



# Stormwater Management Report and Servicing Brief

9-Storey Residential Building  
211 Clarence Street  
Ottawa, ON

Prepared for:

Clarence Gate Holdings Inc.  
1376 Bank Street, Unit 500.  
Ottawa (ON) K1H 7Y3

Attention: Alex Diaz

LRL File No.: 180647

May 24, 2022



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## 1 INTRODUCTION AND SITE DESCRIPTION

LRL Associates Ltd. was retained by Clarence Gate Holding Inc. to complete a Stormwater Management Analysis and Servicing Brief for the development of a proposed 9-storey residential building located at 211 Clarence Street, Ottawa, ON.

The subject property consists of one (1) lot that is legally described as Part of Lot 2, Registered Plan 4R-4282, City of Ottawa. Refer to survey included in **Appendix F**.



**Figure 1: Aerial View of Proposed Development**

The subject property has approximately 9.15 m frontage along Clarence street. The total site area is approximately **0.029 ha**. The development proposes a 9-storey apartment building that occupies the majority of the lot and consists of 34 units. For additional detail, refer to architectural site plan included in **Appendix F**.

This report has been prepared with reference to the conditions described above. Should there be any changes in the design features, which may relate to the stormwater and site servicing considerations, LRL Associates Ltd. should be advised to review the report recommendations.

## 2 EXISTING SITE AND DRAINAGE DESCRIPTION

The subject site measures **0.029 ha** and is currently vacant. Overall the site is relatively flat, elevations range between 58.24 to 58.56 m.

Sewer and watermain mapping, along with as-built information collected from the City of Ottawa indicate the following existing infrastructure located within the adjacent rights-of-way.

**Clarence Street:**

- 203 mm diameter PVC watermain
- 250 mm diameter PVC sanitary sewer
- 375 mm diameter PVC storm sewer

### **3 SCOPE OF WORK**

As per applicable guidelines, the scope of work includes the following:

**Stormwater management**

- Calculate the allowable stormwater release rate.
- Calculate the anticipated post-development stormwater release rates.
- Demonstrate how the target quantity objectives will be achieved.

**Water services**

- Calculate the expected water supply demand at average and peak conditions.
- Calculate the required fire flow as per the Fire Underwriters Survey (FUS) method.
- Confirm the adequacy of water supply and pressure during peak flow and fire flow.
- Describe the proposed water distribution network and connection to the existing system.

**Sanitary services**

- Describe the existing sanitary sewers available to receive wastewater from the building.
- Calculate peak flow rates from the development.
- Describe the proposed sanitary sewer system.

### **4 REGULATORY APPROVALS**

Ministry of the Environment, Conservation and Parks (MECP) Environmental Compliance Approval (ECA) will be required for this site. However, based on Geotechnical Report, a Permit to Take Water (PTTW) is not expected to be required. Rideau Valley Conservation Authority (RVCA) is required to be consulted to determine stormwater quality control criteria for this site.

### **5 WATER SUPPLY AND FIRE PROTECTION**

#### **5.1 Existing Water Supply Services and Fire Hydrant Coverage**

The subject property lies within the City of Ottawa 1W water distribution network pressure zone. Fronting the property there is an existing 203 mm watermain within Clarence Street. Three (3) existing fire hydrants are available to service the proposed development, refer to **Appendix B** for the location of fire hydrants.



## 5.2 Water Supply Servicing Design

The new apartment building is proposed to be serviced via a single 150mm diameter water service lateral. The proposed water servicing should meet both domestic and fire protection water demand.

Table 1 summarizes the City of Ottawa Design Guidelines design parameters employed in the preparation of the water demand estimate.

**Table 1: Design Parameters based on City of Ottawa Design Guidelines-Water**

Design Parameter	Value
Residential Bachelor / 1-Bedroom Apartment	1.4 P/unit
Other Commercial Average Daily Demand	2.8 L/m <sup>2</sup> /d
Average Daily Demand	350 L/c/d
Minimum Depth of Cover	2.4 m from top of watermain to finished grade
Desired operating pressure during maximum daily flow	345 kPa (50 psi) and 552 kPa (80 psi)
Minimum allowable pressure during peak hour flow	275 kPa (40 psi)
Minimum allowable pressure during maximum daily + fire flow	275 kPa (20 psi)

The interior layout and architectural floor plans have been reviewed and it was determined that the building will house **33** studio/one-bedroom units. Based on the City of Ottawa Design guidelines for population projection, this translates to approximately 47.6 residents. Table 2 below summarizes the proposed development as interpreted using Table 4.1 of the City of Ottawa Design Guidelines.

**Table 2: Proposed Development Residential Population Estimate**

Proposed Unit Type	Persons Per Unit	Number of Units	Population
1-Bedroom/Studio Apartments	1.4	<b>33</b>	<b>47.6</b>

The required water supply requirements for the residential units in proposed building have been calculated using the following formula:

$$Q = (q \times P \times M)$$

Where,

$q$  = Average water consumption (L/capita/day)

$P$  = Design population (capita)

$M$  = Peak factor



The following factors were used in calculations as per MOE Table 3-3 and Table 4.2 of the Ottawa Design Guidelines – Water Distribution:

- Maximum Daily Demand Residential Factor = 7.8 (MOE)
- Peak Hour Demand Residential Factor = 11.8 (MOE)

Using the above-mentioned factors and design parameters listed in Table 1, anticipated total demands were calculated as follows:

- Average day demand = 0.15 L/s
- Maximum daily demand = 1.21 L/s
- Maximum hour demand = 14.35 L/s

Refer to **Appendix B** for water demand calculations.

The City of Ottawa was contacted to obtain boundary conditions associated with the estimated water demand, as indicated in the boundary request correspondence included in **Appendix B**. Table 3 below summarizes boundary conditions for the proposed development.

**Table 3: Summary of Anticipated Demands and Boundary Conditions**

Scenario	Anticipated Demand (L/s)	Boundary Conditions @ Clarence Street* (m H <sub>2</sub> O/KPa)
Average Daily Demand	0.15	115.4 / 561.3
Peak Hour Demand	1.21	106.2 / 471.1
Max Day + Fire Flow	14.35 + 183.3	104.5 / 454.4
*Assumed Ground Elevation of 58.18m		

Boundary Conditions (Table 3) show that pressures in all design scenario meet the minimum required pressure thresholds mentioned in Table 1. However, static water pressure in the average daily demand scenario exceeds the recommended pressure mentioned in Table 1. It is therefore recommended to install pressure reducing valves.

The estimated fire flow for the proposed buildings was calculated in accordance with *ISTB-2018-02* using the following conservatively assumed parameters;

- Type of construction – Non-combustible
- Occupancy type – Limited combustible
- Sprinkler Protection – Non-Sprinklered.

The estimated fire flow demand was estimated to be **11,000 L/min** (183.3 L/s), see **Appendix B** for calculation details.



There are three (3) existing fire hydrants near the proposed building that are available to satisfy the required fire flow demand of 11,000 L/min. Refer to **Appendix B** for fire hydrant locations. Table 4 below summarizes the aggregate fire flow of the contributing hydrants in close proximity to the proposed development based on Table 18.5.4.3 of *ISTB-2018-02*.

**Table 4: Fire Protection Summary Table**

Building	Fire Flow Demand (L/min)	Fire Hydrants within 75m	Fire Hydrant within 150m	Available Combined Fire Flow (L/min)
Proposed 9-Storey Apartment Building	11,000	2	1	(2 x 5678) + (1 x 3785) = 15,141

The total available fire flow from contributing hydrants is equal to 15,141 L/min which is sufficient to provide adequate fire flow for the proposed development. A certified fire protection system specialist will need to be employed to design the building's fire suppression system and confirm the actual fire flow demand.

## 6 SANITARY SERVICE

### 6.1 Existing Sanitary Sewer Services

There is an existing 250 mm dia. sanitary sewer along Clarence Street fronting the subject site.

The post-development total flow was calculated to be **0.57 L/s** as a result of the proposed residential population and infiltration allowance. Refer to **Appendix C** for additional information on the calculated sanitary flows.

### 6.2 Sanitary Sewer Servicing Design

The proposed development will be serviced via 150mm dia. sanitary service lateral. The wastewater flow from the proposed development was calculated to be **0.57 L/s**, which will be conveyed to the existing 250 mm dia. sanitary sewer within Clarence Street before ultimately discharging to the 1050mm trunk sewer within King Edward Ave. Refer to LRL drawing C401 for the proposed sanitary servicing.

The parameters used to calculate the anticipated sanitary flows are; residential average population per unit of 1.4 person for 1-bedroom, a residential daily sewage flow of 280 L/p/day, a residential peaking factor using Harmon equation (max=4) and a total infiltration rate of 0.33 L/s/ha. Based on these parameters and the total site area of 0.029 ha, the total anticipated sanitary flow was estimated **0.57 L/s**. Refer to **Appendix C** for the sanitary sewer design sheet.

Based on as-builts drawing provided from the City, the existing 250mm municipal sanitary sewer within Clarence Street right-of-way is sloped at 0.5% and has a maximum capacity of **42.05 L/s**.





The total anticipated sanitary flow from the proposed development represents approximately 1.4% of the maximum capacity of the downstream municipal sewer leg.

## 7 STORMWATER MANAGEMENT

### 7.1 Existing Stormwater Infrastructure

Stormwater runoff from the subject property is tributary to the City of Ottawa sewer system. As such, approvals for the proposed development within this area are under the approval authority of the City of Ottawa. Existing infrastructure fronting the subject site include a 375 mm dia. storm sewer along Clarence Street.

Based on review of the topography of the site, in pre-development conditions, runoff flows uncontrolled overland towards Clarence Street right-of-way (ROW). Refer to Pre-development Watershed Plan C701 in **Appendix E**.

### 7.2 Design Criteria

The stormwater management criteria for this development are based on the pre-consultation with City of Ottawa officials, the City of Ottawa Sewer Design Guidelines, 2012 (City standards), as well as the Ministry of the Environment's Stormwater Management Planning and Design Manual, 2003 (SWMPD Manual).

#### 7.2.1 Water Quality

The subject property lies within the Lower Rideau River sub-watershed and is therefore subject to review by the Rideau Valley Conservation Authority (RVCA). Based on correspondence with RVCA, refer to **Appendix A** for correspondence, further quality control measures will not be required as runoff from the proposed development will be primarily from clean rooftop and landscaped surfaces.

#### 7.2.2 Water Quantity

Based on pre-consultation with the City, correspondence included in **Appendix A**, the following stormwater management requirements, , were identified for the subject site:

- Meet an allowable release rate based on a maximum Rational Method runoff coefficient (C) of 0.5, employing the City of Ottawa IDF parameters for a 5-year storm with a calculated time of concentration equal to or greater than 10 minutes.
- Retain storm events greater than 5 year, up to and including the City of Ottawa 100-year storm event on site.

The total allowable stormwater release rate was calculated to be **4.17 L/s**. Refer to **Appendix D** for calculations.

### 7.3 Method of Analysis

The Modified Rational Method has been used to calculate the runoff rate from the subject site and to quantify the detention storage required for quantity control. Refer to **Appendix D** for stormwater storage calculations.



#### 7.4 Proposed Stormwater Quantity Controls

The proposed stormwater management quantity control for this development will be accomplished using roof drains restricting the flow leaving the rooftop. Storage required as a result of quantity control will be accomplished through rooftop surface storage.

The subject site is proposed to be serviced via a 200 mm dia. storm service lateral that will connect to the existing 375 mm dia. storm sewer within Clarence street. The proposed servicing layout and connection points are shown on drawing C401 in **Appendix E**, and detailed calculations can be found in **Appendix D**.

The existing site is delineated by catchments EWS-01, which currently drains uncontrolled off the site towards Clarence street, refer to Pre-development Watershed Plan C701 included in **Appendix E**. The site has been analyzed and post-development watersheds have been allocated, see Table 5 and Post-development Watershed Plan C702 in **Appendix E**.

**Table 5: Post-development Drainage Areas**

Drainage Area Name	Area (ha)	Weighted Runoff Coefficient	100 Year Weighted Runoff Coefficient (25% increase)
WS-01 (un-controlled)	0.007	0.33	0.41
WS-02 (controlled)	0.022	0.90	1.0
<b>Total</b>	<b>0.029</b>	<b>0.76</b>	<b>0.95</b>

*Watershed WS-01* consists of small mainly landscaped areas north and south of the proposed building and is uncontrolled in post-development conditions. Runoff in the north portion of this watershed will be collected via two (2) area drains in the backyard which will be indirectly connected to the foundation drain via the building’s internal mechanical system. Runoff from the remainder of this watershed will surface drain uncontrolled towards Clarence Street right-of-way.

*Watershed WS-02* consists of the building’s envelope. Runoff in this watershed will be collected via three (3) WATT’s roof drains with a closed weir opening. Collected runoff on the roof will then discharge to the existing 375 mm dia. storm sewer within Clarence street via the proposed 200mm diameter storm outlet. Refer to C401 in **Appendix E** for servicing layout and connection points.

The building’s rooftop was analysed and divided into three (3) ponding areas. A total of three (3) roof drains are proposed, each of which will restrict the discharge rate to **0.63 L/s**, resulting in a total release rate of **1.89 L/s** from the roof. The roof drain flow control device has been selected to provide a flow rate of **0.63 L/s** at a maximum flow depth of **0.15 m**. Proposed roof drains are to be **Watts RD-100-A** with a **closed** exposed weir opening. See **Appendix D** for more information about the selected roof drain and storage calculations.



Table 6 summarizes the release rates and storage volumes required to meet the allowable release rates.

**Table 6: Stormwater Release Rate & Storage Volume Summary**

Catchments	Area (ha)	100-Yr Release Rate (L/s)	100-Yr Storage Required (m <sup>3</sup> )	Total Available Storage (m <sup>3</sup> )
WS-01	0.007	1.42	0	0
WS-02 (Roof Controls)	0.022	1.89	6.62	10.14
<b>TOTAL</b>	<b>0.029</b>	<b>3.31</b>	<b>6.62</b>	<b>10.14</b>

It is calculated that a total of **6.62 m<sup>3</sup>** of storage will be required to attenuate flows to the release rate of **3.31 L/s**. The runoff exceeding the allowable release rate will be stored on-site via rooftop ponding. Greater details of ponding extents, storage provided and proposed release rates can be found on drawing C601 (Stormwater Management Plan) in **Appendix E**.

## 8 EROSION AND SEDIMENT CONTROL

During construction, erosion and sediment controls will be provided primarily via a sediment control fence to be erected along the perimeter of the site where runoff has the potential of leaving the site. Inlet sediment control devices are also to be provided in any catch basin and/or manholes in and around the site that may be impacted by the site construction. Construction and maintenance requirements for erosion and sediment controls are to comply with Ontario Provincial Standard Specification OPSS 577. Refer to Erosion and Sediment Control Plan C101 in **Appendix E**.

## 9 CONCLUSION

This Stormwater Management and Servicing Report for the proposed development at 211 Clarence street presents the rationale and details for the servicing requirements for the subject property.

In accordance with the report objectives, the servicing requirements for the development are summarized below:

### Water Service

- The maximum required fire flow was calculated at 183.3 L/min using the FUS method.
- There are three (3) existing fire hydrants available to service the proposed development which will provide a combined fire flow of 15,141 L/min to the site.



- The new development will be serviced with 150 mm dia. water service connection to the existing 200 mm dia. watermain within Clarence Street.
- Boundary conditions received from the City of Ottawa indicate that sufficient pressure is available to meet the proposed development's water and fire flow demands.

### Sanitary Service

- The total anticipated sanitary flow from the proposed development is 0.57 L/s.
- The proposed development will discharge sewage to the existing 250 mm dia. sanitary sewer within Clarence Street via a proposed 150 mm dia. sanitary service lateral.

### Stormwater Management


- Stormwater quality control measures are not required as per consultation with RVCA.
- The storm water release rates from the proposed development will meet calculated allowable release rate of 4.17 L/s.
- Stormwater quantity control objectives will be met through on-site storm water storage on the roof.

## 10 REPORT CONDITIONS AND LIMITATIONS

The report conclusions are applicable only to this specific project described in the preceding pages. Any changes, modifications or additions will require a subsequent review by LRL Associates Ltd. to ensure the compatibility with the recommendations contained in this document. If you have any questions or comments, please contact the undersigned.

Prepared by:

**LRL Associates Ltd.**



Amr Salem, PMP  
Civil Designer



Mohan Basnet, P.Eng.  
Civil Engineer



**APPENDIX A**  
**Pre-consultation**

## DEVELOPMENT SERVICING STUDY CHECKLIST

Project #: 180647

2022-05-17

### 4.1 General Content

Executive Summary (for larger reports only).	N/A
Date and revision number of the report.	Report Cover sheet
Location map and plan showing municipal address, boundary, and layout of proposed development.	Drawings/Figures
Plan showing the site and location of all existing services.	Figure 1
Development statistics, land use, density, adherence to zoning and official plan, and reference to applicable subwatershed and watershed plans that provide context to which individual developments must adhere.	Section 1.0
Summary of Pre-consultation Meetings with City and other approval agencies.	Section 4.0 & Appendix A
Reference and confirm conformance to higher level studies and reports (Master Servicing Studies, Environmental Assessments, Community Design Plans), or in the case where it is not in conformance, the proponent must provide justification and develop a defensible design criteria.	Section 5.1, 6.1, 7.1
Statement of objectives and servicing criteria.	Section 1.0
Identification of existing and proposed infrastructure available in the immediate area.	Section 5.1, 6.1, 7.1
Identification of Environmentally Significant Areas, watercourses and Municipal Drains potentially impacted by the proposed development (Reference can be made to the Natural Heritage Studies, if available).	Section 7.0
Concept level master grading plan to confirm existing and proposed grades in the development. This is required to confirm the feasibility of proposed stormwater management and drainage, soil removal and fill constraints, and potential impacts to neighbouring properties. This is also required to confirm that the proposed grading will not impede existing major system flow paths.	C301

Identification of potential impacts of proposed piped services on private services (such as wells and septic fields on adjacent lands) and mitigation required to address potential impacts. N/A

Proposed phasing of the development, if applicable. N/A

Reference to geotechnical studies and recommendations concerning servicing. C401

All preliminary and formal site plan submissions should have the following information:

- Metric scale

- North arrow (including construction North)

- Key plan

- Name and contact information of applicant and property owner C401

- Property limits including bearings and dimensions

- Existing and proposed structures and parking areas

- Easements, road widening and rights-of-way

- Adjacent street names

## 4.2 Development Servicing Report: Water

Confirm consistency with Master Servicing Study, if available N/A

Availability of public infrastructure to service proposed development Section 5.1

Identification of system constraints Section 5.1

Identify boundary conditions Section 5.2

Confirmation of adequate domestic supply and pressure Section 5.2

Confirmation of adequate fire flow protection and confirmation that fire flow is calculated as per the Fire Underwriter's Survey. Output should show available fire flow at locations throughout the development. Section 5.2

Provide a check of high pressures. If pressure is found to be high, an assessment is required to confirm the application of pressure reducing valves.	Section 5.2
Definition of phasing constraints. Hydraulic modeling is required to confirm servicing for all defined phases of the project including the ultimate design	N/A
Address reliability requirements such as appropriate location of shut-off valves	N/A
Check on the necessity of a pressure zone boundary modification.	N/A
Reference to water supply analysis to show that major infrastructure is capable of delivering sufficient water for the proposed land use. This includes data that shows that the expected demands under average day, peak hour and fire flow conditions provide water within the required pressure range	Section 5.2
Description of the proposed water distribution network, including locations of proposed connections to the existing system, provisions for necessary looping, and appurtenances (valves, pressure reducing valves, valve chambers, and fire hydrants) including special metering provisions.	Section 5.2
Description of off -site required feeder mains, booster pumping stations, and other water infrastructure that will be ultimately required to service proposed development, including financing, interim facilities, and timing of implementation.	N/A
Confirmation that water demands are calculated based on the City of Ottawa Design Guidelines.	Section 5.2
Provision of a model schematic showing the boundary conditions locations, streets, parcels, and building locations for reference.	N/A

#### **4.3 Development Servicing Report: Wastewater**

Summary of proposed design criteria (Note: Wet-weather flow criteria should not deviate from the City of Ottawa Sewer Design Guidelines. Monitored flow data from relatively new infrastructure cannot be used to justify capacity requirements for proposed infrastructure).	Section 6.2
Confirm consistency with Master Servicing Study and/or justifications for deviations.	N/A



Consideration of local conditions that may contribute to extraneous flows that are higher than the recommended flows in the guidelines. This includes groundwater and soil conditions, and age and condition of sewers.	N.A
Description of existing sanitary sewer available for discharge of wastewater from proposed development.	Section 6.1
Verify available capacity in downstream sanitary sewer and/or identification of upgrades necessary to service the proposed development. (Reference can be made to previously completed Master Servicing Study if applicable)	Section 6.2
Calculations related to dry-weather and wet-weather flow rates from the development in standard MOE sanitary sewer design table (Appendix 'C') format.	Section 6.2 Appendix C
Description of proposed sewer network including sewers, pumping stations, and forcemains.	Section 6.2
Discussion of previously identified environmental constraints and impact on servicing (environmental constraints are related to limitations imposed on the development in order to preserve the physical condition of watercourses, vegetation, soil cover, as well as protecting against water quantity and quality).	N/A
Pumping stations: impacts of proposed development on existing pumping stations or requirements for new pumping station to service development.	Section 6.1
Forcemain capacity in terms of operational redundancy, surge pressure and maximum flow velocity.	N/A
Identification and implementation of the emergency overflow from sanitary pumping stations in relation to the hydraulic grade line to protect against basement flooding.	N/A
Special considerations such as contamination, corrosive environment etc.	N/A

#### **4.4 Development Servicing Report: Stormwater Checklist**

Description of drainage outlets and downstream constraints including legality of outlets (i.e. municipal drain, right-of-way, watercourse, or private property)	Section 7.1
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Analysis of available capacity in existing public infrastructure.	N/A
A drawing showing the subject lands, its surroundings, the receiving watercourse, existing drainage patterns, and proposed drainage pattern.	N/A
Water quantity control objective (e.g. controlling post-development peak flows to pre-development level for storm events ranging from the 2 or 5 year event (dependent on the receiving sewer design) to 100 year return period); if other objectives are being applied, a rationale must be included with reference to hydrologic analyses of the potentially affected subwatersheds, taking into account long-term cumulative effects.	Section 7.2.1
Water Quality control objective (basic, normal or enhanced level of protection based on the sensitivities of the receiving watercourse) and storage requirements.	Section 7.2.1
Description of the stormwater management concept with facility locations and descriptions with references and supporting information.	Section 7.4
Set-back from private sewage disposal systems.	N/A
Watercourse and hazard lands setbacks.	N/A
Record of pre-consultation with the Ontario Ministry of Environment and the Conservation Authority that has jurisdiction on the affected watershed.	N/A
Confirm consistency with sub-watershed and Master Servicing Study, if applicable study exists.	N/A
Storage requirements (complete with calculations) and conveyance capacity for minor events (1:5 year return period) and major events (1:100 year return period).	Section 7.4
Identification of watercourses within the proposed development and how watercourses will be protected, or, if necessary, altered by the proposed development with applicable approvals.	N/A
Calculate pre and post development peak flow rates including a description of existing site conditions and proposed impervious areas and drainage catchments in comparison to existing conditions.	Section 7.4 Appendix D

Any proposed diversion of drainage catchment areas from one outlet to another.	N/A
Proposed minor and major systems including locations and sizes of stormwater trunk sewers, and stormwater management facilities.	Appendix D
If quantity control is not proposed, demonstration that downstream system has adequate capacity for the post-development flows up to and including the 100 year return period storm event.	N/A
Identification of potential impacts to receiving watercourses Identification of municipal drains and related approval requirements.	N/A
Descriptions of how the conveyance and storage capacity will be achieved for the development.	Section 7.4
100 year flood levels and major flow routing to protect proposed development from flooding for establishing minimum building elevations (MBE) and overall grading.	NA
Inclusion of hydraulic analysis including hydraulic grade line elevations.	N/A
Description of approach to erosion and sediment control during construction for the protection of receiving watercourse or drainage corridors.	Section 8.0
Identification of floodplains – proponent to obtain relevant floodplain information from the appropriate Conservation Authority. The proponent may be required to delineate floodplain elevations to the satisfaction of the Conservation Authority if such information is not available or if information does not match current conditions.	N/A
Identification of fill constraints related to floodplain and geotechnical investigation	N/A

#### **4.5 Approval and Permit Requirements: Checklist**

Conservation Authority as the designated approval agency for modification of floodplain, potential impact on fish habitat, proposed works in or adjacent to a watercourse, cut/fill permits and Approval under Lakes and Rivers Improvement Act. The Conservation Authority is not the approval authority for the Lakes and Rivers Improvement Act. Where there are Conservation Authority regulations in place, approval under the Lakes and Rivers Improvement Act is not required, except in cases of dams as defined in the Act.

N/A

Application for Certificate of Approval (CofA) under the Ontario Water Resources Act.

N/A

Changes to Municipal Drains.

N/A

Other permits (National Capital Commission, Parks Canada, Public Works and Government Services Canada, Ministry of Transportation etc.)

N/A

#### **4.6 Conclusion Checklist**

Clearly stated conclusions and recommendations

Section 9.0

Comments received from review agencies including the City of Ottawa and information on how the comments were addressed. Final sign-off from the responsible reviewing agency.

Noted

All draft and final reports shall be signed and stamped by a professional Engineer registered in Ontario

Noted

## Amr Salem

---

**From:** Alex Diaz <alex@arthousedevelopments.ca>  
**Sent:** April 27, 2022 10:21 PM  
**To:** Amr Salem  
**Subject:** Fwd: 211 Clarence Street - Preconsult Follow-up  
**Attachments:** 20210728\_111023\_211\_Clarence\_Renders\_Pre-Consult.pdf; 20210728\_111023\_211\_Clarence\_Site\_Plan\_Elevations\_Pre-Consult.pdf; Clarence, 211\_Design Brief.pdf; Plans and Study list\_211 Clarence.pdf

**Follow Up Flag:** Follow up  
**Flag Status:** Completed

Hi Amr

Attached is the pre-consultation follow up email from the City re 211 Clarence  
Is this what you are looking for?  
If something else let me know...

Alex Diaz  
Art House Developments  
613-252-5931  
[alex@arthousedevelopments.ca](mailto:alex@arthousedevelopments.ca)

----- Forwarded message -----

**From:** Bernier, John <[John.Bernier@ottawa.ca](mailto:John.Bernier@ottawa.ca)>  
**Date:** Mon, Oct 4, 2021 at 11:40 AM  
**Subject:** 211 Clarence Street - Preconsult Follow-up  
**To:** Jeffrey Kelly <[j.kelly@novatech-eng.com](mailto:j.kelly@novatech-eng.com)>  
**Cc:** Dubyk, Wally <[Wally.Dubyk@ottawa.ca](mailto:Wally.Dubyk@ottawa.ca)>, Moise, Christopher <[christopher.moise@ottawa.ca](mailto:christopher.moise@ottawa.ca)>, Bakhit, Reza <[reza.bakhit@ottawa.ca](mailto:reza.bakhit@ottawa.ca)>, Murray Chown <[m.chown@novatech-eng.com](mailto:m.chown@novatech-eng.com)>, [alex@arthousedevelopments.ca](mailto:alex@arthousedevelopments.ca) <[alex@arthousedevelopments.ca](mailto:alex@arthousedevelopments.ca)>, Ashraf Arif <[aarif@synercapital.ca](mailto:aarif@synercapital.ca)>, Amr Salem <[asalem@lrl.ca](mailto:asalem@lrl.ca)>

Good Morning,

Please refer to the below [and/or attached notes] regarding the Pre-Application Consultation (pre-con) Meeting held on August 19, 2021 for the property at 211 Clarence for the development a 9-storey, 31-unit apartment building. No parking spaces were proposed. I have also attached the required Plans & Study List for application submission.

Below [or attached] are staff's preliminary comments based on the information available at the time of pre-con meeting:

## Planning

- **OP General Urban Area** - note that new draft OP will likely be tabled this fall and any applications submitted after this time will need to include a rationale as to how this project has regard for the future OP.
  - [Annex 12](#): Viewshed Area of Parliament Buildings from Beechwood Cemetery
  
- **Secondary Plan**: Central Area Secondary Plan (Lowertown Policy Area)- supportive of a medium-profile residential building
- **Zoning By-law: R4UD S77**- \*\*\*R4T no longer applies\*\*\* Allows low-rise apartment buildings. Therefore, rezoning required to permit use and additional height (27.78m).
  - [https://documents.ottawa.ca/sites/documents/files/schedule77\\_zbl\\_en.pdf](https://documents.ottawa.ca/sites/documents/files/schedule77_zbl_en.pdf)
  - 6.10m front yard setback
  - 21.4m height
  
- **ZBA/Planning Rationale:**
  - Was made privy to the previous Preconsult that you had, in which the planner was asking for additional height: this current design might be a little too high. Would prefer a height that matches the buildings on either side.
    - Issues of landscaping, amenity space reqs, setbacks, and livability of the units don't appear to be addressed.
  
- Should you proceed:
  - Given the small size of the lot, rationale will be required to demonstrate that the proposed development would not represent an overdevelopment of the site. Attention should be given in particular to the site design, in particular the upper storeys of the building, as well as the treatment at ground level
  
  - Discussion on how the development is achieving the Lowertown Secondary Plan Design Criteria:
    - In particular medium-scale buildings should:
      - Special treatment of lower floors for visual interest
      - Setting back medium profile buildings to achieve human scale
      - Usable private amenity space
      - Opportunities for trees
      - Identifiable entrance
  
  - Note: R4T is no longer applicable, now subject to the R4UD requirements, many of which are not being met here.
  - View analysis will be required. Please include the following in order to model and assess whether it is outside of the Beechwood Viewshed.
    - an AutoCAD 3D .dwg (v2006), a Sketchup .skp , and a site plan with setbacks, etc. for accurate placement.
  
  - 2 visitor parking spaces required and would require relief.

- **General Comments:**

- Flesh out the waste management strategy - room dimensions, bins, door clearances etc.
- 16 Bicycle space proposed: we would encourage a 1:1 ratio since you are proposing 0 parking spaces.
- Difficult to tell whether the amenity space requirements are being met.
- Rooftop amenity and studio apartment seem to be a conflict, would suggest removing this unit and enlarging this space.

## **Urban Design**

- This proposal resides within one of the City's Design Priority Areas and must attend the City's UDRP. We recommend that the applicant come to an agreement with staff on an appropriate approach to locations of massing and overall height prior to their submission for a formal review with the Panel;
- We have the following comments/questions in regard to the current design:
  - **Height:** We recognize this site is problematic with a narrow width sandwiched between two mid-rise residential buildings and struggles with an appropriate contextual relationship.
    - The three storey option may not fit perfectly and be dwarfed by its neighbours however, it may result in a lower impact on residents of those existing buildings as compared to a higher more contextual design;
    - The nine storey option (or a height which more closely matches the neighbouring buildings) would appear to fit better in this context however, any impacts created by the footprint size will increase with each additional floor;
    - We recommend the proposal illustrate how the request for additional height will not negatively impact the two neighbouring buildings in regard to excessive shadowing of the neighbouring units facing the rear yards;
  - **Front yard set-back:** We recommend that any portion of the proposal which is proud of the neighbouring buildings provide some measure to reduce a blank wall effect through some architectural means (ie fenestration, material, etc.)
  - **Rear yard set-back:** We suggest that any variances to rear yard reductions using a three storey proposal may not be equivalent to a nine storey building with a similar foot print. We recommend the rear yard set-backs be reconsidered in the totality of the nine storey proposal with all additional impacts thereby created;
  - **Side yard set-back:** We note that the adjacent properties appear to be designed with the ability to have this property build to its side-yard lot line for a certain length. We recommend the proposal investigate the possibility of gaining additional floor area to the side lot lines to match the existing buildings as a way to increase floor area when the rear yard set-back may increase;
  - **Materiality and heritage considerations:** We recommend consideration of the material context of the Byward Market, especially concerning the street facing facade;
- A scoped Design Brief is a required submittal (and separate from any UDRP submission) for all Site Plan/Re-zoning applications and can be combined with the Planning Rationale. Please see the Design Brief Terms of Reference provided and consult the City's website for details regarding the UDRP schedule.

## **Engineering**

### **General:**

- It is the sole responsibility of the consultant to investigate the location of existing underground utilities in the proposed servicing area and submit a request for locates to avoid conflict(s). The location of existing utilities and services shall be documented on an **Existing Conditions Plan**.
- Any easements on the subject site shall be identified and respected by any development proposal and shall adhere to the conditions identified in the easement agreement. A **legal survey plan** shall be provided, and all easements shall be shown on the engineering plans.

#### 1. Reference documents for information purposes :

- Ottawa Sewer Design Guidelines (October 2012)
- Technical Bulletin PIEDTB-2016-01
- Technical Bulletins ISTB-2018-01, ISTB-2018-02 and ISTB-2018-03.
- Ottawa Design Guidelines - Water Distribution (2010)
- Geotechnical Investigation and Reporting Guidelines for Development Applications in the City of Ottawa (2007)
- City of Ottawa Slope Stability Guidelines for Development Applications (revised 2012)
- City of Ottawa Environmental Noise Control Guidelines (January 2016)
- City of Ottawa Accessibility Design Standards (2012) (City recommends development be in accordance with these standards on private property)
- Ottawa Standard Tender Documents (latest version)
- Ontario Provincial Standards for Roads & Public Works (2013)
- Record drawings and utility plans are also available for purchase from the City (Contact the City's Information Centre by email at [InformationCentre@ottawa.ca](mailto:InformationCentre@ottawa.ca) or by phone at (613) 580-424 x.44455).

Please note that this is the applicant responsibility to refer to the latest applicable guidelines while preparing reports and studies.





**Disclaimer:**

*The City of Ottawa does not guarantee the accuracy or completeness of the data and information contained on the above image(s) and does not assume any responsibility or liability with respect to any damage or loss arising from the use or interpretation of the image(s) provided. This image is for schematic purposes only*

**Stormwater Management Criteria and Information:**

- **Water Quantity Control:** Please control post-development runoff from the subject site, up to and including the **100-year storm event**, to a **5-year pre-development level**. The pre-development runoff coefficient will need to be determined **as per existing conditions** but in no case more than 0.5. **[If 0.5 applies it needs to be clearly demonstrated in the report that the pre-development runoff coefficient is greater than 0.5]**. The time of concentration ( $T_c$ ) used to determine the pre-development condition should be calculated.  *$T_c$  should not be less than 10 min. since IDF curves become unrealistic at less than 10 min;  $T_c$  of 10 minutes shall be used for all post-development calculations*].
- Any storm events greater than the established **5-year allowable** release rate, up to and including the **100-year storm event**, shall be detained on-site. The SWM measures required to avoid impact on downstream sewer system will be subject to review.
- Please note that foundation drainage is to be independently connected to sewer main unless being pumped with appropriate back up power, sufficient sized pump and back flow prevention. **It is recommended that the foundation drainage system be drained by a sump pump connection to the storm sewer to minimize risk of basement flooding as it will provide the best protection from the uncontrolled sewer system compared to relying on the backwater valve.**

- **Water Quality Control:** Please consult with the local conservation authority (RVCA) regarding water quality criteria prior to submission of a Site Plan Control Proposal application to establish any water quality control restrictions, criteria and measures for the site. Correspondence and clearance shall be provided in the Appendix of the report.
- **If Underground Storage proposed:** Please note that the Modified Rational Method for storage computation in the Sewer Design Guidelines was originally intended to be used for above ground storage (i.e. parking lot) where the change in head over the orifice varied from 1.5 m to 1.2 m (assuming a 1.2 m deep CB and a max ponding depth of 0.3 m). This change in head was small and hence the release rate fluctuated little, therefore there was no need to use an average release rate.

When underground storage is used, the release rate fluctuates from a maximum peak flow based on maximum head down to a release rate of zero. This difference is large and has a significant impact on storage requirements. **We therefore require that an average release rate equal to 50% of the peak allowable rate shall be applied to estimate the required volume. Alternatively, the consultant may choose to use a submersible pump in the design to ensure a constant release rate.**

In the event that there is a disagreement from the designer regarding the required storage, The City will require that the designer demonstrate their rationale utilizing dynamic modelling, that will then be reviewed by City modellers in the Water Resources Group.

Please provide information on UG storage pipe. Provide required cover over pipe and details, chart of storage values, capacity etc. How will this pipe be cleaned of sediment and debris? ( This to be discuss in SWM report)

Provide information on type of underground storage system including product name and model, number of chambers, chamber configuration, confirm invert of chamber system, top of chamber system, required cover over system and details, interior bottom slope (for self-cleansing), chart of storage values, length, width and height, capacity, entry ports (maintenance) etc.

Provide a cross section of underground chamber system showing invert and obvert/top, major and minor HWLs, top of ground, system volume provided during major and minor events. UG storage to provide actual 2- and 100-year event storage requirements.

In regard to all proposed UG storage, ground water levels (and in particular HGW levels) will need to be reviewed to ensure that the proposed system does not become surcharged and thereby ineffective. ( Please provide discussion in SWM report)

Modeling can be provided to ensure capacity for both storm and sanitary sewers for the proposed development by City's Water Distribution Dept. – Modeling Group, through PM and upon request.

- Please note that the minimum orifice dia. for a plug style **ICD is 83mm and the minimum flow rate from a vortex ICD is 6 L/s** in order to reduce the likelihood of plugging.
- Post-development site grading shall match existing property line grades in order to minimize disruption to the adjacent residential properties. A **topographical plan of survey** shall be provided as part of the submission and a note provided on the plans.
- Please provide a **Pre-Development Drainage Area Plan** to define the pre-development drainage areas/patterns. **Existing drainage patterns shall be maintained and discussed as part of the proposed SWM solution.**

- **If rooftop control and storage is proposed** as part of the SWM solutions sufficient details (Cl. 8.3.8.4) shall be discussed and document in the report and on the plans. Roof drains are to be connected downstream of any incorporated ICDs within the SWM system and not to the foundation drain system. Provide a **Roof Drain Plan** as part of the submission.
- If **Window wells** are proposed, they are to be indirectly connected to the footing drains. A detail of window well with indirect connection is required, as is a note at window well location speaking to indirect connection.
- There must be at least **15cm of vertical clearance** between the spill elevation and the ground elevation at the building envelope that is in proximity of the flow route or ponding area. The exception in this case would be at reverse sloped loading dock locations. At these locations, a minimum of 15cm of vertical clearance must be provided below loading dock openings. Ensure to provide discussion in report and ensure grading plan matches if applicable.

### Sanitary Sewers:

- A 250mm dia. PVC Sanitary sewer (1992) is available within **Clarence St.**

### Storm Sewers:

- A 375mm dia. PVC Storm Sewer ( 1992) is available within **Clarence St.**

### Water :

- A 203 mm dia. PVC watermain (1992) is available within **Clarence St.**
- Existing residential service to be blanked at the main. (If applicable , this has to be discuss in serving section of the report and to be shown and noted on the servicing plans)
- **Water Supply Redundancy:** Residential buildings with a basic day demand greater than 50m<sup>3</sup>/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 50m<sup>3</sup>/day.
- Please **review Technical Bulletin ISTB-2018-0**, maximum fire flow hydrant capacity is provided in Section 3 Table 1 of Appendix I. A **hydrant coverage figure** shall be provided and **demonstrate there is adequate fire protection for the proposal**. Two or more public hydrants are anticipated to be required to handle fire flow.
- 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.

1. Type of Development and Units
2. Site Address
3. A plan showing the proposed water service connection location.
4. **Average Daily Demand** (L/s)
5. **Maximum Daily Demand** (L/s)
6. **Peak Hour Demand** (L/s)
7. **Fire Flow** (L/min)

*Exposure separation distances shall be defined on a figure to support the FUS calculation and required fire flow (RFF).*

1. **Hydrant capacity shall be assessed to demonstrate the RFF can be achieved.**

### **Road Reinstatement**

Where servicing involves three or more service trenches, either a full road width or full lane width 40 mm asphalt overlay will be required, as per amended Road Activity By-Law 2003-445 and City Standard Detail Drawing R10. The amount of overlay will depend on condition of roadway and width of roadway(s).

### **Permits and Approvals:**

- Please note that this project will be subject to an Environmental Compliance Approval (ECA).

### **Required Engineering Plans and Studies:**

#### **PLANS:**

- Existing Conditions and Removals Plan
- Site Servicing Plan
- Grade Control and Drainage Plan
- Erosion and Sediment Control Plan
- Roof Drainage Plan ( If roof utilized as a SWM component)
- Topographical survey

#### **REPORTS:**

- Site Servicing and Stormwater Management Report
- Geotechnical Study/Investigation
- Slope Stability Assessment Reports ( if required, please see requirements below)
- Noise Control Study

- Phase I ESA
- Phase II ESA (Depending on recommendations of the Phase I ESA)
- Site lighting certificate
- Wind study

Please refer to the **City of Ottawa Guide to Preparing Studies and Plans [Engineering]**:

Specific information has been incorporated into both the [Guide to Preparing Studies and Plans](#) for a site plan. The guide outlines the requirement for a statement to be provided on the plan about where the property boundaries have been derived from.

Added to the general information for servicing and grading plans is a note that an **O.L.S.** should be engaged when reporting on or relating information to property boundaries or existing conditions. The importance of engaging an **O.L.S.** for development projects is emphasized.

#### **Phase One Environmental Site Assessment:**

- A Phase I ESA is required to be completed in accordance with Ontario Regulation 153/04 in support of this development proposal to determine the potential for site contamination. Depending on the Phase I recommendations a Phase II ESA may be required.
- The Phase I ESA shall provide all the required Environmental Source Information as required by O. Reg. 153/04. ERIS records are available to public at a reasonable cost and need to be included in the ESA report to comply with O.Reg. 153/04 and the Official Plan. The City will not be in a position to approve the Phase I ESA without the inclusion of the ERIS reports.
- Official Plan Section 4.8.4:

<https://ottawa.ca/en/city-hall/planning-and-development/official-plan-and-master-plans/official-plan/volume-1-official-plan/section-4-review-development-applications#4-8-protection-health-and-safety>

#### **Geotechnical Investigation:**

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

<https://documents.ottawa.ca/sites/default/files/documents/cap137602.pdf>

#### **Slope Stability Assessment Reports**

- A report addressing the stability of slopes, prepared by a qualified geotechnical engineer licensed in the Province of Ontario, should be provided wherever a site has slopes (existing or proposed) steeper than 5 horizontal to 1 vertical (i.e., 11 degree inclination from horizontal) and/or more than 2 metres in height.
- A report is also required for sites having retaining walls greater than 1 metre high, that addresses the global stability of the proposed retaining walls.

<https://documents.ottawa.ca/en/document/slope-stability-guidelines-development-applications>

### Noise Study:

- A **Transportation Noise Assessment** is required as the subject development is located within 100m proximity of an Arterial Road .
- A **Stationary Noise Assessment** is required in order to assess the noise impact of the proposed sources of stationary noise (mechanical HVAC system/equipment) of the development onto the surrounding residential area to ensure the noise levels do not exceed allowable limits specified in the City Environmental Noise Control Guidelines.

[https://documents.ottawa.ca/sites/default/files/documents/enviro\\_noise\\_guide\\_en.pdf](https://documents.ottawa.ca/sites/default/files/documents/enviro_noise_guide_en.pdf)

### Wind analysis:

- A wind analysis must be prepared, signed and stamped by an engineer who specializes in pedestrian level wind evaluation. Where a wind analysis is prepared by a company which do not have extensive experience in pedestrian level wind evaluation, an independent peer review may be required at the expense of the proponent

[Terms of Reference: Wind Analysis \(ottawa.ca\)](#)

### Gas pressure regulating station

- A gas pressure regulating station may be required depending on HVAC needs (typically for 12+ units). Be sure to include this on the Grading, Site Servicing, SWM and Landscape plans. This is to ensure that there are no barriers for overland flow routes (SWM) or conflicts with any proposed grading or landscape features with installed structures and has nothing to do with supply and demand of any product.

### Regarding Quantity Estimates:

- Please note that external Garbage and/or bicycle storage structures are to be added to QE under Landscaping as it is subject to securities. In addition, sump pumps for Sanitary and Storm laterals and/or cisterns are to be added to QE under Hard items as it is subject to securities, even though it is internal and is spoken to under SWM and Site Servicing Report and Plan.

## **CCTV sewer inspection**

- CCTV sewer inspection required for pre and post construction conditions to ensure no damage to City Assets surrounding site.

## **Pre-Construction Survey**

- Pre-Construction (Piling/Hoe Ramming or close proximity to City Assets) and/or Pre-Blasting (if applicable) Survey required for any buildings/dwellings in proximity of 75m of site and circulation of notice of vibration/noise to residents within 150 m of site. Conditions for Pre-Construction/ Pre-Blast Survey & Use of Explosives will be applied to agreements. Refer to City's Standard S.P. No. F-1201 entitled Use of Explosives, as amended.

## **Exterior Site Lighting:**

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

**Construction approach** – Please contact the Right-of-Ways Permit Office [TMconstruction@ottawa.ca](mailto:TMconstruction@ottawa.ca) early in the Site Plan process to determine the ability to construct site and copy **File Lead** [John.Bernier@ottawa.ca](mailto:John.Bernier@ottawa.ca) on this request.

## **Transportation**

The Screening Form indicated that the TIA Trigger has been met for Design Priority Area and the Forecasting components are minor. Step 2 – Scoping is to be submitted for review. Also, the TIA report will be limited to the Design Review component therefore the Steps 3 & 4 to be submitted together. Ensure that both TDM checklists are filled out and appropriate measures are taken to achieve the target modal shares.

The purchaser, tenant or sub-lessee acknowledges the unit being rented/sold is not provided with any on-site parking and should a tenant/purchaser have a vehicle for which they wish to have parking that alternative and lawful arrangements will need to be made to accommodate their parking need at an alternative location. The Purchaser/Tenant also acknowledges that the availability and regulations governing on-street parking vary; that access to on-street parking, including through residential on-street parking permits issued by the City cannot be guaranteed now or in the future; and that a purchaser, tenant or sub-lessee intending to rely on on-street parking for their vehicle or vehicles does so at their own risk.

Please keep in mind that on street parking is not a viable option for tenants. Ensure that potential tenants are aware that there is no provision for parking.

The closure of an existing private approach shall reinstate the sidewalk, shoulder, curb and boulevard to City standards.

Permanent structures such as curbing, stairs, retaining walls, and underground parking foundation also bicycle parking racks are not to extend into the City's right-of-way limits

For any planter boxes/trees on the City's road right-of-way, an Encroachment Agreement along with a Maintenance Agreement will be required.

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

### **Community Association Comments**

- Include family-sized units.
- Concerned with the rear and front projecting beyond the neighbours.
- Provide wheelchair accessible amenity space and building entrance.
- Previous concerns to be aware of:
  - first floor balconies are too low and accessible to street posing a safety hazard for break-ins, theft privacy etc.
  - if used for storage, glass balconies encourage theft
  - building is too tall
  - I quote parts from 2011 objection
    - **Heritage Sensitivity (Section 1.8.3e)** The Byward Village plan states that *City Council shall ensure that regardless of profile, residential development respect and is sensitive to nearby heritage buildings....* Clarence Street is predominately a street of brick buildings on the block of the proposed development and on adjacent blocks as well. The developer is proposing a wood and glass box that is completely out of character with this neighbourhood
    - respectfully request that the cladding of a building on this site be sensitive to the character of the neighbourhood.
    - **Safety of Reduced Sideyards** Both the east and west sideyards are reduced.... I question whether .06 metres is adequate to provide access to residents at the rear of the building in case of a fire emergency.



- Furthermore, the long narrow alleyways created by these reduced sideyards provide ideal haunts for drug dealers, addicts and prostitutes. .... Residents of my neighbourhood are sensitive to the need to make every effort to avoid creating spaces that invite criminal activity. I respectfully request that steps be taken to ensure the safety of residents and neighbours with respect to the sideyards.
- when considered as a package the variances represent a gross over development of an already undersized lot.

## **Other**

- You are encouraged to contact the Ward Councillor, Mathieu Fleury

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

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

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

Regards,

**John Bernier, MCIP, RPP**

**Planner II | *Urbaniste II***

Development Review, Central | *Examen des projets d'aménagement, Central*

Planning, Infrastructure and Economic Development Department | *Services de la planification, de l'infrastructure et du développement économique*

City of Ottawa | *Ville d'Ottawa*

110 Laurier Avenue West. Ottawa, ON | 110, avenue. Laurier Ouest. Ottawa (Ontario) K1P 1J1

613.580.2424 ext./poste 21576

[ottawa.ca/planning](http://ottawa.ca/planning) / [ottawa.ca/urbanisme](http://ottawa.ca/urbanisme)

*Please note that during the current public health emergency I am working remotely. Email is the easiest and most reliable way of reaching me at this time. Thank you for your cooperation.*

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'

## Amr Salem

---

**From:** Eric Lalande <eric.lalande@rvca.ca>  
**Sent:** May 3, 2022 12:48 PM  
**To:** Amr Salem  
**Subject:** RE: LRL180647 - 211 Clarence - Water Quality Criteria

Hi Amr,

Based on the site plan and outlet path, the RVCA does not have any quality control requirements for the proposed development. Best management practices are encouraged where possible.

Thank you,

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

---

**From:** Amr Salem <asalem@lrl.ca>  
**Sent:** Tuesday, May 3, 2022 12:40 PM  
**To:** Jamie Batchelor <jamie.batchelor@rvca.ca>; Eric Lalande <eric.lalande@rvca.ca>  
**Subject:** LRL180647 - 211 Clarence - Water Quality Criteria

Hey guys,

Can you please provide your input regarding any quality control measures required for the proposed development at 211 Clarence given the info below;

Currently, the site is vacant as a previous residential dwelling has been recently demolished. Runoff flows uncontrolled to Clarence street ROW and is conveyed through municipal storm sewer approx. 1.5km before discharging to the Ottawa River.



The development proposes a 9-storey residential building with a footprint that occupies almost the entirety of the lot, with some room for landscaping at the rear yard. No parking proposed. Expected runoff is clean as flows will be collected from roof drains and CB at rear landscaped yard.

Thanks,



**Amr Salem, PMP<sup>®</sup>, B.Eng**

Civil Engineering Services

**LRL Engineering**

5430 Canotek Road  
Ottawa, Ontario K1J 9G2

**T** (613) 842-3434 or (877) 632-5664 ext 248

**F** (613) 842-4338

**E** [asalem@lrl.ca](mailto:asalem@lrl.ca)

**W** [www.lrl.ca](http://www.lrl.ca)

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*Nous nous soucions profondément de votre opinion, nous vous invitons donc à nous faire savoir si nous avons satisfait vos attentes en remplissant notre [sondage sur la satisfaction de la clientèle](#)*



**APPENDIX B**  
**Water Supply Calculations**



**Water Supply Calculations**

LRL File No. 180647  
 Project 211 Clarence  
 Date April 26, 2022  
 Prepared by Amr Salem

**Water Demand based on the City of Ottawa Design Guidelines-Water Distribution, 2010**

<b>Domestic Demand</b>			
<b>Unit Type</b>	<b>Persons Per Unit</b>	<b>Number of Units</b>	<b>Population</b>
Studio/1-Bdrm Apartment	1.4	34	47.6
<b>Total</b>		<b>34</b>	<b>47.6</b>

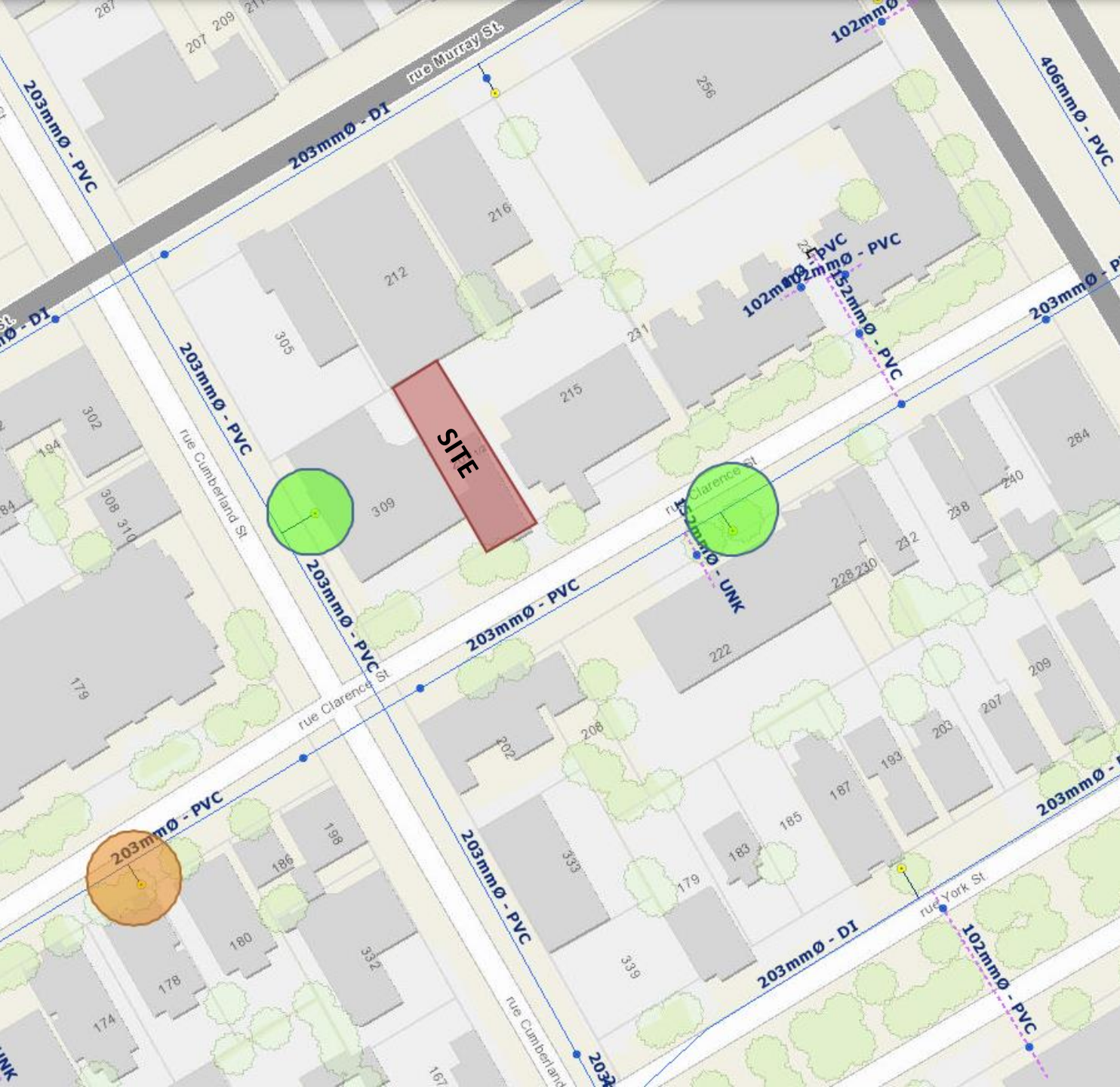
Average Water Consumption Rate	280 L/c/d		
<b>Average Day Demand</b>	<b>13,328 L/d</b>	<b>0.15 L/s</b>	
Maximum Day Factor	7.9	(MOE Table 3-3)	
<b>Maximum Daily Demand</b>	<b>104,799 L/d</b>	<b>1.21 L/s</b>	
Peak Hour Factor	11.8	(MOE Table 3-3)	
<b>Maximum Hour Demand</b>	<b>1,240,138 L/d</b>	<b>14.35 L/s</b>	



## Fire Flow Calculations

LRL File No. 180647  
 Date April 26, 2022  
 Method Fire Underwriters Survey (FUS)  
 Prepared by Amr Salem

Step	Task	Term	Options	Multiplier	Choose:	Value	Unit	Fire Flow	
<b>Structural Framing Material</b>									
1	Choose frame used for building	Coefficient C related to the type of construction	Wood Frame	1.5	Ordinary Construction	1			
			Ordinary Construction	1.0					
			Non-combustible construction	0.8					
			Fire resistive construction <2 hrs	0.7					
			Fire resistive construction >2 hrs	0.6					
<b>Floor Space Area (A)</b>									
2			Total area			1,752	m <sup>2</sup>		
3	Obtain fire flow before reductions	Required fire flow (rounded to nearest 1,000 L/min)	Fire Flow = 220 x C x A <sup>0.5</sup>					L/min	10,000
<b>Reductions or surcharge due to factors affecting burning</b>									
4	Choose combustibility of contents	Occupancy hazard reduction or surcharge	Non-combustible	-25%	Limited combustible	-15%	L/min	8,500	
			Limited combustible	-15%					
			Combustible	0%					
			Free burning	15%					
			Rapid burning	25%					
5	Choose reduction for sprinklers	Sprinkler reduction	Full automatic sprinklers	-30%	True	-30%	L/min	5,100	
			Water supply is standard for both the system and fire department hose lines	-10%	True	-10%			
			Fully supervised system	-10%	False	0%			
6	Choose separation	Exposure distance between units	North side	20.1 to 30m	10%		L/min	11,475	
			East side	0 to 3m	25%				
			South side	3.1 to 10m	20%				
			West side	0 to 3m	25%	80%			
<b>Net required fire flow</b>									
7	Obtain fire flow, duration, and volume	Minimum required fire flow rate (rounded to nearest 1000)						L/min	11,000
		Minimum required fire flow rate						L/s	183.3
		Required duration of fire flow						hr	2.25



# FIRE HYDRANT FIGURE

**LEGEND**

- Hydrants within 75m
- Hydrants within 150m

Distance to buildings <sup>a</sup>		Maximum capacity <sup>b</sup>	
(ft)	(m)	(gpm)	(L/min)
≤ 250	≤ 76	1500	5678
> 250 and ≤ 500	> 76 and ≤ 152	1000	3785
> 500 and ≤ 1000	> 152 and ≤ 305	750	2839

<sup>a</sup> Measured in accordance with 18.5.1.4 and 18.5.1.5.

<sup>b</sup> Minimum 20 psi (139.9 kPa) residual pressure.



## Amr Salem

---

**From:** Bakhit, Reza <reza.bakhit@ottawa.ca>  
**Sent:** May 5, 2022 2:54 PM  
**To:** Amr Salem  
**Subject:** RE: LRL180647 - 211 Clarence - Boundary Conditions Request  
**Attachments:** 211 Clarence Street May 2022.pdf

Hi Amr

FYI, please note the FUS has released an update. Therefore, please ensure to consider the 2020 update for calculations going forward.

The following are boundary conditions, HGL, for hydraulic analysis at 211 Clarence Street (zone 1W) assumed to be connected to the 203 mm watermain on Clarence Street (see attached PDF for location).

Minimum HGL: 106.2 m

Maximum HGL: 115.4 m

Max Day + FF (183.3 L/s): 104.5 m

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

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

Regards,

**Reza Bakhit, P.Eng, C.E.T**

Project Manager

Planning, Real Estate and Economic Development Department / Direction générale de la planification, des biens immobiliers et du développement économique

Development Review - Central Branch

City of Ottawa | Ville d'Ottawa

110 Laurier Avenue West Ottawa, ON | 110, avenue. Laurier Ouest. Ottawa (Ontario) K1P 1J1

613.580.2424 ext./poste 19346, [reza.bakhit@ottawa.ca](mailto:reza.bakhit@ottawa.ca)

**Please note: Given the current pandemic, I will be working from home until further notice; reaching me by email is the easiest. I will be checking my voicemail, just not as frequently as I normally would be.**

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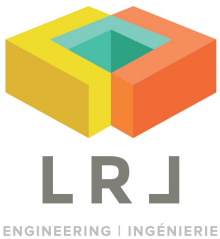
**From:** Amr Salem <asalem@lrl.ca>  
**Sent:** Friday, April 29, 2022 1:36 PM  
**To:** Bakhit, Reza <reza.bakhit@ottawa.ca>  
**Subject:** RE: LRL180647 - 211 Clarence - Boundary Conditions Request

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Hello Reza,

Please find OBC calcs attached for refence – fireflow demand is indeed more than 9,000 L /min.



Regards,

**Amr Salem, PMP®, B.Eng**

Civil Engineering Services

**LRL Engineering**

5430 Canotek Road  
Ottawa, Ontario K1J 9G2

**T** (613) 842-3434 or (877) 632-5664 ext 248

**F** (613) 842-4338

**E** [asalem@lrl.ca](mailto:asalem@lrl.ca)

**W** [www.lrl.ca](http://www.lrl.ca)

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*Nous nous soucions profondément de votre opinion, nous vous invitons donc à nous faire savoir si nous avons satisfait vos attentes en remplissant notre [sondage sur la satisfaction de la clientèle](#)*



---

**From:** Bakhit, Reza <[reza.bakhit@ottawa.ca](mailto:reza.bakhit@ottawa.ca)>

**Sent:** April 28, 2022 11:40 AM

**To:** Amr Salem <[asalem@lrl.ca](mailto:asalem@lrl.ca)>

**Subject:** RE: LRL180647 - 211 Clarence - Boundary Conditions Request

Hi Amr,

Please use the OBC only and not per NFPA.

The City of Ottawa Water Guidelines does not reference NFPA for fire demand calculations. Please note the NFPA is for fire suppression only and not the firefighting. Even if it is proposed to install sprinkler system , still we must abide by OBC calculation . The fire demands should be submitted using the OBC method if there are no watermains being designed or the OBC method is lower than 150 L/s ( 9000 L/min) .

Regards,

**Reza Bakhit, P.Eng, C.E.T**

Project Manager

Planning, Real Estate and Economic Development Department / Direction générale de la planification, des biens immobiliers et du développement économique

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613.580.2400 ext./poste 19346, [reza.bakhit@ottawa.ca](mailto:reza.bakhit@ottawa.ca)

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---

**From:** Amr Salem <[asalem@lrl.ca](mailto:asalem@lrl.ca)>

**Sent:** Thursday, April 28, 2022 11:20 AM

**To:** Bakhit, Reza <[reza.bakhit@ottawa.ca](mailto:reza.bakhit@ottawa.ca)>

**Subject:** RE: LRL180647 - 211 Clarence - Boundary Conditions Request

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Hey Reza,

Can you confirm that the OBC method is as per the NFPA?

Where the total fireflow demand is assumed to be the sum of *the required flow rate for the sprinkler system + anticipated hose stream* as per the tables below;

**Table 11.2.2.1 Water Supply Requirements for Pipe Schedule Sprinkler Systems**

Occupancy Classification	Minimum Residual Pressure Required		Acceptable Flow at Base of Riser (Including Hose Stream Allowance)		Duration (minutes)
	psi	bar	gpm	L/min	
Light hazard	15	1	500-750	1900-2850	30-60
Ordinary hazard	20	1.4	850-1500	3200-5700	60-90

**Table 11.2.3.1.2 Hose Stream Allowance and Water Supply Duration Requirements for Hydraulically Calculated Systems**

Occupancy	Inside Hose		Total Combined Inside and Outside Hose		Duration (minutes)
	gpm	L/min	gpm	L/min	
Light hazard	0, 50, or 100	0, 190, or 380	100	380	30
Ordinary hazard	0, 50, or 100	0, 190, or 380	250	950	60–90
Extra hazard	0, 50, or 100	0, 190, or 380	500	1900	90–120



Thanks,

**Amr Salem, PMP<sup>®</sup>, B.Eng**

Civil Engineering Services

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*Nous nous soucions profondément de votre opinion, nous vous invitons donc à nous faire savoir*

*si nous avons satisfait vos attentes en remplissant notre [sondage sur la satisfaction de la clientèle](#)*




---

**From:** Bakhit, Reza <[reza.bakhit@ottawa.ca](mailto:reza.bakhit@ottawa.ca)>

**Sent:** April 28, 2022 11:03 AM

**To:** Amr Salem <[asalem@lrl.ca](mailto:asalem@lrl.ca)>

**Subject:** RE: LRL180647 - 211 Clarence - Boundary Conditions Request

Hi Amr,

Did you calculate the OBC first, and it was over 9000 L/min ? Please note that as per the tech bulletin ISTB-2021-03, the OBC method can be used if the fire demand for the private property is less than 9,000 L/min. If the OBC fire demand reaches 9000 L/min, then the FUS method is to be used. Could you please confirm?

Regards,

Reza Bakhit, P.Eng, C.E.T

Project Manager

Planning, Real Estate and Economic Development Department / Direction générale de la planification, des biens immobiliers et du développement économique

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---

**From:** Amr Salem <[asalem@lrl.ca](mailto:asalem@lrl.ca)>

**Sent:** Thursday, April 28, 2022 10:01 AM

**To:** Bakhit, Reza <[reza.bakhit@ottawa.ca](mailto:reza.bakhit@ottawa.ca)>

**Subject:** LRL180647 - 211 Clarence - Boundary Conditions Request

**Importance:** High

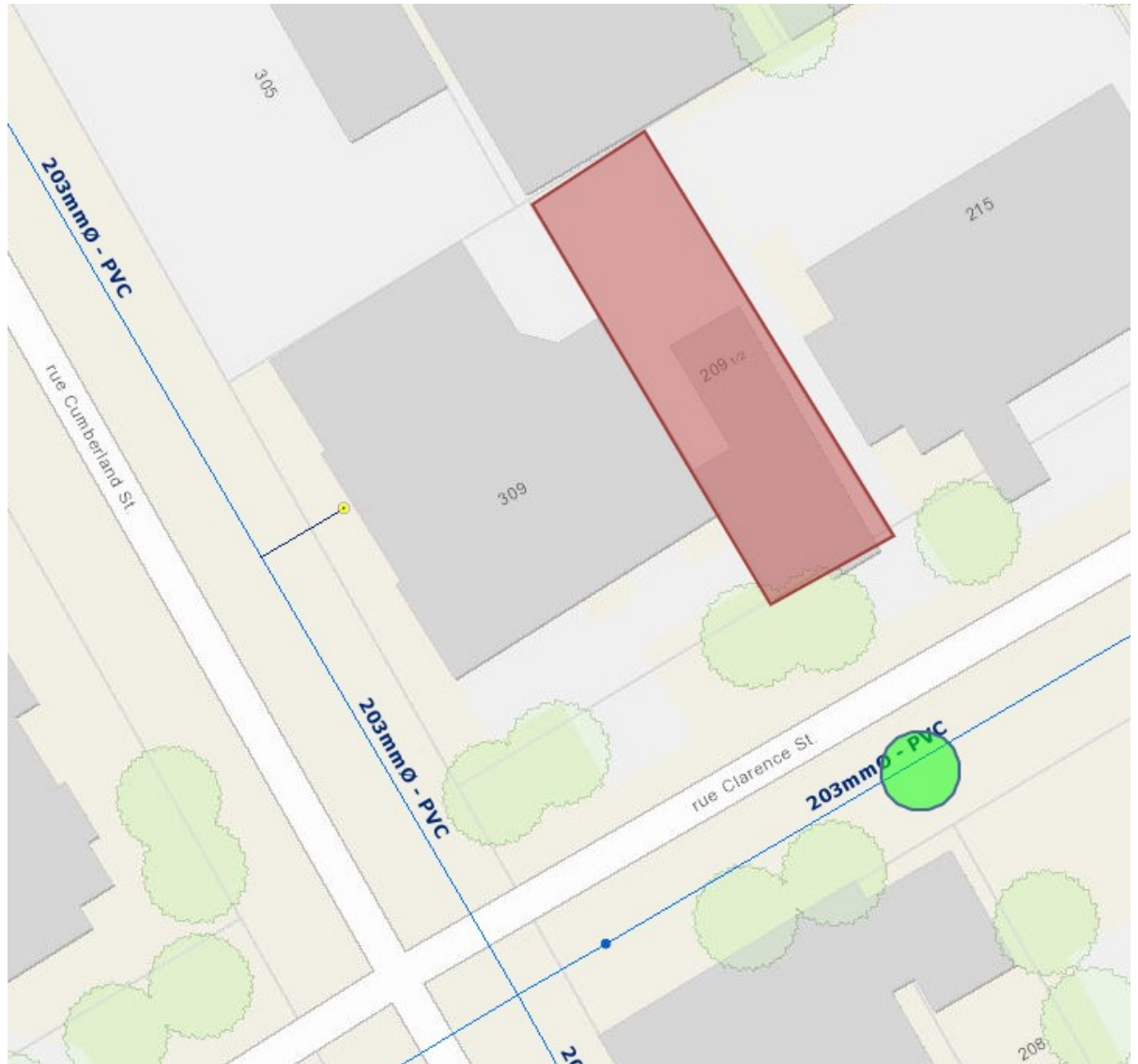
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Hello Reza,

I would like to kindly request boundary conditions for the proposed development at 211 Clarence using the following proposed development demands:

- Type of development: **proposed 9-storey apartment bldg consisting of 34 units. . (draft site plan attached for reference)**
- Proposed Connection Points:
  - **Propose a connection point to the 200mm ex. watermain within Clarence St;**



- Please provide pressures for the following water demand scenarios required for the proposed development:

	<b>Demand L/s</b>
<b>Avg. Daily</b>	0.15
<b>Max Day + FUS</b>	1.21 + 183.3
<b>Peak Hour</b>	14.35

Thank you,



**Amr Salem, PMP<sup>®</sup>, B.Eng**

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# Boundary Conditions for 211 Clarence Street



**Legend**

- PRIVATE
- PUBLIC



**APPENDIX C**  
**Wastewater Collection Calculations**



**LRL File No.** 180647  
**Project:** 9-Storey Apartment Building  
**Location:** 211 Clarence Street  
**Date:** May 24, 2022

**Sanitary Design Parameters**  
 Average Daily Flow = 280 L/p/day  
 Commercial & Institutional Flow = 50000 L/ha/day  
 Light Industrial Flow = 35000 L/ha/day  
 Heavy Industrial Flow = 55000 L/ha/day  
 Maximum Residential Peak Factor = 4.0  
 Commercial & Institutional Peak Factor = 1.5

Industrial Peak Factor = as per Appendix 4-B = 7  
 Extraneous Flow = 0.33L/s/gross ha

**Pipe Design Parameters**

Minimum Velocity = 0.60 m/s  
 Manning's n = 0.013

LOCATION			RESIDENTIAL AREA AND POPULATION					COMMERCIAL		INDUSTRIAL			INSTITUTIONAL		C+I+I	INFILTRATION			TOTAL FLOW (l/s)	PIPE						
STREET	FROM MH	TO MH	AREA (Ha)	POP.	CUMMULATIVE		PEAK FACT.	PEAK FLOW (l/s)	AREA (Ha)	ACCU. AREA (Ha)	AREA (Ha)	ACCU. AREA (Ha)	PEAK FACT.	AREA (Ha)	ACCU. AREA (Ha)	PEAK FLOW (l/s)	TOTAL AREA (Ha)	ACCU. AREA (Ha)	INFILT. FLOW (l/s)	TOTAL FLOW (l/s)	LENGTH (m)	DIA. (mm)	SLOPE (%)	MATERIAL	CAP. (FULL) (l/s)	VEL. (FULL) (m/s)
					AREA (Ha)	POP.																				
Clarence Street	Bldg	SAN MH01	0.029	47.6	0.03	47.6	3.7	0.56	0.000	0.000	0.00	0.00	7.0	0.0	0.0	0.00	0.029	0.029	0.01	0.57	2.6	150	1.00%	PVC	15.23	0.86
	SAN MH01	EX.SAN						0.56											0.01	0.57	10.4	150	1.00%	PVC	15.23	0.86
	EX. SAN																					250	0.50%	PVC	42.05	0.86

NOTES Existing inverts and slopes are estimated. They are to be confirmed on-site.

Designed: A.S.	PROJECT: Apartment Building		
Checked: V.J.	LOCATION: 211 Clarence Street		
Dwg. Reference: C.401	File Ref.: 180647	Date: 2022-05-24	Sheet No. 1 of 1

## **APPENDIX D**

### **Stormwater Management Calculations Watts Roof Drain Specification**

LRL Associates Ltd.  
Storm Watershed Summary



**LRL File No.** 180647  
**Project:** Apartment Building  
**Location:** 211 Clarence  
**Date:** May 10, 2022  
**Designed:** Amr Salem  
**Drawing Reference:** C701/C702

**Pre-Development Catchments**

WATERSHED	C = 0.2	C = 0.70	C = 0.90	Total Area (m <sup>2</sup> )	Total Area (ha)	Combined C
EWS-01	157.7	0.0	130.0	287.7	0.0288	0.52
<b>TOTAL</b>	<b>157.7</b>	<b>0.0</b>	<b>130.0</b>	<b>287.7</b>	<b>0.0288</b>	<b>0.52</b>

**Post-Development Catchments**

WATERSHED	C = 0.20	C = 0.70	C = 0.90	Total Area (m <sup>2</sup> )	Total Area (ha)	Combined C
WS-01(UNCONTROLLED)	57.0		12.7	69.7	0.007	0.33
WS-02 (CONTROLLED)			218.0	218.0	0.022	0.90
<b>TOTAL</b>	<b>57.0</b>	<b>0.0</b>	<b>230.7</b>	<b>287.7</b>	<b>0.0288</b>	<b>0.76</b>



LRL File No. 180647  
 Project: Apartment Building  
 Location: 211 Clarence  
 Date: May 10, 2022  
 Designed: Amy Salem  
 Drawing Ref.: C.601

Stormwater Management  
 Design Sheet

**Runoff Equation**

$Q = 2.78CIA (L/s)$   
 $C =$  Runoff coefficient  
 $I =$  Rainfall intensity (mm/hr) =  $A / (T_d + C)^b$   
 $A =$  Area (ha)  
 $T_d =$  Time of concentration (min)

**Pre-development Stormwater Management**

$L_{100} = 998.071 / (T_d + 6.023)^{0.88}$        $a = 998.071$        $b = 0.814$        $C = 6.023$

$C =$  0.55 max of 0.5 as per City of Ottawa  
 $I =$  104.2 mm/hr  
 $T_c =$  10 min  
 Total Area = 0.029 ha

Allowable Release Rate = 4.17 L/s

**Post-development Stormwater Management**

		0.029	ha	19x	3R <sub>100</sub>	3R <sub>100</sub>
Controlled	WS-02 (Roof)	0.029	ha	R <sub>c</sub>	0.00	1.00
	WS-01 (Roof)	0.029	ha	R <sub>c</sub>	0.00	1.00
Un-controlled	WS-01	0.007	ha	R <sub>c</sub>	0.33	0.41
	Total Un-controlled	0.007	ha	19c	0.33	0.41

**Post-development Stormwater Management (Uncontrolled Catchment WS-01)**

100 Year Storm Event:  
 $L_{100} = 1735.688 / (T_d + 6.014)^{0.88}$        $a = 1735.688$        $b = 0.820$        $C = 6.014$

Time (min)	Intensity (mm/hr)	Uncontrolled Runoff (L/s)	Controlled Release Rate Constant (L/s)	Total Release Rate (L/s)
10	178.8	1.67	0.00	1.67

**Post-development Stormwater Management (WS-02 On Roof)**

100 Year Storm Event:  
 $L_{100} = 1735.688 / (T_d + 6.014)^{0.88}$        $a = 1735.688$        $b = 0.820$        $C = 6.014$

Time (min)	Intensity (mm/hr)	Storage Required		Controlled Release Rate Constant		Total Release Rate (L/s)
		Controlled Runoff (L/s)	Storage Volume (m³)	Controlled Runoff (L/s)	Uncontrolled Runoff (L/s)	
10	178.8	0.00	0.00	1.89	0.00	1.89
15	142.0	0.00	0.00	1.89	0.00	1.89
20	100.0	0.00	0.00	1.89	0.00	1.89
25	62.0	0.00	0.00	1.89	0.00	1.89
30	31.0	0.00	0.00	1.89	0.00	1.89
35	16.0	0.00	0.00	1.89	0.00	1.89
40	7.1	0.00	0.00	1.89	0.00	1.89
45	3.5	0.00	0.00	1.89	0.00	1.89
50	1.9	0.00	0.00	1.89	0.00	1.89
55	1.0	0.00	0.00	1.89	0.00	1.89
60	0.5	0.00	0.00	1.89	0.00	1.89
70	0.2	0.00	0.00	1.89	0.00	1.89
80	0.1	0.00	0.00	1.89	0.00	1.89
90	0.0	0.00	0.00	1.89	0.00	1.89
100	0.0	0.00	0.00	1.89	0.00	1.89
110	0.0	0.00	0.00	1.89	0.00	1.89
120	0.0	0.00	0.00	1.89	0.00	1.89



TABLE 1: Adjustable Weir Operating

Exposed
Fully Exposed
3/4
1/2
1/4
Closed

$V = 1/3 (\pi r^2) H = Ah/3$

**Summary of Roof Storage**

Maximum Required Roof Storage (100 Year) = 6.62 m³  
 Weirs Roof Drain Discharge = 0.0042 L/s/min  
 Proposed Head = 160 mm  
 Control Flow/Drain = 0.63 L/s  
 Number of Roof Drains = 3  
 Total Flow from Roof Drain = 1.89 L/s  
 Total Roof Surface = 218 m²  
 Effective Roof Surface = 203 m² (93% of total roof surface)  
 Available Roof Storage = 10.14 m³  
 Roof Drain Model = Weirs Roof Drain with Adjustable Flow Setting (Weirs RD-100 Weir Opening = Closed)

Total Storage Required = 6.62 m³  
 Available Roof Storage = 10.14 m³      refer to LRL Plan C.601

**Summary of release Rate and Storage Volumes**

Catchment Area	Drainage Area (ha)	100-year Release Rate	100-Year Required Storage (m³)	Total Available Storage
WS-01	0.021	3.42	0	0
WS-02 (Roof Control)	0.022	1.89	6.62	10.14
TOTAL	0.043	5.31	6.62	10.14

### ADJUSTABLE ACCUTROL (for Large Sump Roof Drains only)

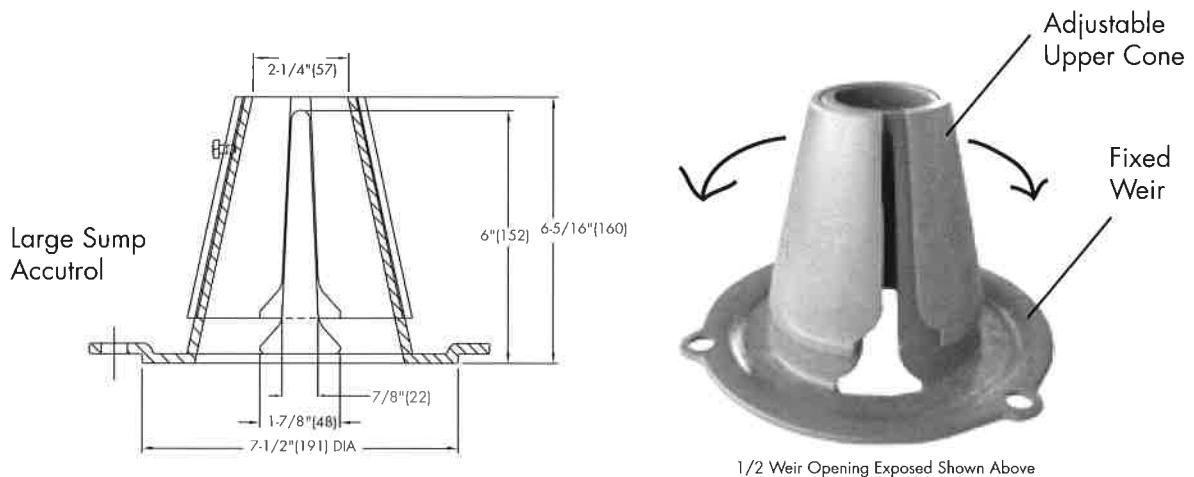
For more flexibility in controlling flow with heads deeper than 2", Watts Drainage offers the Adjustable Accutrol. The Adjustable Accutrol Weir is designed with a single parabolic opening that can be covered to restrict flow above 2" of head to less than 5 gpm per inch, up to 6" of head. To adjust the flow rate for depths over 2" of head, set the slot in the adjustable upper cone according to the flow rate required. Refer to Table 1 below.

Note: Flow rates are directly proportional to the amount of weir opening that is exposed.

**EXAMPLE:**

For example, if the adjustable upper cone is set to cover 1/2 of the weir opening, flow rates above 2" of head will be restricted to 2-1/2 gpm per inch of head.

Therefore, at 3" of head, the flow rate through the Accutrol Weir that has 1/2 the slot exposed will be:  
 [ 5 gpm(per inch of head) x 2 inches of head ] + 2-1/2 gpm(for the third inch of head) = 12-1/2 gpm.


**TABLE 1. Adjustable Accutrol Flow Rate Settings**

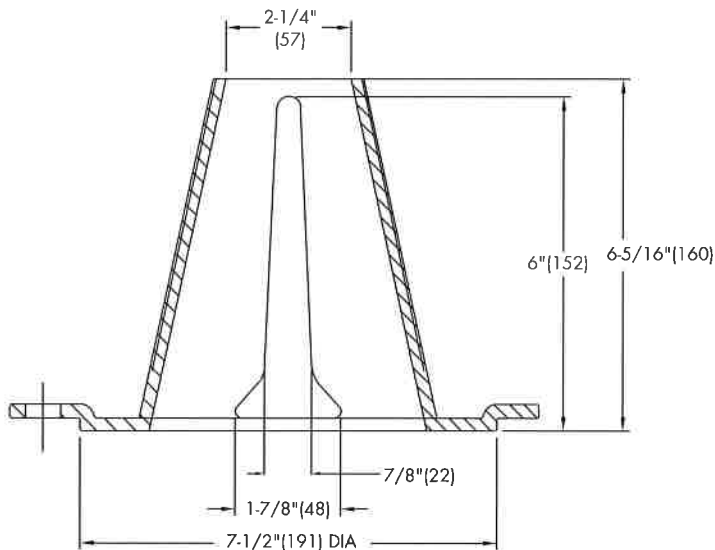
Weir Opening Exposed	Head of Water					
	1"	2"	3"	4"	5"	6"
	<b>Flow Rate (gallons per minute)</b>					
Fully Exposed	5	10	15	20	25	30
3/4	5	10	13.75	17.5	21.25	25
1/2	5	10	12.5	15	17.5	20
1/4	5	10	11.25	12.5	13.75	15
Closed	5	10	10	10	10	10

Job Name \_\_\_\_\_ Model No. \_\_\_\_\_  
 Job Location \_\_\_\_\_ Contractor \_\_\_\_\_  
 Engineer \_\_\_\_\_ Representative \_\_\_\_\_

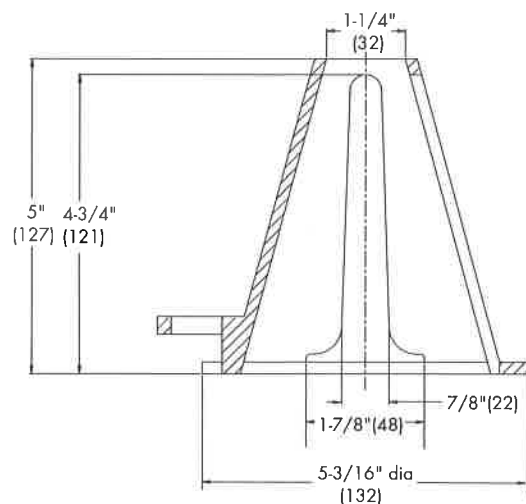
### ACCUTROL WEIR FLOW CONTROL

**SPECIFICATION:** Watts Drainage Products epoxy coated cast iron Accutrol Weir is designed with parabolic openings which limit the flow of rain water off a roof. Each weir slot controls flow to 5 gpm per inch of head to a maximum of 30 gpm at 6" head (for large sump), 25 gpm at 5" head (for small sump). The Accutrol Weir is secured to the flashing clamp of the roof drain. The Accutrol Weir is available with 1 to 4 slots for the large sump drain and up to 3 slots for the small sump drain.

**For Large Sump Roof Drains Specify the "-A" option and number of slots required. (ie. "RD-100-A2" for two slot weir)**  
**For Small Sump Roof Drains Specify the "-A" option and number of slots required. (ie. "RD-200-A1" for one slot weir)**



**LARGE SUMP ACCUTROL WEIR**



**SMALL SUMP ACCUTROL WEIR**

Job Name \_\_\_\_\_ Model No. \_\_\_\_\_

Job Location \_\_\_\_\_ Contractor \_\_\_\_\_

Engineer \_\_\_\_\_ Representative \_\_\_\_\_



WATTS Drainage reserves the right to modify or change product design or construction without prior notice and without incurring any obligation to make similar changes and modifications to products previously or subsequently sold. See your WATTS Drainage representative for any clarification. Dimensions are subject to manufacturing tolerances.



Specification Drainage Products

CANADA: 5435 North Service Road, Burlington, ON, L7L 5H7 TEL: 905-332-6718 TOLL-FREE: 1-888-208-8927 Website: www.wattscanada.ca

**APPENDIX E**  
**Civil Engineering Drawings**



# 211 CLARENCE STREET, OTTAWA, ONTARIO

## REVISION 01



KEY PLAN (N.T.S.)

DRAWING INDEX	
TITLE PAGE	
SEDIMENT AND EROSION CONTROL PLAN	C101
DEMOLITION PLAN	C102
SITE DEVELOPMENT PLAN	C201
GRADING AND DRAINAGE PLAN	C301
SERVICING PLAN	C401
STORMWATER MANAGEMENT PLAN	C601
PRE-DEVELOPMENT WATERSHED PLAN	C701
POST-DEVELOPMENT WATERSHED PLAN	C702
CONSTRUCTION DETAIL PLAN	C901



# LRJ

ENGINEERING | INGÉNIERIE

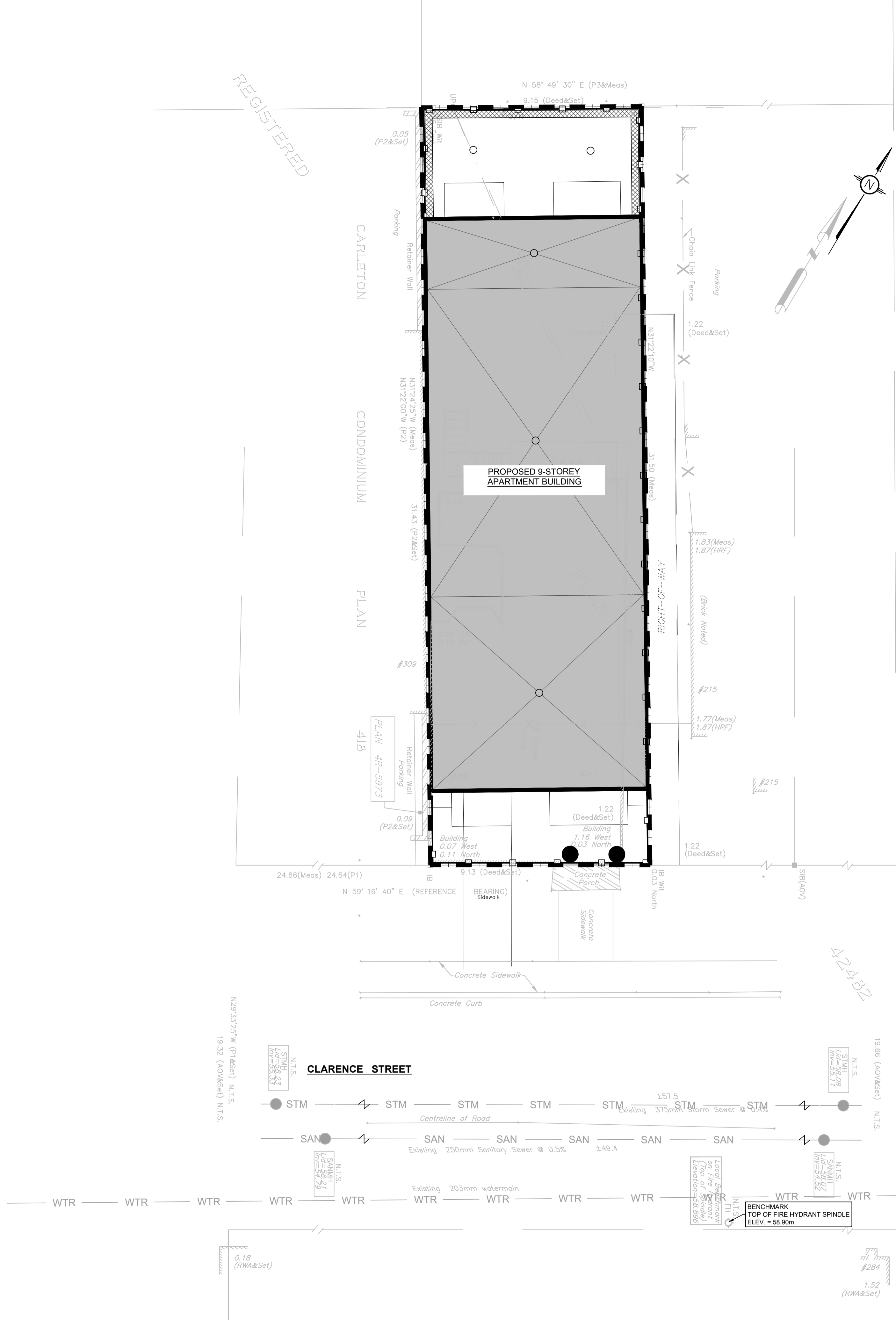
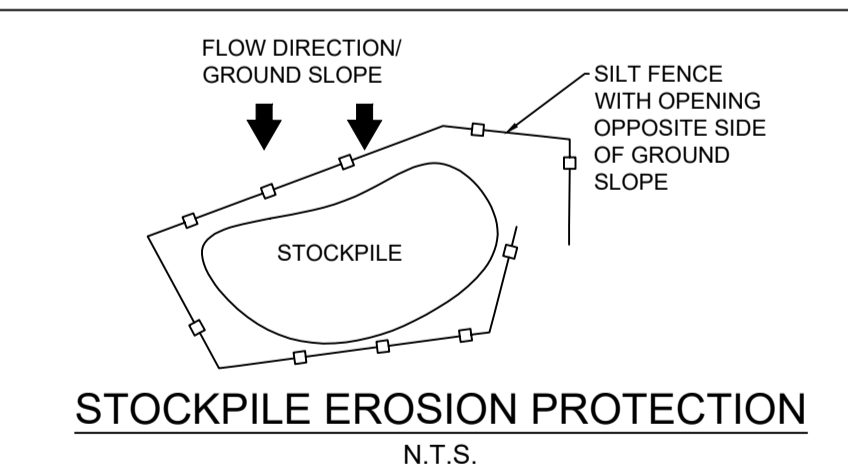
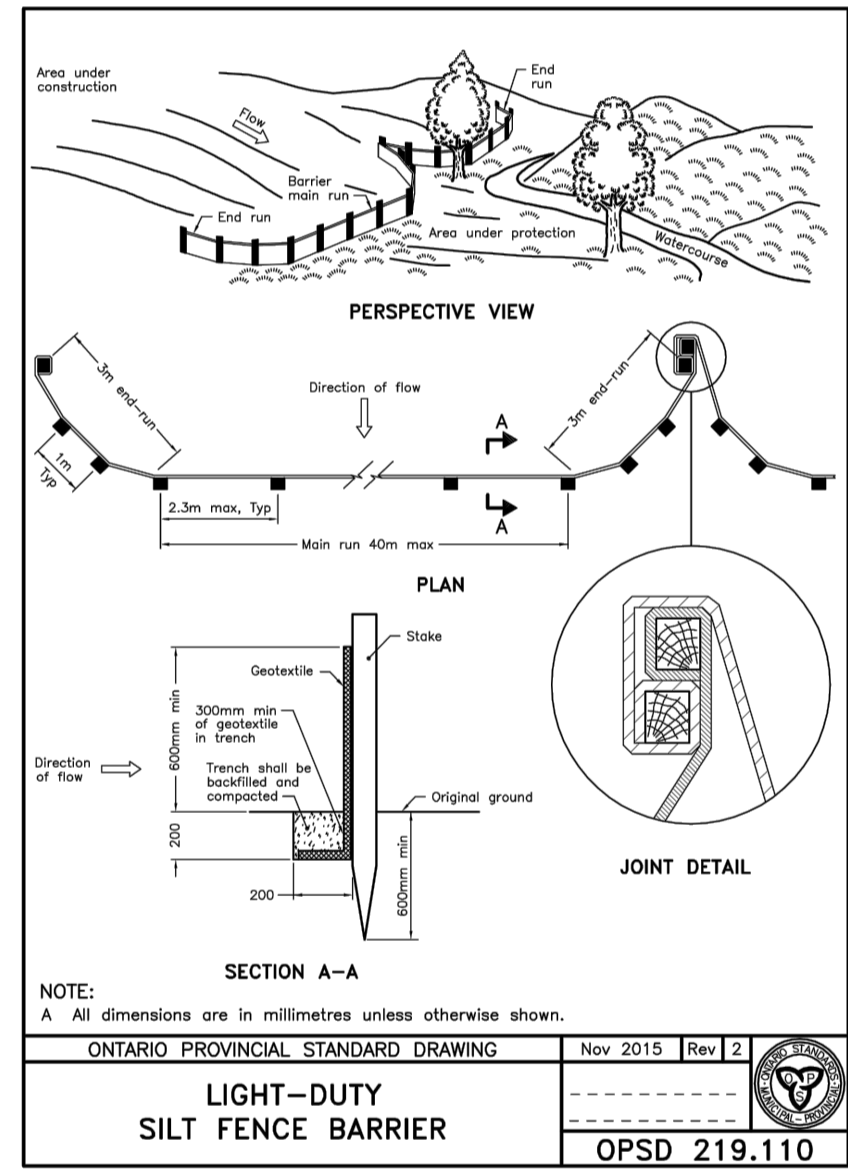
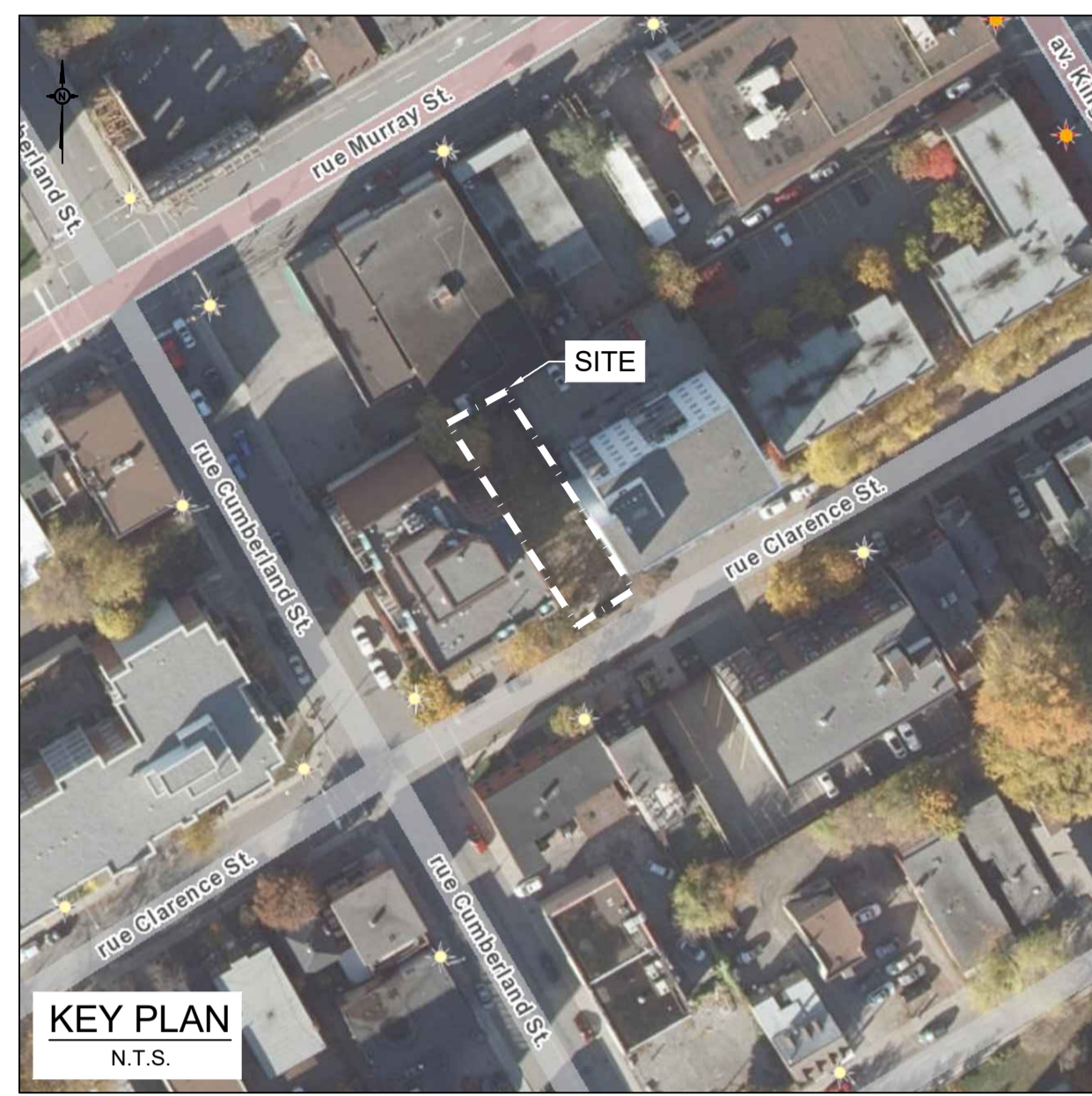
5430 Canotek Road | Ottawa, ON, K1J 9G2  
www.lrl.ca | (613) 842-3434

211 CLARNCE STREET,  
OTTAWA, ONTARIO  
REV.01 - ISSUED FOR MUNICIPAL APPROVAL - MAY 24, 2022  
LRL PROJECT no: 180647



NOT AUTHENTIC UNLESS SIGNED AND DATED





**LEGEND:**

	EXISTING PROPERTY LINE TO REMAIN
	PROPOSED CURB
	PROPOSED DEPRESSED CURB
	PROPOSED TERRACING (3.1 MIN.)
	PROPOSED SILT FENCE AS PER OPSD 219.110
	PROPOSED FENCE
	PROPOSED DOOR ENTRANCE/EXIST
	PROPOSED GRASS AREA (100mm TOP SOIL & SOD)
	PROPOSED CONCRETE FEATURES/SLAB
	PROPOSED HEAVY DUTY ASPHALT
	PROPOSED LIGHT DUTY ASPHALT
	PROPOSED RIP RAP
	PROPOSED ELEVATION
	PROPOSED HIGH POINT ELEVATION
	PROPOSED SWALE ELEVATION
	PROPOSED BOTTOM OF CURB / ASPHALT ELEVATION
	PROPOSED TOP OF CURB ELEVATION
	PROPOSED EXPOSED BOTTOM OF RETAINING WALL
	PROPOSED TOP OF RETAINING WALL
	MATCH INTO EXISTING ELEVATION
	EXISTING ELEVATION
	PROPOSED OVERLAND MAJOR FLOW ROUTE
	PROPOSED 100mmØ PERFORATED SUBDRAIN
	PROPOSED STORM SEWER
	PROPOSED SANITARY SEWER
	PROPOSED WATERMAIN
	EXISTING STORM SEWER
	EXISTING SANITARY SEWER
	EXISTING WATERMAIN
	EXISTING GAS LINE
	EXISTING MANHOLE
	EXISTING CATCHBASIN
	PROPOSED CATCHBASIN-MANHOLE/CATCHBASIN
	PROPOSED MANHOLE
	PROPOSED CURB STOP
	PROPOSED PIPE INSULATION
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2m 0.5 0 2 4m  
SCALE: 1:100

**SUBJECT TO APPROVAL**

01	ISSUED FOR MUNICIPAL APPROVAL	A.S.	24 MAY 2022
No.	REVISIONS	BY	DATE

**PROFESSIONAL ENGINEER**  
M. BASNET  
100501996  
PROVINCE OF ONTARIO

NOT AUTHENTIC UNLESS SIGNED AND DATED.

**LRJ**  
ENGINEERING | INGÉNIÉRIE  
5430 Canotek Road | Ottawa, ON, K1J 9G2  
www.lrl.ca | (613) 842-3434

CLIENT: CLARENCE GATE HOLDINGS INC.

DESIGNED BY: A.S. DRAWN BY: A.O. APPROVED BY: V.J.

PROJECT: PROPOSED RE-DEVELOPMENT 211 CLARENCE STREET, OTTAWA, ON

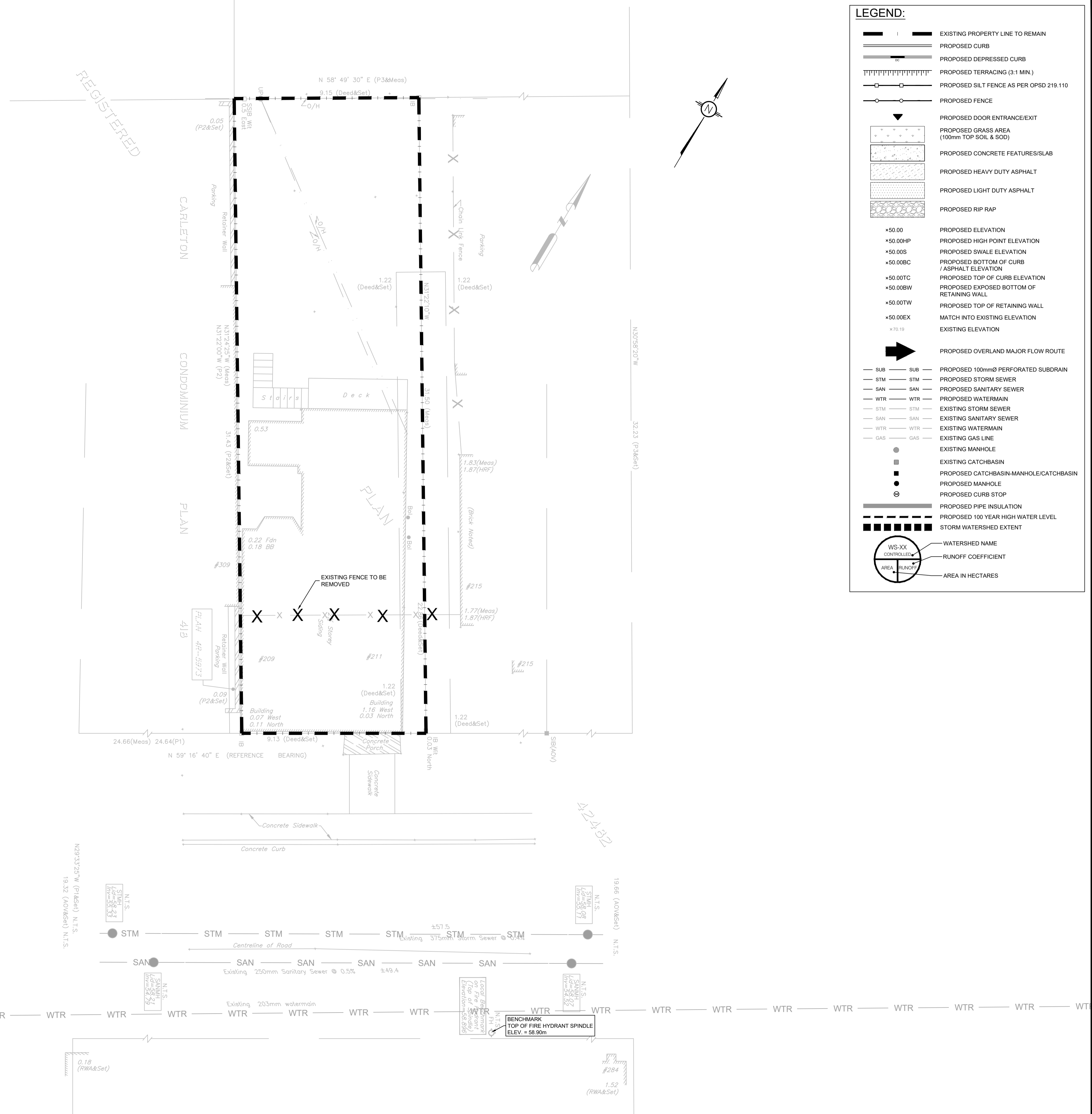
DRAWING TITLE: EROSION AND SEDIMENT CONTROL PLAN

PROJECT NO.: 180647  
DATE: NOV 2021

**C101**



KEY PLAN  
N.T.S.



**LEGEND:**

- EXISTING PROPERTY LINE TO REMAIN
- PROPOSED CURB
- PROPOSED DEPRESSED CURB
- PROPOSED TERRACING (3:1 MIN.)
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- PROPOSED FENCE
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- EXISTING ELEVATION
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2m 0.5 0 2 4m

SCALE: 1:100

**SUBJECT TO APPROVAL**

01	ISSUED FOR MUNICIPAL APPROVAL	A.S.	24 MAY 2022
No.	REVISIONS	BY	DATE



NOT AUTHENTIC UNLESS SIGNED AND DATED



**LRJ**  
ENGINEERING | INGENIERIE  
5430 Canotek Road | Ottawa, ON, K1J 9G2  
www.lrl.ca | (613) 842-3434

CLIENT  
**CLARENCE GATE HOLDINGS INC.**

DESIGNED BY: A.S. DRAWN BY: A.O. APPROVED BY: V.J.

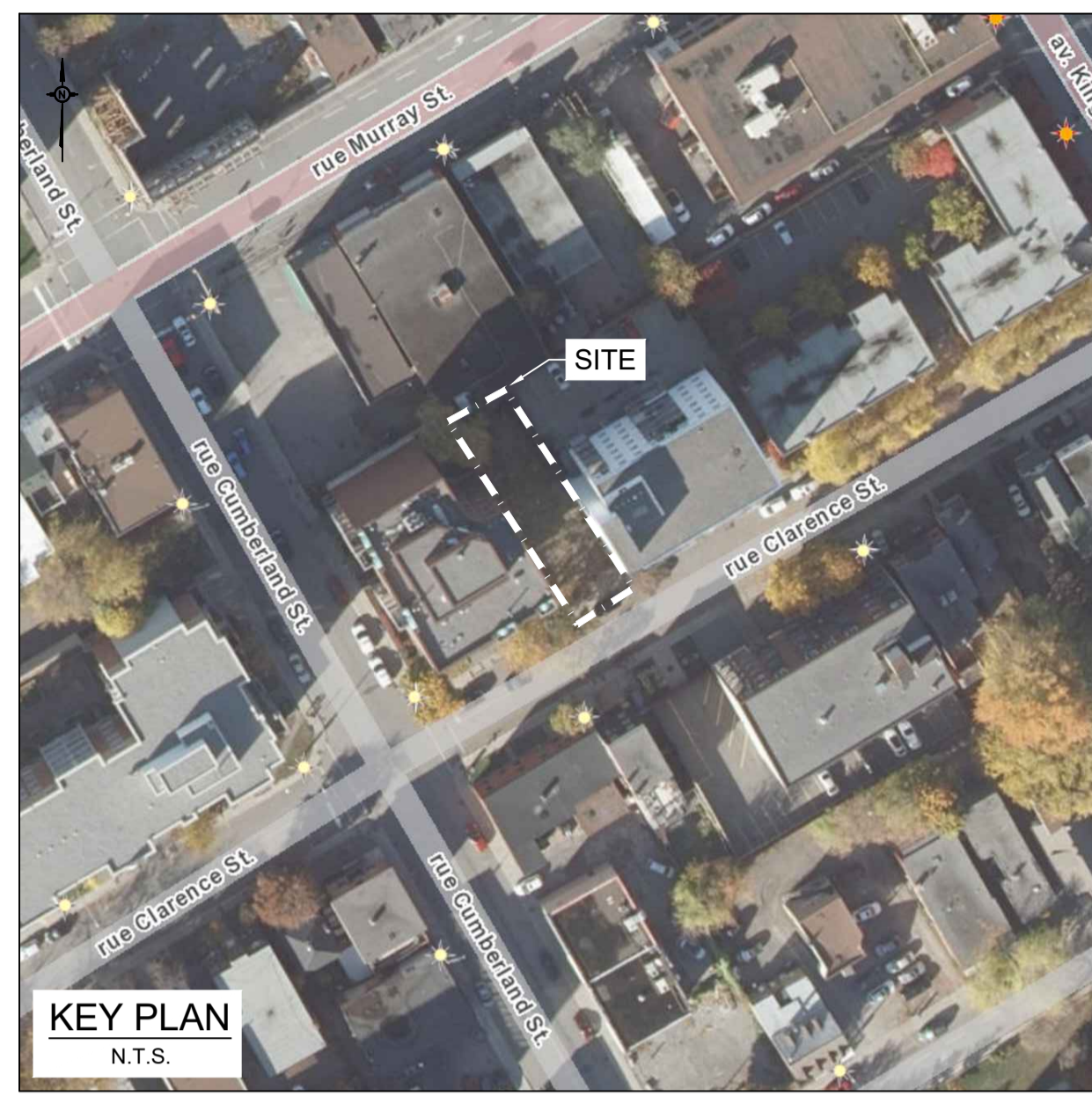
PROJECT  
**PROPOSED RE-DEVELOPMENT  
211 CLARENCE STREET, OTTAWA, ON**

DRAWING TITLE  
**DEMOLITION PLAN**

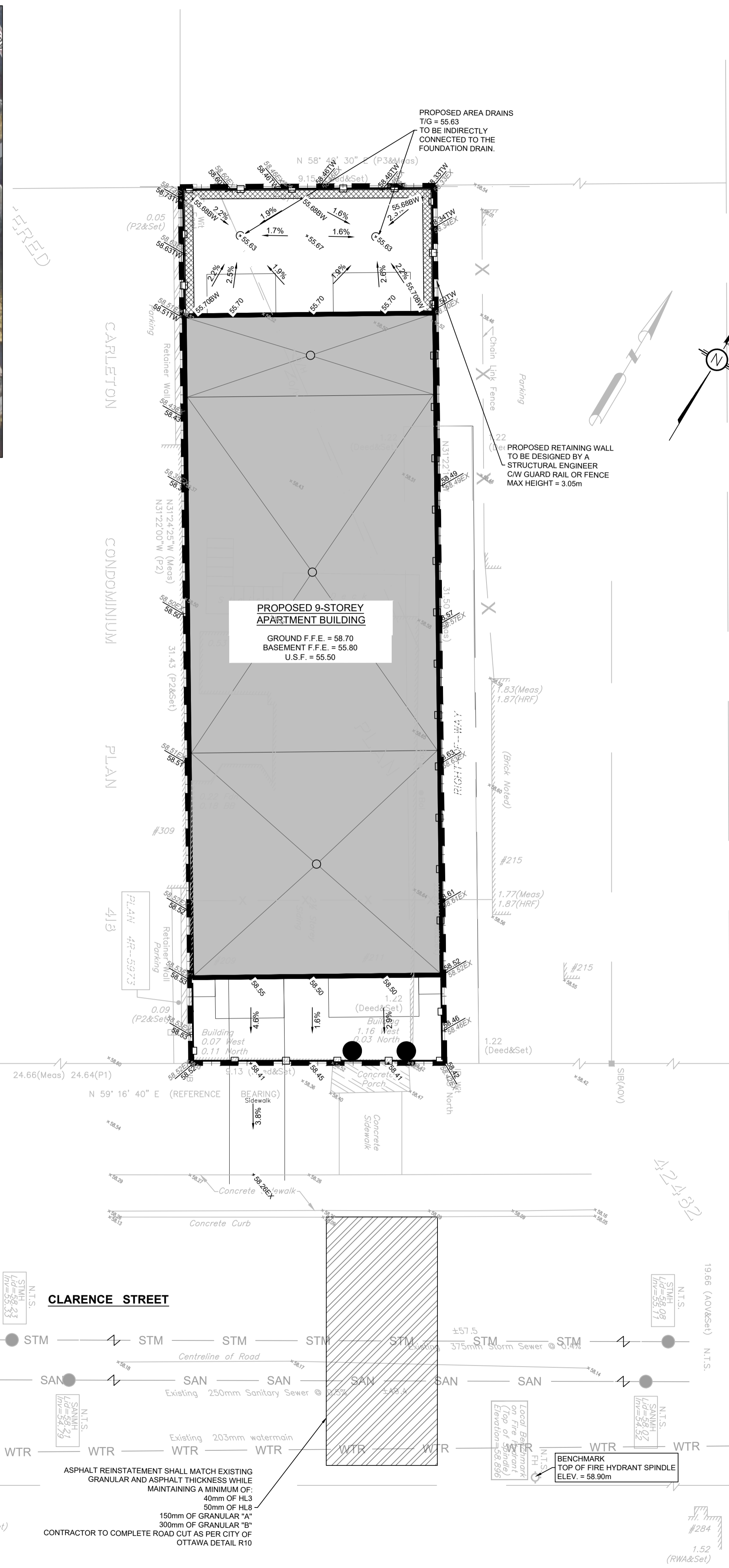
PROJECT NO.  
**180647**

DATE  
**NOV 2021**

**C102**



**KEY PLAN**  
N.T.S.



**LEGEND:**

	EXISTING PROPERTY LINE TO REMAIN
	PROPOSED CURB
	PROPOSED DEPRESSED CURB
	PROPOSED TERRACING (3:1 MIN.)
	PROPOSED SILT FENCE AS PER OPSD 219.110
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SCALE: 1:100

**SUBJECT TO APPROVAL**

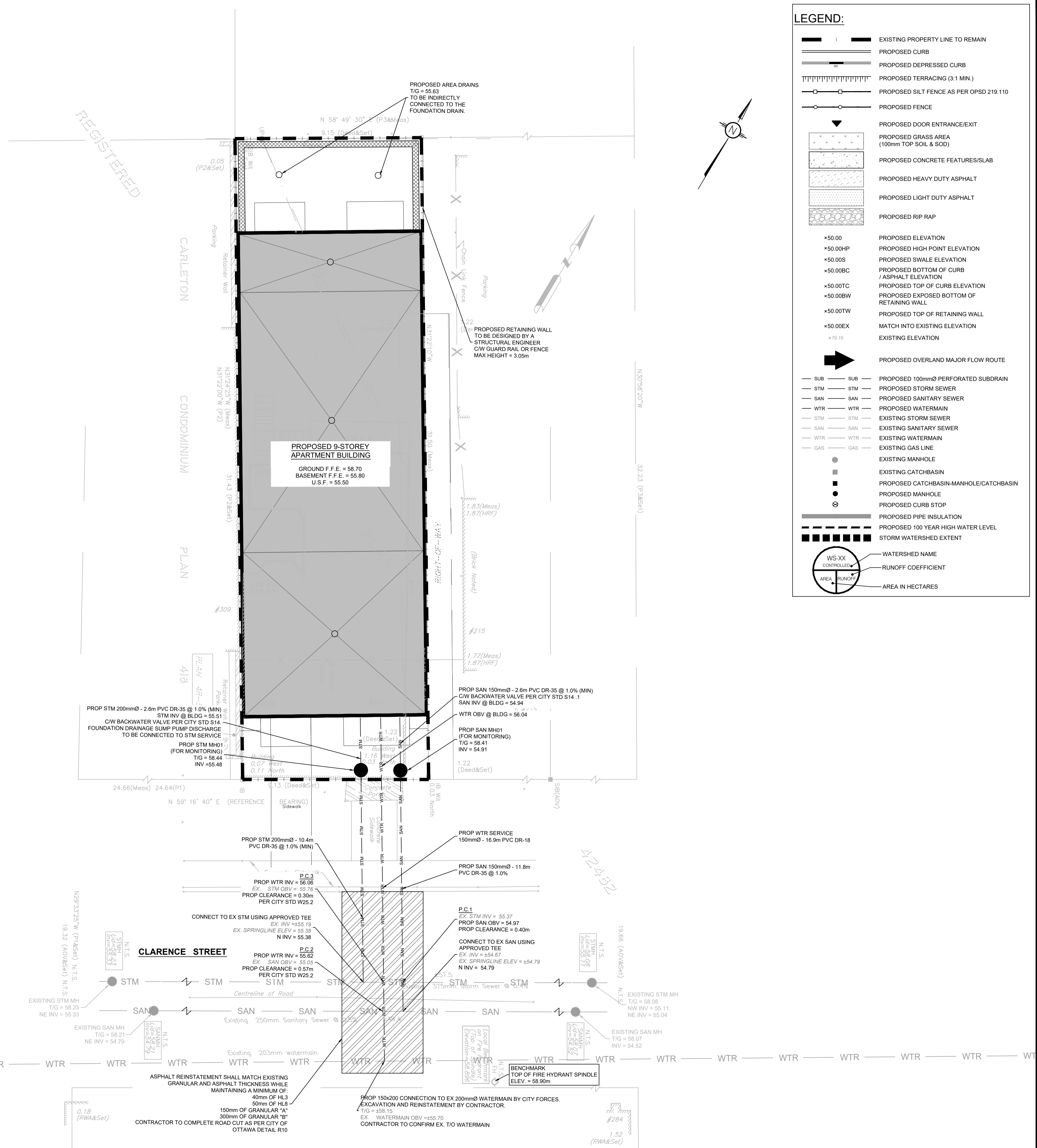
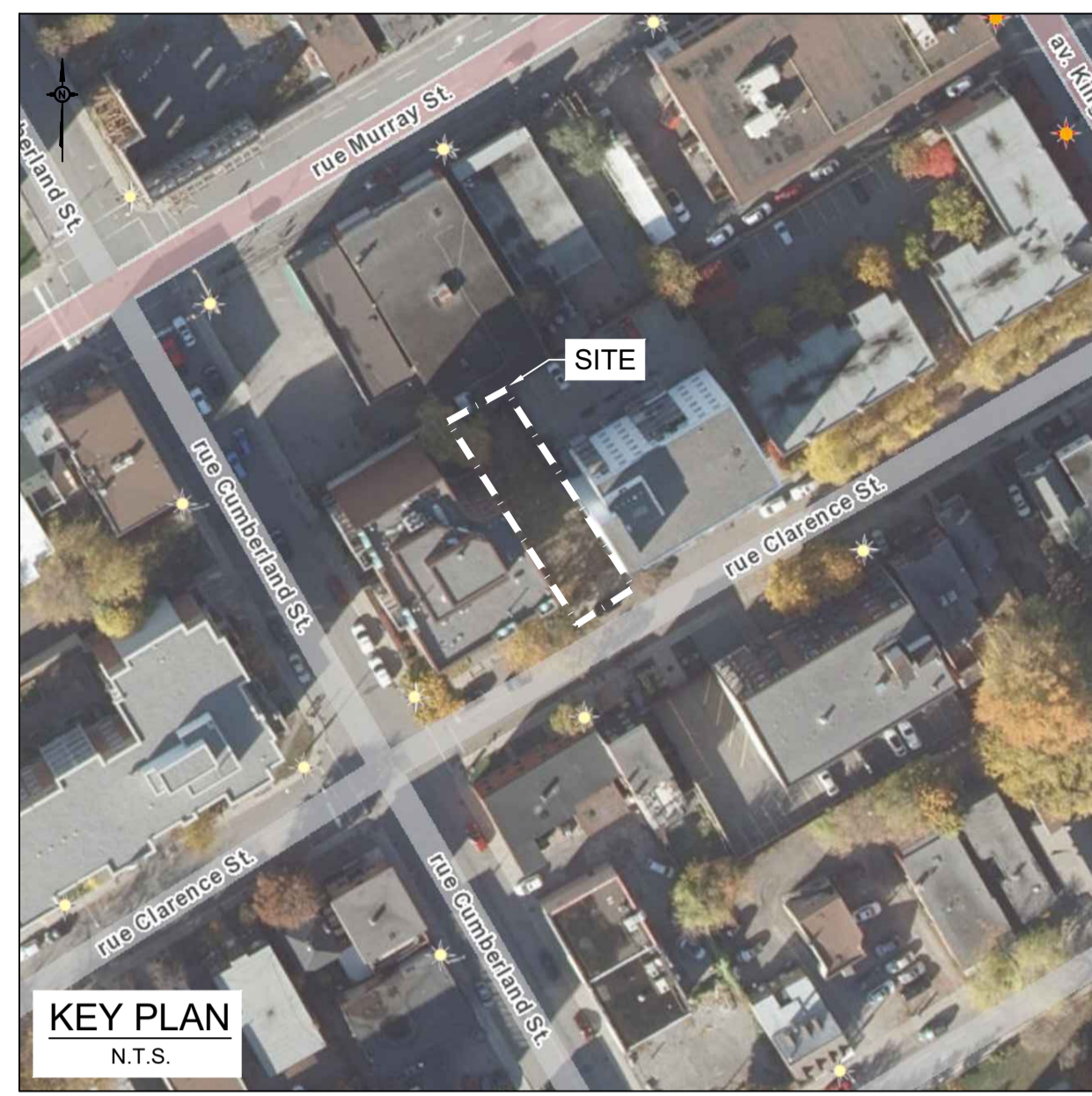
01	ISSUED FOR MUNICIPAL APPROVAL	A.S.	24 MAY 2022
No.	REVISIONS	BY	DATE



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**LRJ**  
ENGINEERING | INGENIERIE  
5430 Canotek Road | Ottawa, ON, K1J 9G2  
www.lrl.ca | (613) 842-3434

CLIENT	CLARENCE GATE HOLDINGS INC.		
DESIGNED BY:	A.S.	DRAWN BY:	A.O.
		APPROVED BY:	V.J.
PROJECT	PROPOSED RE-DEVELOPMENT 211 CLARENCE STREET, OTTAWA, ON		
DRAWING TITLE	GRADING AND DRAINAGE PLAN		
PROJECT NO.	180647	DATE	NOV 2021
			<b>C301</b>



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SCALE: 1:100

No.	REVISIONS	BY	DATE
01	ISSUED FOR MUNICIPAL APPROVAL	A.S.	24 MAY 2022

NOT AUTHENTIC UNLESS SIGNED AND DATED

**LRJ**  
 ENGINEERING | INGENIERIE  
 5430 Canotek Road | Ottawa, ON, K1J 9G2  
 www.lrl.ca | (613) 842-3434

CLIENT: CLARENCE GATE HOLDINGS INC.

DESIGNED BY: A.S. DRAWN BY: A.O. APPROVED BY: V.J.

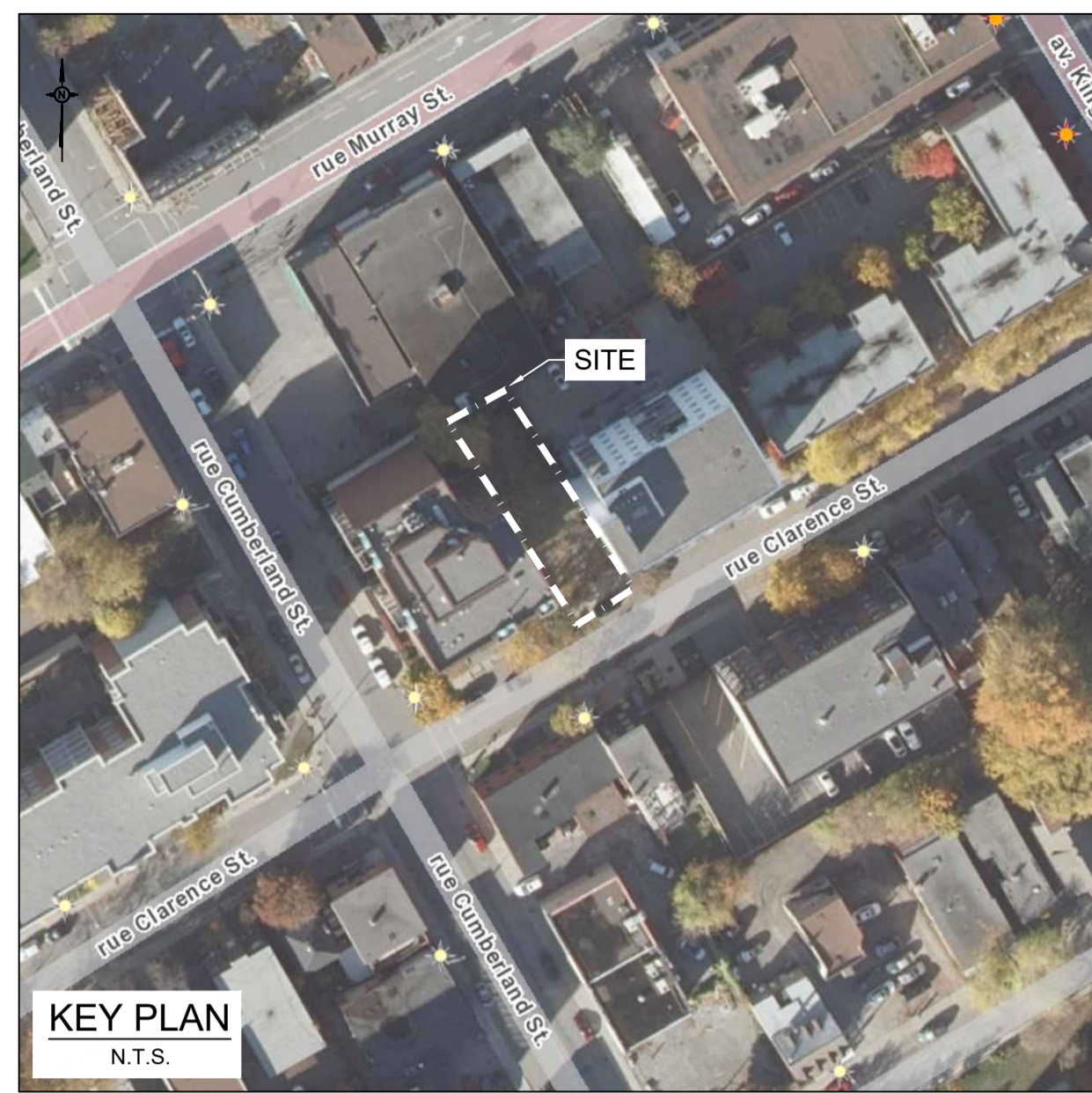
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DRAWING TITLE: SERVICING PLAN

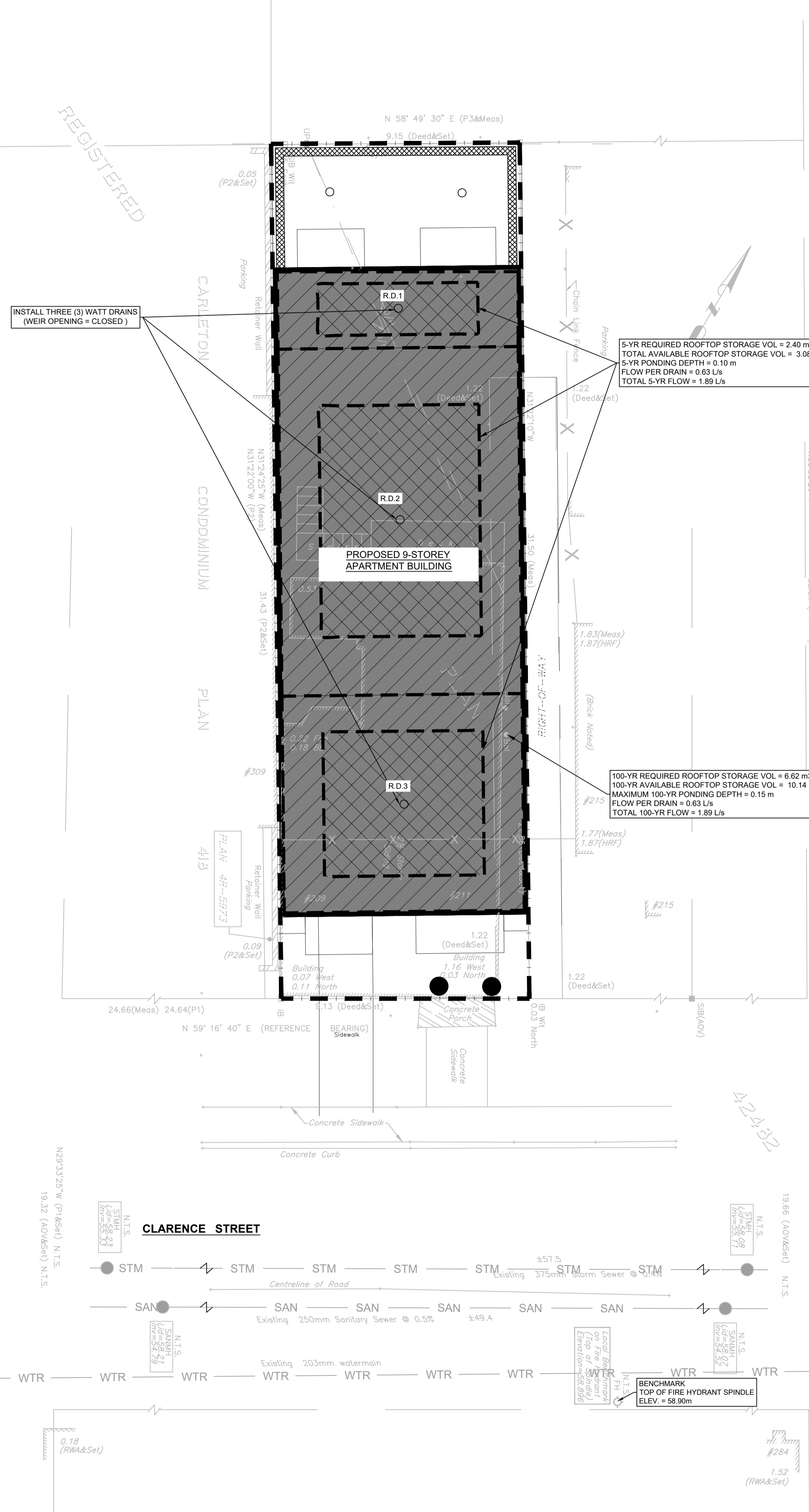
PROJECT NO: 180647

DATE: NOV 2021

**C401**

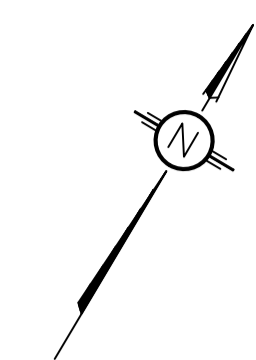


**KEY PLAN**  
N.T.S.



**LEGEND:**

- I — EXISTING PROPERTY LINE TO REMAIN
- — — PROPOSED CURB
- — — PROPOSED DEPRESSED CURB
- — — PROPOSED TERRACING (3.1 MIN.)
- — — PROPOSED SILT FENCE AS PER OPSD 219.110
- — — PROPOSED FENCE
- ▼ PROPOSED DOOR ENTRANCE/EXIT
- PROPOSED GRASS AREA (100mm TOP SOIL & SOD)
- PROPOSED CONCRETE FEATURES/SLAB
- PROPOSED HEAVY DUTY ASPHALT
- PROPOSED LIGHT DUTY ASPHALT
- PROPOSED RIP RAP
- ▲50.00 PROPOSED ELEVATION
- ▲50.00HP PROPOSED HIGH POINT ELEVATION
- ▲50.00S PROPOSED SWALE ELEVATION
- ▲50.00BC PROPOSED BOTTOM OF CURB / ASPHALT ELEVATION
- ▲50.00TC PROPOSED TOP OF CURB ELEVATION
- ▲50.00BW PROPOSED EXPOSED BOTTOM OF RETAINING WALL
- ▲50.00TW PROPOSED TOP OF RETAINING WALL
- ▲50.00EX MATCH INTO EXISTING ELEVATION
- ▲EXISTING ELEVATION
- ➔ PROPOSED OVERLAND MAJOR FLOW ROUTE
- SUB — SUB — PROPOSED 100mmØ PERFORATED SUBDRAIN
- STM — STM — PROPOSED STORM SEWER
- SAN — SAN — PROPOSED SANITARY SEWER
- WTR — WTR — PROPOSED WATERMAIN
- STM — STM — EXISTING STORM SEWER
- SAN — SAN — EXISTING SANITARY SEWER
- WTR — WTR — EXISTING WATERMAIN
- GAS — GAS — EXISTING GAS LINE
- EXISTING MAN-HOLE
- EXISTING CATCHBASIN
- PROPOSED CATCHBASIN-MANHOLE/CATCHBASIN
- PROPOSED MANHOLE
- PROPOSED CURB STOP
- — — PROPOSED PIPE INSULATION
- — — PROPOSED 100 YEAR HIGH WATER LEVEL
- ■ ■ ■ ■ STORM WATERSHED EXTENT
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SCALE: 1:100

2m 0.5 1 2 4m



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CLIENT  
**CLARENCE GATE HOLDINGS INC.**

DESIGNED BY: A.S. DRAWN BY: A.O. APPROVED BY: V.J.

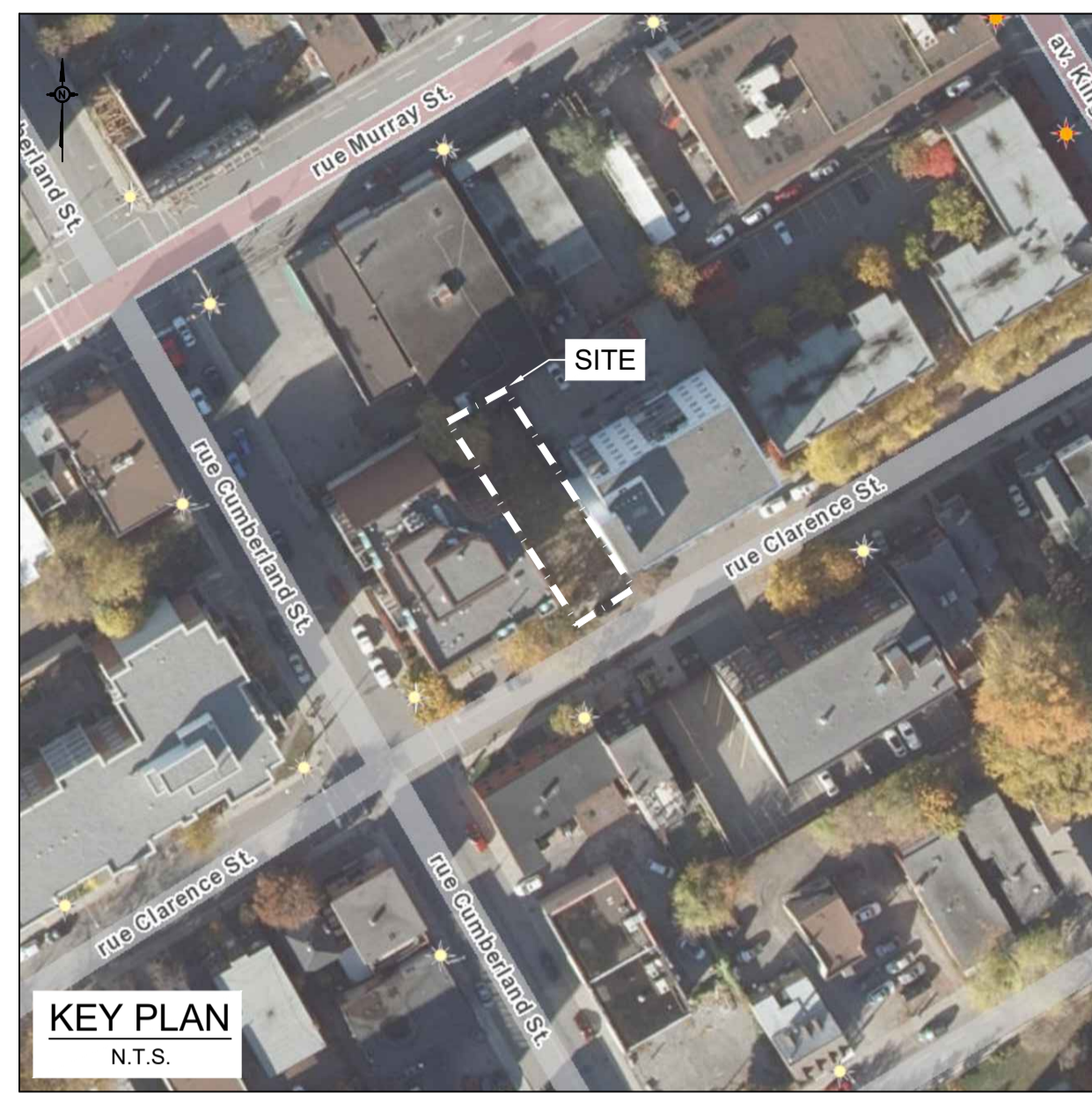
PROJECT  
**PROPOSED RE-DEVELOPMENT  
211 CLARENCE STREET, OTTAWA, ON**

DRAWING TITLE  
**STORMWATER MANAGEMENT PLAN**

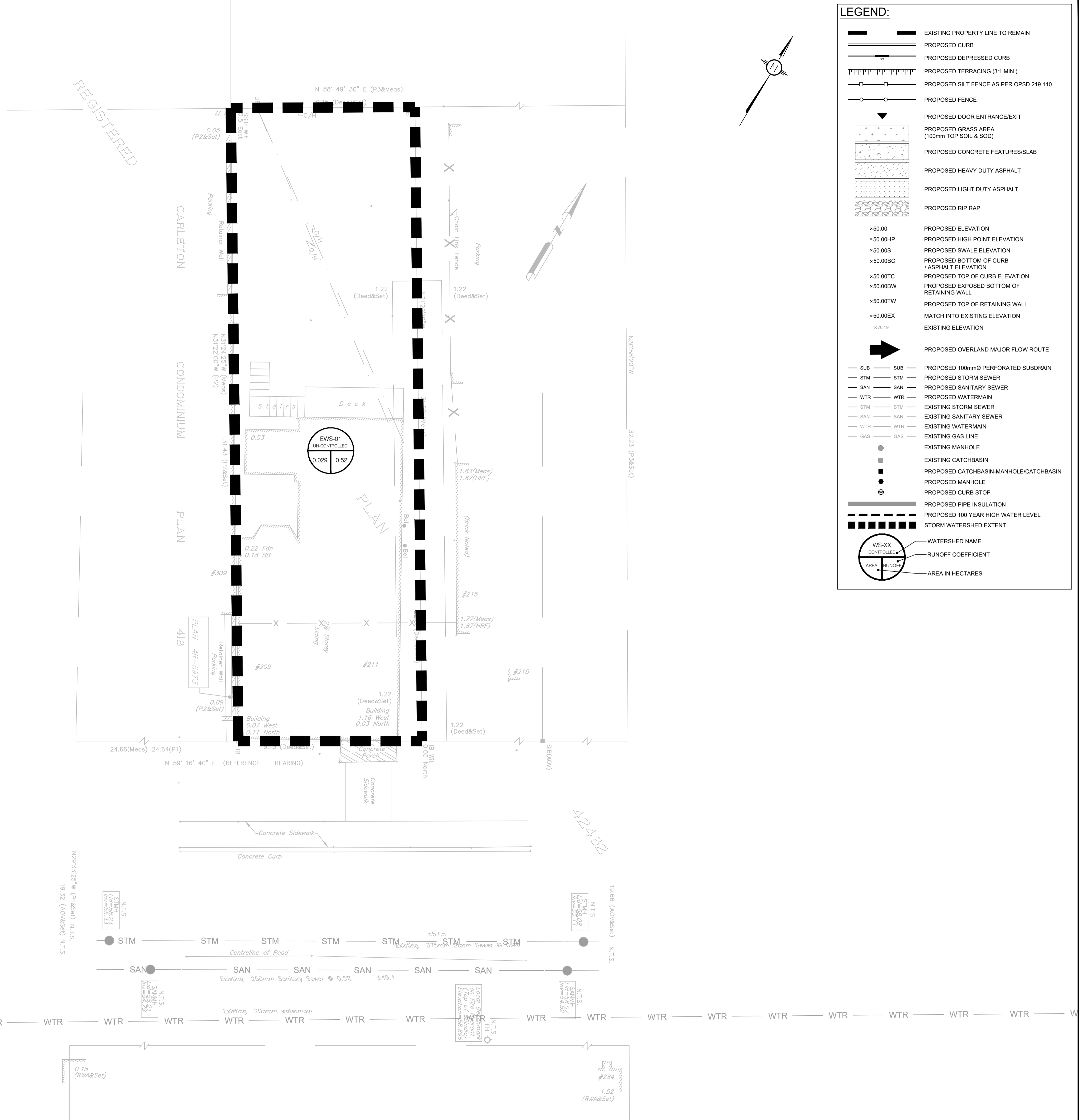
PROJECT NO.  
**180647**

DATE  
**NOV 2021**

**C601**



**KEY PLAN**  
N.T.S.



**LEGEND:**

- | — EXISTING PROPERTY LINE TO REMAIN
- — — PROPOSED CURB
- — — PROPOSED DEPRESSED CURB
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- EXISTING CATCHBASIN
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- PROPOSED MANHOLE
- PROPOSED CURB STOP
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- — — STORM WATERSHED EXTENT
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SCALE: 1:100

SUBJECT TO APPROVAL

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www.lrl.ca | (613) 842-3434

CLIENT  
**CLARENCE GATE HOLDINGS INC.**

DESIGNED BY: A.S. DRAWN BY: A.O. APPROVED BY: V.J.

PROJECT  
**PROPOSED RE-DEVELOPMENT  
211 CLARENCE STREET, OTTAWA, ON**

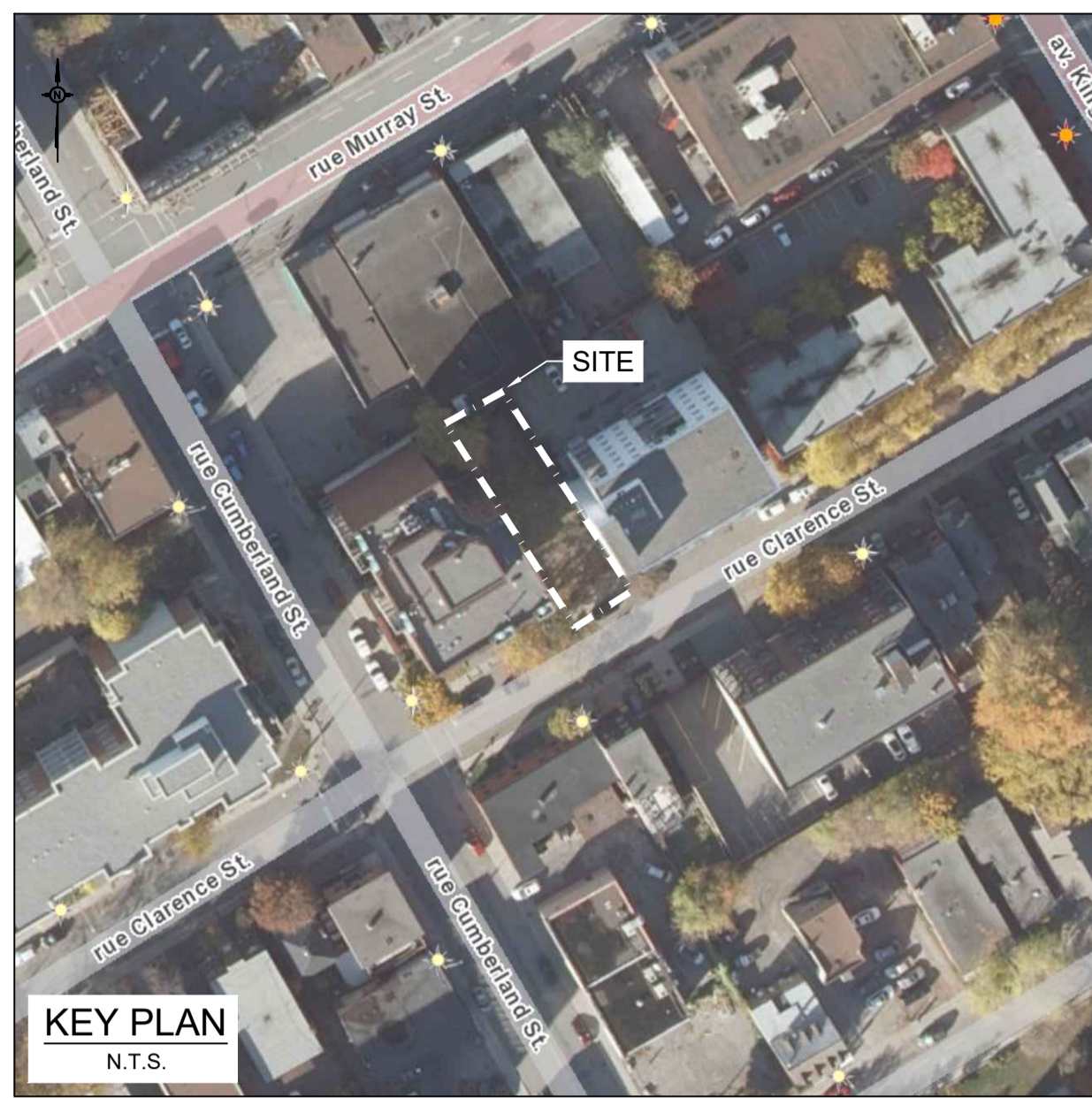
DRAWING TITLE  
**PRE-DEVELOPMENT  
WATERSHED PLAN**

PROJECT NO.  
**180647**

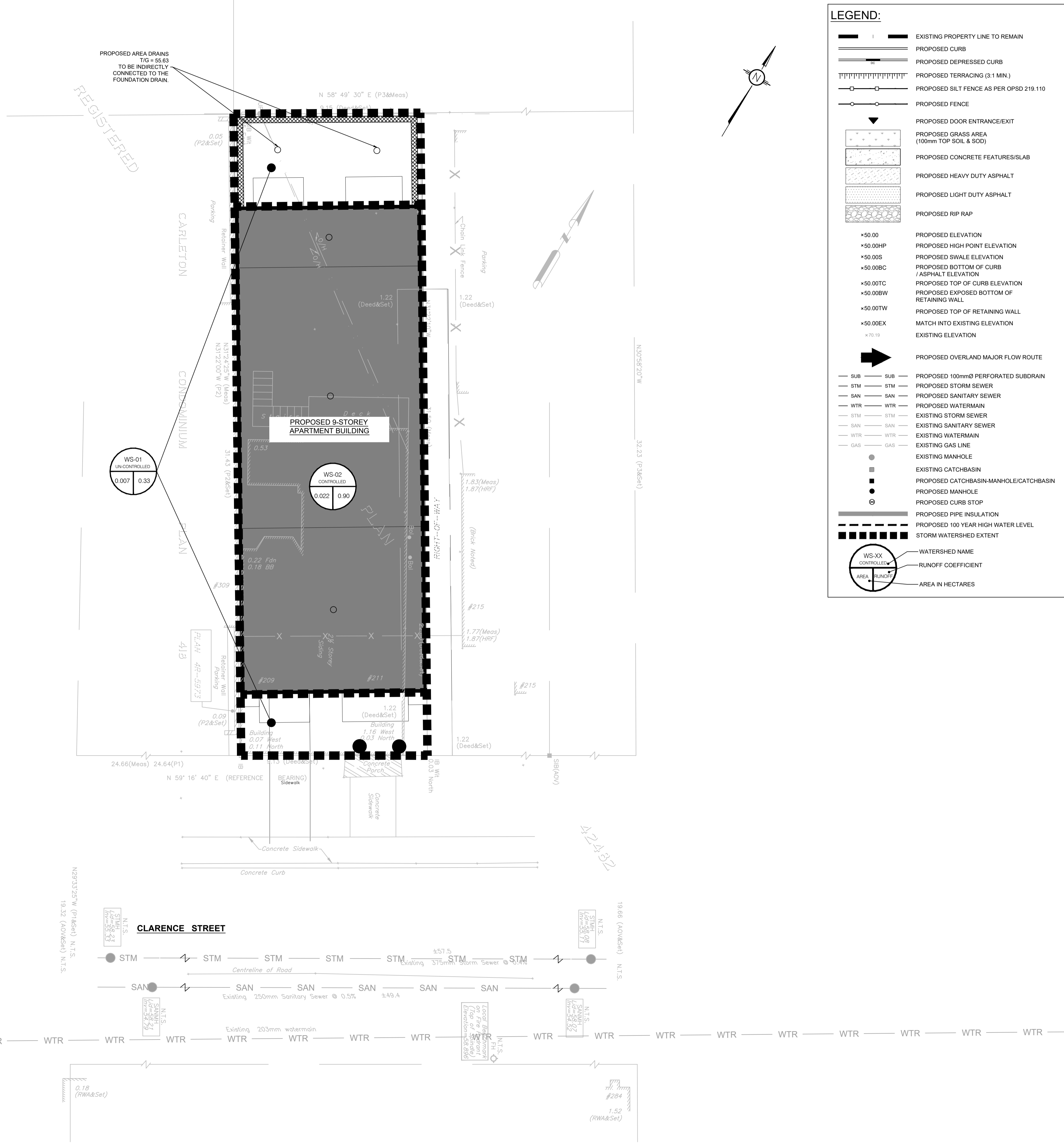
DATE  
**NOV 2021**

C701





**KEY PLAN**  
N.T.S.



**LEGEND:**

- EXISTING PROPERTY LINE TO REMAIN
- PROPOSED CURB
- PROPOSED DEPRESSED CURB
- PROPOSED TERRACING (3:1 MIN.)
- PROPOSED SILT FENCE AS PER OPD 219.11.0
- PROPOSED FENCE
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01	ISSUED FOR MUNICIPAL APPROVAL	A.S.	24 MAY 2022



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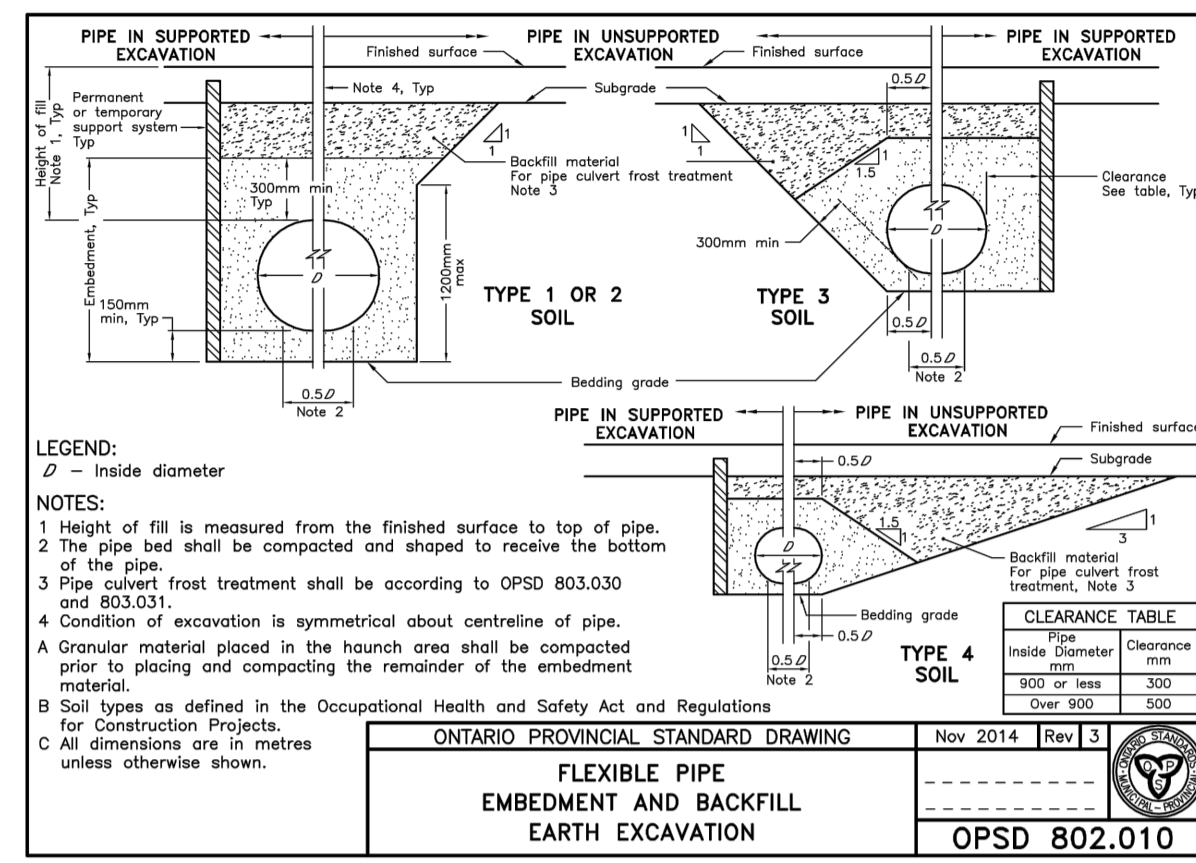
PROJECT  
**PROPOSED RE-DEVELOPMENT  
211 CLARENCE STREET, OTTAWA, ON**

DRAWING TITLE  
**POST-DEVELOPMENT  
WATERSHED PLAN**

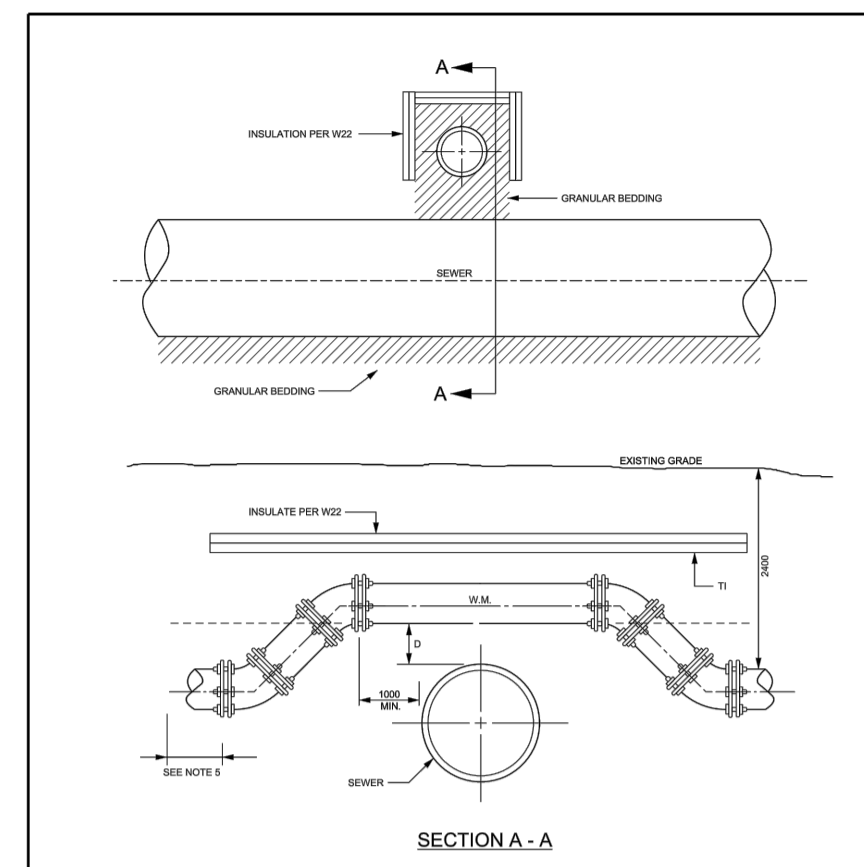
PROJECT NO.  
**180647**

DATE  
**NOV 2021**

**C702**

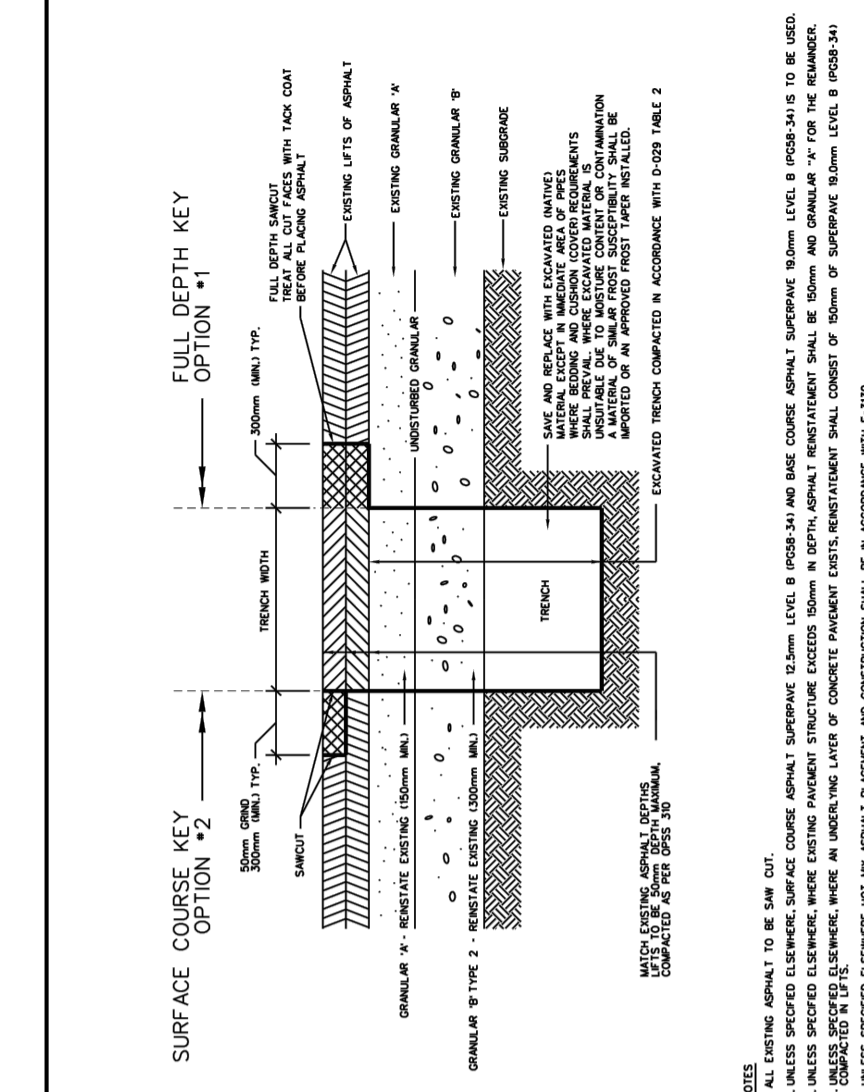


ONTARIO PROVINCIAL STANDARD DRAWING  
**FLEXIBLE PIPE EMBEDMENT AND BACKFILL EARTH EXCAVATION**  
 Nov 2014 Rev 1  
**OPSD 802.010**

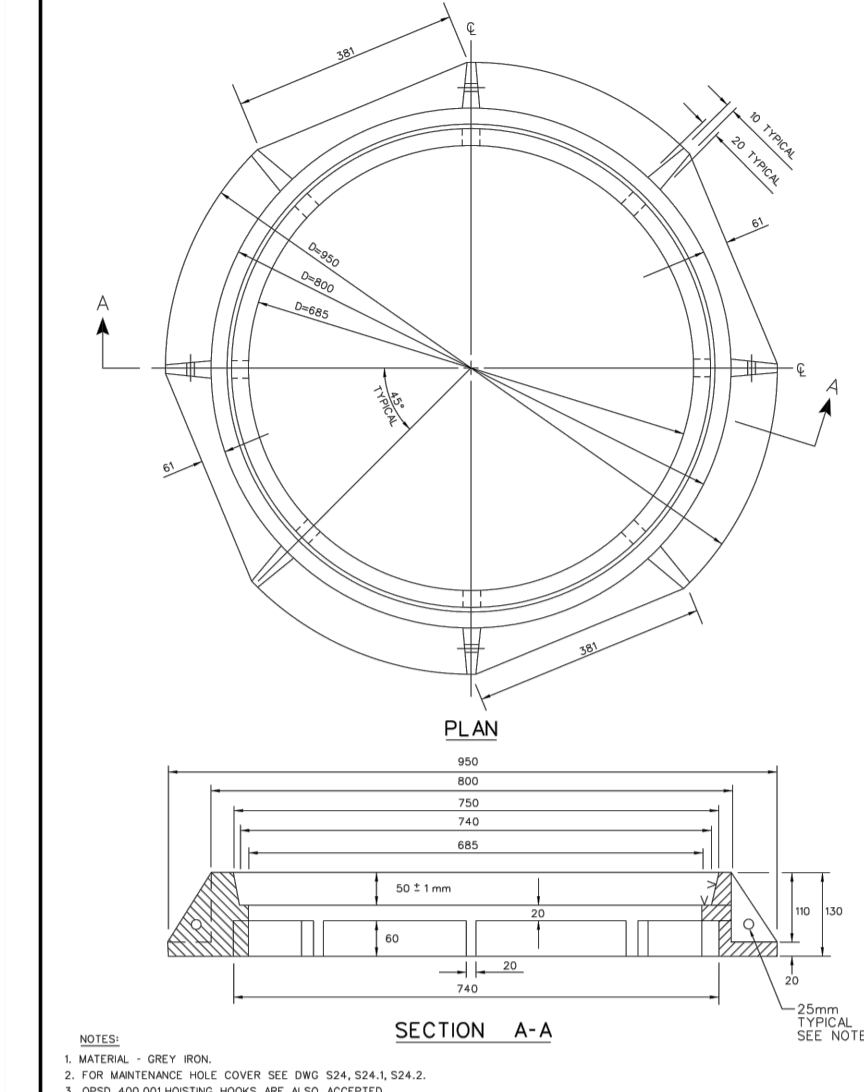


**NOTES:**  
 1. FOR WATERMAIN 100mm (NOMINAL) TO 150mm (NOMINAL)  
 2. 1 BARREL TO 2 BARRELS, SEPARATIONS SHALL BE 200mm MINIMUM  
 3. 3 BARRELS TO 5 BARRELS, SEPARATIONS SHALL BE 200mm MINIMUM  
 4. FOR 300mm (NOMINAL) AND 400mm (NOMINAL) MAINS, SPACES SHALL BE MAX. OF 200mm  
 5. CONCRETE FOR THESE BARRELS SHALL BE 20MPa  
 6. REFER TO 704 FOR REINFORCED CONCRETE REQUIREMENTS  
 7. REFER TO 704 FOR TRENCH DESIGN REQUIREMENTS  
 8. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN  
 9. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN  
 10. DESIGNED TO MEET THE INTENT OF THE BACK WATERMAIN DESIGN (OCTOBER-JUNE 2012)

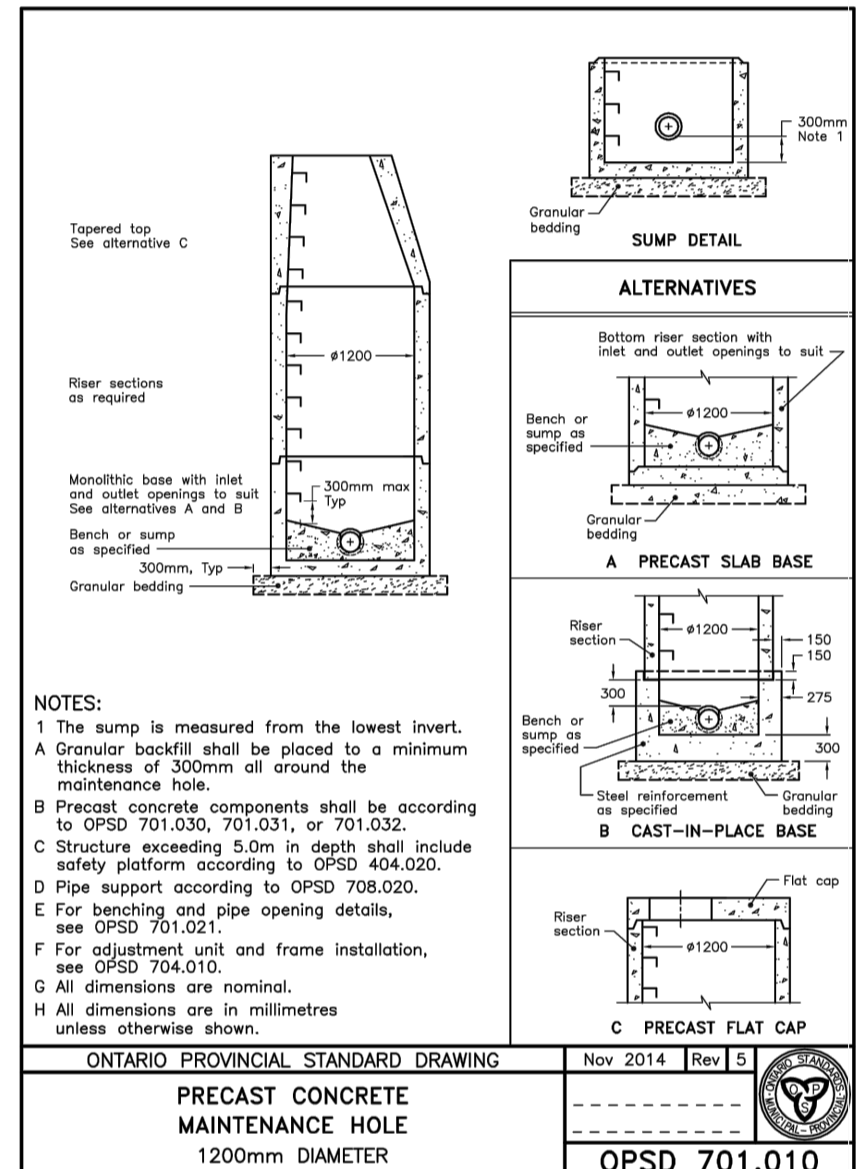
DATE: MAY 2001  
 DESIGNED: W22.2  
 DRAWN: RTD



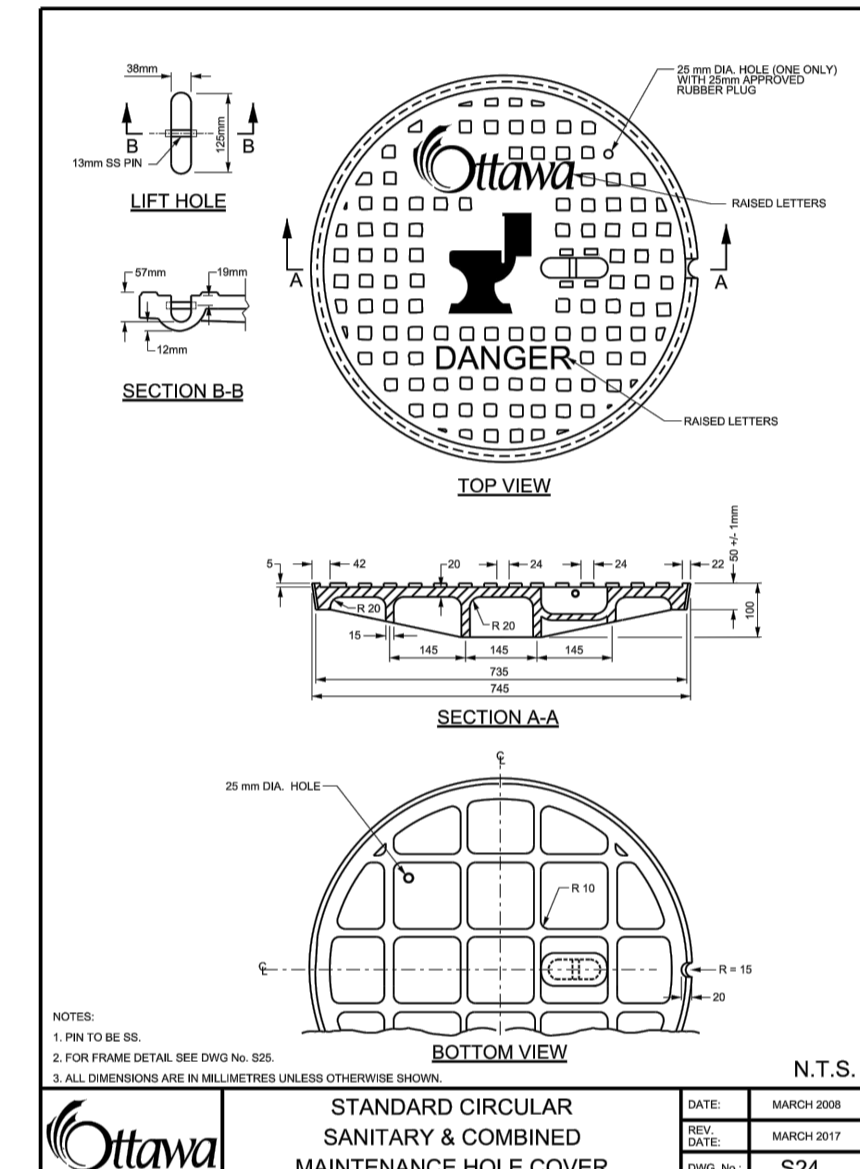
DATE: MAY 2001  
 DESIGNED: W22.2  
 DRAWN: RTD



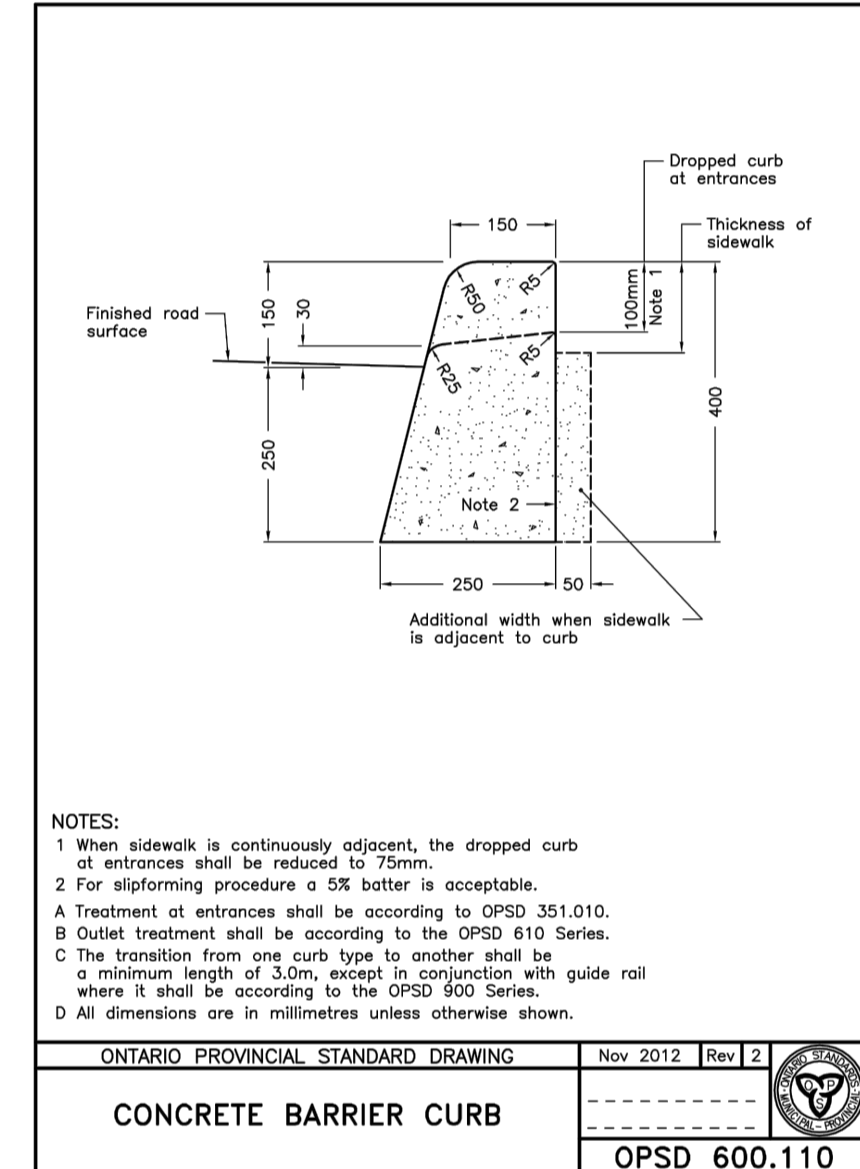
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 DESIGNED: W22.2  
 DRAWN: RTD



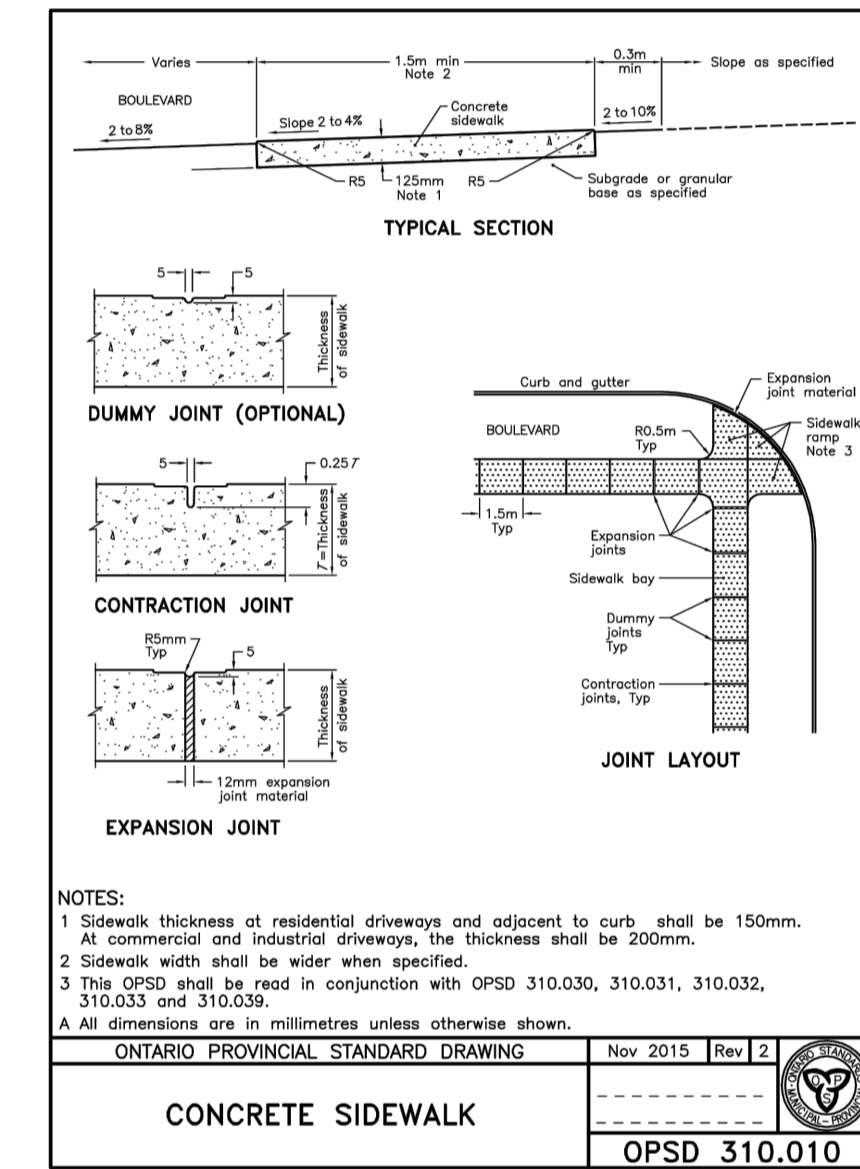
ONTARIO PROVINCIAL STANDARD DRAWING  
**PRECAST CONCRETE MAINTENANCE HOLE**  
 1200mm DIAMETER  
 Nov 2014 Rev 1  
**OPSD 701.010**



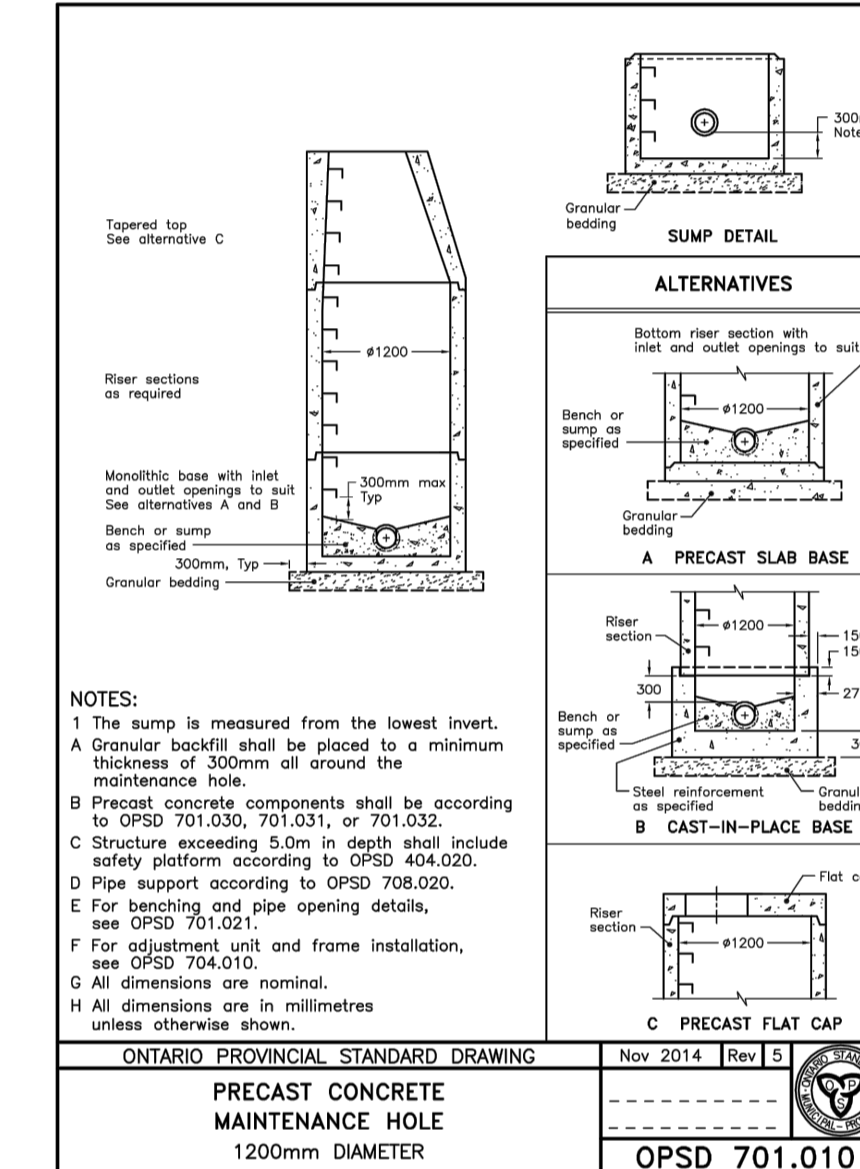
DATE: MARCH 2008  
 DESIGNED: S24  
 DRAWN: S24



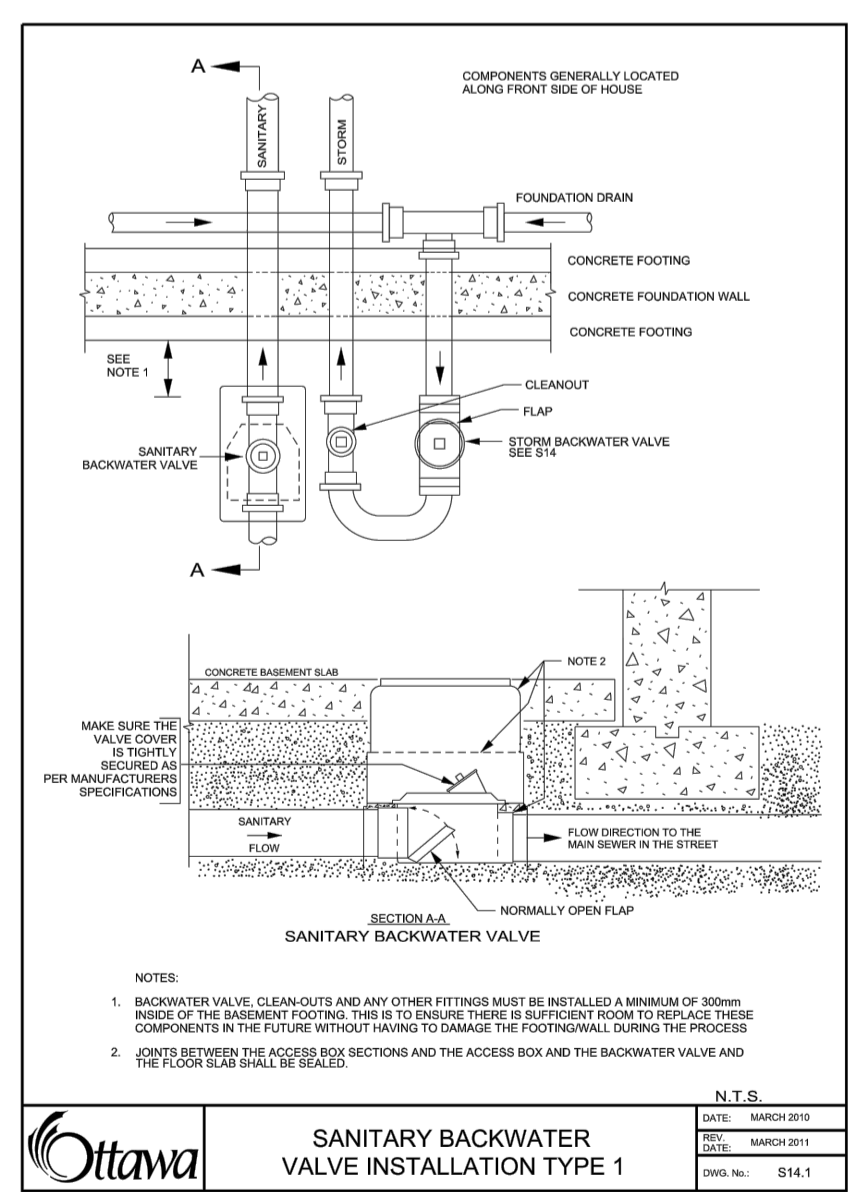
ONTARIO PROVINCIAL STANDARD DRAWING  
**CONCRETE BARRIER CURB**  
 Nov 2012 Rev 2  
**OPSD 600.110**



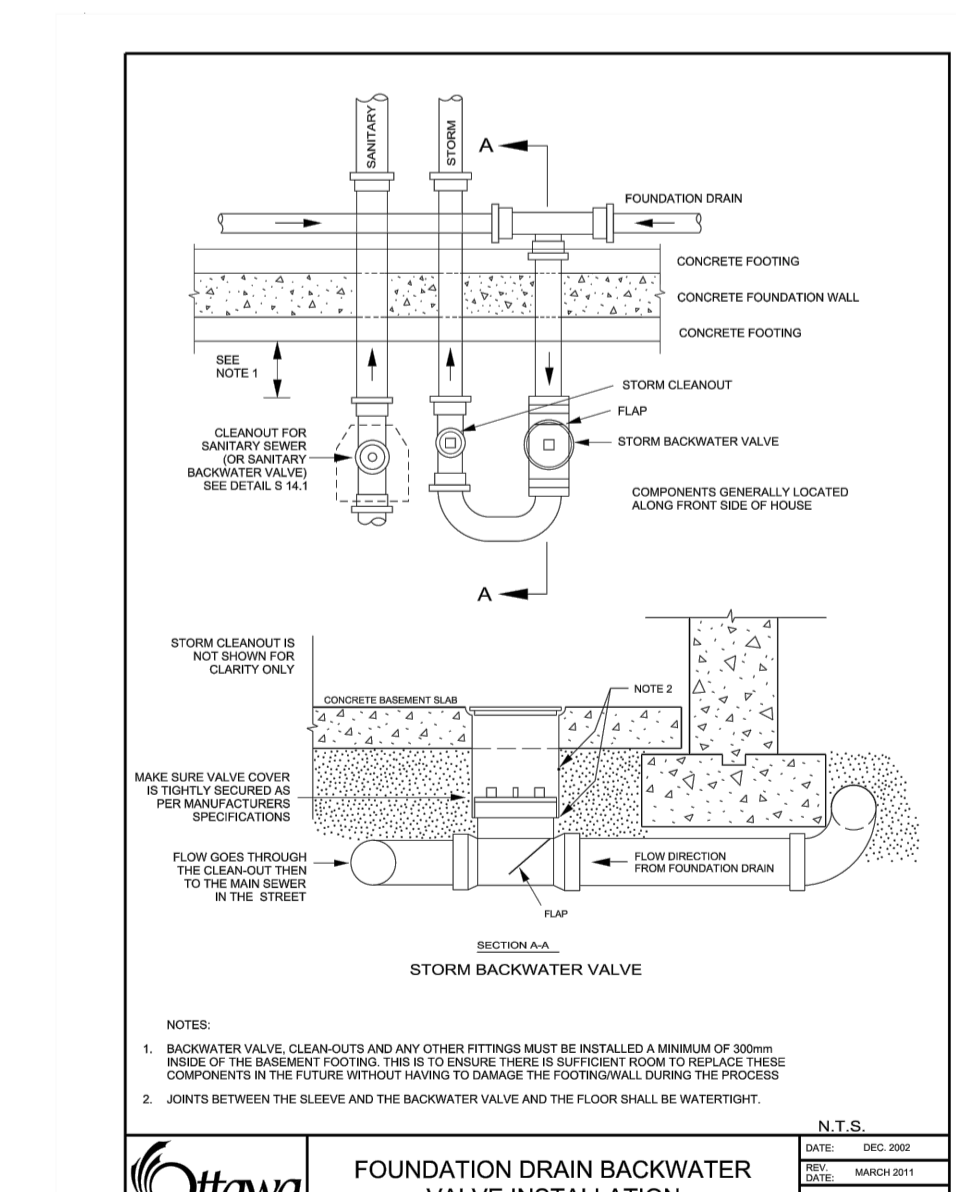
ONTARIO PROVINCIAL STANDARD DRAWING  
**CONCRETE SIDEWALK**  
 Nov 2015 Rev 2  
**OPSD 310.010**



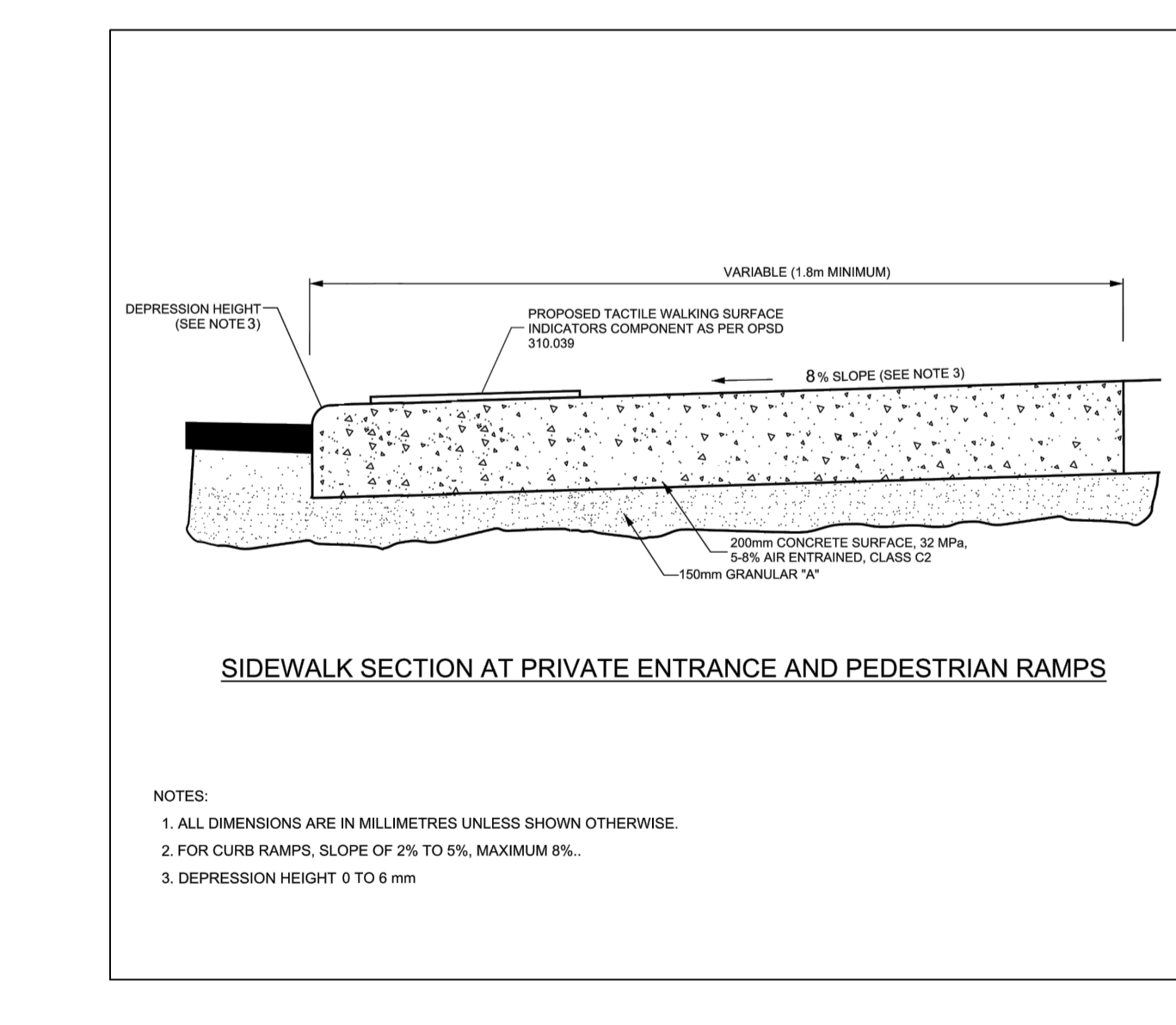
ONTARIO PROVINCIAL STANDARD DRAWING  
**PRECAST CONCRETE MAINTENANCE HOLE**  
 1200mm DIAMETER  
 Nov 2014 Rev 1  
**OPSD 701.010**



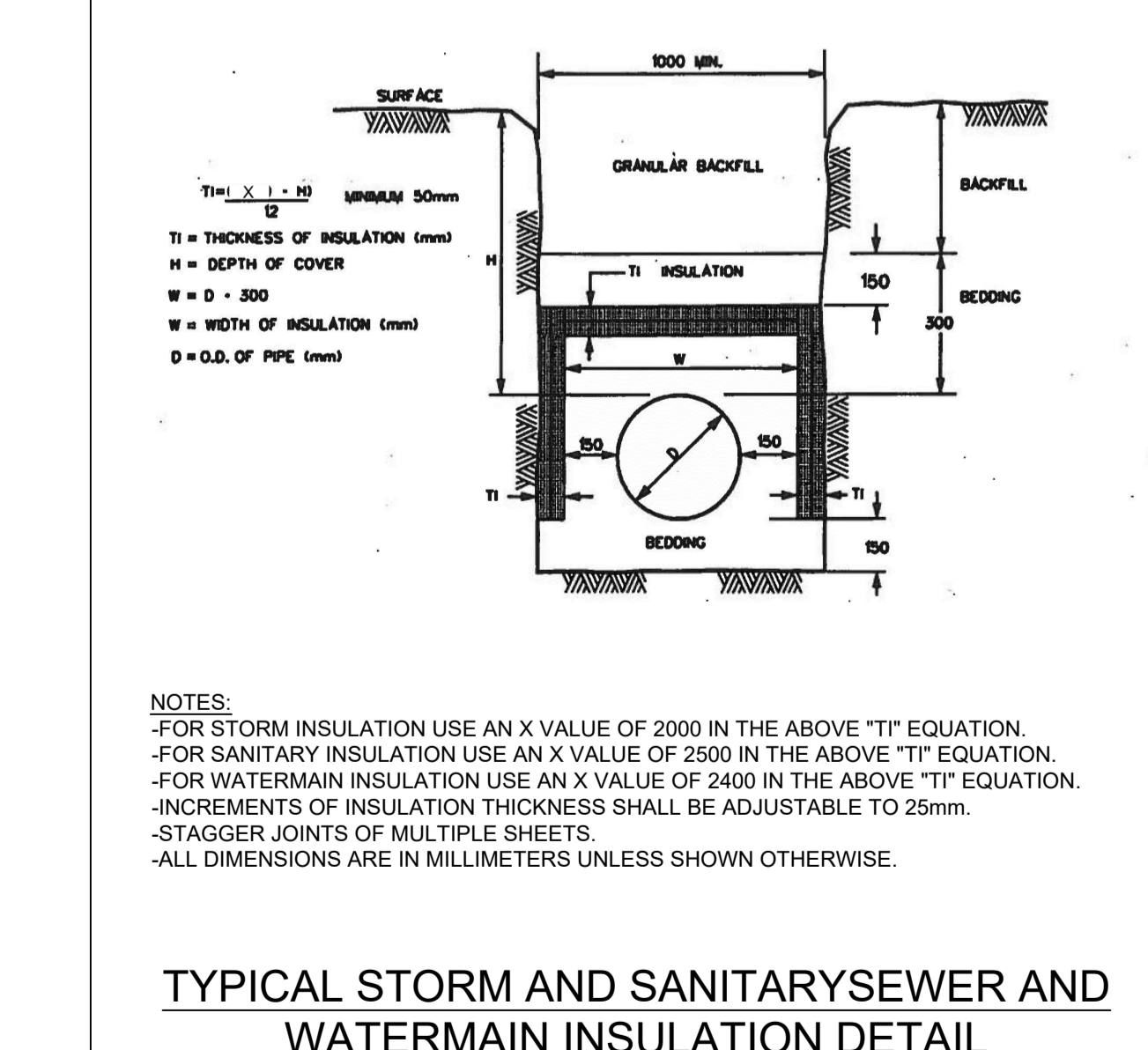
DATE: MARCH 2011  
 DESIGNED: S14.1  
 DRAWN: S14.1



DATE: MARCH 2011  
 DESIGNED: S14  
 DRAWN: S14



DATE: MARCH 2011  
 DESIGNED: S14  
 DRAWN: S14



DATE: MARCH 2011  
 DESIGNED: S14  
 DRAWN: S14

**USE AND INTERPRETATION OF DRAWINGS**

GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION ARE PART OF THE CONTRACT DOCUMENTS AND DESCRIBE THE USE AND INTENT OF THE DRAWINGS. THE CONTRACT DOCUMENTS INCLUDE NOT ONLY THE DRAWINGS, BUT ALSO THE OWNER-CONTRACTOR AGREEMENTS, CONDITIONS OF THE CONTRACT, THE SPECIFICATIONS, ADDENDA, AND MODIFICATIONS ISSUED AFTER EXECUTION OF THE CONTRACT. THESE CONTRACT DOCUMENTS ARE COMPLEMENTARY, AND WHAT IS REQUIRED BY ANY ONE SHALL BE BINDING AS REQUIRED BY ALL. WORK NOT COMPLETELY DELINEATED HEREON SHALL BE CONSTRUCTED OF THE SAME MATERIALS AND DETAILED SIMILARLY AS WORK SHOWN MORE COMPLETELY ELSEWHERE IN THE CONTRACT DOCUMENTS.

BY USE OF THE DRAWINGS FOR CONSTRUCTION OF THE PROJECT, THE OWNER CONFIRMS THAT HE HAS REVIEWED AND APPROVED THE DRAWINGS. THE CONTRACTOR CONFIRMS THAT HE HAS VISITED THE SITE, FAMILIARIZED HIMSELF WITH THE LOCAL CONDITIONS, VERIFIED FIELD DIMENSIONS AND CORRELATED HIS OBSERVATIONS WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.

AS INSTRUMENTS OF SERVICE ALL DRAWINGS, SPECIFICATIONS, CAD FILES OR OTHER ELECTRONIC MEDIA AND COPIES THEREOF FURNISHED BY THE ENGINEER ARE HIS PROPERTY. THEY ARE TO BE USED ONLY FOR THIS PROJECT AND ARE NOT TO BE USED ON ANY OTHER PROJECT, INCLUDING REPEATS OF THE PROJECT. CHANGES TO THE DRAWINGS MAY ONLY BE MADE BY THE ENGINEER.

UNLESS THE REVISION TITLE IS ISSUED FOR CONSTRUCTION, THESE DRAWINGS SHALL BE CONSIDERED PRELIMINARY AND SHALL NOT BE USED AS A CONSTRUCTION DOCUMENT.

THESE DRAWINGS ILLUSTRATE THE WORK TO BE DONE. THE ENGINEER IS NOT RESPONSIBLE FOR THE MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES USED TO DO THE WORK, OR THE SAFETY ASPECTS OF CONSTRUCTION, AND NOTHING ON THESE DRAWINGS EXPRESSED OR IMPLIED CHANGES THIS CONDITION. CONTRACTOR SHALL DETERMINE ALL CONDITIONS AT THE SITE AND SHALL BE RESPONSIBLE FOR KNOWING HOW THEY AFFECT THE WORK. SUBMITTALS OF A BID TO PERFORM THIS WORK IS AN ACKNOWLEDGEMENT OF THE RESPONSIBILITIES, AND THAT THEY HAVE BEEN FULLY CONSIDERED IN PLANNING OF THE WORK AND THE BID PRICE. NO CLAIMS FOR EXTRA CHARGES DUE TO THESE CONDITIONS WILL BE FORTHCOMING.

UNAUTHORIZED CHANGES:

IN THE EVENT THE CLIENT, THE CLIENT'S CONTRACTORS OR SUBCONTRACTORS, OR ANYONE FOR WHOM THE CLIENT IS LEGALLY LIABLE MAKES OR PERMITS TO BE MADE ANY CHANGES TO THESE PLANS, SPECIFICATIONS OR OTHER CONSTRUCTION DOCUMENTS PREPARED BY LRL ASSOCIATES LTD. (LRL) WITHOUT OBTAINING LRL'S PRIOR WRITTEN CONSENT, THE CLIENT SHALL ASSUME FULL RESPONSIBILITY FOR THE RESULTS OF SUCH CHANGES. THEREFORE THE CLIENT AGREES TO WAIVE ANY CLAIM AGAINST LRL AND TO RELEASE LRL FROM ANY LIABILITY ARISING DIRECTLY OR INDIRECTLY FROM SUCH UNAUTHORIZED CHANGES.

IN ADDITION, THE CLIENT AGREES TO THE FULLEST EXTENT PERMITTED BY LAW, TO INDEMNIFY AND HOLD HARMLESS LRL FROM ANY DAMAGES, LIABILITIES OR COSTS, INCLUDING REASONABLE ATTORNEY'S FEES AND COSTS OF DEFENSE, ARISING FROM SUCH CHANGES.

GENERAL NOTES:

EXISTING SERVICES AND UTILITIES SHOWN ON THESE DRAWINGS ARE TAKEN FROM THE BEST AVAILABLE RECORDS, BUT MAY NOT BE COMPLETE OR TO DATE. CONTRACTOR SHALL VERIFY IN FIELD FOR LOCATION AND ELEVATION OF PIPES AND CHECK WITH THE UTILITY COMPANIES BEFORE DIGGING OR PERFORMING WORK.

CONTRACTOR IS ADVISED TO COLLECT INFORMATION ON SOIL CONDITIONS BEFORE START OF CONSTRUCTION.

THE ENGINEER WAIVES ANY AND ALL RESPONSIBILITY AND LIABILITY FOR PROBLEMS WHICH ARISE FROM FAILURE TO FOLLOW THESE PLANS, SPECIFICATIONS AND OTHER CONSTRUCTION DOCUMENTS WITHOUT THE PRIOR WRITTEN APPROVAL OF LRL AND THAT FURTHER REQUIRES THE CONTRACTOR TO INDEMNIFY BOTH LRL AND THE CLIENT FROM ANY LIABILITY OR COST ARISING FROM SUCH CHANGES MADE WITHOUT SUCH PROPER AUTHORIZATION.

CONTRACTOR TO VERIFY ALL DIMENSIONS AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES BEFORE WORK COMMENCES. DO NOT SCALE DRAWINGS.

**SUBJECT TO APPROVAL**

No.	ISSUED FOR MUNICIPAL APPROVAL	REVISIONS	BY	DATE
01			A.S.	24 MAY 2022



NOT AUTHENTIC UNLESS SIGNED AND DATED



CLIENT  
**CLARENCE GATE HOLDINGS INC.**

DESIGNED BY: A.S. DRAWN BY: A.O. APPROVED BY: V.J.

PROJECT  
**PROPOSED RE-DEVELOPMENT 211 CLARENCE STREET, OTTAWA, ON**

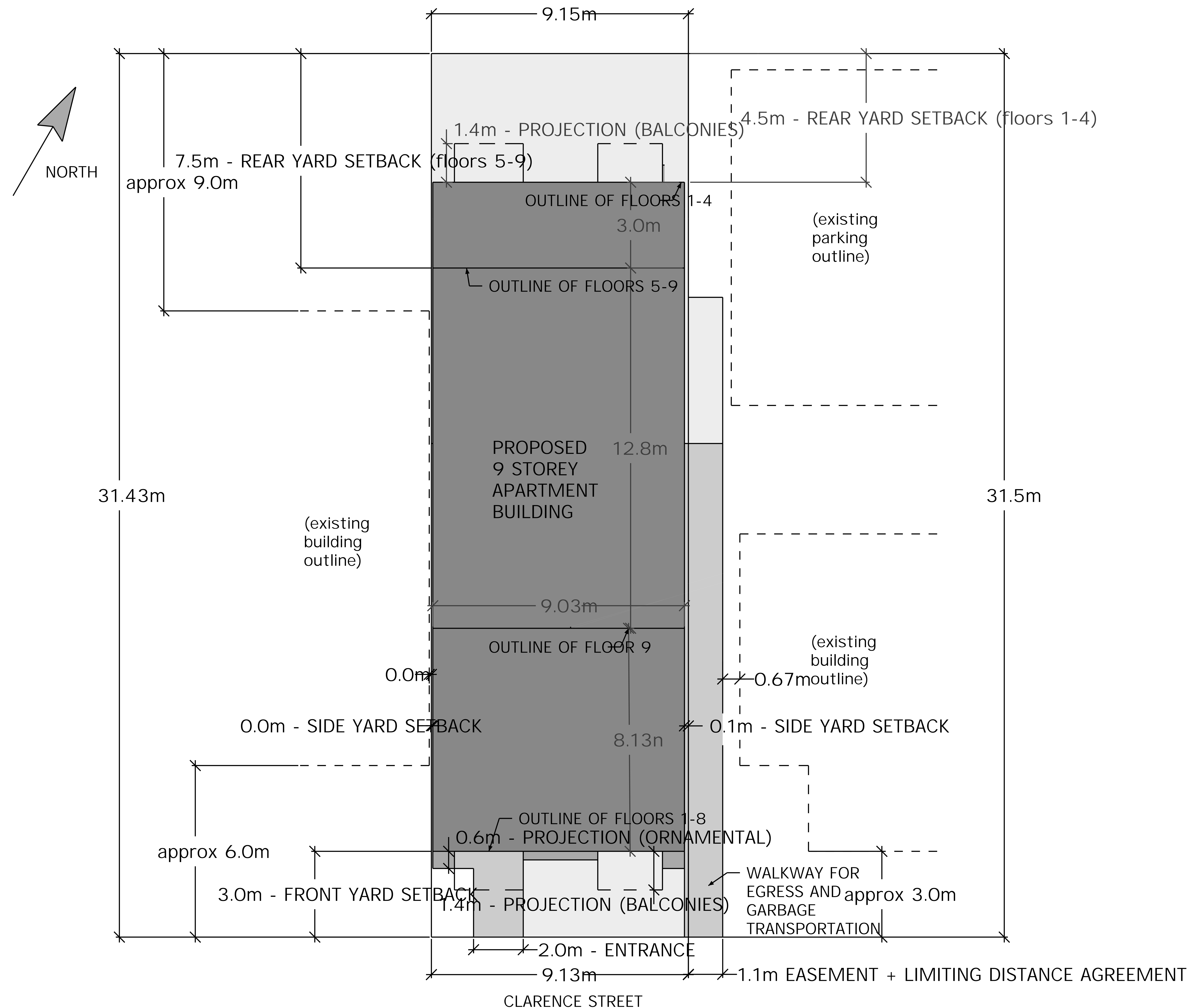
DRAWING TITLE  
**CONSTRUCTION DETAIL PLAN**

PROJECT NO.  
**180647**

DATE  
**NOV 2021**

**C901**

**APPENDIX F**  
**Proposed Site Plan**  
**Legal Survey**  
**As-builts**



PROPOSED MID-RISE APARTMENT BUILDING

9 STOREYS  
 34 UNITS = 24 STUDIO UNITS + 10 ONE-BEDROOM UNITS  
 34 BICYCLE PARKING  
 0 CAR PARKING  
 COMMON AREA ROOF TERRACE

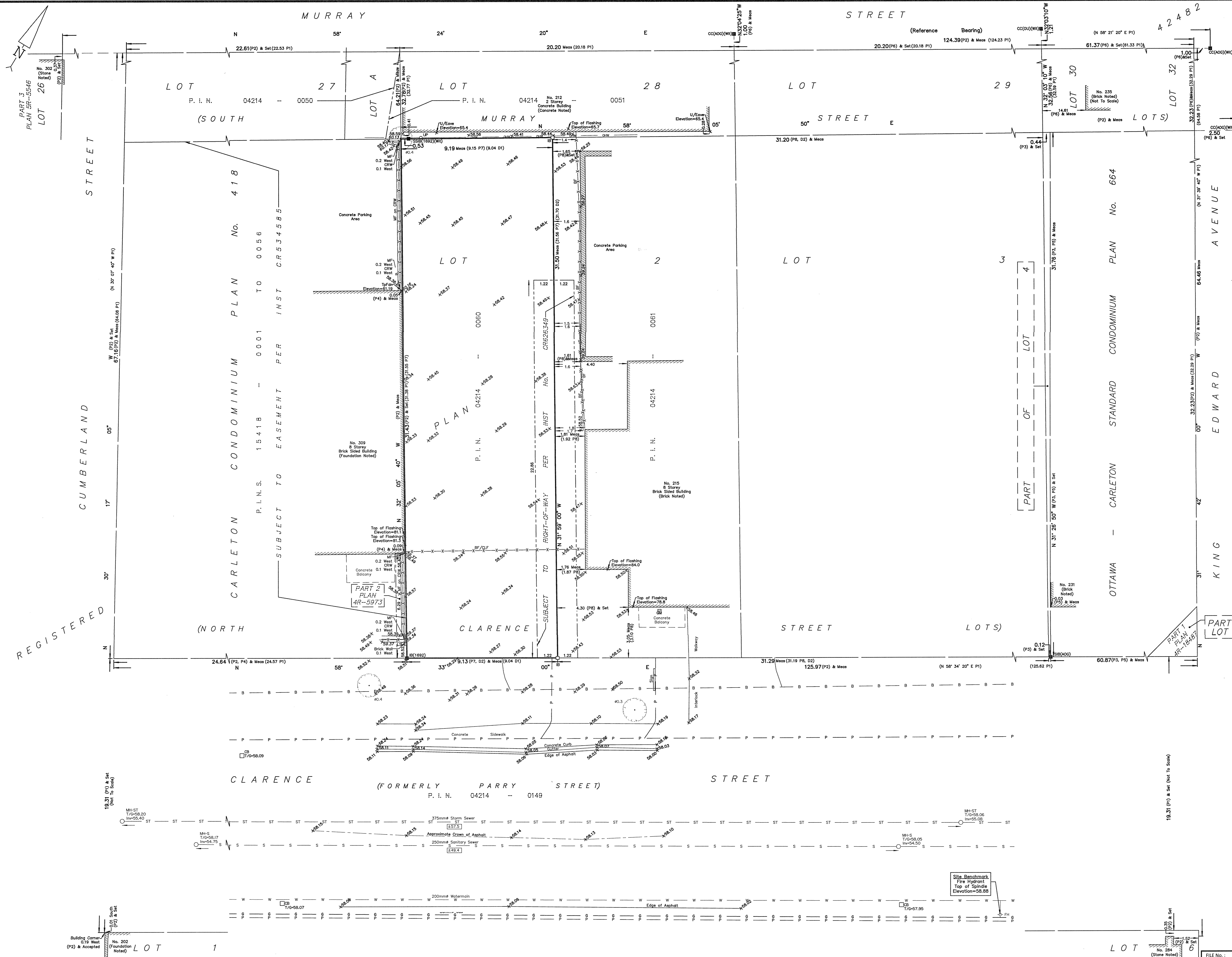
1718m<sup>2</sup> BUILDING AREA - ABOVE GRADE  
 214 m<sup>2</sup> BUILDING AREA - BELOW GRADE  
 287.6 m<sup>2</sup> SITE AREA

211 CLARENCE - VARIANCES REQUESTED (based on current R4UD S77 Zoning)

1. LOT WIDTH - 12.0m REQUIRED  
 - 9.13m PROPOSED
2. LOT AREA - 360.0m<sup>2</sup> REQUIRED  
 - 287.6m<sup>2</sup> PROPOSED
3. BUILDING HEIGHT - 10.7m REQUIRED 6.1m from front lot line  
 - 26.25m PROPOSED
4. BUILDING HEIGHT - 12.0m REQUIRED after 6.1m from front lot line  
 - 26.25m PROPOSED  
 (property has 21.4m height limit as per R4T S77 Zoning)
5. FRONT YARD SETBACK - 6.1m REQUIRED  
 - 3.0m PROPOSED (same as adjacent property to the right/east)
6. SIDE YARD SETBACK (left/west) - 2.5m REQUIRED (for first 21m from front lot line)  
 - 0.0m PROPOSED (same as adjacent property to the left/west)
7. SIDE YARD SETBACK (left/west) - 6.0m REQUIRED (from 21m to 27m from front lot line)  
 - 0.0m PROPOSED (same as adjacent property to the left/west)
8. SIDE YARD SETBACK (right/east) - 2.5m REQUIRED (for first 21m from front lot line)  
 - 0.1m PROPOSED
9. SIDE YARD SETBACK (right/east) - 6.0m REQUIRED (from 21m to 27m from front lot line)  
 - 0.1m PROPOSED
10. REAR YARD SETBACK (floors 1-4) - 7.5m REQUIRED  
 - 4.5m PROPOSED (rear yard setback floors 5-9 - 7.5m proposed)
11. VISITORS PARKING - 2 SPACES REQUIRED  
 - 0 SPACES PROPOSED
12. AMENITY AREA

211 CLARENCE STREET  
 CLARENCE GATE HOLDINGS  
 JANUARY 2022

SITE PLAN  
 613-860-3500  
 34 UNITS



TOPOGRAPHIC PLAN OF SURVEY OF

**PART OF LOT 2 (NORTH CLARENCE STREET) REGISTERED PLAN 42482 CITY OF OTTAWA**  
 FARLEY, SMITH & DENIS SURVEYING LTD. 2022  
 Scale 1: 100



**Metric Note**  
 Distances on this plan are in metres and can be converted to feet by dividing by 0.3048.

**Distance Note**  
 Distances shown on this plan are ground distances and can be converted to grid distances by multiplying by the combined scale factor of 0.99994.

**Bearing Note**  
 Bearings hereon are grid bearings derived from the Can-Net Real Time Network and are referred to the Central Meridian of MTM Zone 9 (76°30' West Longitude) Nad-83 (Original).  
 For bearing comparisons, a rotation of 0°43'40" counter-clockwise was applied to bearings on P1, P2, P3, P4 & P5.

**Elevation Notes**  
 1. Elevations shown are geodetic and are referred to Geodetic Datum CGVD-1928-1978.  
 2. Elevations derived from City of Ottawa Vertical Benchmark No. 247 having a published elevation of 57.951m.  
 3. It is the responsibility of the user of this information to verify that the job benchmark has not been altered or disturbed and that its relative elevation and description agrees with the information shown on this drawing.

**Utility Notes**  
 1. This drawing cannot be accepted as acknowledging all of the utilities and it will be the responsibility of the user to contact the respective utility authorities for confirmation.  
 2. Only visible surface utilities were located.  
 3. Underground utility data derived from City of Ottawa utility sheet reference: D-14-01, D-14-02, 2441p&4 & 2441p&5.  
 4. Sanitary and storm sewer grades and inverts were derived from: Field measurement.  
 5. A field location of underground plant by the pertinent utility authority is mandatory before any work involving breaking ground, probing, excavating etc.

**Notes & Legend**

Denotes	Legend
SM	Survey Monument Planted
SIB	Survey Monument Found
SSIB	Standard Iron Bar
IB	Short Standard Iron Bar
CC	Iron Bar
(CU)	Cut Cross
(W/U)	Origin Unknown
(W)	Witness
Meas	Measured
(P1)	Registered Plan 42482
(P2)	Plan 4R-5973
(P3)	Plan 4R-11239
(P4)	Carleton Condominium Plan No. 418
(P5)	Ottawa-Carleton Standard Condominium Plan No. 664
(P6)	Plan by (AOG) dated March 10, 2021 (Job No. 21338-21)
(P7)	Plan by (647) dated February 9, 1973
(P8)	Plan by (647) dated February 5, 1969
(D1)	Inst CR626349
(D2)	Inst CR242100
MH-ST	Maintenance Hole (Storm)
MH-S	Maintenance Hole (Sanitary)
ST	Underground Storm Sewer
S	Underground Sanitary Sewer
W	Underground Water
P	Underground Power
GP	Underground Gas
B	Underground Bell
OW	Overhead Wires
ULP	Utility Pole
LS	Light Standard
CB	Catch Basin
GM	Gas Meter
D	Diameter
BF	Board Fence
WF	Wire Fence
MF	Metal Fence
CRW	Concrete Retaining Wall
Inv.	Invert
T/G	Top of Grate
U/Eave	Underside of Eave
TpFdn	Top of Foundation
CL	Centreline
+65.00	Location of Elevations
+65.00	Top of Concrete Curb/Retaining Wall Elevation
---	Property Line
○	Deciduous Tree - The symbol shown denotes location and trunk diameter only. Size of its root system/overhead canopy may be smaller/larger than the symbol size depicted on this plan.

TOPOGRAPHIC DATA WAS COLLECTED UNDER WINTER CONDITIONS. SNOW COVER AND ICE PRECLUDE DETERMINING LOCATION AND ELEVATION OF SOME TOPOGRAPHICAL DATA THAT IS OTHERWISE VISIBLE.

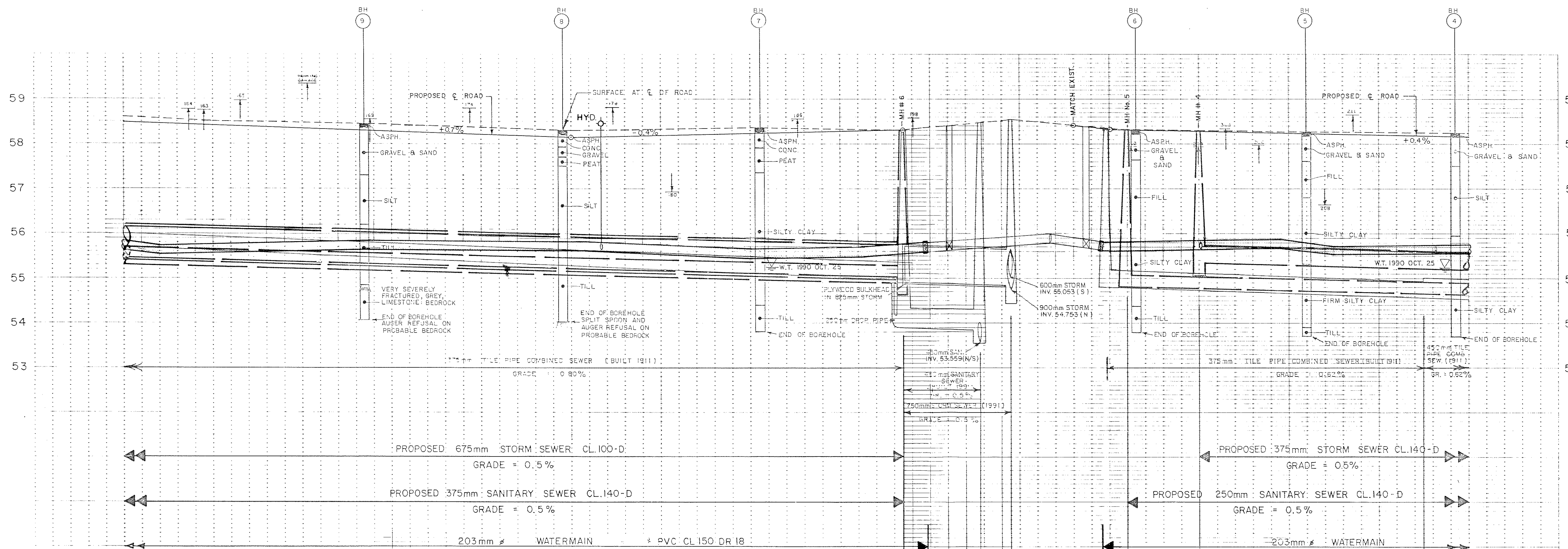
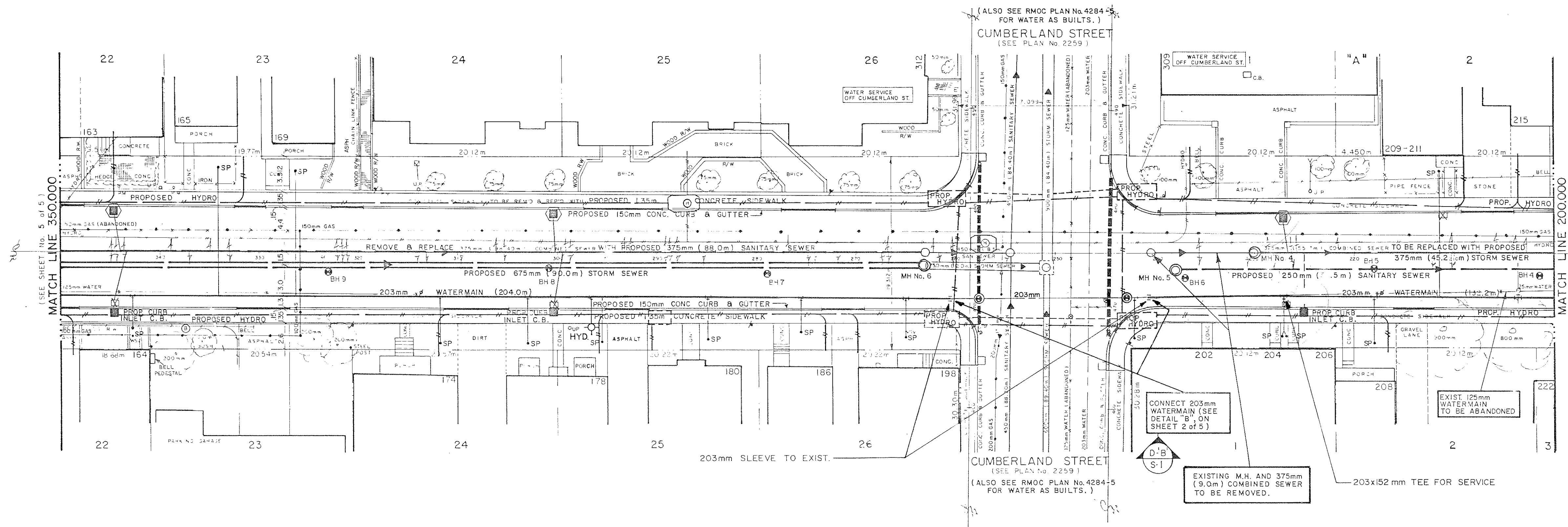
**WARNING** NO PERSON MAY COPY, REPRODUCE, DISTRIBUTE OR ALTER THIS PLAN IN WHOLE OR IN PART WITHOUT THE WRITTEN PERMISSION OF FARLEY, SMITH & DENIS SURVEYING LTD.  
 © FARLEY, SMITH & DENIS SURVEYING LTD., 2022.

**Surveyor's Certificate**  
 I certify that:  
 1. This survey and plan are correct and in accordance with the Surveys Act, the Surveyors Act and the Regulations made under them.  
 2. The survey was completed on the 16th day of February, 2022.

Date: Feb 22, 2022  
 Signature: Jamie Leslie  
 Ontario Land Surveyor

**FARLEY, SMITH & DENIS SURVEYING LTD.**  
 ONTARIO LAND SURVEYORS  
 CANADA LAND SURVEYORS  
 Unit 275, 30 COLONNADE ROAD, OTTAWA, ONTARIO K2E 7J6  
 TEL: (613) 727-8226 E-mail: fdsurveys@bellnet.ca

CLARENCE STREET



Stations	Existing Surface	Proposed Road	Top of Watermain	Type B Diameter (sewer)	Inverts Exist & Prop (sewer)	Stations	Existing Surface	Proposed Road	Top of Watermain	Type B Diameter (sewer)	Inverts Exist & Prop (sewer)
350.00		58.180				350.00					
348.00		55.74				348.00					
340.00		58.410				340.00					
330.00		58.340				330.00					
322.50		58.270	55.82			322.50					
320.00		58.200				320.00					
310.00						310.00					
300.00		58.130	55.82			300.00					
298.50						298.50					
296.50						296.50					
290.00		58.170				290.00					
280.00		58.210	55.66			280.00					
270.00		58.250				270.00					
267.40		55.70				267.40					
265.00		58.200				265.00					
260.00		55.80				260.00					
257.80						257.80					
250.00						250.00					
240.00						240.00					
230.00		58.770				230.00					
227.00		58.83				227.00					
221.00		58.85				221.00					
220.00		58.830				220.00					
215.00		55.74				215.00					
210.00		58.190				210.00					
205.00						205.00					
203.80						203.80					
200.00		55.750	55.890			200.00					

Revisions:

No.	Date	Description	Drawn By	Appr'd By
1	MAY 94	AS BUILT W.M. BY R.M.O.C	CD	

Final Measurements:

Construction Type	Inspector
Work Commenced	Instrumentman
Work Completed	Field Book #
Contractor	Date
Drafting Revisions	Checked By

Designed By	9.7.26	Date/Structural Check By		Date
Survey Detail By		Date/Checked By		Date
Checked By		Date/Checked By		Date
Drafting By		Date/Checked By		Date

Professional Engineer Seal: W.D. TAYLOR, 1/10/94

Notes:  
 Utilities shown are taken from best available records Contractor is requested to check with all utility companies before digging.  
 Soil information shown is not guaranteed and contractors are advised to collect additional soils information as deemed necessary.  
 Reference bench mark Index No. 249 Man No OTT 90 Elev 59.519  
 Proposed storm and sanitary sewers may be constructed in a common trench provided that a minimum horizontal distance of 460mm is maintained between outside barrels of pipe.  
 All pipes shall conform to the Canadian Standards Association (C.S.A.) A257-2 reinforced concrete sewer pipe with approved rubber gaskets.  
 A minimum of 460mm vertical clearance to be maintained between sewers and watermains where practical.  
 Borehole soil descriptions are not based on sieve analysis but on visual inspection only, except where otherwise noted.  
 Soil information taken from Jacques Whitford and Paterson & Assoc., Nov., 1990.  
 Date of television inspection: July, 1989.  
 This plan supercedes (in whole or in part) plan no. G-21-a  
 Actual rock line recorded during construction of existing sewer.  
 Registered plan no. 42482  
 Caution, while illustrations and utilities shown are taken from best available information, they cannot be guaranteed.  
 When reduced, the scale of this drawing is approximately 1:400 horizontally and 1:81 vertically. Do not scale this plan.  
 See additional notes on sheet No. 1.

Regional Municipality of Ottawa-Carleton / Municipalite d'Ottawa-Carleton  
 Environmental Services Department / Services environnementaux  
**Approved**  
 J. Macinnis  
 Date 13/02/94  
**WATER WORKS**

"AS BUILT"  
 City of Ottawa  
 Department Of Engineering And Works  
 Engineering Branch  
 Design And Construction Division  
 1600 SCOTT STREET OTTAWA ONTARIO K1H 4N7  
 D.G. Curry P.Eng. / W.R. Cole P.Eng.  
**CLARENCE STREET**  
 FROM: KING EDWARD AVENUE TO DALHOUSIE STREET  
 Contract No. 92 C 2441 / Survey Books 4661, 4705 & 4711 / Scales HOR. 1:250 VERT. 1:50  
**4373-4**  
 2441  
 Sheet 4 of 5