Flow (L/s)	Commercial / Institutional Peaking Factor	Cumulative ICI Area (ha.)	Peak Design ICI Flow Q (ici) (L/s)	Cumulative Extraneous Drainage Area (ha.)	Design Extraneous Flow Q(e) (L/s)	Total Peak Design Flow Q(D) (L/s)	Pipe Length (m)	Pipe Size (mm) and Material	Pipe ID Actual (m)	Roughness n	Design Grade So (%)	Capacity Qfull (L/s)	Full Flow Velocity (m/s)	Q(D) / Qfull	d / D
200 Elgin	Stub	EX SAN			126		0.265	0.265	0.86	3.48	2.98	0.180	0.180	0.000	0.072	0.02	1.50	0.072	0.04	0.252	0.08	3.10	8.2	200 PVC	0.203	0.013	1.00	34.2	1.06	9.1%	20.0%
Totals			**0**	**0**	**126**	**0.000**	**0.265**	**0.265**	**0.86**	**3.48**	**2.98**	**0.180**	**0.180**	**0.000**	**0.072**	**0.02**	**1.50**	**0.072**	**0.04**	**0.252**	**0.08**	**3.10**	**8.2**							

Demand Equation / Parameters

1. **Q(D) =** Q(p) + Q(ici) + Q(e)
2. **Q(p) =** (P x q x M x K / 86,400)
3. **q =** 280 L/per person/day (design)
4. **M = Harmon Formula (maximum of 4.0)**
5. **K =** 0.8 (design)
6. **Park flow is considered equivalent to a single unit / ha**
   Park Demand = 4 single unit equivalent / park ha (~ 3,600 L/ha/day)
7. **Q(ici) =** ICI Area x ICI Flow x ICI Peak
8. **Q(e) =** 0.33 L/s/ha (design)

Definitions

Q(D) = Peak Design Flow (L/s)
Q(p) = Peak Design Population Flow (L/s)
Q(q) = Average Population Flow (L/s)

	Singles	Semis / Towns	Apts
P = Residential Population =	3.4	2.7	2.1

q = Average Capita Flow
M = Harmon Formula
K = Harmon Correction Factor
Q(ici) = Industrial / Commercial / Institutional Flow (L/s)
Q(e) = Extraneous Flow (L/s)

Institutional / Commercial / Industrial	Industrial	Commercial / Institutional	
Design =	35000	28000	L/gross ha/day
ICI Peak *			
Design =	1.5	1.5	* ICI Peak = 1.0 Default, 1.5 if ICI in contributing area is >20% (design only)

Capacity Equation

Q full = $1000*(1/n)*A_p*R^{2/3}*So^{0.5}$

Definitions

Q full = Capacity (L/s)
n = Manning coefficient of roughness (0.013)
A_p = Pipe flow area (m^2)
R = Hydraulic Radius of wetted area (dia./4 for full pipes)
So = Pipe slope/gradient

SANITARY SEWER DESIGN SHEET

NOVATECH
Engineers, Planners & Landscape Architects

Novatech Project #: 123101
Project Name: 169 Lisgar
Date: 3/8/2024
Input By: Curtis Ferguson, E.I.T.
Reviewed By: Greg MacDonald, P.Eng.
Drawing Reference: 123101-GP

Legend:
- Design Input by User
- As-Built Input by User
- Cumulative Cell
- Calculated Design Cell Output

Reference: City of Ottawa - Sewer Design Guidelines (2012 and TBs)
MOE - Design Guidelines for Sewage Works (2008)

Location			Demand																		Design Capacity								Design Partial Pipe Flow Checks
			Residential Flow										Industrial / Commercial / Institutional (ICI) Flow						Extraneous Flow Area Method		Total Design Flow	Proposed Sewer Pipe Sizing / Design								Proposed Sewer Partial Pipe Flow
Street	From MH	To MH	Singles	Semis / Towns	Apts	Park Area	Population (in 1000's)	Cumulative Population (in 1000's)	Average Pop. Flow Q(q) (L/s)	Design Peaking Factor M	Peak Design Pop. Flow Q(p) (L/s)	Res. Drainage Area (ha.)	Cumulative Res. Drainage Area (ha.)	Industrial Area (ha.)	Cumulative Commercial / Institutional Area (ha.)	Average Design Commercial / Institutional Flow (L/s)	Commercial / Institutional Peaking Factor	Cumulative ICI Area (ha.)	Peak Design ICI Flow Q (ici) (L/s)	Cumulative Extraneous Drainage Area (ha.)	Design Extraneous Flow Q(e) (L/s)	Total Peak Design Flow Q(D) (L/s)	Pipe Length (m)	Pipe Size (mm) and Material	Pipe ID Actual (m)	Roughness n	Design Grade So (%)	Capacity Qfull (L/s)	Full Flow Velocity (m/s)	Q(D) / Qfull	d / D
169 Lisgar	Stub	EX SAN			42		0.088	0.088	0.29	3.61	1.03	0.065	0.065	0.000	0.000	0.00	1.00	0.000	0.00	0.065	0.02	1.05	11.7	150 PVC - DO NOT SPEC	0.152	0.013	2.00	22.5	1.23	4.7%	14.0%
Totals			**0**	**0**	**42**	**0.000**	**0.088**	**0.088**	**0.29**	**3.61**	**1.03**	**0.065**	**0.065**	**0.000**	**0.072**	**0.02**	**1.50**	**0.072**	**0.04**	**0.137**	**0.05**	**1.11**	**11.7**								

Demand Equation / Parameters

1. **Q(D) =** Q(p) + Q(ici) + Q(e)
2. **Q(p) =** (P x q x M x K / 86,400)
3. **q =** 280 L/per person/day (design)
4. **M = Harmon Formula (maximum of 4.0)**
5. **K =** 0.8 (design)
6. **Park flow is considered equivalent to a single unit / ha**
   Park Demand = 4 single unit equivalent / park ha (~ 3,600 L/ha/day)
7. **Q(ici) =** ICI Area x ICI Flow x ICI Peak
8. **Q(e) =** 0.33 L/s/ha (design)

Definitions

Q(D) = Peak Design Flow (L/s)
Q(p) = Peak Design Population Flow (L/s)
Q(q) = Average Population Flow (L/s)

	Singles	Semis / Towns	Apts
P = Residential Population =	3.4	2.7	2.1

q = Average Capita Flow
M = Harmon Formula
K = Harmon Correction Factor
Q(ici) = Industrial / Commercial / Institutional Flow (L/s)
Q(e) = Extraneous Flow (L/s)

Institutional / Commercial / Industrial	Industrial	Commercial / Institutional	
Design =	35000	28000	L/gross ha/day
ICI Peak *			
Design =	1.5	1.5	* ICI Peak = 1.0 Default, 1.5 if ICI in contributing area is >20% (design only)

Capacity Equation

Q full = $1000*(1/n)*A_p*R^{2/3}*So^{0.5}$

Definitions

Q full = Capacity (L/s)
n = Manning coefficient of roughness (0.013)
A_p = Pipe flow area (m^2)
R = Hydraulic Radius of wetted area (dia./4 for full pipes)
So = Pipe slope/gradient

SANITARY SEWER DESIGN SHEET

NOVATECH
Engineers, Planners & Landscape Architects

Novatech Project #: 123101
Project Name: 18 Nepean
Date: 3/8/2024
Input By: Curtis Ferguson, E.I.T.
Reviewed By: Greg MacDonald, P.Eng.
Drawing Reference: 123101-GP

Legend:
- Design Input by User
- As-Built Input by User
- Cumulative Cell
- Calculated Design Cell Output

Reference: City of Ottawa - Sewer Design Guidelines (2012 and TBs)
MOE - Design Guidelines for Sewage Works (2008)

Location			Demand																		Design Capacity								Design Partial Pipe Flow Checks
			Residential Flow										Industrial / Commercial / Institutional (ICI) Flow						Extraneous Flow Area Method		Total Design Flow	Proposed Sewer Pipe Sizing / Design								Proposed Sewer Partial Pipe Flow
Street	From MH	To MH	Singles	Semis / Towns	Apts	Park Area	Population (in 1000's)	Cumulative Population (in 1000's)	Average Pop. Flow Q(q) (L/s)	Design Peaking Factor M	Peak Design Pop. Flow Q(p) (L/s)	Res. Drainage Area (ha.)	Cumulative Res. Drainage Area (ha.)	Industrial Area (ha.)	Cumulative Commercial / Institutional Area (ha.)	Average Design Commercial / Institutional Flow (L/s)	Commercial / Institutional Peaking Factor	Cumulative ICI Area (ha.)	Peak Design ICI Flow Q (ici) (L/s)	Cumulative Extraneous Drainage Area (ha.)	Design Extraneous Flow Q(e) (L/s)	Total Peak Design Flow Q(D) (L/s)	Pipe Length (m)	Pipe Size (mm) and Material	Pipe ID Actual (m)	Roughness n	Design Grade So (%)	Capacity Qfull (L/s)	Full Flow Velocity (m/s)	Q(D) / Qfull	d / D
18 Nepean	Stub	EX SAN			22		0.046	0.046	0.15	3.66	0.55	0.055	0.055	0.000	0.000	0.00	1.00	0.000	0.00	0.055	0.02	0.57	9.5	200 PVC	0.203	0.013	2.00	48.4	1.49	1.2%	7.0%
Totals			**0**	**0**	**22**	**0.000**	**0.046**	**0.046**	**0.15**	**3.66**	**0.55**	**0.055**	**0.055**	**0.000**	**0.072**	**0.02**	**1.50**	**0.072**	**0.04**	**0.127**	**0.04**	**0.62**	**9.5**								

Demand Equation / Parameters

1. **Q(D) =** Q(p) + Q(ici) + Q(e)
2. **Q(p) =** (P x q x M x K / 86,400)
3. **q =** 280 L/per person/day (design)
4. **M = Harmon Formula (maximum of 4.0)**
5. **K =** 0.8 (design)
6. **Park flow is considered equivalent to a single unit / ha**
   Park Demand = 4 single unit equivalent / park ha (~ 3,600 L/ha/day)
7. **Q(ici) =** ICI Area x ICI Flow x ICI Peak
8. **Q(e) =** 0.33 L/s/ha (design)

Definitions

Q(D) = Peak Design Flow (L/s)
Q(p) = Peak Design Population Flow (L/s)
Q(q) = Average Population Flow (L/s)

	Singles	Semis / Towns	Apts
P = Residential Population =	3.4	2.7	2.1

q = Average Capita Flow
M = Harmon Formula
K = Harmon Correction Factor
Q(ici) = Industrial / Commercial / Institutional Flow (L/s)
Q(e) = Extraneous Flow (L/s)

Institutional / Commercial / Industrial	Industrial	Commercial / Institutional	
Design =	35000	28000	L/gross ha/day
ICI Peak *			
Design =	1.5	1.5	* ICI Peak = 1.0 Default, 1.5 if ICI in contributing area is >20% (design only)

Capacity Equation

Q full = $1000*(1/n)*A_p*R^{2/3}*So^{0.5}$

Definitions

Q full = Capacity (L/s)
n = Manning coefficient of roughness (0.013)
A_p = Pipe flow area (m^2)
R = Hydraulic Radius of wetted area (dia./4 for full pipes)
So = Pipe slope/gradient

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514.738.9762

CLEAN WATER WORKS INC.

INTEGRATED SEWER SOLUTIONS

Novatech Egineering

200 Elgin
Ottawa, Ontario

DRAIN CCTV INSPECTION REPORT

Report ID
130570

Sewer Use
Sanitary

Completion Date
August 1 2023

Inspected Length
10.8 meters

Index of pipes

1 item

Inspected length : 10.80
Total length : 0.00

Pipe	Start/End	Direction	Road	Date	Inspected	Total	Page
200 Elgin_130570_MainB021	Cleanout --> Mainline	Direction of flow	200 Elgin	01/08/2023 2:12 PM	10.8		5

Internal condition grade

1 item

1 - Acceptable structural condition (1 of 1 items)

Total	Peak	Pipe	Start/End	Direction	Road	Page
0	0	200 Elgin_130570_MainB021	Cleanout --> Mainline	Direction of flow	200 Elgin	5

Operational performance grade

1 item

Grade: 1 (1 of 1 items)

Total	Peak	ICG	Pipe	Start/End	Direction	Road	Page
0	0	1	200 Elgin_130570_MainB021	Cleanout --> Mainline	Direction of flow	200 Elgin	5

Pipe summary and condition details

Pipe identification

Pipe: 200 Elgin_130570_MainB021
Direction of flow: Cleanout --> Mainline

Pipe location

Road: 200 Elgin
Crossroad:
Drainage Area:
City: Ottawa
Location:
Owner: Novatech Egineering
Road segment:

UPSTREAM	DOWNSTREAM
Easting (X):	**Easting (X):**
Northing (Y):	**Northing (Y):**
Elevation (Z):	**Elevation (Z):**

GPS Accuracy:
Corrdinate System:
Vertical Datum:

Pipe characteristics

Category: Sanitary
Shape:
Material: Cast iron
Lining:
Type: Lateral
Invert (upstream):
Depth (upstream):
Cover level (upstream):

Size: 100
Width:
Total length:
Pipe unit length:
Year laid:
Invert (downstream):
Depth (downstream):
Cover level (downstream):

Additional details

Inspection standard: WRC 3rd edition
Date: 01/08/2023 2:12 PM
Project Number:
Contractor project #: Clean Water Works
Client: MISC_200 Elgin_WO130570
Purpose:
Weather:
Operator: David
Analyst:

Survey Abandoned:
Inspected length: 10.8
Pre-cleaning: ☐
Blocked flow: ☐
Regular CCTV: ☐
Reinspect with ZOOM: ☐
Medium #:
Start position:
End position:

Internal Condition

Grade: 1
Total: 0
Peak: 0

Operational Performance

Grade: 1
Total: 0
Peak: 0

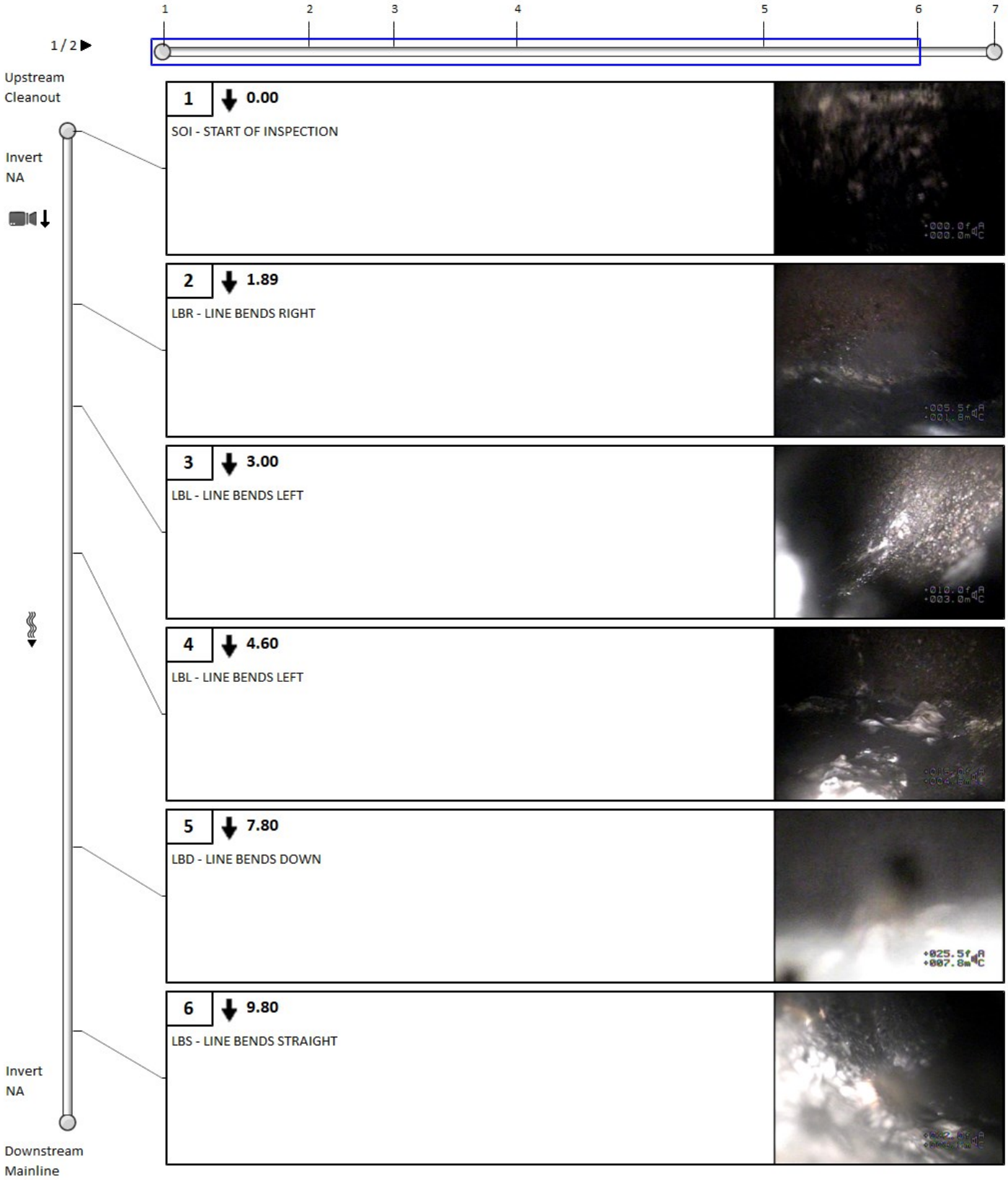
Comments

Other information

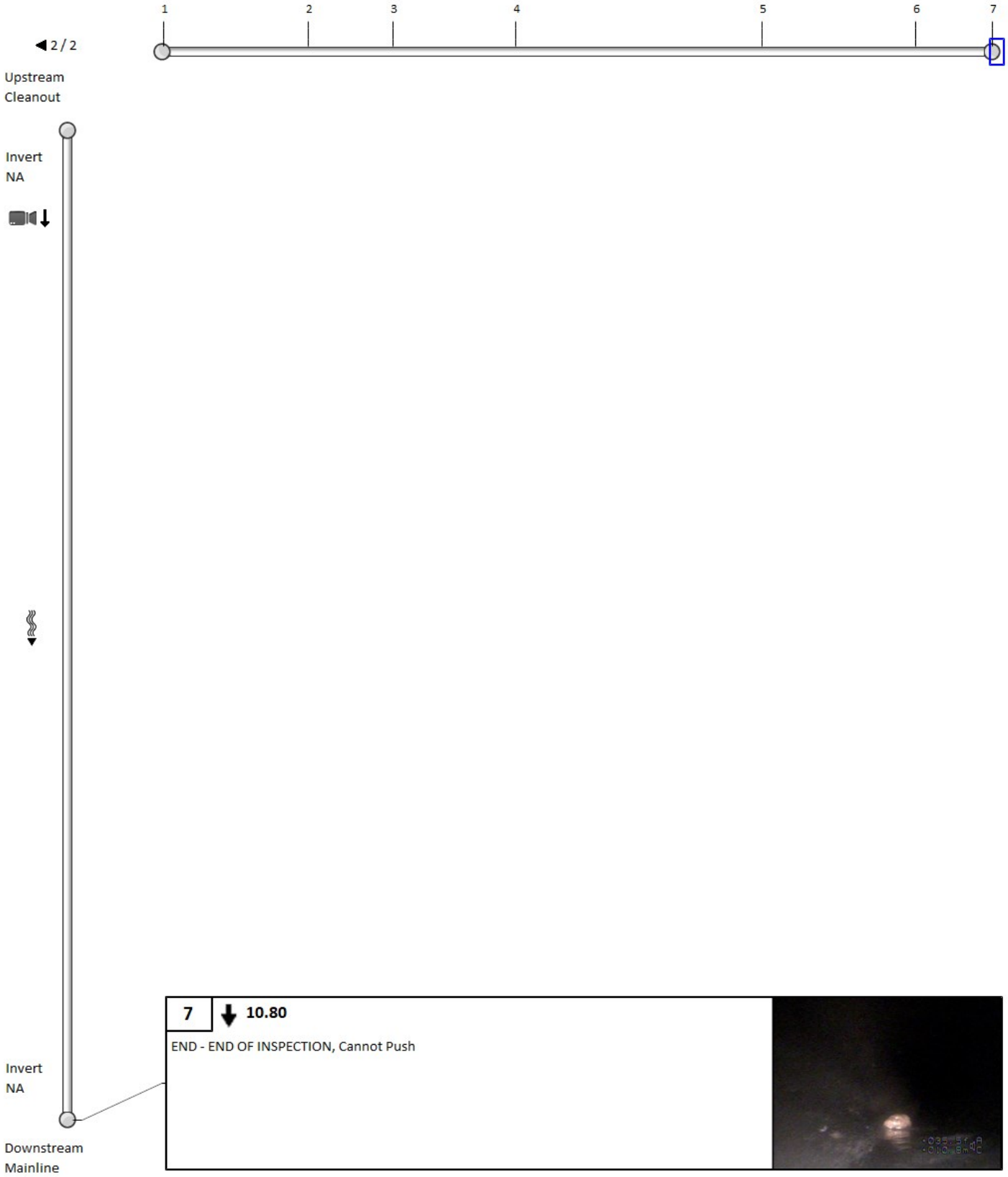
Date: August 1 2023
Work Order#: 130570
Start of Location: Cleanout
End of Location: Mainline
Location:
Information 6:

Information 7:
Information 8:
Information 9:
Information 10:
PI5 (MAMR): 0
PI6 (MAMR): 0

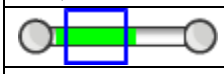
Pipe summary and condition details



Pipe summary and condition details



Vision Report© Legend

	The numbers sequentially identify each observation. They allow you to find complete descriptions and related photos throughout the pages. Note that when the pipe contains too many observations, the Vision© report hides the least important observations to optimize the display*.
60	A number with neither a square nor circle indicates a general observation.
	A circled number indicates a structural anomaly. The color of the circle indicates the severity of the anomaly on a scale of 1 to 5, 5 being the most severe: green=1, blue=2, magenta=3, orange=4 and red=5.
	A number in a square indicates an operation and maintenance anomaly. The color of the square indicates the severity of the anomaly on a scale of 1 to 5, 5 being the most severe: green=1, blue=2, magenta=3, orange=4 and red=5.
◀ 3 / 31 ▶	Indicates the current page number of the inspection report.
	The blue square indicates a section of the pipe; this section is covered in detail on the current page of the report.
	The green line indicates the inspected part of the pipe. The remaining white line indicates the uninspected part of the pipe.
	Indicates the hold points on the camera during an inspection.
	Indicates the hold points on the camera during the reverse inspection.
	Indicates that a reverse inspection was carried out, however the camera did not reach the initial inspection hold point. (the hold point of the initial inspection)
	Indicates that a reverse inspection was carried out and that it has joined (has arrived at) the initial inspection hold point.
401-059B	Identifies the start manhole number. Note that this manhole is not necessarily the upstream manhole of the pipe.
401-631	Identifies the end manhole number. Note that this manhole is not necessarily the downstream manhole of the pipe.
ou	A downward arrow indicates that the inspection was carried out in the direction of the current, whereas an upward arrow indicates an inspection against the current. Note that the manhole located on the upper left of the page is always the start manhole, but not necessarily the upstream manhole of the pipe.
	This camera followed by a downward arrow is located on the upper left of the vertical pipe; it indicates that an inspection was done from this manhole.
	When the second camera appears on the bottom left page it means that a reverse inspection was carried out. Information about the reverse inspection is included in the report, thereby combining both inspections.
Invert 3.40	The measurement shown under the word <Invert> indicates the measurements between the frame and the pipe captured during the inspection. This measurement is available at the top left for the start manhole and the bottom left for the end manhole. If the invert was not measured during the inspection, an <NA> mark will be displayed.
	The downward bold arrow to the right of the observation number indicates that this observation was captured during the initial inspection.
	The blank arrow pointing upwards and located to the right of the observation number indicates that this observation was taken during the reverse inspection period, thereby confirming that this report combined both inspections.
18.40 m	Located to the right of the observation number is a number identifying the observation distance in relation to the start of the pipe.
SRV - Armature visible	A full description of the observation code according to the protocol used.

*Any hidden observations are readily accessible from the database as well as in other CTSpec report templates.

** CTSpec inc. reserves the right to modify, eliminate or add to the product features described in this pamphlet without notice.

Appendix D
Storm Servicing

STORM SEWER DESIGN SHEET

Novatech Project #: 123101
Project Name: 200 Elgin Street / 169 Lisgar
Date: 3/8/2024
Input By: Curtis Ferguson, E.I.T.
Reviewed By: Greg MacDonald, P.Eng.
Drawing Reference:

Storm Design Event = 100 Year

Legend:
- Design Input by User
- As-Built Input by User
- Cumulative Cell
- Calculated Design Cell Output
- Calculated Uncontrolled Peak Flow Cell Output
- Design Input Restricted Peak Flow Cell

Reference: City of Ottawa - Sewer Design Guidelines (2012 and TBs)
MOE - Design Guidelines for Sewage Works (2008)

Location			Flow								Design Capacity								Design Partial Pipe
											Proposed Sewer Pipe Sizing / Design								Proposed Sewer Partial
Street	From MH	To MH	Area A (ha.)	Runoff Coefficient C	Indivi. 2.78 AC	Accum. 2.78 AC	Time of Conc. Tc (min.)	Rain Intensity I (mm/hr)	Total Uncontrolled Peak Flow Q (L/s)	Total Restricted Peak Flow (L/s)	Pipe Size (mm) and Material	Pipe ID Actual (m)	Roughness n	Design Grade So (%)	Capacity Qfull (L/s)	Full Flow Velocity (m/s)	Time of Flow (min.)	Q / Qfull	d / D
200 Elgin	STUB	EX STM	0.25	0.90	0.61	0.61	15.00	142.89	87.6		300 PVC	0.3048	0.013	2.00	142.7	1.96	0.08	61.4%	56.0%
Totals			**0.25**																

Demand Equation / Parameters

1. Q = 2.78 ACI

Definitions

Q = Peak flow in litres per second (L/s)
A = Area in hectares (ha)
C = Weighted runoff coefficient (increased by 25% for 100-year)
I = Rainfall intensity in millimeters per hour (mm/hr)

Rainfall intensity is based on City of Ottawa IDF data presented in the City of Ottawa - Sewer Design Guidelines

Capacity Equation

Q full = $1000*(1/n)*A_p*R^{2/3}*So^{0.5}$

Definitions

Q full = Capacity (L/s)
n = Manning coefficient of roughness (0.013)
A_p = Pipe flow area (m^2)
R = Hydraulic Radius of wetted area (dia./4 for full pipes)
So = Pipe slope/gradient

NEPEAN ST

ELGIN ST

LISGAR ST

EXISTING 18 NEPEAN STREET
13 STOREY CONDO BUILDING

0.61
B-01
0.90

EXISTING 180 ELGIN STREET

EXISTING 169 LISGAR
11 STOREY BUILDING

1.82
A-01
0.90

EXISTING 200 ELGIN
11 STOREY BUILDING
OFFICE TO RESIDENTIAL
FFE = 71.10 (EST)

169 LISGAR ENTRANCE

COMMERCIAL ENTRANCE

RESIDENTIAL ENTRANCE

SIAMESE CONNECTION

GAS METER

EX. STM MH
N.E. INV=67.52
S.W. INV=67.52

61.1m - 450mmØ STORM 0.59%

EX. STM MH
N.E. INV=67.52
S.W. INV=67.52

9.7m - 450mmØ STM @1.54%

EX. STM MH
N.E. INV=67.08
S.W. INV=67.41

13.0m - 525mmØ STORM @1.15%

EX. STM MH
N.E. INV=67.14
S.W. INV=67.15

9.3m - 525mmØ STORM @1.18%

EX. 300mmØ STM

EX. 300mmØ STORM

EX. STM MH

EX. 1500mmØ STM

EX. 375mmØ STM

±150m - 1350mmØ STORM @0.18%

EX. STM MH
N.E. INV=66.83
S.W. INV=66.83

±30m - 1350mmØ STORM @0.10%

EX. STM MH
N.E. INV=66.80
S.W. INV=66.60

EX. 1500mmØ STM

EX. 375mmØ STM

LEGEND

DRAINAGE AREA LIMITS

0.085
A-16
0.78

DRAINAGE AREA (ha)
DRAINAGE AREA ID
RUNOFF COEFFICIENT

PROPERTY LINE

NOVATECH
Engineers, Planners & Landscape Architects
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Telephone (613) 254-9643
Facsimile (613) 254-5867
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200 ELGIN STREET

STORM DRAINAGE AREAS

SCALE 1 : 500 (0, 5m, 10m, 20m)

DATE MAR 2024 | JOB 123101 | FIGURE STM

M:\2023\123101\CAD\Civil\123101-STM.dwg, STM, Mar 11, 2024 - 10:19am, cferguson

SHT11X17.DWG - 279mmX432mm

STORM SEWER DESIGN SHEET

NOVATECH
Engineers, Planners & Landscape Architects

Novatech Project #: 123101
Project Name: 18 Nepean
Date: 3/8/2024
Input By: Curtis Ferguson, E.I.T.
Reviewed By: Greg MacDonald, P.Eng.
Drawing Reference:

Storm Design Event = 100 Year

Legend:
- Design Input by User
- As-Built Input by User
- Cumulative Cell
- Calculated Design Cell Output
- Calculated Uncontrolled Peak Flow Cell Output
- Design Input Restricted Peak Flow Cell

Reference: City of Ottawa - Sewer Design Guidelines (2012 and TBs)
MOE - Design Guidelines for Sewage Works (2008)

Location			Flow								Design Capacity: Proposed Sewer Pipe Sizing / Design								Design Partial Pipe: Proposed Sewer Partial
Street	From MH	To MH	Area A (ha.)	Runoff Coefficient C	Indivi. 2.78 AC	Accum. 2.78 AC	Time of Conc. Tc (min.)	Rain Intensity I (mm/hr)	Total Uncontrolled Peak Flow Q (L/s)	Total Restricted Peak Flow (L/s)	Pipe Size (mm) and Material	Pipe ID Actual (m)	Roughness n	Design Grade So (%)	Capacity Qfull (L/s)	Full Flow Velocity (m/s)	Time of Flow (min.)	Q / Qfull	d / D
18 Nepean Street	STUB	EX STM	0.06	0.90	0.14	0.14	15.00	142.89	19.7		200 PVC	0.2032	0.013	2.00	48.4	1.49	0.11	40.6%	44.0%
Totals			**0.06**																

Demand Equation / Parameters

1. Q = 2.78 ACI

Definitions

Q = Peak flow in litres per second (L/s)
A = Area in hectares (ha)
C = Weighted runoff coefficient (increased by 25% for 100-year)
I = Rainfall intensity in millimeters per hour (mm/hr)

Rainfall intensity is based on City of Ottawa IDF data presented in the City of Ottawa - Sewer Design Guidelines

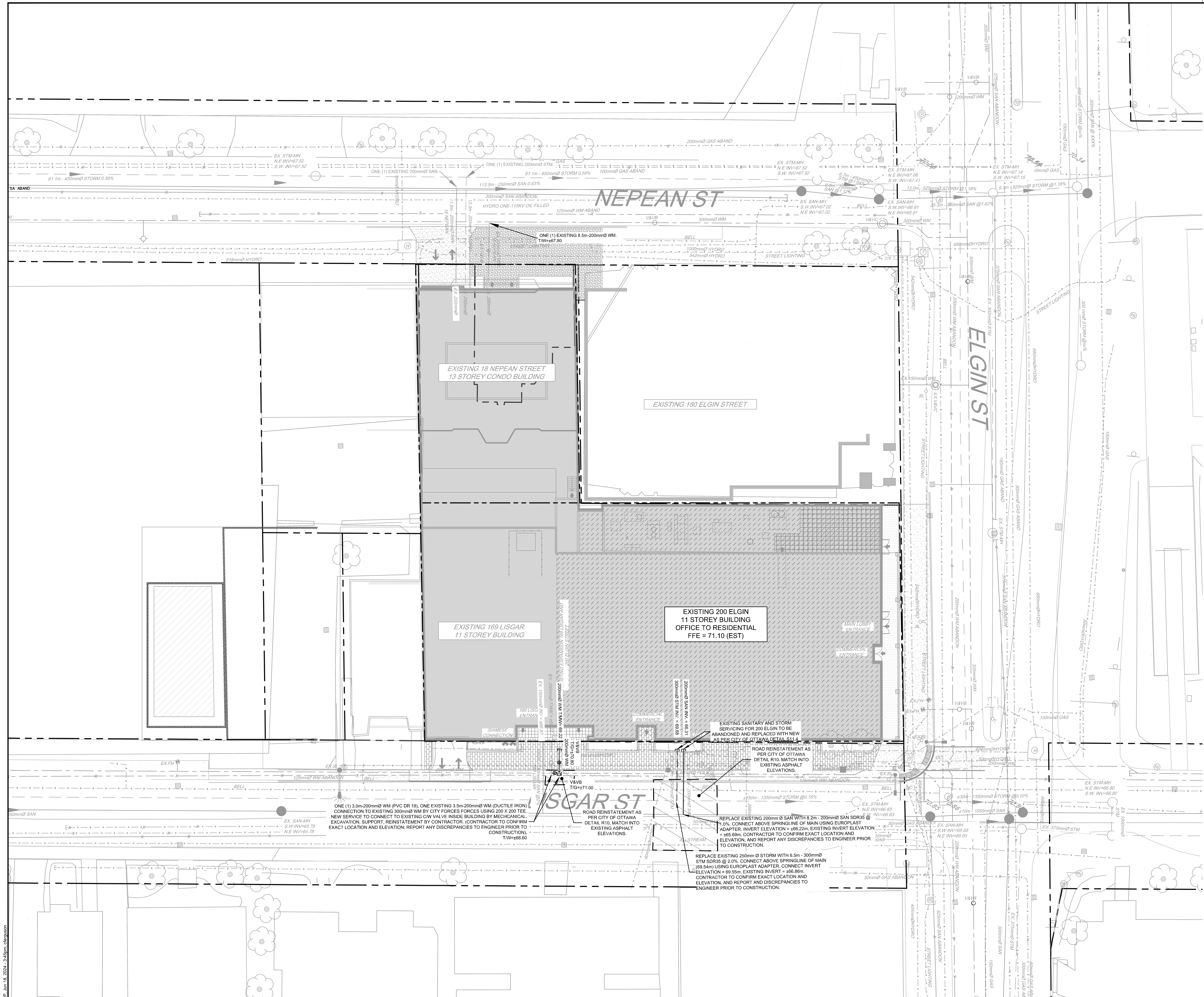
Capacity Equation

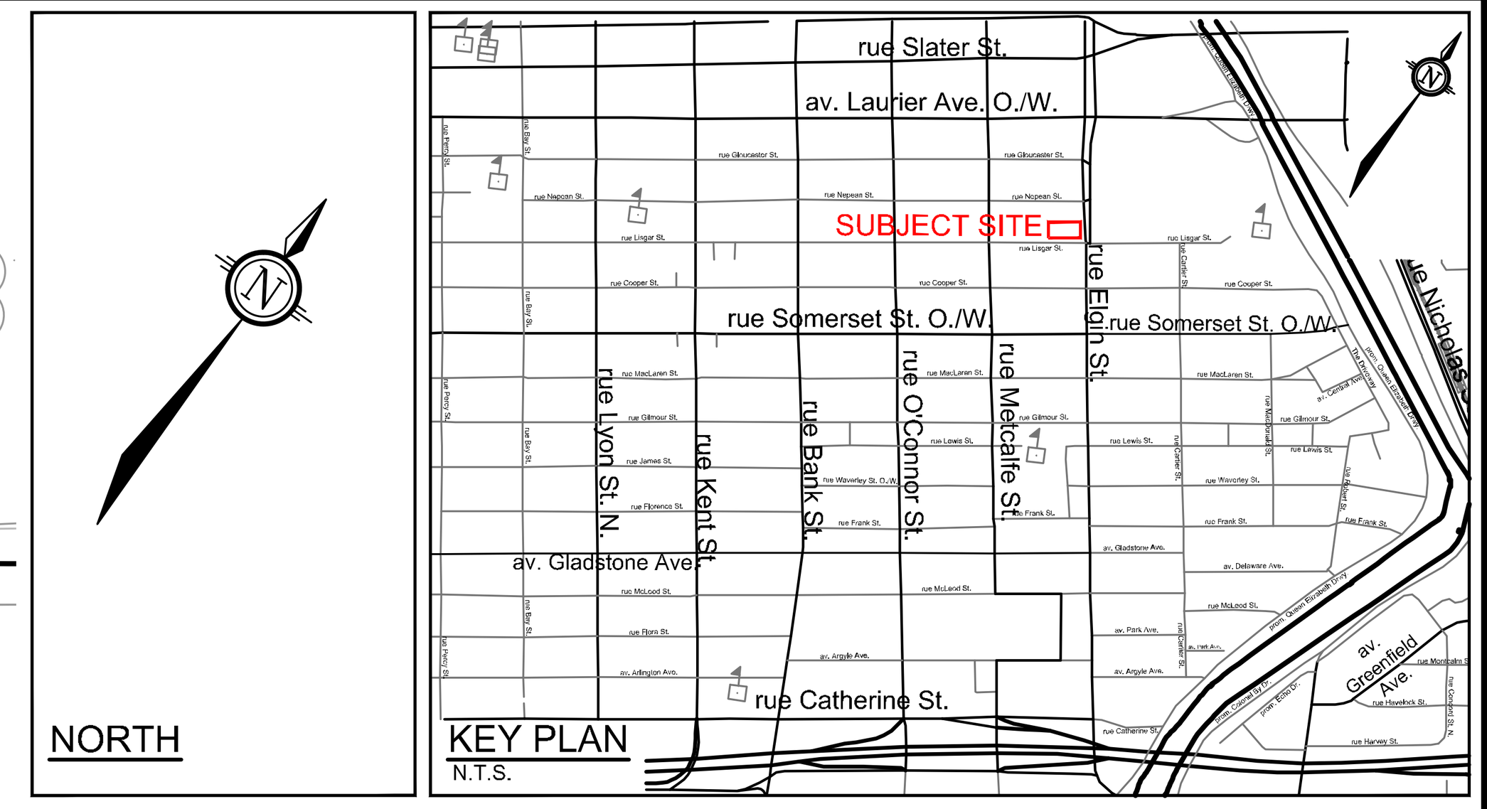
Q full = $1000*(1/n)*A_p*R^{2/3}*So^{0.5}$

Definitions

Q full = Capacity (L/s)
n = Manning coefficient of roughness (0.013)
A_p = Pipe flow area (m^2)
R = Hydraulic Radius of wetted area (dia./4 for full pipes)
So = Pipe slope/gradient

Appendix E
Drawings





LEGEND

IRON BAR & PROPERTY LINE	SAMH — EXISTING SANITARY MANHOLE
MISC LEGAL LINE (EASEMENT, PROPERTY LINES) REFER TO LEGAL PLAN FOR DETAILS	STMH — EXISTING STORM MANHOLE
DC — PROPOSED DEPRESSED CURB	EXISTING CATCHBASIN
PROPOSED BARRIER CURB	EXISTING FIRE HYDRANT
EXISTING BARRIER CURB	EXISTING WATER MAIN VALVE STOP
DC — EXISTING DEPRESSED CURB	EXISTING WATER MAIN
V&VB — PROPOSED VALVE LOCATION	EXISTING STORM SEWER
PROPOSED STORM SEWER	EXISTING SANITARY SEWER
PROPOSED SANITARY SEWER	EXISTING OVERHEAD WIRE
PROPOSED WATERMAIN	SL — EXISTING STREET LIGHT
DIRECTION OF FLOW	

GENERAL NOTES:

1. COORDINATE AND SCHEDULE ALL WORK WITH OTHER TRADES AND CONTRACTORS.
2. DETERMINE THE EXACT LOCATION, SIZE, MATERIAL AND ELEVATION OF `ALL EXISTING UTILITIES PRIOR TO COMMENCING CONSTRUCTION. PROTECT AND ASSUME RESPONSIBILITY FOR ALL EXISTING UTILITIES WHETHER OR NOT SHOWN ON THIS DRAWING.
3. OBTAIN ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF OTTAWA BEFORE COMMENCING CONSTRUCTION.
4. BEFORE COMMENCING CONSTRUCTION OBTAIN AND PROVIDE PROOF OF COMPREHENSIVE, ALL RISK AND OPERATIONAL LIABILITY INSURANCE FOR $5,000,000.00. INSURANCE POLICY TO NAME OWNERS, ENGINEERS AND ARCHITECTS AS CO-INSURED.
5. RESTORE ALL DISTURBED AREAS ON-SITE AND OFF-SITE, INCLUDING TRENCHES AND SURFACES ON PUBLIC ROAD ALLOWANCES TO EXISTING CONDITIONS OR BETTER TO THE SATISFACTION OF THE CITY OF OTTAWA AND ENGINEER.
6. REMOVE FROM SITE ALL EXCESS EXCAVATED MATERIAL, ORGANIC MATERIAL AND DEBRIS UNLESS OTHERWISE INSTRUCTED BY ENGINEER. EXCAVATE AND REMOVE FROM SITE ANY CONTAMINATED MATERIAL. ALL CONTAMINATED MATERIAL SHALL BE DISPOSED OF AT A LICENSED LANDFILL FACILITY.
7. ALL DIMENSIONS AND INVERTS MUST BE VERIFIED PRIOR TO CONSTRUCTION. IF THERE IS ANY DISCREPANCY THE CONTRACTOR IS TO NOTIFY THE ENGINEER PROMPTLY.
8. REFER TO ARCHITECT'S AND LANDSCAPE ARCHITECT'S DRAWINGS FOR BUILDING AND HARDSURFACE AREAS AND DIMENSIONS.
9. REFER TO SERVICING REPORT (R-2024-004) PREPARED BY NOVATECH ENGINEERING CONSULTANTS LTD.
10. SAW CUT AND KEY GRIND ASPHALT AT ALL ROAD CUTS AND ASPHALT TIE IN POINTS AS PER CITY OF OTTAWA STANDARDS (R10).
11. PROVIDE LINE/PARKING PAINTING.
12. CONTRACTOR TO PROVIDE THE CONSULTANT WITH A GENERAL PLAN OF SERVICES INDICATING ALL SERVICING AS-BUILT INFORMATION SHOWN ON THIS PLAN. AS-BUILT INFORMATION MUST INCLUDE: PIPE MATERIAL, SIZES, LENGTHS, SLOPES, INVERT AND T/G ELEVATIONS, STRUCTURE LOCATIONS, VALVE AND HYDRANT LOCATIONS, T/WM ELEVATIONS AND ANY ALIGNMENT CHANGES, ETC.
13. ALL MATERIALS AND CONSTRUCTION METHODS SHALL BE IN ACCORDANCE WITH THE CITY OF OTTAWA STANDARDS AND SPECIFICATIONS AND ONTARIO PROVINCIAL STANDARDS AND SPECIFICATIONS. ONTARIO PROVINCIAL STANDARDS WILL APPLY WHERE NO CITY STANDARDS ARE AVAILABLE.
14. CONTRACTOR IS RESPONSIBLE FOR ALL LAYOUT FOR CONSTRUCTION PURPOSES.

SEWER NOTES:

1. SPECIFICATIONS:

ITEM	SPEC. No.	REFERENCE
SEWER TRENCH	S6 & S7	CITY OF OTTAWA
STORM SEWER	PVC DR 35	
SANITARY SEWER	PVC DR 35	
CATCHBASIN LEAD	PVC DR 35	
INSULATION FOR SHALLOW SEWERS	S35	CITY OF OTTAWA

2. INSULATE ALL PIPES (SAN/STM) THAT HAVE LESS THAN 2.0m COVER WITH 50mmX1200mm HI-40 INSULATION. PROVIDE 150mm CLEARANCE BETWEEN PIPE AND INSULATION (REFER TO DETAIL).
3. SERVICES ARE TO BE CONSTRUCTED TO 1.0m FROM FACE OF BUILDING AT A MINIMUM SLOPE OF 1.0% (2.0% IS PREFERRED).
4. SEWER SERVICE CONNECTIONS PER CITY OF OTTAWA DETAILS S11 AND S11.1.
5. A MINIMUM OF 150 mm OPSS GRANULAR A SHOULD BE PLACED FOR BEDDING FOR SEWER OR WATER PIPES WHEN PLACED ON A SOIL SUBGRADE. THE BEDDING SHOULD EXTEND TO THE SPRING LINE OF THE PIPE. COVER MATERIAL, FROM THE SPRING LINE TO A MINIMUM OF 300 mm ABOVE THE OBVERT OF THE PIPE, SHOULD CONSIST OF OPSS GRANULAR A (CONCRETE OR PSM PVC PIPES) OR SAND (CONCRETE PIPE). THE BEDDING AND COVER MATERIALS SHOULD BE PLACED IN MAXIMUM 225 MM THICK LIFTS AND COMPACTED TO 98% OF THE SPMDD.
6. WHERE HARD SURFACE AREAS ARE CONSIDERED ABOVE THE TRENCH BACKFILL, THE TRENCH BACKFILL MATERIAL WITHIN THE FROST ZONE (ABOUT 1.8 M BELOW FINISHED GRADE) AND ABOVE THE COVER MATERIAL SHOULD MATCH THE SOILS EXPOSED AT THE TRENCH WALLS TO MINIMIZE DIFFERENTIAL FROST HEAVING. THE TRENCH BACKFILL SHOULD BE PLACED IN MAXIMUM 225 MM THICK LOOSE LIFTS AND COMPACTED TO A MINIMUM OF 98% OF THE MATERIAL'S SPMDD. ALL COBBLES LARGER THAN 200 MM IN THEIR LONGEST DIRECTION SHOULD BE SEGREGATED FROM RE-USE AS TRENCH BACKFILL.
7. FLEXIBLE CONNECTIONS ARE REQUIRED FOR CONNECTING PIPES TO MANHOLES (FOR EXAMPLE KOR-N-SEAL, PSX: POSITIVE SEAL AND DURASEAL). THE CONCRETE CRADLE FOR THE PIPE CAN BE ELIMINATED.
8. THE OWNER SHALL REQUIRE THAT THE SITE SERVICING CONTRACTOR PERFORM FIELD TESTS FOR QUALITY CONTROL OF ALL SANITARY SEWERS. LEAKAGE TESTING SHALL BE COMPLETED IN ACCORDANCE WITH OPSS 410.07.16, 410.07.16.04 AND 407.07.24. DYE TESTING IS TO BE COMPLETED ON ALL SANITARY SERVICES TO CONFIRM PROPER CONNECTION TO THE SANITARY SEWER MAIN. THE FIELD TESTS SHALL BE PERFORMED IN THE PRESENCE OF A CERTIFIED PROFESSIONAL ENGINEER WHO SHALL SUBMIT A CERTIFIED COPY OF THE TEST RESULTS.
9. STORM MANHOLES AND CBMHS ARE TO HAVE 300mm SUMPS UNLESS OTHERWISE INDICATED.
10. CONTRACTOR TO TELEVISE (CCTV) ALL PROPOSED SEWERS, 200mmØ OR GREATER PRIOR TO BASE COURSE ASPHALT. UPON COMPLETION OF CONTRACT, THE CONTRACTOR IS RESPONSIBLE TO FLUSH AND CLEAN ALL SEWERS & APPURTENANCES.

WATERMAIN NOTES:

1. SPECIFICATIONS:

ITEM	SPEC. No.	REFERENCE
WATERMAIN TRENCHING	W17	CITY OF OTTAWA
THERMAL INSULATION IN SHALLOW TRENCHES	W22	CITY OF OTTAWA
WATERMAIN CROSSING BELOW SEWER/ABOVE SEWER	W25 / W25,2	CITY OF OTTAWA
WATERMAIN	PVC DR 18	
VALVE AND VALVE BOX	W24	CITY OF OTTAWA

2. SUPPLY AND CONSTRUCT ALL WATERMAINS AND APPURTENANCES IN ACCORDANCE WITH THE CITY OF OTTAWA STANDARDS AND SPECIFICATIONS. EXCAVATION, INSTALLATION, BACKFILL AND RESTORATION OF ALL WATERMAINS BY THE CONTRACTOR. CONNECTIONS AND SHUT-OFFS AT THE MAIN AND CHLORINATION OF THE WATER SYSTEM SHALL BE PERFORMED BY CITY OFFICIALS.
3. WATERMAIN SHALL BE MINIMUM 2.4m DEPTH BELOW GRADE UNLESS OTHERWISE INDICATED. ANY WATERMAIN WITH LESS THAN 2.4m COVER TO BE INSULATED PER THE SHOWN DETAIL.
4. PROVIDE MINIMUM 0.25m ABOVE, 0.5m IF BELOW, CLEARANCE BETWEEN OUTSIDE OF PIPES AT ALL CROSSINGS PER CITY OF OTTAWA STANDARDS W25/W25.2
5. WATER SERVICE IS TO BE CONSTRUCTED TO WITHIN 1.0m OF FOUNDATION WALL AND CAPPED, UNLESS OTHERWISE INDICATED.
6. CATHODIC PROTECTION REQUIRED FOR ALL IRON FITTINGS CITY OF OTTAWA STANDARD DETAILS W-39, 40, 41, 42, 43 AND 44.
7. PROVIDE THERMAL INSULATION FOR WATERMAIN AT OPEN STRUCTURES PER CITY OF OTTAWA STANDARD DETAIL W-23.
8. IF WATERMAIN MUST BE DEFLECTED TO MEET ALIGNMENT, ENSURE THAT THE AMOUNT OF DEFLECTION USED IS LESS THAN HALF THAT RECOMMENDED BY THE MANUFACTURER.

NOTE:
THE POSITION OF ALL POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, DETERMINE THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

NOT FOR CONSTRUCTION

No.	REVISION	DATE	BY
3.	REVISED PER CITY COMMENTS	JUNE 18/24	GJM
2.	REVISED PER CITY COMMENTS	MAR 8/24	GJM
1.	ISSUED FOR SITE PLAN CONTROL	JAN9/24	GJM

SCALE 1:200

DESIGN CJF · CHECKED GJM · DRAWN CJF · CHECKED GJM · APPROVED GJM

FOR REVIEW ONLY

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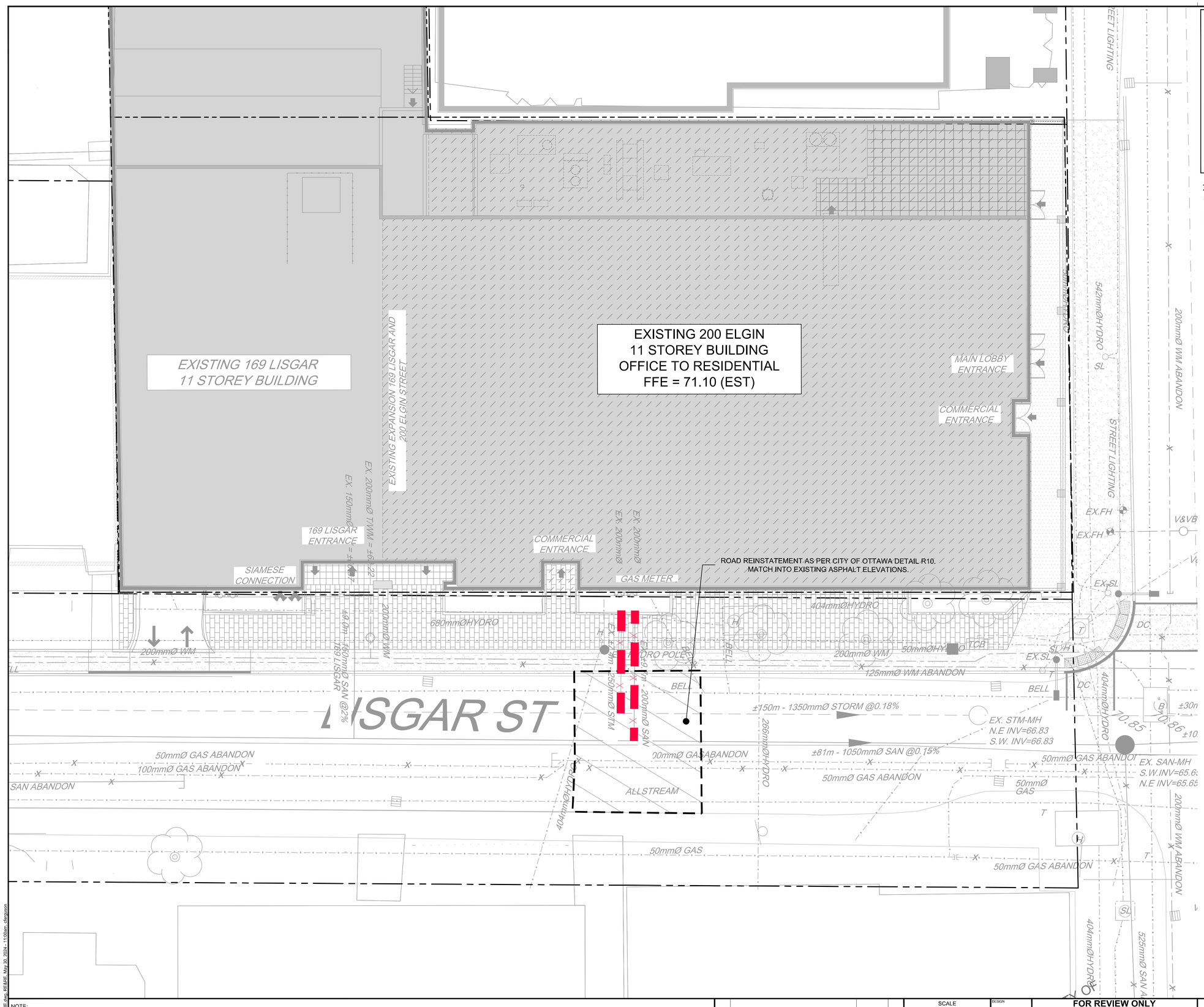
Website www.novatech-eng.com

LOCATION
CITY OF OTTAWA
200 ELGIN STREET

DRAWING NAME
GENERAL PLAN OF SERVICING

PROJECT No. 123101
REV REV # 3
DRAWING No. 123101-GP



REMOVALS NOTES:

1. OBTAIN ALL APPROVALS AND PERMITS FROM THE CITY OF OTTAWA PRIOR TO ANY REMOVAL WORK OR CONSTRUCTION.
2. ALL STORM STRUCTURES AND PIPES WITHIN THE PROPOSED BUILDING FOOTPRINT TO BE REMOVED AND DISPOSED OF OFF SITE.
3. ALL STORM PIPES OUTSIDE THE BUILDING FOOTPRINT TO BE ABANDONED PER CITY OF OTTAWA STANDARD DETAIL S11.4.
4. SAW CUT AND KEY GRIND ASPHALT AT ALL ROAD CUTS AND ASPHALT TIE IN POINTS PER CITY OF OTTAWA STANDARD DETAIL R10.
5. REFER TO THE LANDSCAPE PLANS FOR TREE PRESERVATION AND REMOVALS
6. ALL MONITORING WELLS SHOULD BE DECOMMISSIONED IN ACCORDANCE WITH ONTARIO REGULATIONS O.REG 903 BY A QUALIFIED LICENSED WELL TECHNICIAN PRIOR TO CONSTRUCTION.
7. EXISTING FOUNDATION WALLS AND OTHER CONSTRUCTION DEBRIS SHOULD BE ENTIRELY REMOVED FROM WITHIN THE PERIMETERS OF THE PROPOSED BUILDINGS AND PARKING STRUCTURE. UNDER PAVED AREAS, EXISTING CONSTRUCTION REMNANTS, SUCH AS FOUNDATION WALLS, SHOULD BE EXCAVATED TO A MINIMUM OF 1m BELOW FINAL GRADE.

NOTE:
THE POSITION OF ALL POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, DETERMINE THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

NOT FOR CONSTRUCTION

No.	REVISION	DATE	BY
3.	REVISED PER CITY COMMENTS	JUNE 18/24	GJM
2.	REVISED PER CITY COMMENTS	MAY 3/24	GJM
1.	REVISED PER CITY COMMENTS	MAR 8/24	GJM

SCALE 1:100

DESIGN CJF
CHECKED GJM
DRAWN CJF
CHECKED GJM
APPROVED GJM

FOR REVIEW ONLY

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LOCATION
CITY OF OTTAWA
200 ELGIN STREET

DRAWING NAME
REMOVALS AND REINSTATEMENT PLAN

PROJECT No. 123101
REV REV # 3
DRAWING No. 123101-RR