# Stormwater Management Report and Servicing Brief

Site Plan Control Design
630 Montreal Road, Ottawa, ON

Prepared for:

MB Group et Associes Inc.
549 De Mazenod Avenue
Ottawa, Ontario
K1S 5H3

Attention: Salim Mahi-Beaudry

LRL File No.: 210682

April 19, 2023

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# 1 INTRODUCTION AND SITE DESCRIPTION

LRL Associates Ltd. was retained by MB Groupe et Associes Inc. to complete a Stormwater Management Analysis and Servicing Brief for the development of a 9-storey condo building with 2 level of underground garage parking. Part of the work will include the demolition of a two-storey dwelling and a garage.

The subject property consists of one (1) lot with an existing two-storey dwelling and a detached garage. The site location is legally described as Lot 45 and Part of Lots 3, 4 & 5, Registered Plan 343 in the City of Ottawa). The subject lot is zoned AM10[2199] (Arterial Mainstreet).

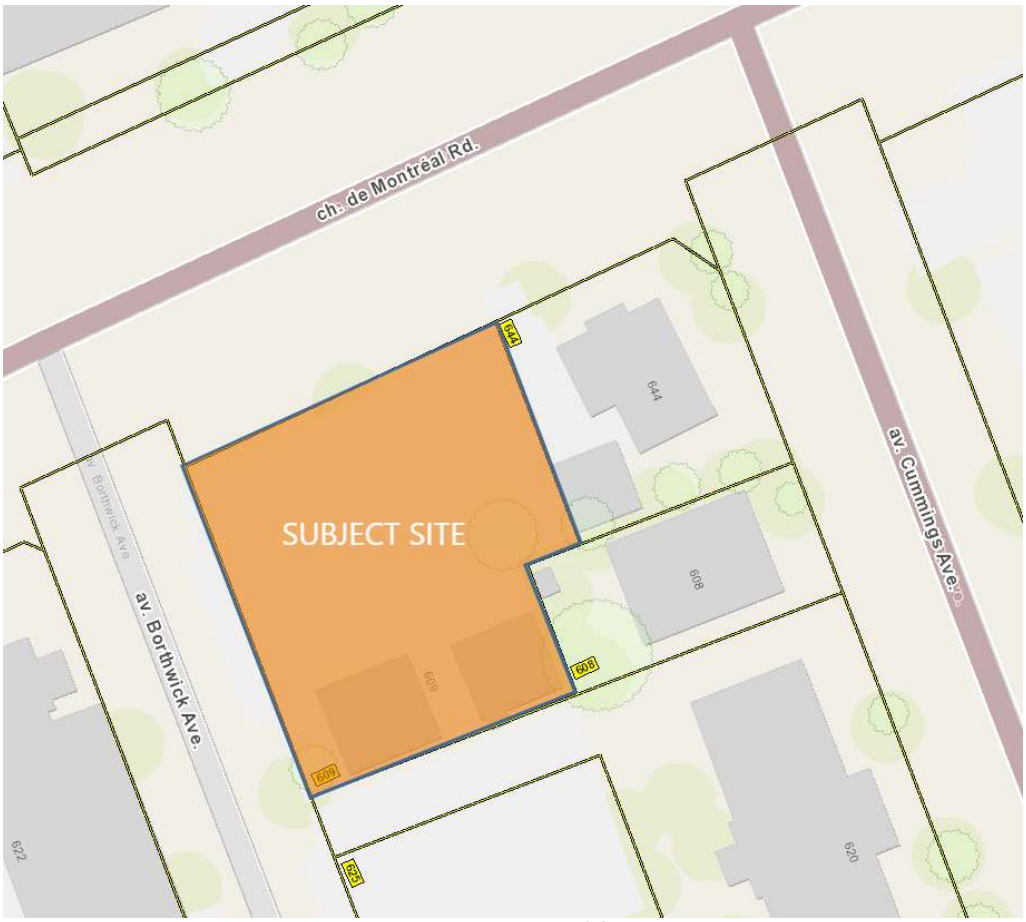



***Figure 1: Aerial View of Subject Lands***

The subject property measures approximately 32m in frontage along Montreal Road and approximately 31m along Borthwick Avenue. Based on locations of the existing property line, the total site area is approximately **0.103 ha**.

The proposed development will be constructed in a single phase, which includes the demolition of the existing two-storey dwelling and detached garage building and the construction of the 9-storey condo building. Refer to ***Site Plan*** included in ***Appendix F*** for more details***.***

This report has been prepared in consideration of the terms and conditions noted above and with the civil drawings prepared for the new development. Should there be any changes in the design features, which may relate to the stormwater and servicing considerations, LRL Associates Ltd. should be advised to review the report recommendations.

## 2 Existing Site and Drainage Description

The subject site measures ***0.0968 ha*** and currently consists of a two-storey dwelling and a detached garage building with associated asphalt parking. There is one existing entrance to the site via Borthwick Avenue. The highest point onsite is located at the northeast corner and has an elevation of 80.01m, the lowest point onsite is located at the southwest corner of the site and has as elevation of 77.47m. The site generally slopes towards the south. There is a drop of approximately 1m across the south property line, a drop of approximately 1m across the east property line and a drop of approximately 1.5m across the west property line.

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

**Montreal Road:**

- 525mm CONC storm sewer (1997)
- 300mm CONC sanitary sewer
- 406mm PVC watermain (2006)

**Borthwick Avenue:**

- 525mm CONC storm sewers (1964)
- 225mm CONC sanitary sewer
- 152mm UCI watermain (1995)

## 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.
- Review impact of increased sanitary flow on downstream sanitary sewer.

## 4 REGULATORY APPROVALS

An MECP Environmental Compliance Approval is not expected to be required for installation of the proposed storm and sanitary sewers within the site. A Permit to Take Water is not anticipated to be required for pumping requirements for sewer installation. The Rideau Valley Conservation Authority will need to be consulted to obtain municipal approval for site development. No other approval requirements from other regulatory agencies are anticipated.

## 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 1E water distribution network pressure zone. There is an existing 406 mm PVC watermain within Montreal Road and a 152mm UCI watermain in Borthwick Avenue. There are currently at least four (4) existing fire hydrants within proximity to the subject property. Refer to ***Appendix B*** for the location of fire hydrants.

### 5.2 Water Supply Servicing Design

According to the City of Ottawa Water Distribution Guidelines (Technical Bulletin ISDTB-2014-02), since the subject site is anticipated to house more than 50 residential units, it is required to be serviced by two water service laterals, separated by an isolation valve, for redundancy and to avoid creation of a vulnerable service area. Additionally, considering the presence of automatic sprinkler system inside the building and a recommended size to service the sprinkler system, the subject property is proposed to be serviced via two (2) 150 mm diameter service laterals connected to the existing 406mm PVC watermain within Montreal Road. Refer to *Site Servicing Plan* C.401 in ***Appendix E*** for servicing layout and connection points.

We have analyzed the water demand requirements for the proposed 9-storey condo building. The residential water demands, and anticipated population were determined using Appendix 4-A, Table 4.1 and Table 4.2 from the *City of Ottawa Water Distribution Design Guidelines* and Table 3-3 from the *MOE Design Guidelines for Drinking Water Systems*.

Through reviewing the architectural floor plans of the proposed building, it was determined that the building will have a total combined aboveground floorspace of **5,390 m$^2$**, **55** residential units and **206.5 m$^2$** of commercial space.

The water supply requirements for the residential units and commercial space in the proposed development have been calculated using the following formulas:

$$Q = (q \times P \times M), \text{ for the residential and}$$
$$Q = (q \times A \times M), \text{ for the commercial space.}$$

Where:
$q$ = average water consumption (L/capita/day) or (L/ha/day)
P = design population (capita)
M = Peak factor
A = area (ha)

Residential Demands

The proposed building will include **39** one-bedroom units and 1**6** two-bedroom units. Based on the City of Ottawa Design guidelines for population projection, this translates to approximately **88.2** residents. *Table 1* below summarizes the proposed residential population count as interpreted using Table 4-1 from the *City of Ottawa Water Distribution Design Guideline.*

***Table 1: Development Residential Population Estimate***

| Proposed Unit Type | Persons Per Unit | Number of Units | Total Population |
|---|---|---|---|
| 1 Bedroom | 1.4 | 39 | 54.6 |
| 2 Bedroom | 2.1 | 16 | 33.6 |
| | **Total** | **55** | **88.2** |

With reference to *Table 4.1 of the City of Ottawa Water Distribution Design Guidelines*, an average water consumption rate of 280 L/c/d was used. With reference to Table 3-3 of the MOE *Design Guidelines for Drinking Water Systems* a Maximum Daily Demand Factor and Maximum Hour Demand Factor were calculated to be approximately 6.1 and 9.1, respectively. The anticipated residential demands were calculated as follows:

- Average daily domestic water demand is **0.29** L/s,
- Maximum daily demand is **1.73** L/s, and
- Maximum hourly demand is **15.73** L/s.

Commercial Demands

Appendix 4-A and *Table 4.2 of the City of Ottawa Water Distribution Design Guidelines* were used to determine the consumption rates and peak factors of the commercial space. A water consumption rate of 28,000L/ha/d was used for the commercial space. The Maximum Daily Demand Factor and the Maximum Hourly Demand Factor were 1.5 and 1.8 respectively. *Table 2* below summarizes the proposed commercial demands.

***Table 2: Institutional/ Commercial Demands***

| Property Type | Unit | Rate | Units | Demand (L/d) |
|---|---|---|---|---|
| Commercial Space | 28,000 | L/ha/d | 0.02065 ha | **578.2** |

Using the peak factors, the anticipated commercial demands were calculated as follows:

- Average daily domestic water demand is **0.007** L/s,
- Maximum daily demand is **0.010** L/s, and
- Maximum hourly demand is **0.018** L/s.

Combined - Residential/Commercial/Institutional

The combined residential and commercial demands for the site are anticipated to equal the following:

- Average daily domestic water demand is **0.29** L/s,
- Maximum daily demand is **1.74** L/s, and
- Maximum hourly demand is **15.74** 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 Boundary Conditions***

| **Design Parameter** | **Anticipated Demand (L/s)** | **Boundary Conditions @ Montreal Road** |
|---|---|---|
| | | **Connection 1* (m H2O / kPa)** |
| **Average Daily Demand** | 0.29 | 108.4/ 275.76 |
| **Max Day + Max Fire Flow (per FUS)** | 1.74 + 200.00 | 110.0/ 291.45 |
| **Peak Hour** | 15.74 | 118.3/ 372.84 |
| **Ground Elevation assumed at 80.28 for Connections 1 & 2 @ Montreal Road* | | |

As indicated in Table 3, pressures in all scenarios meet the required pressure range stated in the City of Ottawa Design Guidelines – Water Distribution (Section 4.2.2). Refer to ***Appendix B*** for Boundary Conditions.

The estimated fire flow for the proposed buildings was calculated in accordance with *ISTB-2018-02*. The following parameters were provided by the Architect:

- Type of construction – Non-combustible construction
- Occupancy type – Limited Combustible
- Sprinkler Protection –Fully Automatic Sprinkler System

The estimated fire flow demand was estimated to be **12,000 L/min**, see ***Appendix B*** for details.

There are four (4) existing fire hydrants in proximity to the proposed buildings that are available to provide the required fire flow demands of 12,000 L/min. Refer to ***Appendix G*** for fire hydrant

locations. Table 4 below summarizes the aggregate fire flow of the contributing hydrants in proximity to the proposed development based on Table 18.5.4.3 of *ISTB-2018-02*.

***Table 4: Fire Protection Summary Table***

| | Max. Fire Flow Demand (L/min) | Fire Hydrants(s) within 75m | Fire Hydrant(s) within 150m | Available Combined Fire Flow (L/min) |
|---|---|---|---|---|
| Contemplated Development | 12,000 | 1 | 3 | (1 x 5678) + (3 x 3785) = 17,033 |

The total available fire flow from contributing hydrants is equal to **17,033 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.

The proposed water supply design conforms to all relevant City Guidelines and Policies.

## 6 SANITARY SERVICE

### 6.1 Existing Sanitary Sewer Services

There is an existing 300mm PVC Sanitary sewer located in Montreal Road and a 225mm CONC Sanitary Sewer located in Borthwick Avenue. It is anticipated that the contemplated development will be connected to the existing 225mm CONC sanitary sewer located within Borthwick Avenue.

### 6.2 Sanitary Sewer Servicing Design

The proposed development will be serviced via a 150 mm dia. sanitary service connected to the existing 225mm CONC sanitary sewer located within Borthwick Avenue. Refer to LRL drawing C.401, included in **Appendix F,** for the proposed sanitary servicing.

The parameters used to calculate the anticipated residential sanitary flows are an average population count of 1.4 person per single unit, 2.1 persons per two-bedroom unit, a residential daily demand of 280 L/p/day, a residential peaking factor of 3.5 and a total infiltration rate of 0.33 L/s/ha. The parameters used to calculate the anticipated commercial sanitary flows are a daily flow of 28,000L/ha/day and a commercial peaking factor of 1.5. Based on these parameters and a total site area of 0.101 ha, the total anticipated wet wastewater flow was estimated to be **1.07 L/s**. Refer to ***Appendix C*** for the site sanitary sewer design sheet.

As requested in the pre-consultation with City staff, the calculated sanitary demands for the proposed development were coordinated with the City of Ottawa to confirm there is sufficient capacity in the downstream municipal sewers. As per correspondence attached, see ***Appendix C***, the downstream municipal sewers can sufficiently accommodate the increase in sanitary flows from the proposed development.

# 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.

There is an existing 525mm CONC storm sewer available in Montreal Road and an existing 525mm CONC storm sewer located in Borthwick Avenue. In the pre-development conditions, drainage from the subject lot is depicted by existing watershed EWS-01 (0.103ha), which drains in the south towards Borthwick Avenue. Refer to plan C701 included in ***Appendix E*** for pre-development drainage characteristics. Refer to ***Appendix D*** for pre-development and post-development watershed information.

## 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 including City of Ottawa Stormwater Management Design Guidelines, 2012 (City standards), as well as the Ministry of the Environment's Stormwater Management Planning and Design Manual, 2003 (SWMP Manual).

### 7.2.1 Water Quality

The subject property lies within the Ottawa River West sub-watershed and is therefore subject to review by the Rideau Valley Conservation Authority (RVCA). It was determined that water quality controls would not be required on this site as treatment would be handled by municipal infrastructure. Correspondence with RVCA is included in ***Appendix A***.

### 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 Rational Method Coefficient of 0.50, employing the City of Ottawa IDF parameters for a 2-year storm with a calculated time of concentration equal to 10 minutes; and

- Attenuate all storms up to and including the City of Ottawa 100-year storm event on site.

- Water quality treatment will not be required on this site as the water being collected and conveyed to the storm system is rooftop water. Water collected from the parkade ramp will need to be considered in the detailed mechanical design to ensure that sediment, oil and grit are considered prior to entering the cistern.

As per the pre-application consultation meeting with the City of Ottawa, it was recommended that it would be acceptable to control only the roof portion of the building up to the 100-year storm event, to a 2-year pre-development level and that the remainder of the site could be left

uncontrolled as long as the uncontrolled portion is directed towards the right of way. Based on these stormwater objectives for the subject site, it was determined that the allowable release rate for the site is **5.36 L/s** for all storms up to and including the 100-year storm. 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 site to quantify the detention storage required for quantity control of the development. Refer to ***Appendix D*** for storage calculations.

### 7.4 Proposed Stormwater Quantity Controls

The proposed stormwater management quantity control for this development will be accomplished using an underground cistern. A proposed 250 mm PVC diameter storm sewer pipe will outlet stormwater flows from the site to the existing 525mm CONC storm sewer located within Borthwick Avenue. The proposed servicing layout and connection points are shown on drawing C.401 in ***Appendix E,*** and detailed calculations can be found in ***Appendix D***.

The site has been analyzed and five (5) post-development watersheds have been allocated.

WS-01 and WS-02 (0.030 ha) consist of areas around the building that will flow uncontrolled towards the Borthwick Avenue Right of Way.

WS-03 (0.010 ha) is a controlled area which consists of pavers and grassed areas and is located east of the building. This area is directed to an area drain which carries flows to the underground cistern.

WS-04 (0.050 ha) is a controlled area which consists of the roof envelope. There will be no roof storage since the roof will be used primarily as an amenity space. Flows from the roof will be directed to the underground cistern.

WS-05 (0.013 ha) consists of the ramp access. Flows from this area will be captured via a trench drain and directed to the underground cistern.

Refer to C601, Stormwater Management Plan and C702, Post-Development Watershed Plan C702 in ***Appendix E*** for reference.

Table 5 below summarizes post-development drainage areas. Calculations can be seen in ***Appendix D.***

***Table 5: Post-Development Estimated Areas & Runoff Coefficients***

| WATERSHED | Total Area (ha) | Weighted Runoff Coefficient (C) |
|---|---|---|
| W-01 (UNCONTROLLED) | 0.009 | 0.30 |
| WS-02 (UNCONTROLLED) | 0.021 | 0.44 |
| WS-03 (CONTROLLED IN CISTERN) | 0.010 | 0.36 |
| WS-04 (ROOF - CONTROLLED IN CISTERN) | 0.050 | 0.90 |
| WS-05 (RAMP - CONTROLLED IN CISTERN) | 0.013 | 0.90 |

| | | |
|---|---|---|
| **TOTAL** | **0.103** | **0.70** |

It was determined that it would be acceptable to control only the roof portion of the building up to the 100-year storm event, to a 2-year pre-development level. Based on these assumptions the allowable release rate of the site was calculated to equal **5.36L/s**. In post development, watersheds WS-03, WS-04 and WS-05 will be controlled via the cistern. They have a combined area of 0.073ha and a 100-year weighted runoff coefficient of 1.00. Therefore, it was determined that a total of 23.77m$^3$ of storage would be required within the underground cistern. For release rate and storage calculations, refer to ***Appendix D***. For additional information on cistern location etc., refer to drawing C.601 in ***Appendix E.***

Table 6 below summarizes the release rates and storage volumes required to meet the allowable release rate of **5.36 L/s** for 100-year flow rates.

***Table 6: Stormwater Release Rate & Storage Volume Summary (100 Year)***

| CATCHMENT AREAS | DRAINAGE AREAS (ha) | 100-YEAR RELEASE RATE (L/s) | 100-YEAR REQUIRED STORAGE (m$^3$) | TOTAL AVAILABLE STORAGE (m$^3$) |
|---|---|---|---|---|
| WS-03 (CONTROLLED IN CISTERN) | 0.010 | 5.36 | 23.77 | 24.00 |
| WS-04 (ROOF - CONTROLLED IN CISTERN) | 0.050 | | | |
| WS-05 (RAMP - CONTROLLED IN CISTERN) | 0.013 | | | |
| **TOTAL CONTROLLED** | **0.073** | **5.36** | **23.77** | **24.00** |

To attenuate flows to the allowable release rate of **5.36 L/s**, it is calculated that a total of **23.77 m$^3$** of storage will be required. The required storage is proposed to be met through an underground cistern. The total required storage, storage available and allowable release rate is the following;

- **23.77 m$^3$** is required for underground cistern storage capacity corresponding to a maximum restricted flow of **5.36L/s** via roof drain controls.
- The cistern will have a capacity of a minimum of **24.63 m$^3$** of available storage. Exact cistern size and location will be confirmed during the detailed design stage.

## 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. For more details refer to drawing C101 Erosion and Sediment Control Plan in ***Appendix E***.

## 9 CONCLUSION

This Stormwater Management and Servicing Report for the development proposed at 424 Churchill Avenue N 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 to be **12,000 L/min** using the FUS method.
- There are at least four (4) existing fire hydrants available to service the proposed development. They will provide a combined fire flow of **17,033 L/min** to the site.
- The new development will be serviced via two (2) 150mm diameter services separated by an isolation valve, that will be connected to the existing 406mm PVC watermain within Montreal Road.
- Boundary conditions received from the City of Ottawa indicate that sufficient pressure is available to service the proposed site.

**Sanitary Service**

- The total calculated wet wastewater flow from the proposed development is **1.07 L/s.**
- The proposed development will discharge **1.07 L/s** to the existing 225 mm CONC sanitary sewer within Borthwick Avenue via a proposed 150mm PVC sanitary service lateral.

**Stormwater Management**

- The stormwater release rates from the proposed development will meet the calculated allowable release rate of **5.36L/s.**
- As per the pre-application consultation meeting with the City of Ottawa, only the roof portion of the building will be controlled up to the 100-year storm event, to a 2-year pre-development level and the remainder of the site may be left uncontrolled and will be directed towards the right of way.
- The site stormwater quantity control objectives will be met through storage within an underground cistern. **23.77m$^3$** of storage is required and there will be a minimum of **24.00m$^3$** of storage capacity available within the cistern.

## 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.**

Tamara Harb, EIT, SPESC-IT
Civil Designer

Virginia Johnson, P. Eng.
Civil Engineer

# APPENDIX A

## Pre-consultation / Correspondance

**Site Plan Control Pre-consultation**

**630 Montreal Road**

**Applicant:** Max Mahi
**Owner:** Max Mahi
**Meeting Date:** February 2, 2021

**Attendees:** **Applicant Team**
Max Mahi
Anissa Alami Merrouni
Yves Lussier

**City of Ottawa**
Jean-Charles Renaud, Planner
Randolph Wang, Urban Designer
Jeff Nadeau, Planner (Committee of Adjustment)
Reza B, Engineer
Mark Richardson, Forester
Jenny Kluke, Housing Developer
Shukufa Sultonmamad, Planning Assistant

## *Meeting Notes & Comments*

*Proposal***:** The site of interest is located at 630 Montreal Road in a corner lot on the southeast side of Montreal Road and adjacent to Borthwick Avenue. The area surrounding the site of interest is well developed with two three-storey apartment buildings and a block comprised of two-storey townhouses to the south. The northern there is a car dealership, single storey strip mall, and a two storey office / commercial complex. The east portion includes a two storey and single-storey dwellings. The applicant is proposing a nine-storey mixed-use building with underground parking.

**Planning Comments – Renaud, Jean – Charles**

- How will loading and waste management function? Will everything be going through the underground garage? This is typical of a very urban environment, not of an Arterial Mainstreet environment.
    - *Answer from applicant: Waste will be located in the basement. Someone will need to bring it up. Perhaps we could move the garbage to a room closer to the front of the property. Trucks for commercial loading would stop along Borthwick.*

- The AM10 zone incorporates stepbacks which are meant to protect the residential neighbourhoods at the rear. Staff have concerns with the lack of adherence to these performance standards. The proposal may benefit from some articulation at the rear.
- Please provide a strong rationale for the relief requested, demonstrating how the proposal maintains the Zoning By-law's intent with the AM10 zone.
- The building's large footprint in relation to the size of the property is being detrimental to the amount of green space that can be provided around the building and is reducing opportunities to provide more plantings and trees. A rooftop green area is a positive element to the proposal, but it does not participate or add to the streetscape.
- Please contact Hydro Ottawa as soon as possible to discuss the powerlines located along the streets' edges.

**Urban Design Comments- Randolph Wang**

- A Design Brief is required for Site Plan Control application. The Terms of Reference of the Design Brief is attached for convenience.
- The site is within a Design Priority Area, a visit to the City's Urban Design Review Panel (UDRP) is required. Please visit the UDRP website for information and contact udrp@ottawa.ca for any questions. The applicant may also benefit from an informal preconsultation with the UDRP. The decision as to the need for a UDRP preconsulation can be made at the second preconsulation since changes to the design after yesterday's preconsultation are anticipated and a second preconsultation is expected.
- With respect to the design presented yesterday, the site organization, and scale of the building are generally appropriate for the context. However, The application should investigate and confirm regulations around the hydro lines along both Montreal Road and Borthwick Avenue. These may have significant impacts on the placement and massing of the proposed building.
- Moving forward as part of the urban design analysis, the applicant should investigate and illustrate both the existing conditions and development potentials on the abutting properties to understand the relationship and impacts.
- Please take into consideration the following in the revised design:
    1. Locate the main entrance and the emergency exit required by the Building Code on Borthwick Avenue to maintain the residential character of the street while allowing for increased flexibility for the commercial spaces.
    2. Provide sufficient floor to ceiling height of the ground floor, minimum 4.5m, frequently around 6.0m as proposed by many local developers.
    3. Examine the impact of potential development on abutting properties and adjust the floor plan layout accordingly to ensure access to natural light and privacy are protected in the long term.
    4. Consideration should be given to the base-middle-top design approach incorporating step backs at middle and top sections to reduce the impact of massing and open up sky views.
    5. Develop a calmed architecture expression.
    6. Explore opportunities to anchor the street corner.
    7. Develop an appropriate landscape plan.

Hope these are helpful. Please feel free to reach out if you have any questions.

**Committee of Adjustment Planning Comments – Jeff Nadeau**

Recommend advancing the site plan control application to a point where design issues have been substantially resolved before seeking minor variances.

**Housing Comments – Jenny Kluke**

If you are applying to CMHC National Housing Strategy funding programs to support this development, they may require a letter of support from the City of Ottawa. Please contact Jenny Kluke in the City's Affordable Housing Branch to discuss this further. Jenny can be reached at jenny.kluke@ottawa.ca.

**Forester Comments – Mark Richardson**

*Minimum Setbacks*

- Maintain 1.5m from sidewalk or MUP/cycle track.
- Maintain 2.5m from curb
- Coniferous species require a minimum 4.5m setback from curb, sidewalk or MUP/cycle track/pathway.
- Maintain 7.5m between large growing trees, and 4m between small growing trees. Park or open space planting should consider 10m spacing.
- Adhere to Ottawa Hydro's planting guidelines (species and setbacks) when planting around overhead primary conductors.

*Tree specifications*

- Minimum stock size: 50mm tree caliper for deciduous, 200cm height for coniferous.
- Maximize the use of large deciduous species wherever possible to maximize future canopy coverage
- Tree planting on city property shall be in accordance with the City of Ottawa's Tree Planting Specification; and include watering and warranty as described in the specification (can be provided by Forestry Services).
- Plant native trees whenever possible
- No root barriers, dead-man anchor systems, or planters are permitted.
- No tree stakes unless necessary (and only 1 on the prevailing winds side of the tree)

*Hard surface planting*

- Curb style planter is highly recommended
- No grates are to be used and if guards are required, City of Ottawa standard (which can be provided) shall be used.
- Trees are to be planted at grade

*Soil Volume*
Please ensure adequate soil volumes are met:

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

Please note that these soil volumes are not applicable in cases with Sensitive Marine Clay.

*Sensitive Marine Clay*

- Please follow the City's 2017 Tree Planting in Sensitive Marine Clay guidelines

For additional information on the following please contact Tracy.Smith@Ottawa.ca

**Engineering Comments- Reza Bakhit**

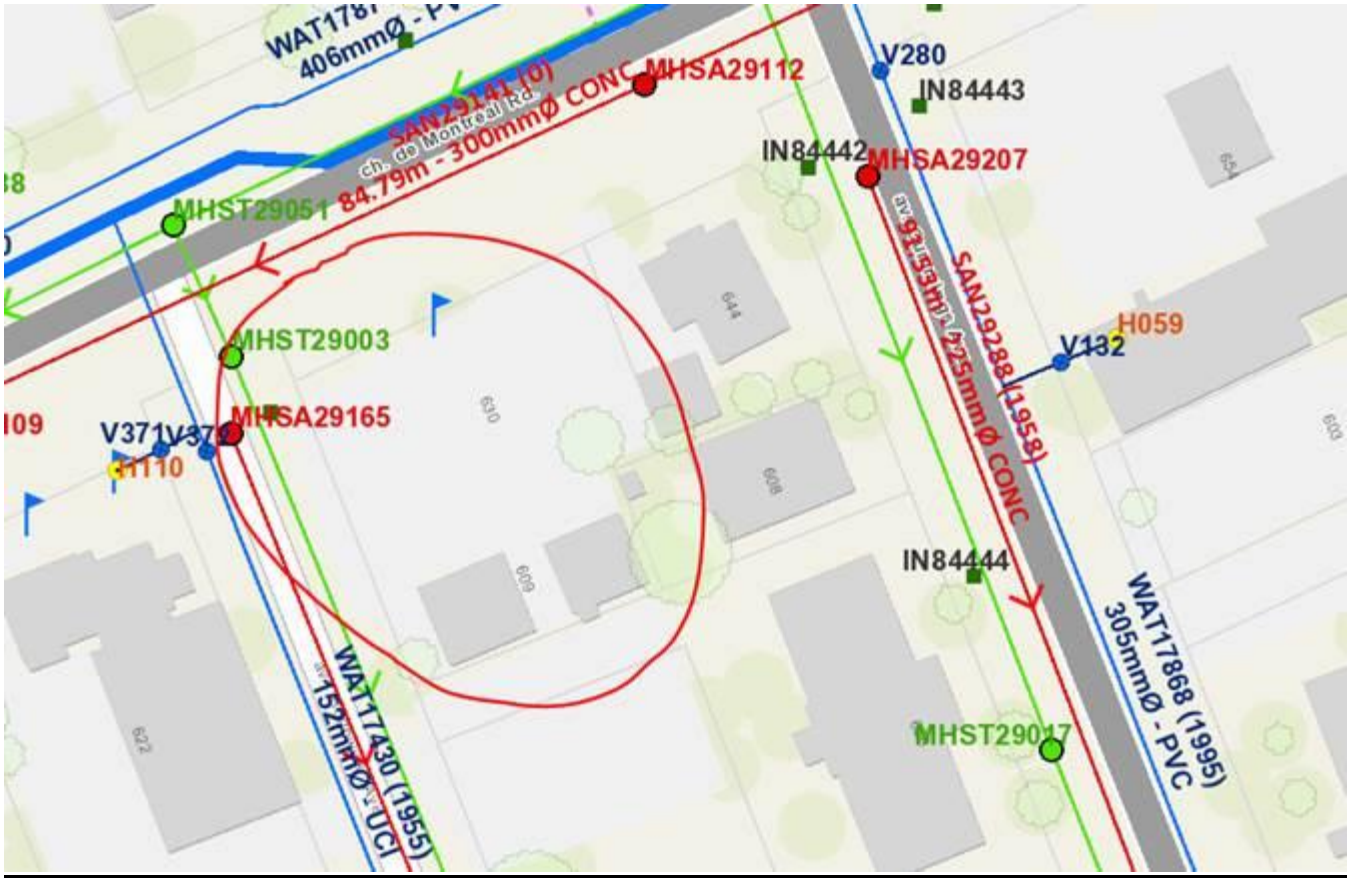
Please forward the below information to the applicant regarding a development proposal at 630 Montreal Road/609 Borthwick Ave. for 8-storey mixed-use building with 3 levels of underground parking. Note that the information is considered preliminary and the assigned Development Review Project Manager may modify and/or add additional requirements and conditions upon review of an application if deemed necessary.

*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.
- An application to consolidate the parcels ( 630 Montreal road and 609 Borthwick Ave) of land will be required otherwise the proposed stormwater works will be servicing more than one parcel of land and thus does not meet the exemption set out in O.Reg. 525/98. This would mean an ECA would be required regardless of who owns the parcels.
- Concerns about roadway drainage spilling into the underground parking garage. Please make sure that the entrances to the underground garage is 0.30m higher than the spill point on the street. Entrance should not be located within a sag (low point) in the road.
- A deep excavation and dewatering operations have the potential to cause damages to the neighboring adjacent buildings/ City infrastructure. Document that construction activities (excavation, dewatering, vibrations associated with construction, etc.) will not have an impact on any adjacent buildings and infrastructure.

- A Record of Site Condition (RSC) in accordance with O.Reg. 153/04 will be required to be filed and acknowledged by the Ministry prior to issuance of a building permit due to a change to a more sensitive property use.
- 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 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: In the absence of area specific SWM criteria please control post-development runoff from the subject site, up to and including the 100-year storm event, to a 2-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 shall be 20min or can be calculated. [*$T_c$ of 20 minutes should be used for all pre-development calculations without engineering justification, Tc should not be less than 10 min. since IDF curves become unrealistic at less than 10 min; $T_c$ of 10 minutes shall be used for all post-development calculations*].
- Any storm events greater than the established 2-year allowable release rate, up to and including the 100-year storm event, shall be detained on-site. The SWM 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 sewermain 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.
- Please note that as per *Technical Bulletin PIEDTB-2016-01 section 8.3.11.1 (p.12 of 14)* there shall be no surface ponding on private parking areas during the 2-year storm rainfall event.
- Underground Storage: Please note that the Modified Rational Method for storage computation in the Sewer Design Guidelines was originally intended to be used for above ground storage (i.e. parking lot) where the change in head over the orifice varied from 1.5 m to 1.2 m (assuming a 1.2 m deep CB and a max ponding depth of 0.3 m). This change in head was small and hence the release rate fluctuated little, therefore there was no need to use an average release rate.
  When underground storage is used, the release rate fluctuates from a maximum peak flow based on maximum head down to a release rate of zero. This difference is large and has a significant impact on storage requirements. We therefore require that an average release rate equal to 50% of the peak allowable rate shall be applied to estimate the required volume. Alternatively, the consultant may choose to use a submersible pump in the design to ensure a constant release rate.
  In the event that there is a disagreement from the designer regarding the required storage, The City will require that the designer demonstrate their rationale utilizing dynamic modelling, that will then be reviewed by City modellers in the Water Resources Group.
- 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.
- Investigate the implementation of LID features (i.e. permeable IPS) to reduce runoff however no credit shall be given in terms of stormwater management.

*Storm Sewer:*

- A 525 mm dia. CONC Combined sewer (1997) is available within Montreal Road.
- A 525 mm dia. CONC Combined sewer (1964) is available within Borthwick Ave.

*Sanitary Sewer Maclaren St:*

- A 300 mm dia. CONC Sanitary sewer is available within Montreal Road.
- A 225 mm dia. CONC Sanitary sewer is available within Borthwick Ave.
- An analysis and demonstration that there is sufficient/adequate residual capacity to accommodate any increase in wastewater flows in the receiving and downstream wastewater system is required to be provided. Needs to be demonstrated that there is adequate capacity to support any increase in wastewater flow.
- Please apply the wastewater design flow parameters *in Technical Bulletin PIEDTB-2018-01.*
- Sanitary sewer monitoring maintenance hole is required to be installed at the property line (on the private side of the property) as per City of Ottawa Sewer-Use By-Law 2003-514 (14) *Monitoring Devices*.
- A backwater valve is required on the sanitary service for protection.

*Water:*

- A 406 mm dia. PVC watermain (2006) is available within Montreal Road.
- A 152 mm dia. UCI watermain (1955) is available within Borthwick Ave.
- Existing residential service to be blanked at the main.
- Water Supply Redundancy: Residential buildings with a basic day demand greater than 50m$^3$/day (0.57 L/s) are required to be connected to a minimum of two water services separated by an isolation valve to avoid a vulnerable service area as per the *Ottawa Design Guidelines - Water Distribution, WDG001, July 2010 Clause 4.3.1 Configuration.* The basic day demand for this site not expected to exceed 50m$^3$/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.

- Type of Development and Units
- Site Address
- A plan showing the proposed water service connection location.
- Average Daily Demand (L/s)
- Maximum Daily Demand (L/s)
- Peak Hour Demand (L/s)
- Fire Flow (L/min)

[*Fire flow demand requirements shall be based on Fire Underwriters Survey (FUS) Water Supply for Public Fire Protection 1999*]
*Exposure separation distances shall be defined on a figure to support the FUS calculation and required fore flow (RFF).*

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

*Snow Storage:*

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

*Permits and Approvals:*

- Please note that this project will be subject to an Environmental Compliance Approval (ECA) for Private Sewage Works. ( Any connection to a combined Sewer system required the Ministry ( MECP) approval)

*Required Engineering Plans and Studies:*
*PLANS:*

- Existing Conditions and Removals Plan
- Site Servicing Plan
- Grade Control and Drainage Plan
- Erosion and Sediment Control Plan
- Pre-Development Drainage Area Plan
- Post-Development Drainage Area Plan
- Roof Drainage Plan
- Foundation Drainage System Detail
- Topographical Plan of Survey
- Legal Survey Plan
- Site Lighting Plan

*REPORTS:*

- Site Servicing and Stormwater Management Report
- Geotechnical Study/Investigation
- Noise Control Study (assessment of stationery and transportation noise) (due to proximity (within 100m) of an existing arterial road (Montreal Road)).
- Phase I ESA
- Phase II ESA (Depending on recommendations of Phase I ESA)
- RSC ( Record of the site Conditions)
- ECA ( If the SWM system services two parcels)
- Site lighting certificate
- Wind analysis

Please refer to the City of Ottawa Guide to Preparing Studies and Plans [Engineering]:
https://ottawa.ca/en/city-hall/planning-and-development/information-developers/development-application-review-process/development-application-submission/guide-preparing-studies-and-plans#gravity-pipe-design-guidelines
Please ensure you are using current guidelines, by-laws and standards.

*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

*RSC ( Record of the site Conditions)*

- A RSC is required when changing the land use (zoning) of a property to a more sensitive land use.

Submitting a record of site condition | Ontario.ca

*ECA application*

- Environmental Compliance Approval (ECA) for stormwater works the services more than one parcel of land.

Environmental Compliance Approval | Ontario.ca

*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

*Noise Study:*

- A Phase 2 Noise Control Detailed Study is required as the subject site is within 100m of Bank Street (arterial road) that is considered a surface transportation noise source. Any existing and/or new stationary noise sources shall be identified and analyzed.
- Please note that an environmental noise assessment of any stationary noise sources (Stationary Noise Assessment) of the proposed development will be required to determine the affects of any proposed roof top units, etc. for this building as this noise may subject the tenants/owners of the upper level of the residential building, and the surrounding neighbours, to static noise levels that are beyond the acceptable limits.
- Noise Study shall be consistent with the City's Environmental Noise Control Guidelines.

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)

*Exterior Site Lighting:*

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

Please note that these comments are considered preliminary based on the information available to date and therefore maybe amended as additional details become available and presented to the City. It is the responsibility of the applicant to verify the above information. The applicant may contact me for follow-up questions related to engineering/infrastructure prior to submission of an application if necessary.

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

**Transportation Comments – Wally Dubyk**

- Montreal Road is scheduled for sewer lining to start 1-2 years.
- Montreal Road is designated as a Design Priority Area.
- Montreal Road is designated as an Arterial road within the City's Official Plan with a ROW protection limit of 37.5 metres. The ROW protection limit and the offset distance (18.75 metres) are to be dimensioned from the existing centerline of pavement and shown on the drawings.
- ROW interpretation – Land for a road widening will be taken equally from both sides of a road, measured from the centreline in existence at the time of the widening if required by the City. The centreline is a line running down the middle of a road surface, equidistant from both edges of the pavement. In determining the centreline, paved shoulders, bus lay-bys, auxiliary lanes, turning lanes and other special circumstances are not included in the road surface.
- Borthwick Avenue is classified as a Collector road. There are no additional protected ROW limits identified in the Official Plan.
- A 5.0 metres x 5.0 metres sight triangle would be required at the intersection of Montreal Road and Borthwick Avenue and is to be shown on all drawings. The sight triangle dimensions are to be measured from the protected ROW limits.
- All underground and above ground building footprints and permanent walls need to be shown on the plan to confirm that any permanent structure does not extend either above or below into the existing property lines, sight triangles and/or future road widening protection limits.
- The consultant should review the sight distance to the access and any obstructions that may hinder the view of the driver.
- The concrete sidewalks should be 2.0 metres in width and be continuous and depressed through the proposed accesses (please refer to the City's sidewalk and curb standards.
- The closure of an existing private approach shall reinstate the sidewalk, shoulder, curb and boulevard to City standards.
- The proponent shall comply with the Private Approach By-Law 2003-447
- No private approach shall be constructed within 0.3 metres of any adjacent property measured at the highway line, and at the curb line or roadway edge.
- Ensure that the driveway grade does not exceed 2-6% within the private property for a distance of 9.0 metres from the ROW limit; see Section 25 (t) of the Private Approach By-Law #2003-447. Any grade exceeding 6% will require a subsurface melting device.
- 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.

The TIA (Transportation Impact Assessment) Guidelines (2017) were approved by Transportation Committee and City Council on June 14, 2017. The new version of the TIA Guidelines (2017) that are posted on the web are now to be used for the TIA Submission for development applications.
The following list highlights the significant changes to the 2006 TIA Guidelines

1. A Screening Test (Step 1) quickly determines if a transportation study is required. Consultants should fill in the form in Appendix B.

2. Should the development generate 60 peak hour person trips, the TIA guidelines Step 2 – Scoping report would be required.
3. Study Scope (Step 2) is site specifically tailored; there are no longer three defined types of TIA reports. Scoping report is required and needs to be signed off by TPM before the consultant moves on to Forecasting volumes.
4. Sign off from City Transportation Project Manager is required at key points in the review process prior to TIA Submission (Step 5). See Figure 1 on page 9 for a good flow chart of the process.
5. Multi Modal Level of Service (MMLOS) and Complete Street analysis is required to assess the impact of all modes of travel rather than just vehicle traffic.
6. There is no longer a requirement for consultant pre-approval. Consultants must now sign and submit the Credentials Form included in the Appendix A with each TIA report.
7. The TIA Submission (report, drawings and/or monitoring plan) is required with the development application.

Click on the website: www.ottawa.ca/TIA

A construction Traffic Management Plan is to be provided for approval by the Senior Engineer, Traffic Management, Transportation Services Dept.

*Application Submission Information*

Application Type: **Site Plan Control, Standard, Staff Approval (based on plans discussed at the teleconference meeting of February 2, 2021)**

For information on Site Plan Control Thresholds under the Site Plan Control By-law, please visit: https://documents.ottawa.ca/sites/documents/files/siteplan_thresholds_en.pdf

For information on Applications, including fees, please visit: https://ottawa.ca/en/city-hall/planning-and-development/information-developers/development-application-review-process/development-application-submission/fees-and-funding-programs/development-application-fees

The application processing timeline generally depends on the quality of the submission. For more information on standard processing timelines, please visit: https://ottawa.ca/en/city-hall/planning-and-development/information-developers/development-application-review-process/development-application-submission/development-application-forms#site-plan-control

Prior to submitting a formal application, it is recommended that you pre-consult with the Ward Councillor.

*Application Submission Requirements*

For information on the preparation of Studies and Plans and the City's Planning and Engineering requirements, please visit: https://ottawa.ca/en/city-hall/planning-and-development/information-developers/development-application-review-process/development-application-submission/guide-preparing-studies-and-plans

**Please provide electronic copy (PDF) of all plans and studies required.**

**All plans and drawings must be produced on A1-sized paper and folded to 21.6 cm x 27.9 cm (8½"x 11").**

**Note that many of the plans and studies collected with this application must be signed, sealed and dated by a qualified engineer, architect, surveyor, planner or designated specialist.**

## Tamara Harb

**From:** Bakhit, Reza <reza.bakhit@ottawa.ca>
**Sent:** March 23, 2023 11:22 AM
**To:** Tamara Harb
**Cc:** Mohan Basnet; Maxime Longtin
**Subject:** RE: LRL210682 - 630 Montreal Road Boundary Conditions Request & Sanitary Capacity
**Attachments:** 630 Montreal Road February 2023.pdf

**Follow Up Flag:** Follow up
**Flag Status:** Flagged

Hi Tamara,

The following are boundary conditions, HGL, for hydraulic analysis at 630 Montreal Road (zone 1E) assumed to be connected to the 152 mm watermain on Borthwick Avenue OR the 406 mm watermain on Montreal Road (see attached PDF for location).

**Borthwick Connection:**

Min HGL: 108.8 m

Max HGL: 118.3 m

Available fire flow at 20 psi: 195 L/s, assuming a ground elevation of 78.8 m

**Montreal Connection:**

Min HGL: 108.4 m

Max HGL: 118.3 m

Max Day + Fire Flow (200 L/s): 110.0 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 - Centeral 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
**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.**

**From:** Tamara Harb <tharb@lrl.ca>
**Sent:** Monday, March 13, 2023 1:48 PM
**To:** Bakhit, Reza <reza.bakhit@ottawa.ca>
**Cc:** Mohan Basnet <mbasnet@lrl.ca>; Maxime Longtin <mlongtin@lrl.ca>
**Subject:** LRL210682 - 630 Montreal Road Boundary Conditions Request & Sanitary Capacity

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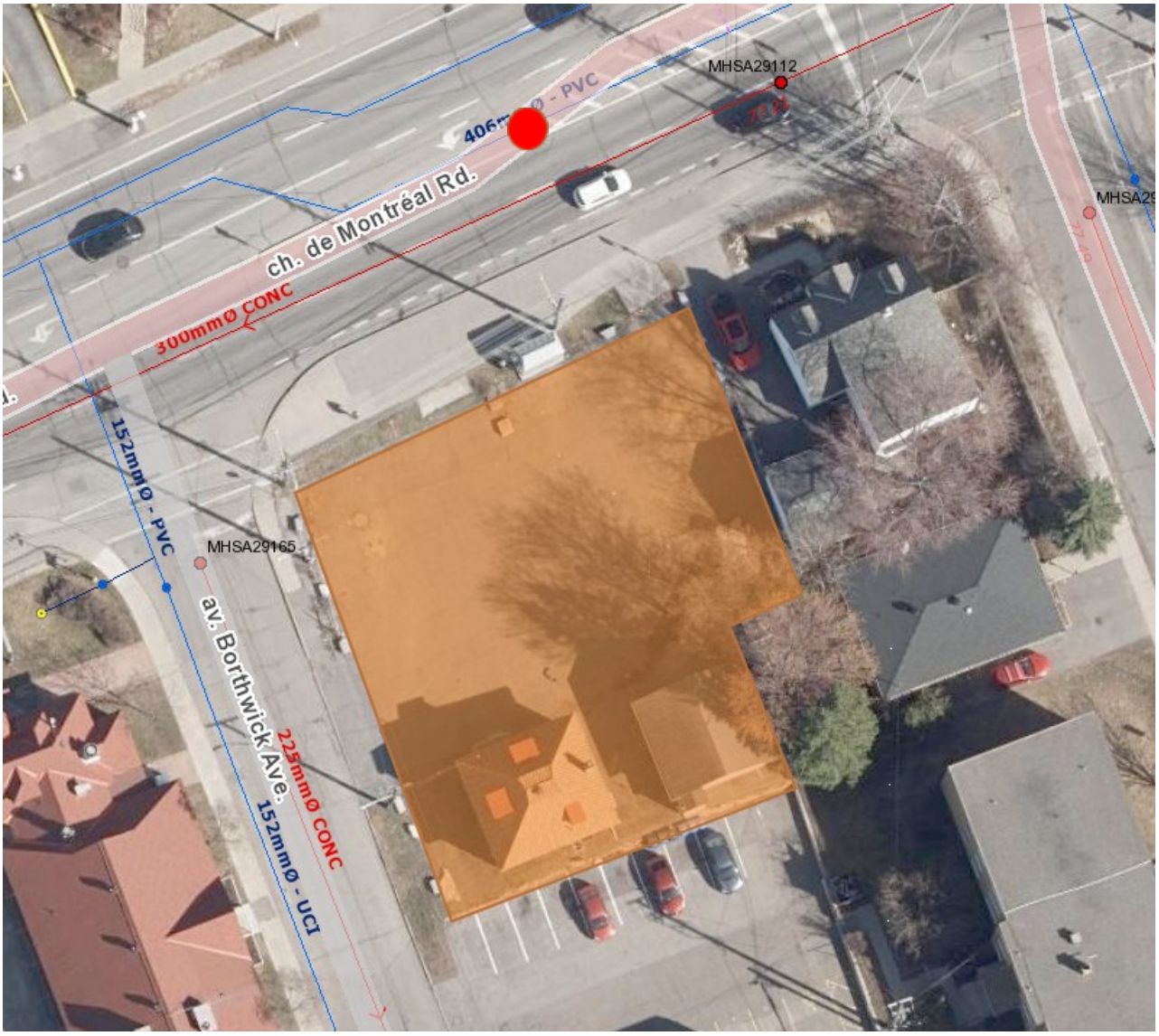
**ATTENTION : Ce courriel provient d'un expéditeur externe. Ne cliquez sur aucun lien et n'ouvrez pas de pièce jointe, excepté si vous connaissez l'expéditeur.**

Hello,

I would like to request boundary conditions for the proposed development located at 630 Montreal Road. It is proposed that one 9-storey building with two underground parking levels will be developed on this site. The building will house a total of 55 units. We are proposing a dual service connection to the 406mm municipal watermain in Montreal Road (see image for connection points below). Please provide the boundary conditions for the two connections, using the following proposed development demands:

| | **Demand (L/s)** |
|---|---|
| **Avg. Daily** | 0.29 |
| **Max Day + FUS** | 1.74 + 200 |
| **Peak Hour** | 15.74 |




**Sanitary Connection**

We also determined that the sanitary sewer discharge from the site would be equal to **1.07L/s**. We are proposing to tie into the 300mm CONC sanitary sewer located within Montreal Road. Please confirm if the existing sanitary sewer will have sufficient capacity to accommodate our site.

**TAMARA HARB,** EIT, CPESC-IT
Civil Engineer in Training

**LRL Engineering**
5430 Canotek Road
Ottawa, Ontario K1J 9G2

**T** (613) 842 - 3434 or (877) 632-5664 ext.222
**C** (613) 915 - 0350
**F** (613) 842 - 4338
**E** tharb@lrl.ca
**W** www.lrl.ca

*We care deeply, so let us know how we did by completing our Customer Satisfaction Survey.*
*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*

## Tamara Harb

**From:** Bakhit, Reza <reza.bakhit@ottawa.ca>
**Sent:** February 23, 2023 9:24 AM
**To:** Tamara Harb
**Cc:** Mohan Basnet; Maxime Longtin
**Subject:** RE: LRL210682 - 630 Montreal Road Boundary Conditions Request & Sanitary Capacity

Hi Tamara,

For the 2nd part of your inquiry :
I can confirm there is no concern with the proposed SAN flow.
As for storm, if the building takes up a significant portion of the lot, you can proceed with the rooftop control only **( to the 2-year level).**
If you decide to control the roof only , you need to make sure the uncontrolled portion of the site will be drained to the ROW. This should be discussed in the SWM report.

Thanks

**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 - Centeral Branch
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110 Laurier Avenue West Ottawa, ON | 110, avenue. Laurier Ouest. Ottawa (Ontario) K1P 1J1
613.580.2424 ext./poste 19346, 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.**

---

**From:** Tamara Harb <tharb@lrl.ca>
**Sent:** Tuesday, February 21, 2023 11:30 AM
**To:** Bakhit, Reza <reza.bakhit@ottawa.ca>
**Cc:** Mohan Basnet <mbasnet@lrl.ca>; Maxime Longtin <mlongtin@lrl.ca>
**Subject:** LRL210682 - 630 Montreal Road Boundary Conditions Request & Sanitary Capacity

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**ATTENTION : Ce courriel provient d'un expéditeur externe. Ne cliquez sur aucun lien et n'ouvrez pas de pièce jointe, excepté si vous connaissez l'expéditeur.**

Good morning,

I would like to request boundary conditions for the proposed development located at 630 Montreal Road. It is proposed that one 9-storey building with two underground parking levels will be developed on this site. The building will house a total of 55 units. We are proposing a dual service connection to the 152mm municipal watermain in Borthwick Avenue (see image for connection points below). Please provide the boundary conditions for the two connections, using the following proposed development demands:

# APPENDIX B

## Water Supply Calculations & Fire Hydrant Coverage

**Water Supply Calculations**

| | |
|---|---|
| LRL File No. | 210682 |
| Date | 2023-02-21 |
| Prepared by | Tamara Harb |
| Location | 630 Montreal Road |

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

| Domestic Demand | | | |
|---|---|---|---|
| **Unit Type** | **Persons Per Unit** | **Number of Units** | **Population** |
| 1 Bedroom Apartment | 1.4 | 39 | 54.6 |
| 2 Bedroom Apartment | 2.1 | 16 | 33.6 |
| | **Total** | **55** | **88.2** |

**Based on a daily demand of 280L/day per person as identified by Appendix 4-A of the Sewer design guidelines.*

| | | | | |
|---|---|---|---|---|
| Average Water Consumption Rate | 280 | L/c/d | | |
| **Average Day Demand** | **24,696** | **L/d** | **0.29** | **L/s** |
| Maximum Day Factor | 6.1 | | Table (3-3) MOE Peaking Factors | |
| **Maximum Daily Demand** | **149,501** | **L/d** | **1.73** | **L/s** |
| Peak Hour Factor | 9.1 | | Table (3-3) MOE Peaking Factors | |
| **Maximum Hour Demand** | **1,358,668** | **L/d** | **15.73** | **L/s** |

| Institutional / Commercial / Industrial Demand | | | | | |
|---|---|---|---|---|---|
| **Property Type** | **Unit Rate** | | **Units** | | **Demand (L/d)** |
| Commercial | 28000 | L/ha/d | 0.02065 | ha | 578.2 |

| | | | | |
|---|---|---|---|---|
| **Average Day Demand** | **578** | **L/d** | **0.007** | **L/s** |
| Maximum Day Factor | 1.5 | ( Design Guidelines-Water Distribution Table 4.2) | | |
| **Maximum Daily Demand** | **867** | **L/d** | **0.010** | **L/s** |
| Peak Hour Factor | 1.8 | ( Design Guidelines-Water Distribution Table 4.2) | | |
| **Maximum Hour Demand** | **1,561** | **L/d** | **0.018** | **L/s** |

| TOTAL DEMAND | | | | |
|---|---|---|---|---|
| **Average Day Demand** | **25,274** | **L/d** | **0.29** | **L/s** |
| **Maximum Daily Demand** | **150,369** | **L/d** | **1.74** | **L/s** |
| **Maximum Hour Demand** | **1,360,229** | **L/d** | **15.74** | **L/s** |

**Water Service Pipe Sizing**

**Q = VA**

Where: V = velocity
A = area of pipe
Q = flow rate

**Assuming a maximum velocity of 1.8m/s, the diameter of pipe is calculated as:**

| | | |
|---|---|---|
| **Minimum pipe diameter (d) =** | $(4Q/\pi V)^{1/2}$ | |
| **=** | 0.106 | m |
| **=** | 106 | mm |
| **Proposed pipe diameter (d) =** | **150** | mm |
| **=** | **6** | Inches |

## Fire Flow Calculations

| | |
|---|---|
| LRL File No. | 210682 |
| Date | February 21, 2023 |
| Method | Fire Underwriters Survey (FUS) |
| Prepared by | Tamara Harb |
| Location | 630 Montreal Road |

| Step | Task | Term | Options | Multiplier | Choose: | Value | Unit | Fire Flow |
|---|---|---|---|---|---|---|---|---|
| **Structural Framing Material** | | | | | | | | |
| **1** | Choose frame used for building | Coefficient C related to the type of construction | Wood Frame | 1.5 | Non-combustible construction | **0.8** | | |
| | | | Ordinary Construction | 1.0 | | | | |
| | | | Non-combustible construction | 0.8 | | | | |
| | | | Fire resistive construction <2 hrs | 0.7 | | | | |
| | | | Fire resistive construction >2 hrs | 0.6 | | | | |
| **Floor Space Area (A)** | | | | | | | | |
| **2** | Total area | | | | | **5,390** | $m^2$ | |
| **3** | Obtain fire flow before reductions | Required fire flow *(rounded to nearest 1,000 L/min)* | Fire Flow = 220 x C x $A^{0.5}$ | | | | L/min | **13,000** |
| **Reductions or surcharge due to factors affecting burning** | | | | | | | | |
| **4** | Choose combustibility of contents | Occupancy hazard reduction or surcharge | Non-combustible | -25% | Limited combustible | **-15%** | L/min | **11,050** |
| | | | 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 | **6,630** |
| | | | 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 | >30m | 0% | | L/min | **12,155** |
| | | | West side | 10.1 to 20m | 15% | | | |
| | | | East side | 3.1 to 10m | 20% | | | |
| | | | South side | 10.1 to 20m | 15% | **50%** | | |
| **Net required fire flow** | | | | | | | | |
| **7** | Obtain fire flow, duration, and volume | Minimum required fire flow rate (rounded to nearest 1000) | | | | | L/min | **12,000** |
| | | Minimum required fire flow rate | | | | | L/s | **200.0** |
| | | Required duration of fire flow | | | | | hr | **2.5** |

**FIRE HYDRANTS LOCATIONS**
630 Montreal Road

**LEGEND**
Hydrants within 75m
Hydrants within 150m

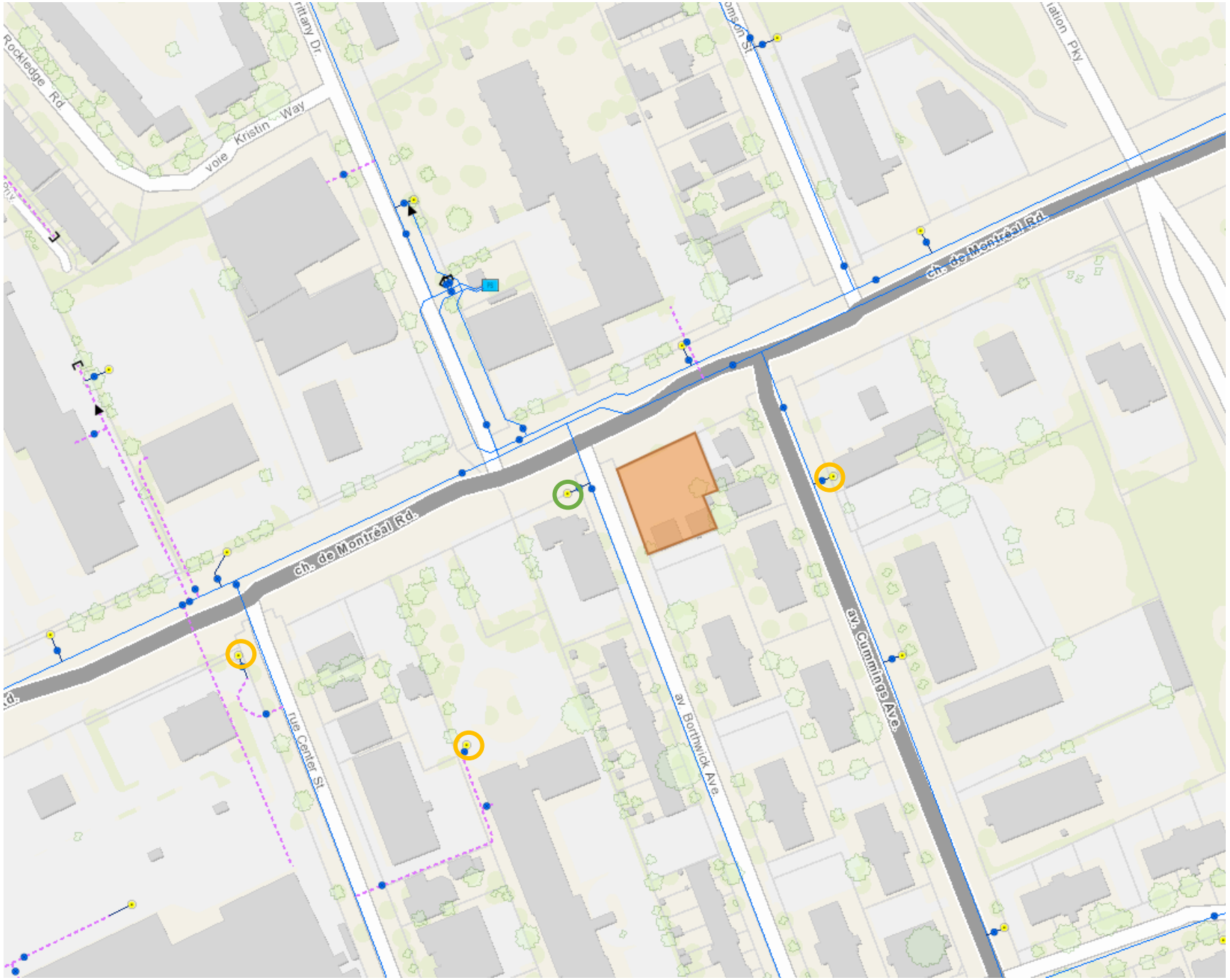



**Table 18.5.4.3 Maximum Fire Hydrant Fire Flow Capacity**

| Distance to Building[a] | | Maximum Capacity[b] | |
|---|---|---|---|
| (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 |

[a]Measured in accordance with 18.5.1.4 and 18.5.1.5.
[b]Minimum 20 psi (139.9 kPa) residual pressure.

# APPENDIX C

## Wastewater Collection Calculations

**LRL File No.** 210682
**Project:** Site Plan Control Design
**Location:** 630 Montreal Road
**Date:** February 21, 2023

**Sanitary Design Parameters**

Commercial & Institutional Flow = 28000 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
Average Daily Flow = 280 L/p/day
Daily Flow for Places of Employment = 75L/p/day
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 | | | OFFICE | | C+I+I | INFILTRATION | | | TOTAL FLOW (l/s) | PIPE | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| STREET | FROM | TO | AREA (Ha) | POP. | CUMMULATIVE AREA (Ha) | CUMMULATIVE POP. | PEAK FACT. | PEAK FLOW (l/s) | AREA (Ha) | ACCU. AREA (Ha) | AREA (Ha) | ACCU. AREA (Ha) | PEAK FACT. | POP | ACCU. POP | PEAK FLOW (l/s) | TOTAL AREA (Ha) | ACCU. AREA (Ha) | INFILT. FLOW (l/s) | | LENGTH (m) | DIA. (mm) | SLOPE (%) | MATERIAL | CAP. (FULL) (l/s) | VEL. (FULL) (m/s) |
| Borthwick Ave | Bldg | EX 225 CONC SAN SEWER | 0.103 | 88.2 | 0.103 | 88.2 | 3.6 | 1.03 | 0.021 | 0.021 | 0.00 | 0.00 | 7.0 | 0.0 | 0.0 | 0.01 | 0.103 | 0.103 | 0.03 | **1.07** | 8.7 | 150 | 2.00% | PVC | **21.54** | **1.22** |

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

| | | | |
|---|---|---|---|
| Designed: **TH** | PROJECT: **Site Plan Control Design** | | |
| Checked: **MB** | LOCATION: **360 Montreal Road** | | |
| Dwg. Reference: **C.401** | File Ref.: **210682** | Date: **2023-01-31** | Sheet No. 1 of 1 |

# APPENDIX D

## Stormwater Management Calculations

# LRL Associates Ltd.

## Storm Watershed Summary

| | |
|---|---|
| **LRL File No.** | 210682 |
| **Project:** | Site Plan Control Design |
| **Location:** | 630 Montreal Road |
| **Date:** | April 10, 2022 |
| **Designed:** | Tamara Harb |
| **Drawing Reference:** | C701/C702 |

**Pre-Development Catchments**

| WATERSHED | C = 0.2 | C=0.7 | C = 0.90 | Total Area ($m^2$) | Total Area (ha) | Combined C |
|---|---|---|---|---|---|---|
| EWS-01 | 0.0 | 0.0 | 1033.9 | 1033.9 | 0.103 | 0.90 |
| **TOTAL** | **0.0** | **0.0** | **1033.9** | **1033.9** | **0.103** | **0.90** |

**Post-Development Catchments**

| WATERSHED | C = 0.20 | C = 0.70 | C = 0.90 | Total Area ($m^2$) | Total Area (ha) | Combined C |
|---|---|---|---|---|---|---|
| W-01 (UNCONTROLLED) | 74.71 | 18.33 | 0.00 | 93.04 | 0.009 | 0.30 |
| WS-02 (UNCONTROLLED) | 132.76 | 30.83 | 50.65 | 214.24 | 0.021 | 0.44 |
| WS-03 (CONTROLLED IN CISTERN) | 70.68 | 18.39 | 9.29 | 98.36 | 0.010 | 0.36 |
| WS-04 (ROOF - CONTROLLED IN CISTERN) | 0.00 | 0.00 | 502.52 | 502.52 | 0.050 | 0.90 |
| WS-05 (RAMP - CONTROLLED IN CISTERN) | 0.00 | 0.00 | 125.78 | 125.78 | 0.013 | 0.90 |
| **TOTAL** | **278.1** | **67.5** | **688.2** | **1033.9** | **0.103** | **0.70** |

| | |
|---|---|
| **LRL File No.** | 210682 |
| **Project:** | Site Plan Control Design |
| **Location:** | 630 Montreal Road |
| **Date:** | April 10, 2023 |
| **Designed:** | Tamara Harb |
| **Drawing Ref.:** | C601 |

**Stormwater Management Design Sheet**

**Runoff Equation**

**Q = 2.78CIA (L/s)**
C = Runoff coefficient
I = Rainfall intensity (mm/hr) = A / (Td + C)$^{B}$
A = Area (ha)
$T_c$ = Time of concentration (min)

**Pre-development Stormwater Management - 2 Year Storm**

2 year storm

**I2 = 732.95 / (Td + 6.199)$^{0.81}$** **a = 732.951** **b = 0.810** **C = 6.199**

| | | |
|---|---|---|
| C = | 0.50 | max of 0.5 as per City of Ottawa |
| I = | 76.8 | mm/hr |
| Tc = | 10 | min |
| Total Area = | 0.050 | ha |

**Allowable Release Rate= 5.36 L/s**

**Post-development Stormwater Management**

| | | | | | $\sum R_{2\&5}$ | $\sum R_{100}$ |
|---|---|---|---|---|---|---|
| | | **Area** | ha | **∑R=** | | |
| **Controlled** | WS-03 (CONTROLLED IN CISTERN) | 0.010 | ha | R= | 0.36 | 0.45 |
| | WS-04 (ROOF - CONTROLLED IN CISTERN) | 0.050 | ha | R= | 0.90 | 1.00 |
| | WS-05 (RAMP - CONTROLLED IN CISTERN) | 0.013 | ha | R= | 0.90 | 1.00 |
| | **Total Controlled** | **0.073** | **ha** | **∑R=** | **0.83** | **1.00** |

**Post-development Stormwater Management (WS-03, WS-04 AND WS-05 CISTERN)**

100 Year Storm Event:

**$I_{100}$ = 1735.688 / (Td + 6.014)$^{0.820}$** **a = 1735.688** **b = 0.820** **C = 6.014**

| | | Storage Required | | | | |
|---|---|---|---|---|---|---|
| **Time (min)** | **Intensity (mm/hr)** | **Controlled Runoff (L/s)** | **Storage Volume (m$^3$)** | **Controlled Release Rate Constant (L/s)** | **Uncontrolled Runoff (L/s)** | **Total Release Rate (L/s)** |
| 10 | 178.6 | 36.07 | 18.42 | 5.36 | 0.00 | 5.36 |
| 15 | 142.9 | 28.87 | 21.15 | 5.36 | 0.00 | 5.36 |
| 20 | 120.0 | 24.23 | 22.64 | 5.36 | 0.00 | 5.36 |
| 25 | 103.8 | 20.98 | 23.42 | 5.36 | 0.00 | 5.36 |
| 30 | 91.9 | 18.56 | 23.75 | 5.36 | 0.00 | 5.36 |
| 35 | 82.6 | 16.68 | 23.77 | 5.36 | 0.00 | 5.36 |
| 40 | 75.1 | 15.18 | 23.56 | 5.36 | 0.00 | 5.36 |
| 45 | 69.1 | 13.95 | 23.18 | 5.36 | 0.00 | 5.36 |
| 50 | 64.0 | 12.92 | 22.66 | 5.36 | 0.00 | 5.36 |
| 60 | 55.9 | 11.29 | 21.34 | 5.36 | 0.00 | 5.36 |
| 70 | 49.8 | 10.06 | 19.71 | 5.36 | 0.00 | 5.36 |
| 80 | 45.0 | 9.09 | 17.87 | 5.36 | 0.00 | 5.36 |
| 90 | 41.1 | 8.30 | 15.88 | 5.36 | 0.00 | 5.36 |
| 100 | 37.9 | 7.66 | 13.75 | 5.36 | 0.00 | 5.36 |
| 110 | 35.2 | 7.11 | 11.53 | 5.36 | 0.00 | 5.36 |
| 120 | 32.9 | 6.65 | 9.22 | 5.36 | 0.00 | 5.36 |

**Total Storage Required = 23.77 m$^3$**
**Available Cistern Storage = 24.00 m$^3$**

All controlled areas will be directed to the underground cistern either through roof drains or area drains. Where the cistern will control the flows to 11.04L/s

**SUMMARY OF RELEASE RATES AND STORAGE VOLUMES**

| CATCHMENT AREAS | DRAINAGE AREAS (ha) | 100-YEAR RELEASE RATE | 100-YEAR REQUIRED STORAGE (m3) | TOTAL AVAILABLE STORAGE (m3) |
|---|---|---|---|---|
| WS-03 (CONTROLLED IN CISTERN) | 0.010 | 5.36 | 23.77 | 24.00 |
| WS-04 (ROOF - CONTROLLED IN CISTERN) | 0.050 | | | |
| WS-05 (RAMP - CONTROLLED IN CISTERN) | 0.013 | | | |
| **TOTAL** | **0.073** | **5.36** | **23.77** | **24.00** |

# LRL Associates Ltd.

## Storm Design Sheet

**LRL File No.** 210682
**Project:** Site Plan Control Design
**Location:** 630 Montreal Road
**Date:** April 10, 2023
**Designed:** Tamara Harb
**Drawing Reference:** C.401

**Storm Design Parameters**

Rational Method Q = 2.78CIA

Q = Peak flow in litres per second (L/s)
A = Drainage area in hectares (ha)
C = Runoff coefficient
I = Rainfall intensity (mm/hr)

Runoff Coefficient (C)

| | |
|---|---|
| Grass | 0.20 |
| Gravel | 0.70 |
| Asphalt / rooftop | 0.90 |

Ottawa Macdonald-Cartier International Airport IDF curve equation (10 year event, intensity in mm/hr)

**I100 = 1735.688 / (Td + 6.014)0.820**

Min. velocity = 0.80 m/s
Manning's "n" = 0.013

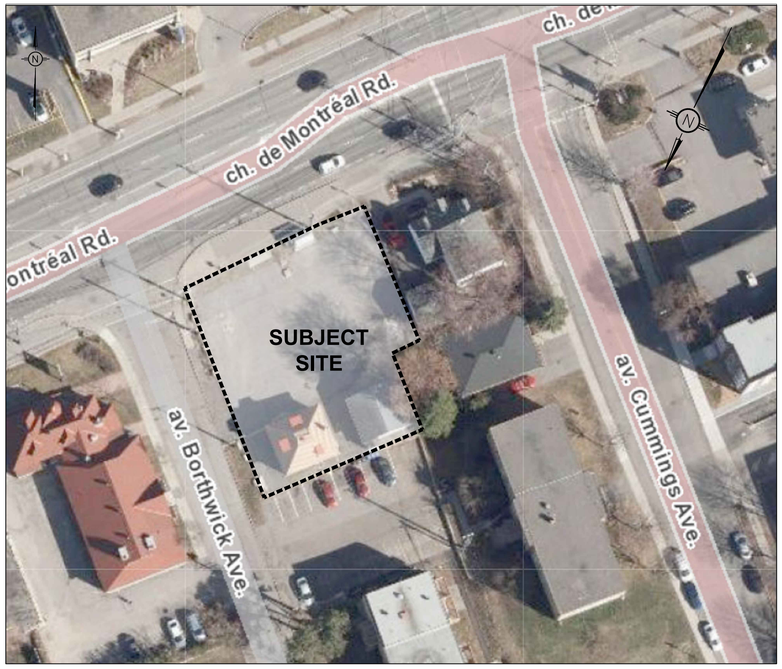
| LOCATION | | | AREA (ha) | | | FLOW | | | | | | STORM SEWER | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Watershed | From | To | C = 0.20 | C = 0.70 | C = 0.90 | Indiv. 2.78AC | Accum. 2.78AC | Time of Conc. (min.) | Rainfall Intensity (mm/hr) | Peak Flow Q (L/s) | Controlled Flow Q (L/s) | Pipe Diameter (mm) | Type | Slope (%) | Length (m) | Capacity Full (L/s) | Velocity Full (m/s) | Time of Flow (min.) | Ratio ($Q/Q_{FULL}$) |
| WS-03 to WS-05 (Directed to Underground Cistern) | BUIDLING | EX 525mm dia. STM Sewer in Borthwick Ave. | 0.007 | 0.002 | 0.064 | 0.167 | 0.167 | 10.00 | 178.6 | 29.83 | 5.36 | 250 | PVC | 2.00% | 5.6 | 84.1 | 1.71 | 0.05 | 0.35 |

# APPENDIX E

## Civil Engineering Drawings

# SITE PLAN CONTROL DESIGN
# 63 MONTREAL ROAD, OTTAWA ON

## SUBMISSION 01




KEY PLAN (N.T.S.)

| DRAWING INDEX | |
|---|---|
| TITLE PAGE | |
| SEDIMENT AND EROSION CONTROL PLAN | C101 |
| 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 |


LRL
ENGINEERING | INGÉNIERIE
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SITE PLAN CONTROL DESIGN
63 MONTREAL ROAD, OTTAWA ON
SUBMISSION.01 - ISSUED FOR APPROVAL - APRIL 19, 2023
LRL PROJECT no: 210682

LICENSED PROFESSIONAL ENGINEER
V. JOHNSON
100510576
04-19-2023
PROVINCE OF ONTARIO
NOT AUTHENTIC UNLESS SIGNED AND DATED

## GENERAL NOTES

1. ALL WORKS MATERIALS SHALL CONFIRM TO THE LAST REVISION OF THE STANDARDS AND SPECIFICATIONS FOR THE CITY OF OTTAWA, ONTARIO PROVINCIAL STANDARD DRAWINGS (OPSD) AND SPECIFICATIONS (OPSS), WHERE APPLICABLE. LOCAL UTILITY STANDARDS AND MINISTRY OF TRANSPORTATION STANDARDS WILL APPLY WHERE REQUIRED.
2. THE CONTRACTORS SHALL CONFIRM THE LOCATION OF ALL EXISTING UTILITIES WITHIN THE SITE AND ADJACENT WORK AREAS. THE CONTRACTORS SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING UTILITIES TO THE SATISFACTION OF THE AUTHORITY HAVING JURISDICTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OR REPLACEMENT OF ANY SERVICES OR UTILITIES DISTURBED DURING CONSTRUCTION , TO THE SATISFACTION OF THE AUTHORITY HAVING JURISDICTION.
3. ALL DIMENSIONS SHALL BE CHECKED AND VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION, ANY DISCREPANCIES SHALL BE REPORTED IMMEDIATELY TO THE ENGINEER. LOST TIME DUE TO FAILURE OF THE CONTRACTORS TO CONFIRM UTILITY LOCATIONS AND NOTIFY ENGINEER OF POSSIBLE CONFLICTS PRIOR TO CONSTRUCTION WILL BE AT CONTRACTORS EXPENSE.
4. ANY AREA BEYOND THE LIMIT OF THE SITE DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO ORIGINAL CONDITION OR BETTER TO THE SATISFACTION OF THE AUTHORITY HAVING JURISDICTION AT THE CONTRACTOR'S EXPENSE. RELOCATING OF EXISTING SERVICES AND/OR UTILITIES SHALL BE AS SHOWN ON THE DRAWINGS OR DETECTED BY THE ENGINEER AT THE EXPENSE OF DEVELOPERS.
5. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE 'OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATIONS FOR CONSTRUCTION PROJECTS'. THE GENERAL CONTRACTORS SHALL BE DEEMED TO BE THE 'CONTRACTOR' AS DEFINED IN THE ACT.
6. ALL THE CONSTRUCTION SIGNAGE MUST CONFIRM TO THE MINISTRY OF TRANSPORTATION OF ONTARIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES PER LATEST AMENDMENT.
7. THE CONTRACTOR IS ADVISED THAT WORKS BY OTHERS MAY BE ONGOING DURING THE PERIOD OF THE CONTRACT. THE CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES TO PREVENT CONFLICTS.
8. ALL DIMENSIONS ARE IN METRES UNLESS SPECIFIED OTHERWISE.
9. THERE WILL BE NO SUBSTITUTION OF MATERIALS UNLESS PRIOR WRITTEN APPROVAL IS RECEIVED FROM THE ENGINEER.
10. ALL CONSTRUCTION SHALL BE CARRIED OUT IN ACCORDANCE WITH THE RECOMMENDATIONS MADE IN THE GEOTECHNICAL REPORT.
11. FOR DETAILS RELATING TO STORMWATER MANAGEMENT AND ROOF DRAINAGE REFER TO THE SITE SERVICING AND STORMWATER MANAGEMENT REPORT.
12. ALL SEWERS CONSTRUCTED WITH GRADES LESS THAN 1.0% SHALL BE INSTALLED USING LASER ALIGNMENT AND CHECKED WITH LEVEL INSTRUMENT PRIOR TO BACKFILLING.
13. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS REQUIRED AND TO BEAR THE COST OF THE SAME.
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADDITIONAL BEDDING, OR ADDITIONAL STRENGTH PIPE IF THE MAXIMUM TRENCH WIDTH AS SPECIFIED BY OPSD IS EXCEEDED.
15. ALL PIPE/CULVERT SECTION SIZES REFER TO INSIDE DIMENSIONS.
16. SHOULD DEEPLY BURIED ARCHAEOLOGICAL REMAINS BE FOUND ON THE PROPERTY DURING CONSTRUCTION ACTIVITIES, THE HERITAGE OPERATIONS UNIT OF THE ONTARIO MINISTRY OF CULTURE MUST BE NOTIFIED IMMEDIATELY.
17. ALL NECESSARY CLEARING AND GRUBBING SHALL BE COMPLETED BY THE CONTRACTOR. REVIEW WITH CONTRACT ADMINISTRATOR AND THE CITY OF OTTAWA PRIOR TO ANY TREE CUTTING/REMOVAL.
18. DRAWINGS SHALL BE READ ON CONJUNCTION WITH ARCHITECTURAL SITE PLAN.
19. THE CONTRACTOR SHALL PROVIDE THE PROJECT ENGINEER ON SET OF AS CONSTRUCTED SITE SERVICING AND GRADING DRAWINGS.
20. BENCHMARKS: IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THAT THE SITE BENCHMARK(S) HAS NOT BEEN ALTERED OR DISTURBED AND THAT ITS RELATIVE ELEVATION AND DESCRIPTION AGREES WITH THE INFORMATION DEPICTED ON THIS PLAN.

## EROSION AND SEDIMENT CONTROL NOTES

### GENERAL

THE CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES, TO PROVIDE FOR PROTECTION OF THE AREA DRAINAGE SYSTEM AND THE RECEIVING WATERCOURSE, DURING CONSTRUCTION ACTIVITIES. THE CONTRACTOR ACKNOWLEDGES THAT FAILURE TO IMPLEMENT APPROPRIATE EROSION AND SEDIMENT CONTROL MEASURES MAY BE SUBJECT TO PENALTIES IMPOSED BY ANY APPLICABLE REGULATORY AGENCY.

THE CONTRACTOR ACKNOWLEDGES THAT SURFACE EROSION AND SEDIMENT RUNOFF RESULTING FROM THEIR CONSTRUCTION OPERATIONS HAS POTENTIAL TO CAUSE A DETRIMENTAL IMPACT TO ANY DOWNSTREAM WATERCOURSE OR SEWER, AND THAT ALL CONSTRUCTION OPERATIONS THAT MAY IMPACT UPON WATER QUALITY SHALL BE CARRIED OUT IN MANNER THAT STRICTLY MEETS THE REQUIREMENT OF ALL APPLICABLE LEGISLATION AND REGULATIONS.

AS SUCH, THE CONTRACTOR SHALL BE RESPONSIBLE FOR CARRYING OUT THEIR OPERATIONS, AND SUPPLYING AND INSTALLING ANY APPROPRIATE CONTROL MEASURES, SO AS TO PREVENT SEDIMENT LADEN RUNOFF ENTERING ANY SEWER OR WATERCOURSE WITHIN OR DOWNSTREAM OF THE WORKING AREA.

THE CONTRACTOR ACKNOWLEDGES THAT NO ONE MEASURE IS LIKELY TO BE 100% EFFECTIVELY FOR EROSION PROTECTION AND CONTROLLING SEDIMENT RUNOFF AND DISCHARGES FROM THE SITE. THEREFORE, WHERE NECESSARY THE CONTRACTOR SHALL IMPLEMENT ADDITIONAL MEASURES ARRANGED IN SUCH MANNER AS TO MITIGATE SEDIMENT RELEASE FROM THE CONSTRUCTION OPERATIONS AND ACHIEVE SPECIFIC MAXIMUM PERMITTED CRITERIA WHERE APPLICABLE. SUGGESTED ON-SITE MEASURES MAY INCLUDE, BUT SHALL NOT BE LIMITED TO, THE FOLLOWING METHODS: SEDIMENT PONDS, FILTER BAGS, PUMP FILTERS, SETTLING TANKS, SILT FENCE, STRAW BALES, FILTER CLOTHS, CATCH BASIN FILTERS, CHECK DAMS AND/OR OTHER RECOGNIZED TECHNOLOGIES AND METHOD AVAILABLE AT THE TIME OF CONSTRUCTION. SPECIFIC MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH REQUIREMENTS OF OPSS 577 WHERE APPROPRIATE, OR IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

WHERE, IN THE OPINION OF THE CONTRACT ADMINISTRATOR OR REGULATORY AGENCY, THE INSTALLED CONTROL MEASURES FAIL TO PERFORM ADEQUATELY, THE CONTRACTOR SHALL SUPPLY AND INSTALL ADDITIONAL OR ALTERNATIVE MEASURES AS DIRECTED BY THE CONTRACT ADMINISTRATOR OR REGULATORY AGENCY, AS SUCH, THE CONTRACTOR SHALL HAVE ADDITIONAL CONTROL MATERIALS ON SITE AT ALL TIME WHICH ARE EASILY ACCESSIBLE AND MAY BE IMPLEMENTED BY HIM AT THE MOMENT'S NOTICE.

PRIOR TO COMMENCING WORK, THE CONTRACTOR SHALL SUBMIT TO THE CONTRACT ADMINISTRATOR SIX COPIES OF A DETAILED EROSION AND SEDIMENT CONTROL PLAN (ESCP). THE ESCP WILL CONSIST OF WRITTEN DESCRIPTION AND DETAILED DRAWINGS INDICATING THE ON-SITE ACTIVITIES AND MEASURES TO BE USED TO CONTROL EROSION AND SEDIMENT MOVEMENT FOR EACH STEP OF THE WORK.

### CONTRACTOR'S RESPONSIBILITIES

THE CONTRACTOR SHALL ENSURE THAT ALL WORKERS, INCLUDING SUB-CONTRACTOR, IN THE WORKING ARE ARE AWARE OF THE IMPORTANCE OF THE EROSION AND SEDIMENT CONTROL MEASURES AND INFORMED OF THE CONSEQUENCES OF THE FAILURE TO COMPLY WITH THE REQUIREMENTS OF ALL REGULATORY AGENCIES.

THE CONTRACTOR SHALL PERIODICALLY, AND WHEN REQUESTED BY THE CONTRACT ADMINISTRATOR, CLEAN OUT ACCUMULATED SEDIMENT DEPOSITS AS REQUIRED AT THE SEDIMENT CONTROL DEVICES, INCLUDING THOSE DEPOSITS THAT MAY ORIGINATE FROM OUTSIDE THE CONSTRUCTION AREA. ACCUMULATED SEDIMENT SHALL BE REMOVED IN SUCH A MANNER THAT PREVENTS THE DEPOSITION OF THIS MATERIAL INTO THE SEWER WATERCOURSE AND AVOIDS DAMAGE TO CONTROL MEASURES. THE SEDIMENT SHALL BE REMOVED FROM THE SITE AT THE CONTRACTOR'S EXPENSE AND MANAGED IN COMPLIANCE WITH REQUIREMENTS FRO EXCESS EARTH MATERIAL, AS SPECIFIED ELSEWHERE IN THE CONTRACT.

THE CONTRACTOR SHALL IMMEDIATELY REPORT TO THE CONTRACT ADMINISTRATOR ANY ACCIDENTAL DISCHARGES OF SEDIMENT MATERIAL INTO EITHER THE WATERCOURSE OR THE STORM SEWER SYSTEM. FAILURE TO REPORT WILL BE CONSTITUTE A BRACH OF THIS SPECIFICATION AND THE CONTRACTOR MAY ALSO BE SUBJECT TO THE PENALTIES IMPOSED BY THE APPLICABLE REGULATORY AGENCY. APPROPRIATE RESPONSE MEASURES, INCLUDING ANY REPAIRS TO EXISTING CONTROL MEASURES OR THE IMPLEMENTATION OF ADDITIONAL CONTROL MEASURES, SHALL BE CARRIED OUT BY THE CONTRACTOR WITHOUT DELAY.

THE SEDIMENT CONTROL MEASURES SHALL ONLY BE REMOVED WHEN, IN THE OPINION OF THE CONTRACT ADMINISTRATOR, THE MEASURE OR MEASURES, IS NO LONGER REQUIRED. NO CONTROL MEASURE MAY BE PERMANENTLY REMOVED WITHOUT PRIOR AUTHORIZATION FROM THE CONTRACT ADMINISTRATOR. ALL SEDIMENT AND EROSION CONTROL MEASURES SHALL BE REMOVED IN A MANNER THAT AVOIDS THE ENTRY OF ANY EQUIPMENT, OTHER THAN HAND-HELD EQUIPMENT, INTO ANY WATERCOURSE, AND PREVENTS THE RELEASE OF ANY SEDIMENT OR DEBRIS INTO ANY SEWER OR WATERCOURSE WITHIN OR DOWNSTREAM OF THE WORKING AREA. ALL ACCUMULATED SEDIMENT SHALL BE REMOVED FROM THE WORKING AREA AT THE CONTRACTOR'S EXPENSE AND MANAGED IN COMPLIANCE WITH THE REQUIREMENTS FOR EXCESS EARTH MATERIAL

WHERE, IN THE OPINION OF EITHER THE CONTRACT ADMINISTRATOR OR A REGULATORY AGENCY, ANY OF THE TERMS SPECIFIED HEREIN HAVE NOT BEEN COMPLIED WITH OR PERFORMED IN A SUITABLE MANNER, OR TAT ALL, THE CONTRACTOR ADMINISTRATOR OR A REGULATORY AGENCY HAS THE RIGHT TO IMMEDIATELY WITHDRAW ITS PERMISSION TO CONTINUE THE WORK BUT MAY RENEW ITS PERMISSION UPON BEING SATISFIED THAT THE DEFAULTS OR DEFICIENCIES IN THE PERFORMANCE OF THIS SPECIFICATION BY THE CONTRACTOR HAVE BEEN REMEDIED.

## SPILL CONTROL NOTES

1. ALL CONSTRUCTION EQUIPMENT SHALL BE RE-FUELED, MAINTAINED, AND STORED NO LESS THAN 30 METRES FROM WATERCOURSE, STEAMS, CREEKS, WOODLOTS, AND ANY ENVIRONMENTALLY SENSITIVE AREAS, OR AS OTHERWISE SPECIFIED.
2. THE CONTRACTOR MUST IMPLEMENT ALL NECESSARY MEASURES IN ORDER TO PREVENT LEAKS, DISCHARGES OR SPILLS OF POLLUTANTS, DELETERIOUS MATERIALS, OR OTHER SUCH MATERIALS OR SUBSTANCES WHICH WOULD OR COULD CAUSE AN ADVERSE IMPACT TO THE NATURAL ENVIRONMENT.
3. IN THE EVENT OF A LEAK, DISCHARGE OR SPILL OF POLLUTANT, DELETERIOUS MATERIAL OR OTHER SUCH MATERIAL OR SUBSTANCE WHICH WOULD OR COULD CAUSE AN ADVERSE IMPACT TO THE NATURAL ENVIRONMENT, THE CONTRACTOR SHALL:
   - 3.1. IMMEDIATELY NOTIFY APPROPRIATE FEDERAL, PROVINCIAL, AND LOCAL GOVERNMENT MINISTRIES, DEPARTMENTS, AGENCIES, AND AUTHORITIES OF THE INCIDENT IN ACCORDANCE WITH ALL CURRENT LAWS, LEGISLATION, ACTS, BY-LAWS, PERMITS, APPROVALS, ETC.
   - 3.2. TAKE IMMEDIATE MEASURES TO CONTAIN THE MATERIAL OR SUBSTANCE, AND TO TAKE SUCH MEASURES TO MITIGATE AGAINST ADVERSE IMPACTS TO THE NATURAL ENVIRONMENT.
   - 3.3. RESTORE THE AFFECTED AREA TO THE ORIGINAL CONDITION OR BETTER TO THE SATISFACTION OF THE AUTHORITIES HAVING JURISDICTION.

## MUD MAT NOTES

1. THE GRANULAR MATERIAL WILL REQUIRE PERIODIC REPLACEMENT AS IT BECOMES CONTAMINATED BY VEHICLE TRAFFIC.
2. SEDIMENT SHALL BE CLEANED FROM PUBLIC ROADS AT THE END OF EACH DAY.
3. SEDIMENT SHALL BE REMOVED FROM PUBLIC ROADS BY SHOVELING OR SWEEPING AND DISPOSED OR PROPERLY IN A CONTROLLED SEDIMENT DISPOSAL AREA.

## SITE GRADING NOTES

1. PRIOR TO THE COMMENCEMENT OF THE SITE GRADING WORKS, ALL SILTATION CONTROL DEVICES SHALL BE INSTALLED AND OPERATIONAL PER EROSION CONTROL PLAN.
2. ALL GRANULAR AND PAVEMENT FOR ROADS/PARKING AREAS SHALL BE CONSTRUCTED IN ACCORDANCE WITH GEOTECHNICAL ENGINEER'S RECOMMENDATIONS.
3. ALL TOPSOIL AND ORGANIC MATERIAL SHALL BE STRIPPED WITHIN THE ROAD AND PARKING AREAS ALLOWANCE PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
4. CONCRETE CURB SHALL BE IN ACCORDANCE WITH THE CITY OF OTTAWA STD. SC1.1 PROVISION SHALL BE MADE OR CURB DEPRESSIONS AS INDICATED ON ARCHITECTURAL SITE PLAN. CONCRETE SIDEWALK SHALL BE IN ACCORDANCE WITH CITY OF OTTAWA STD SC1.4. ALL CURBS, CONCRETE ISLANDS, AND SIDEWALKS SHOWN O THIS DRAWING ARE TO BR PRICED IN SITE WORKS PORTION OF THE CONTRACT.
5. PAVEMENT REINSTATEMENT FOR SERVICE AND UTILITY CUTS SHALL BE IN ACCORDANCE WITH THE CITY OF OTTAWA STD. R10 AND OPSD 509.010 AND OPSS 310.
6. GRANULAR 'A' SHALL BE PLACED TO A MINIMUM THICKNESS OF 30MM AROUND ALL STRUCTURES WITHIN THE PAVEMENT AREA.
7. SUB-EXCAVATE SOFT AREAS AND FILL WITH GRANULAR 'B' COMPACTED IN MAXIMUM 30MM LIFTS.
8. ALL WORK ON THE MUNICIPAL RIGHT OF WAY AND EASEMENTS TO BE INSPECTED BY THE MUNICIPALITY PRIOR BACKFILLING.
9. CONTRACTOR TO OBTAIN A ROAD OCCUPANCY PERMIT 48 HOURS PRIOR TO COMMENCING ANY WORK WITHIN THE MUNICIPAL ROAD ALLOWANCE, IF REQUIRED BY THE MUNICIPALITY.
10. ALL PAVEMENT MARKING FEATURES AND SITE SIGNAGE SHALL BE PLACED PER ARCHITECTURAL SITE PLAN. LINE PAINTING AND DIRECTIONAL SYMBOLS SHALL BE APPLIED WITH A MINIMUM OF TWO COATS OF ORGANIC SOLVENT PAINT.
11. REFER TO ARCHITECTURAL SITE PLAN FOR DIMENSIONS AND SITE DETAILS.
12. STEP JOINTS ARE TO BE USED WHERE PROPOSED ASPHALT MEETS EXISTING ASPHALT. ALL JOINTS MUST BE SEALED.
13. SIDEWALKS TO BE 13MM & BEVELED AT 2:1 OR 6MM WITH NO BEVEL REQUIRED BELOW THE FINISHED FLOOR SLAB ELEVATION AT ENTRANCES REQUIRED TO BE BARRIER-FREE, UNLESS OTHERWISE NOTED. ALL IN ACCORDANCE WITH OBC 3.8.1.3 & OTTAWA ACCESSIBILITY DESIGN STANDARDS.
14. WHERE APPLICABLE THE CONTRACTOR IS TO SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION. SHOP DRAWINGS MUST BE SITE SPECIFIC, SIGNED AND SEALED BY A LICENSED STRUCTURAL ENGINEER. THE CONTRACTOR WILL ALSO BE REQUIRED TO SUPPLY AND GEOTECHNICAL CERTIFICATION OF THE AS-CONSTRUCTED RETAINING WALL TO THE ENGINEER PRIOR TO FINAL ACCEPTANCE.

## ROADWORK SPECIFICATIONS

15. ROADWORK TO BE COMPLETED IN ACCORDANCE WITH GEOTECHNICAL REPORT, PREPARED BY LRL ASSOCIATES. DATED NOVEMBER 2020.
16. AL TOPSOIL AND ORGANIC MATERIAL SHALL BE STRIPPED WITHIN THE ROAD ALLOWANCE PRIOR TO THE COMMENCEMENT OF CONSTRUCTION AND STOCK PILLED ON SITE AS DIRECTED BY NATIONAL MUNICIPALITY.
17. THE SUBGRADE SHALL BE CROWNED AND SLOPED AT LEAST 2% AND PROOF ROLLED WITH HEAVY ROLLERS.
18. SUB-EXCAVATE SOFT AREAS AND FILL WITH GRANULAR 'A', TYPE II COMPACTED IN MAXIMUM 300MM LIFTS.
19. ALL GRANULAR FOR ROADS SHALL BE COMPACTED TO MINIMUM OF 100% STANDARD PROCTOR DENSITY MAXIMUM DRY DENSITY (SPMDD).
20. CONCRETE RAMP C/W TACTILE WALKING SURFACE INDICATORS COMPONENT AS PER OPSD 310.039. TACTILE WALKING SURFACE INDICATORS TO BE INSTALLED AT ALL RAMPS. MATERIAL TO BE POLYMER COMPOSITE, COLOR GREY.

## SANITARY, FOUNDATION DRAIN, STORM SEWER AND WATERMAIN NOTES

### GENERAL

1. LASER ALIGNMENT CONTROL TO BE UTILIZED ON ALL SEWER INSTALLATIONS.
2. CLAY SEALS TO BE INSTALLED AS PER CITY STANDARD DRAWING S8. THE SEALS SHOULD BE AT LEAST 1.5M LONG (IN THE TRENCH DIRECTION) AND SHOULD EXTEND FROM TRENCH WALL TO TRENCH WALL. THE SEALS SHOULD EXTEND FROM THE FROST LINE AND FULLY PENETRATE THE BEDDING, SUB-BEDDING, AND COVER MATERIAL. THE BARRIERS SHOULD CONSIST OF RELATIVELY DRY AND COMPATIBLE BROWN SILTY CLAY PLACED IN MAXIMUM 225MM LIFTS AND COMPACTED TO A MINIMUM OF 95% SPMDD. THE CLAY SEALS SHOULD BE PLACED AT THE SITE BOUNDARIES AND AT 60M INTERVALS IN THE SERVICE TRENCHES.
3. SERVICES TO BUILDING TO BE TERMINATED 1.0M FROM THE OUTSIDE FACE OF BUILDING UNLESS OTHERWISE NOTED.
4. ALL MAINTENANCE STRUCTURE AND CATCH BASIN EXCAVATIONS TO BE BACKFILLED WITH GRANULAR MATERIAL COMPACTED TO 98% STANDARD PROCTOR DENSITY. A MINIMUM OF 300MM AROUND STRUCTURES.
5. "MODULOC" OR APPROVED PRE-CAST MAINTENANCE STRUCTURE AND CATCH BASIN ADJUSTERS TO BE USED IN LIEU OF BRICKING. PARGE ADJUSTING UNITS ON THE OUTSIDE ONLY.
6. SAFETY PLATFORMS SHALL BE PER OPSD 404.02.
7. DROP STRUCTURES SHALL BE IN ACCORDANCE WITH OPSD 1003.01, IF APPLICABLE.
8. THE CONTRACTOR IS TO PROVIDE CCTV CAMERA INSPECTIONS OF ALL SEWERS, INCLUDING PICTORIAL REPORT, ONE (1) CD COPY AND TWO (2) VIDEO RECORDING IN A FORMAT ACCEPTABLE TO ENGINEER. ALL SEWER ARE TO BE FLUSHED PRIOR TO CAMERA INSPECTION. ASPHALT WEAR COURSE SHALL NOT BE PLACED UNTIL THE VIDEO INSPECTION OF SEWERS AND NECESSARY REPAIRS HAVE BEEN COMPLETED TO THE SATISFACTION OF THE ENGINEER.
9. CONTRACTOR SHALL PERFORM LEAKAGE TESTING, IN THE PRESENCE OF THE CONSULTANT, FOR SANITARY SEWERS IN ACCORDANCE WITH OPSS 407. CONTRACTOR SHALL PERFORM VIDEO INSPECTION OF ALL SEWERS. A COPY OF THE VIDEO AND INSPECTION REPORT SHALL BE SUBMITTED TO THE CONSULTANT FOR REVIEW AND APPROVAL PRIOR TO PLACEMENT OF WEAR COURSE ASPHALT.

### SANITARY

10. ALL SANITARY SEWER INSTALLATION SHALL CONFORM TO THE LATEST REVISIONS OF THE CITY OF OTTAWA AND THE ONTARIO PROVINCIAL STANDARD DRAWINGS (OPSD). AND SPECIFICATIONS (OPSS).
11. ALL SANITARY GRAVITY SEWER SHALL BE PVC SDR 35, IPEX 'RING-TITE' (OR APPROVED EQUIVALENT) PER CSA STANDARD B182.2 OR LATEST AMENDMENT, UNLESS SPECIFIED OTHERWISE.
12. EXISTING MAINTENANCE STRUCTURES TO BE RE-BENCHED WHERE A NEW CONNECTION IS MADE.
13. SANITARY GRAVITY SEWER TRENCH AND BEDDING SHALL BE PER CITY OF OTTAWA STD. S6 AND S7 CLASS 'B' BEDDING, UNLESS SPECIFIED OTHERWISE.
14. SANITARY MAINTENANCE STRUCTURE FRAME AND COVERS SHALL BE PER CITY OF OTTAWA STD. S24 AND S25.
15. SANITARY MAINTENANCE STRUCTURES SHALL BE BENCHED PER OPSD 701.021.
16. 100MM THICK HIGH-DENSITY GRADE 'A' POLYSTYRENE INSULATION TO BE INSTALLED IN ACCORDANCE WITH CITY STD W22 WHERE INDICATED ON DRAWING SSP-1.

### STORM

17. ALL REINFORCED CONCRETE STORM SEWER PIPE SHALL BE IN ACCORDANCE WITH CSA A257.2, OR LATEST AMENDMENT. ALL NON-REINFORCED CONCRETE STORM SEWER PIPE SHALL BE IN ACCORDANCE WITH CSA A257.1, OR LATEST AMENDMENT. PIPE SHALL BE JOINED WITH STD. RUBBER GASKETS AS PER CSA A257.3, OR LATEST AMENDMENT.
18. ALL STORM SEWER TRENCH AND BEDDING SHALL BE IN ACCORDANCE WITH THE CITY OF OTTAWA STD. S6 AND S7 CLASS 'B' UNLESS OTHERWISE SPECIFIED. BEDDING AND COVER MATERIAL SHALL BE SPECIFIED BY PROJECT GEOTECHNICAL ENGINEER.
19. ALL PVC STORM SEWERS ARE TO BE SDR 35 APPROVED PER C.S.A. B182.2 OR LATEST AMENDMENT, UNLESS OTHERWISE SPECIFIED.
20. CATCH BASIN SHALL BE IN ACCORDANCE WITH OPSD 705.010.
21. CATCH BASIN LEADS SHALL BE IN 200MM DIA. AT 1% SLOPE (MIN) UNLESS SPECIFIED OTHERWISE.
22. ALL CATCH BASINS SHALL HAVE 600MM SUMPS, UNLESS SPECIFIED OTHERWISE.
23. ALL CATCH BASIN LEAD INVERTS TO BE 1.5M BELOW FINISHED GRADE UNLESS SPECIFIED OTHERWISE.
24. THE STORM SEWER CLASSES HAVE BEEN DESIGNED BASED ON BEDDING CONDITIONS SPECIFIED ABOVE. WHERE THE SPECIFIED TRENCH WIDTH IS EXCEEDED , THE CONTRACTOR IS REQUIRED TO PROVIDE AND SHALL BE RESPONSIBLE FOR EXTRA TEMPORARY AND/OR PERMANENT REPAIRS MADE NECESSARY BY THE WIDENED TRENCH.
25. ALL ROAD AND PARKING LOT CATCH BASINS TO BE INSTALLED WITH ORTHOGONALLY PLACED SUBDRAINS IN ACCORDANCE WITH DETAIL. PERFORATED SUBDRAIN FOR ROAD AND PARKING LOT CATCH BASIN SHALL BE INSTALLED PER CITY STD R1 UNLESS OTHERWISE NOTED.
26. PERFORATED SUBDRAIN FOR REAR YARD AND LANDSCAPING APPLICATIONS SHALL BE INSTALLED PER CITY STD S29, S30 AND S31, WHERE APPLICABLE.
27. RIP-RAP TREATMENT SEWER AND CULVERT OUTLETS PER OPSD 810.010.
28. ALL STORM SEWER/ CULVERTS TO BE INSTALLED WITH FROST TREATMENT PER OPSD 803.031 WHERE APPLICABLE.
29. ALL STORM MANHOLES WITH PIPE LESS THAN 900MM IN DIAMETER SHALL BE CONSTRUCTED WITH A 300MM SUMP AS PER SDG, CLAUSE 6.2.6.

### WATERMAIN

30. ALL WATERMAIN INSTALLATION SHALL CONFORM TO THE LATEST REVISIONS OF THE CITY OF OTTAWA AND THE ONTARIO PROVINCIAL STANDARD DRAWINGS (OPSD) AND SPECIFICATIONS (OPSS).
31. ALL PVC WATERMAINS SHALL BE AWWA C-900 CLASS 150, SDR 18 OR APPROVED EQUIVALENT.
32. ALL WATER SERVICES LESS THAN OR EQUAL TO 50MM IN DIAMETER TO BE TYPE 'K' COPPER.
33. WATERMAIN TRENCH AND BEDDING SHALL BE IN ACCORDANCE WITH CITY OF OTTAWA STANDARD W17. UNLESS SPECIFIED OTHERWISE. BEDDING AND COVER MATERIAL SHALL BE SPECIFIED BY THE PROJECT GEOTECHNICAL ENGINEER.
34. ALL PVC WATERMAINS, SHALL BE INSTALLED WITH A 10 GAUGE STRANDED COPPER TWU OR RWU TRACER WIRE IN ACCORDANCE WITH CITY OF OTTAWA STD. W.36.
35. CATHODIC PROTECTION IS REQUIRED ON ALL METALLIC FITTINGS PER CITY OF OTTAWA STD.25.5 AND W25.6.
36. VALVE BOXES SHALL BE INSTALLED PER CITY OF OTTAWA STD W24.
37. WATERMAIN IN FILL AREAS TO BE INSTALLED WITH RESTRAINED JOINTS PER CITY OF OTTAWA STD.25.5 AND W25.6.
38. THRUST BLOCKING OF WATERMAINS TO BE INSTALLED PER CITY OF OTTAWA STD. W25.3 AND W25.4.
39. THE CONTRACTOR SHALL PROVIDE ALL TEMPORARY CAPS, PLUGS, BLOW-OFFS, AND NOZZLES REQUIRED FOR TESTING AND DISINFECTION OF THE WATERMAIN.
40. WATERMAIN CROSSING OVER AND BELOW SEWERS SHALL BE IN ACCORDANCE WITH THE CITY OF OTTAWA STD. W25,2 AND W25, RESPECTIVELY.
41. WATER SERVICES ARE TO BE INSULATED PER CITY STD. W23 WHERE SEPARATION BETWEEN SERVICES AND MAINTENANCE HOLES ARE LESS THAN 2.4M.
42. THE MINIMUM VERTICAL CLEARANCE BETWEEN WATERMAIN AND SEWER/UTILITY IS 0.5M PER MOE GUIDELINES. FOR CROSSING UNDER SEWERS, ADEQUATE STRUCTURAL SUPPORT FOR THE SEWER IS REQUIRED TO PREVENT EXCESSIVE DEFLECTION OF JOINTS AND SETTLING. THE LENGTH OF WATER PIPE SHALL BE CENTERED AT THE POINT OF CROSSING TO ENSURE THAT THE JOINTS WILL BE EQUIDISTANT AND AS FAR AS POSSIBLE FROM THE SEWER.
43. ALL WATERMAINS SHALL HAVE A MINIMUM COVER OR 2.4M, OTHERWISE THERMAL INSULATION IS REQUIRED AS PER STD DWG W22.
44. GENERAL WATER PLANT TO UTILITY CLEARANCE AS PER STD DWG R20.
45. FIRE HYDRANT INSTALLATION AS PER STD DWG W19, ALL BOTTOM OF HYDRANT FLANGE ELEVATIONS TO BE INSTALLED 0.10M ABOVE PROPOSED FINISHED GRADE AT HYDRANT; FIRE HYDRANT LOCATION AS PER STD DWG W18.
46. BUILDING SERVICE TO BE CAPPED 1.0M OFF THE FACE OF THE BUILDING UNLESS OTHERWISE NOTED AND MUST BE RESTRAINED A MINIMUM OF 12M BACK FROM STUB.
47. ALL WATERMAINS SHALL BE HYDROSTATICALLY TESTED IN ACCORDANCE WITH THE CITY OF OTTAWA AND ONTARIO GUIDELINES UNLESS OTHERWISE DIRECTED. PROVISIONS FOR FLUSHING WATER LINE PRIOR TO TESTING, ETC. MUST BE PROVIDED.
48. ALL WATERMAINS SHALL BE BACTERIOLOGICALLY TESTED IN ACCORDANCE WITH THE CITY OF OTTAWA AND ONTARIO GUIDELINES. ALL CHLORINATED WATER TO BE DISCHARGED AND PRETREATED TO ACCEPTABLE LEVELS PRIOR TO DISCHARGE. ALL DISCHARGED WATER MUST BE CONTROLLED AND TREATED SO AS NOT TO ADVERSELY EFFECT ENVIRONMENT. IT IS RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT ALL MUNICIPAL AND/OR PROVINCIAL REQUIREMENTS ARE FOLLOWED.
49. ALL WATERMAIN STUBS SHALL BE TERMINATED WITH A PLUG AND 50MM BLOW OFF UNLESS OTHERWISE NOTED.


USE AND INTERPRETATION OF DRAWINGS

GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION ARE PART OF THE CONTRACT DOCUMENTS AND DESCRIBE USE AND INTENT OF THE DRAWING. 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 IF 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, CADD FILES OR OTHER ELECTRONIC MEDIA AND COPIED THERE OF 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 ILLUSTRATES 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. SUBMITTAL OF A BID TO PERFORM THIS WORK IS 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 ANY REPORTS, 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 COST, INCLUDING REASONABLE ATTORNEY'S FEES AND COST OF DEFENSE, ARISING FROM SUCH CHANGES.

IN ADDITION, THE CLIENT AGREES TO INCLUDE IN ANY CONTRACTS FOR CONSTRUCTION APPROPRIATE LANGUAGE THAT PROHIBITS THE CONTRACTOR OR ANY SUBCONTRACTORS OF ANY TIER FROM MAKING ANY CHANGES OR MODIFICATIONS TO LRL'S 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.

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 THE DESIGN INTENT THEY CONVEY, OR FOR PROBLEMS WHICH ARISE FROM OTHERS' FAILURE TO OBTAIN AND/OR FOLLOW THE ENGINEER'S GUIDANCE WITH RESPECT TO ANY ERRORS, OMISSIONS, INCONSISTENCIES AMBIGUITIES OR CONFLICTS WHICH ARE ALLEGED.

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


| No. | REVISIONS | BY | DATE |
|---|---|---|---|
| 01 | ISSUED FOR APPROVAL | T.H. | 04-19-2023 |

NOT AUTHENTIC UNLESS SIGNED AND DATED


LRL
ENGINEERING | INGÉNIERIE
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CLIENT
MB GROUP ET ASSOCIES INC.

| DESIGNED BY: | DRAWN BY: | APPROVED BY: |
|---|---|---|
| T.H. | T.H. | V.B. |

PROJECT
SITE PLAN CONTROL DESIGN
630 MONTREAL ROAD
OTTAWA, ON

DRAWING TITLE
GENERAL NOTES

PROJECT NO.
210682

DATE
APRIL, 2023

C001

GARAGE

PROFIL OF LOWER LEVEL UNDERGROUND

PROFILE OF 2ND FLOOR ABOVE

ROOF LEDGE AT FLOOR LEVEL 2

PROFILE OF FLOOR ABOVE

SERVICE ENTRANCE

GROUND F.F.E. = 78.65
COMMERICAL SPACE F.F.E = 79.79
P1 F.F.E. = 74.95
P2 F.F.E = 71.95
U.S.F. =

GROUND FLOOR PROFIL

RESIDENTIAL ENTRANCE

PROFILE OF CANOPY ABOVE

RESIDENTIAL UNIT C/W TERRACE

WOOD FENCE C/W GATE

ROOF LEDGE (END OF BALCONIES ABOVE)

LINE OF 3M SETBACK

PROFIL OF LOWER LEVEL UNDERGROUND

PROFIL OF LEDGE AT FLOOR LEVEL 2

LINE OF 3M SETBACK

SIGHT TRIANGLE 5M X 5M

NEW PROPERTY LINE

PROPERTY LINE AFTER CITY ROAD WIDENING

ACTUAL PROPERTY LINE

ORIGINAL PROPERTY LINE

OTTAWA HYDRO POST

PROTECT EXISTING CB WITH INLET SEDIMENT CONTROL FILTER SOCK AS PER DETAIL.

PROPOSED LOCATION OF BUS SHELTER TO BE COORDINATED WITH CITY.

EXISTING BUS SHELTER TO BE RELOCATED

EXISTING LINE OF SIDEWALK

OTTAWA HYDRO LINES

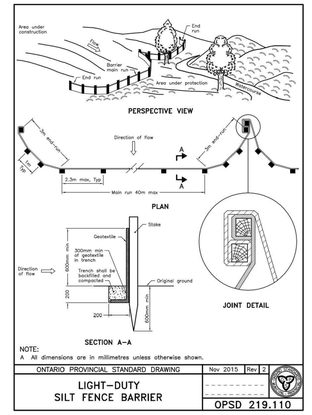
Edge of Asphalt

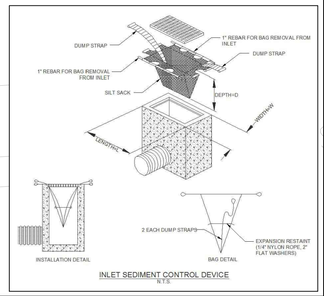
MONTREAL ROAD

BORTHWICK AVENUE

## 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/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
- ×70.19 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 MANHOLE
- EXISTING CATCHBASIN
- PROPOSED CATCHBASIN-MANHOLE/CATCHBASIN
- PROPOSED MANHOLE
- PROPOSED CURB STOP
- PROPOSED PIPE INSULATION
- PROPOSED 100 YEAR HIGH WATER LEVEL
- STORM WATERSHED EXTENT
- WS-XX CONTROLLER — WATERSHED NAME
- AREA / RUNOFF — RUNOFF COEFFICIENT, AREA IN HECTARES

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SCALE: 1:100

| No. | REVISIONS | BY | DATE |
|---|---|---|---|
| 01 | ISSUED FOR APPROVAL | T.H. | 04-19-2023 |

LICENSED PROFESSIONAL ENGINEER
V. JOHNSON
100510576
04-19-2023
PROVINCE OF ONTARIO

NOT AUTHENTIC UNLESS SIGNED AND DATED


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


CLIENT

MB GROUP ET ASSOCIES INC.

| DESIGNED BY: | DRAWN BY: | APPROVED BY: |
|---|---|---|
| T.H. | T.H. | V.B. |

PROJECT

SITE PLAN CONTROL DESIGN
630 MONTREAL ROAD
OTTAWA, ON

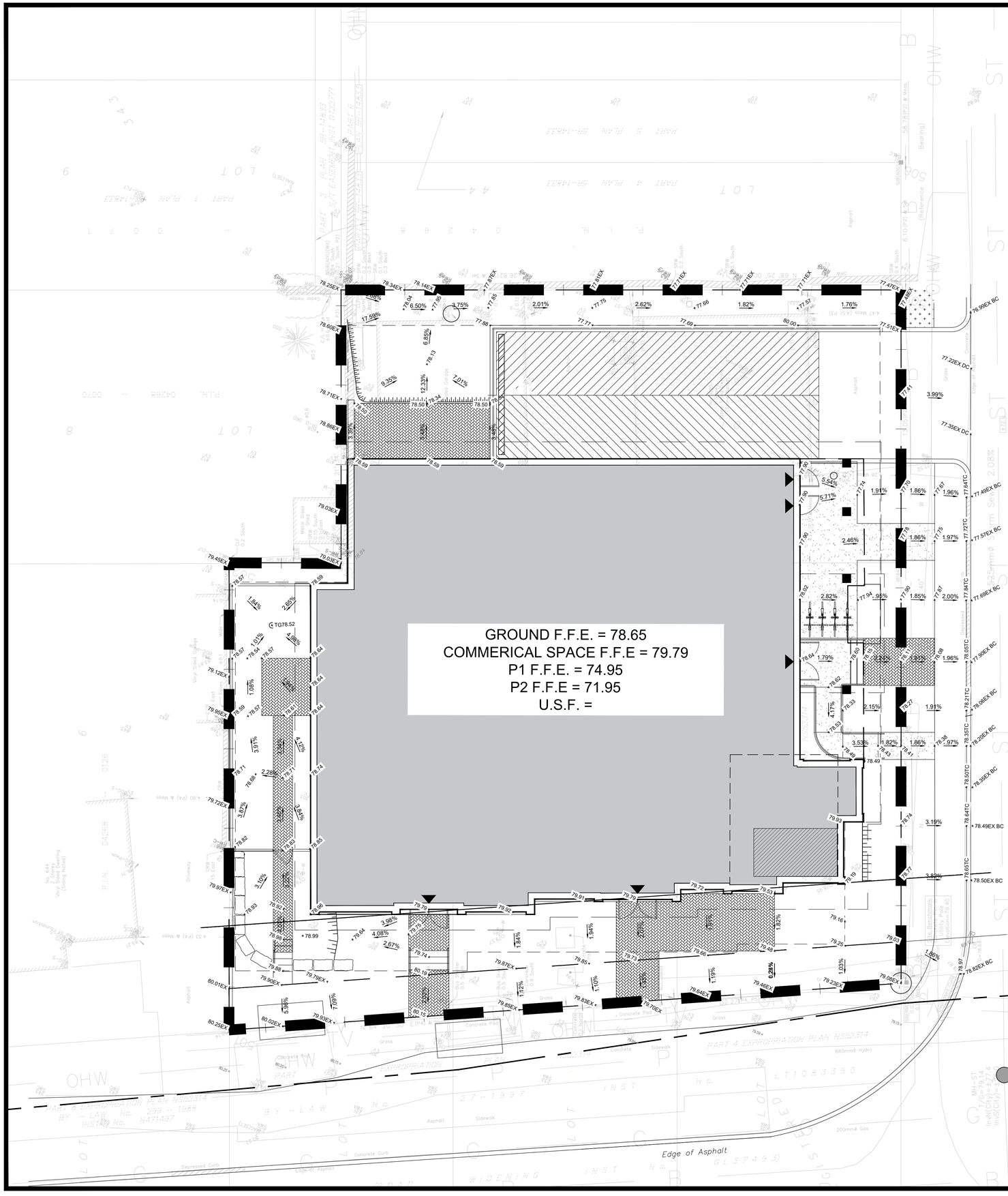
DRAWING TITLE

EROSION AND SEDIMENT CONTROL PLAN

PROJECT NO.
210682

DATE
APRIL, 2023

C101

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LICENSED PROFESSIONAL ENGINEER
V. JOHNSON
100510576
04-19-2023
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CLIENT
MB GROUP ET ASSOCIES INC.

| DESIGNED BY: | DRAWN BY: | APPROVED BY: |
|---|---|---|
| T.H. | T.H. | V.B. |

PROJECT
SITE PLAN CONTROL DESIGN
630 MONTREAL ROAD
OTTAWA, ON

DRAWING TITLE
GRADING AND DRAINAGE PLAN

PROJECT NO.
210682

DATE
APRIL, 2023

C301

## LEGEND:

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TRENCH DRAIN
FLOWS FROM TRENCH DRAIN TO BE DIRECTED INTERNALLY TO UNDERGROUND CISTERN

GARAGE

PROFIL OF LOWER LEVEL UNDERGROUND

PROFILE OF 2ND FLOOR ABOVE

ROOF LEDGE AT FLOOR LEVEL 2

PROFILE OF FLOOR ABOVE

PROPOSED SAN 8.7m - 150mmØ PVC DR-28 @ 2.0%
C/W MONITORING PORT TO BE SPECIFIED BY MECHANICAL SYSTEM
C/W BACKWATER VALVE
INV @ BLDG =75.06

SERVICE ENTRANCE

RD 4

AD

RD 1

EXTENTS OF UNDERGROUND SERVICE ROOM

GROUND FLOOR PROFIL

RD 3

RESIDENTIAL ENTRANCE

PROFILE OF CANOPY ABOVE

BORTHWICK AVENUE

RESIDENTIAL UNIT C/W TERRACE

WOOD FENCE C/W GATE

APPROX. CISTERN LOCATION TO BE COORDINATED WITH MECHNICAL. CISTERN TO COLLECT AND CONTROL FLOWS FROM ROOF DRAINS, ONSITE AREA DRAIN AND TRENCH DRAIN.

RD 2

CROSSING 1
EX STM INV = ± 75.77
PROP SAN OBV = 75.10

CONNECT TO EX. SANITARY SEWER
EX. INV = ±74.81
PROP INV = ± 74.89
CONTRACTOR TO LOCATE AND CONFIRM INVERTS.

PROFIL OF LEDGE AT FLOOR LEVEL 2

SAN
STM

LINE OF 3M SETBACK

ROOF LEDGE (END OF BALCONIES ABOVE)

LINE OF 3M SETBACK

PROFIL OF LOWER LEVEL UNDERGROUND

PROPOSED STM 5.6m - 250mmØ PVC DR-35 @ 2.0%
C/W MONITORING PORT TO BE SPECIFIED BY MECHANICAL SYSTEM
C/W BACKWATER VALVE
INV@PLUG =76.17

PROP 20.7m - 2x150mmØ WTR PVC DR-18
TO BE INSTALLED WITH MIN 2.4M OF COVER BELOW FINISHED GRADE

NEW PROPERTY LINE

AFTER CITY ROAD WIDENING

ACTUAL PROPERTY LINE

ORIGINAL PROPERTY LINE

CONNECT TO EX. STORM SEWER
EX INV = ±75.97
PROP INV = ± 76.06
CONTRACTOR TO LOCATE AND CONFIRM INVERTS.

PROPOSED LOCATION OF BUS SHELTER TO BE COORDINATED WITH CITY.

EXISTING BUS SHELTER TO BE RELOCATED

ASPHALT REINSTATEMENT SHALL MATCH EXISTING GRANULAR AND ASPHALT THICKNESS WHILE MAINTAINING A MINIMUM OF:
40mm OF HL3
50mm OF HL8
150mm OF GRANULAR "A"
450mm OF GRANULAR "B"
CONTRACTOR TO COMPLETE ROAD CUT AS PER CITY OF OTTAWA DETAIL R10. ASPHALT REINSTATEMENT TO BE AS PER PRE-DEVELOPMENT CONDITIONS OR GREATER. CONTRACTOR TO ENSURE TIE-IN ELEVATIONS ARE CONSISTENT WITH PRE-DEVELOPMENT ELEVATIONS AND GRADING IS CONTINUOUS FOR ENTIRE REINSTATED ASPHALT SURFACE.

CROSSING 2
EX SAC INV = ± 77.23
PROP WTR OBV = 76.73
AS PER CITY OF OTTAWA STANDARD DETAIL DWG W25

CROSSING 3
EX SAC INV = ± 77.24
PROP WTR OBV = 76.74
AS PER CITY OF OTTAWA STANDARD DETAIL DWG W25

DUAL 150Ø PROPOSED CONNECTIONS TO 406mmØ WATERMAIN BY CITY FORCES. EXCAVATION AND REINSTATEMENT BY CONTRACTOR.
EX. WATERMAIN OBV = ±77.80

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100510576
04-19-2023
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PROJECT
SITE PLAN CONTROL DESIGN
630 MONTREAL ROAD
OTTAWA, ON

DRAWING TITLE
SERVICING PLAN

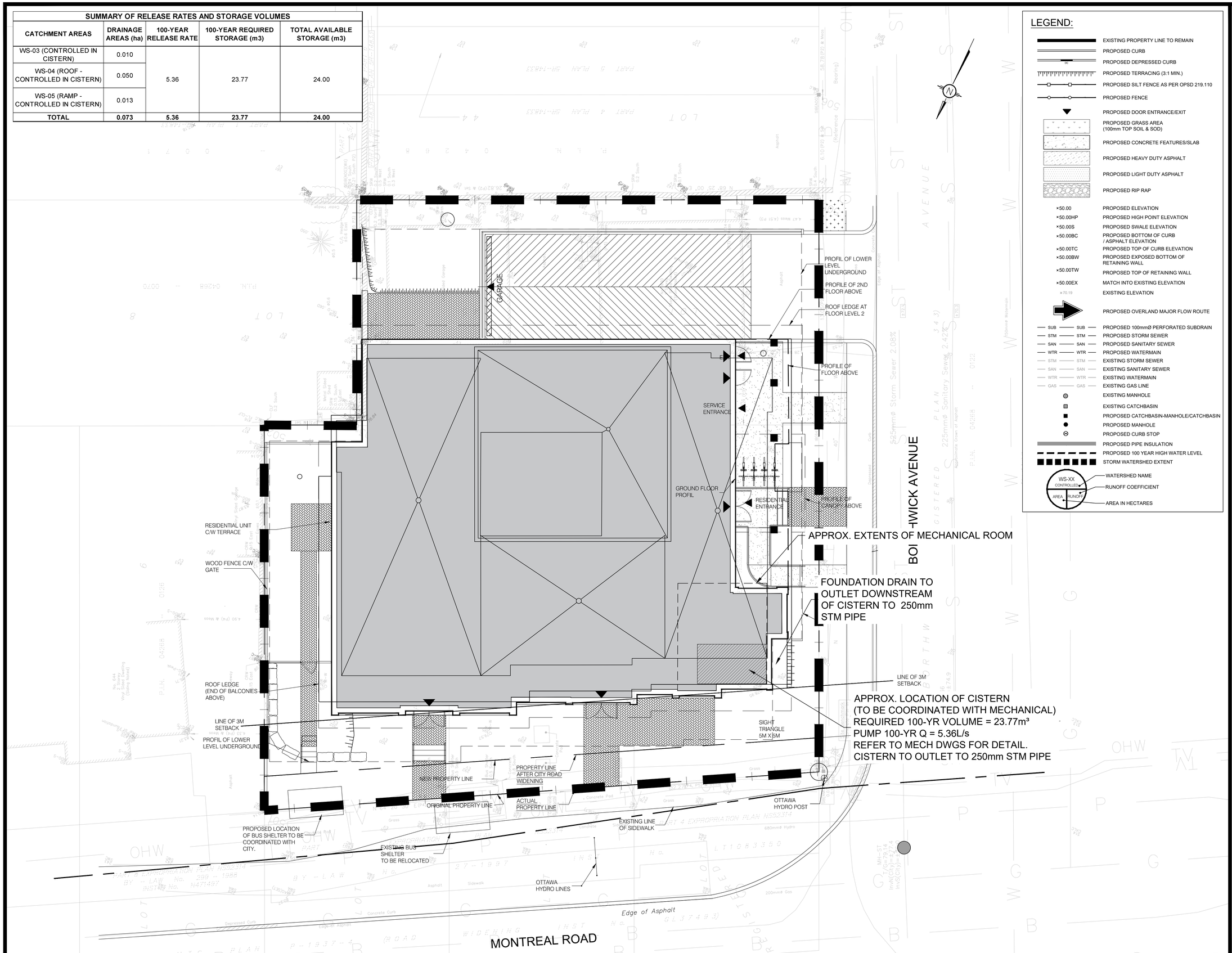
PROJECT NO.
210682

DATE
APRIL, 2023

C401

## SUMMARY OF RELEASE RATES AND STORAGE VOLUMES

| CATCHMENT AREAS | DRAINAGE AREAS (ha) | 100-YEAR RELEASE RATE | 100-YEAR REQUIRED STORAGE (m3) | TOTAL AVAILABLE STORAGE (m3) |
|---|---|---|---|---|
| WS-03 (CONTROLLED IN CISTERN) | 0.010 | 5.36 | 23.77 | 24.00 |
| WS-04 (ROOF - CONTROLLED IN CISTERN) | 0.050 | | | |
| WS-05 (RAMP - CONTROLLED IN CISTERN) | 0.013 | | | |
| **TOTAL** | **0.073** | **5.36** | **23.77** | **24.00** |

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- EXISTING MANHOLE
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SCALE: 1:100

| No. | REVISIONS | BY | DATE |
|---|---|---|---|
| 01 | ISSUED FOR APPROVAL | T.H. | 04-19-2023 |

LICENSED PROFESSIONAL ENGINEER
V. JOHNSON
100510576
04-19-2023
PROVINCE OF ONTARIO

NOT AUTHENTIC UNLESS SIGNED AND DATED


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


CLIENT
MB GROUP ET ASSOCIES INC.

| DESIGNED BY: | DRAWN BY: | APPROVED BY: |
|---|---|---|
| T.H. | T.H. | V.B. |

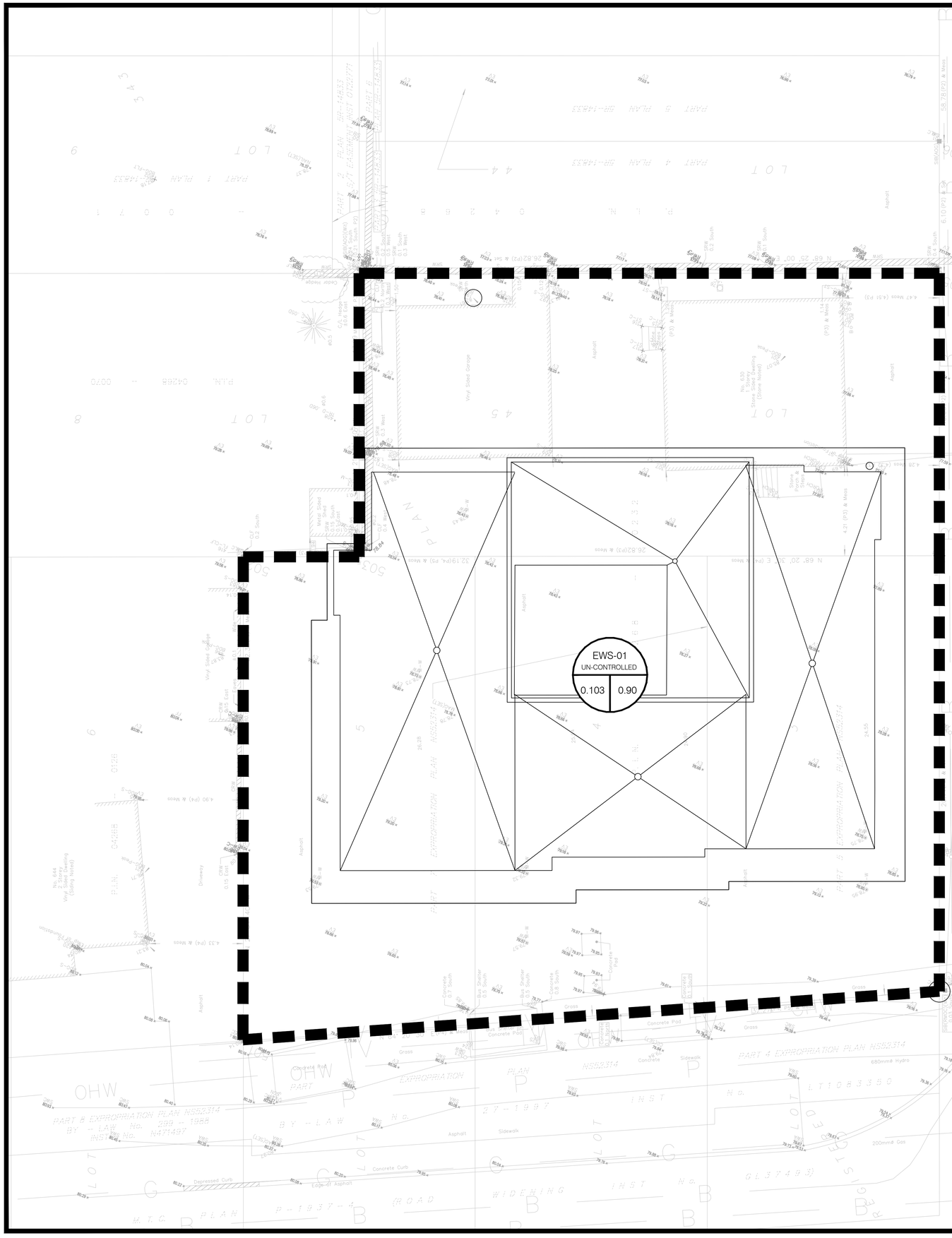
PROJECT
SITE PLAN CONTROL DESIGN
630 MONTREAL ROAD
OTTAWA, ON

DRAWING TITLE
STORMWATER MANAGEMENT PLAN

PROJECT NO.
210682

DATE
APRIL, 2023

C601

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| 01 | ISSUED FOR APPROVAL | T.H. | 04-19-2023 |

LICENSED PROFESSIONAL ENGINEER
V. JOHNSON
100510576
04-19-2023
PROVINCE OF ONTARIO

NOT AUTHENTIC UNLESS SIGNED AND DATED

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CLIENT

MB GROUP ET ASSOCIES INC.

| DESIGNED BY: | DRAWN BY: | APPROVED BY: |
|---|---|---|
| T.H. | T.H. | V.B. |

PROJECT

SITE PLAN CONTROL DESIGN
630 MONTREAL ROAD
OTTAWA, ON

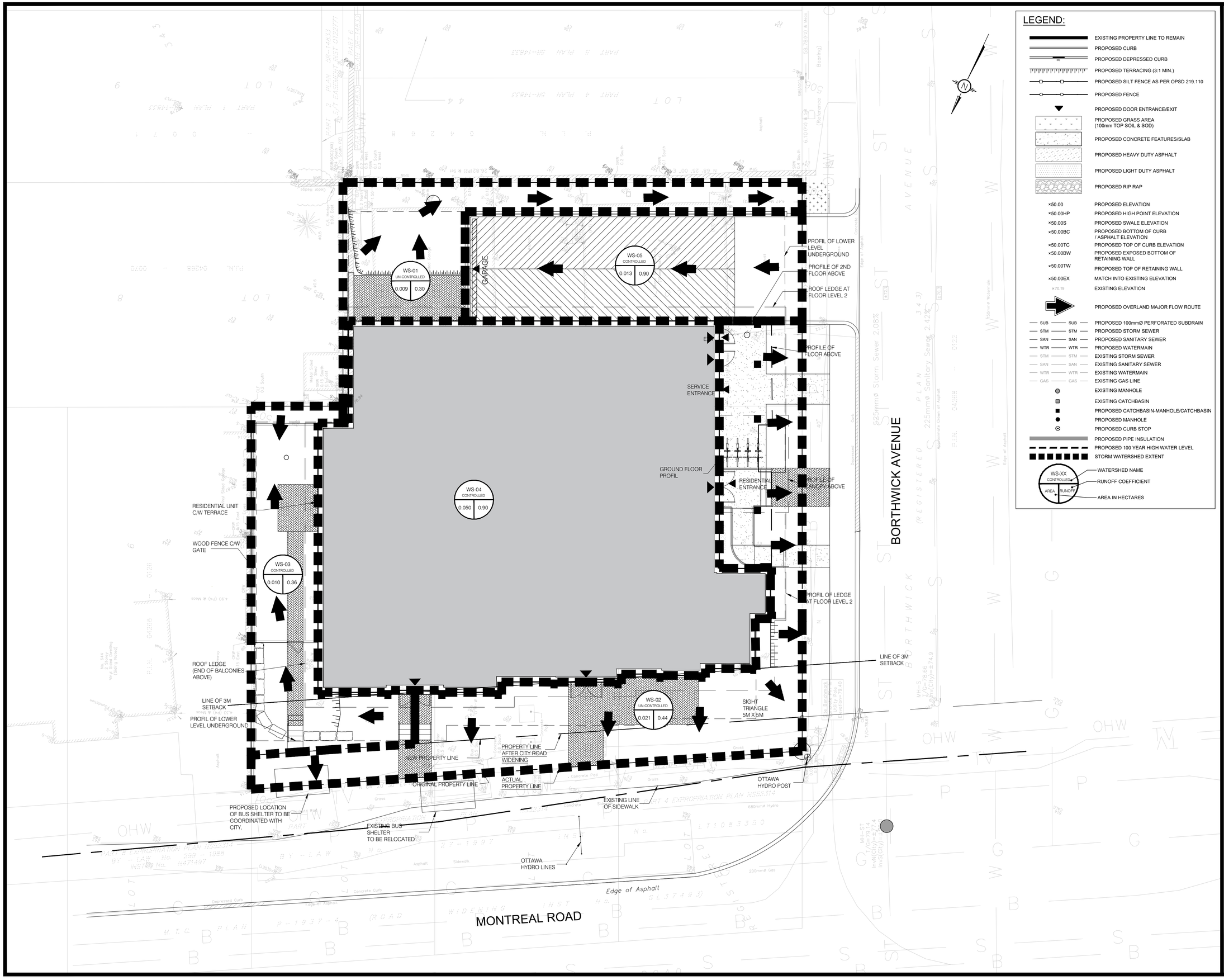
DRAWING TITLE

PRE-DEVELOPMENT
WATERSHED PLAN

PROJECT NO.
210682

DATE
APRIL, 2023

C701

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LICENSED PROFESSIONAL ENGINEER
V. JOHNSON
100510576
04-19-2023
PROVINCE OF ONTARIO

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| DESIGNED BY: | DRAWN BY: | APPROVED BY: |
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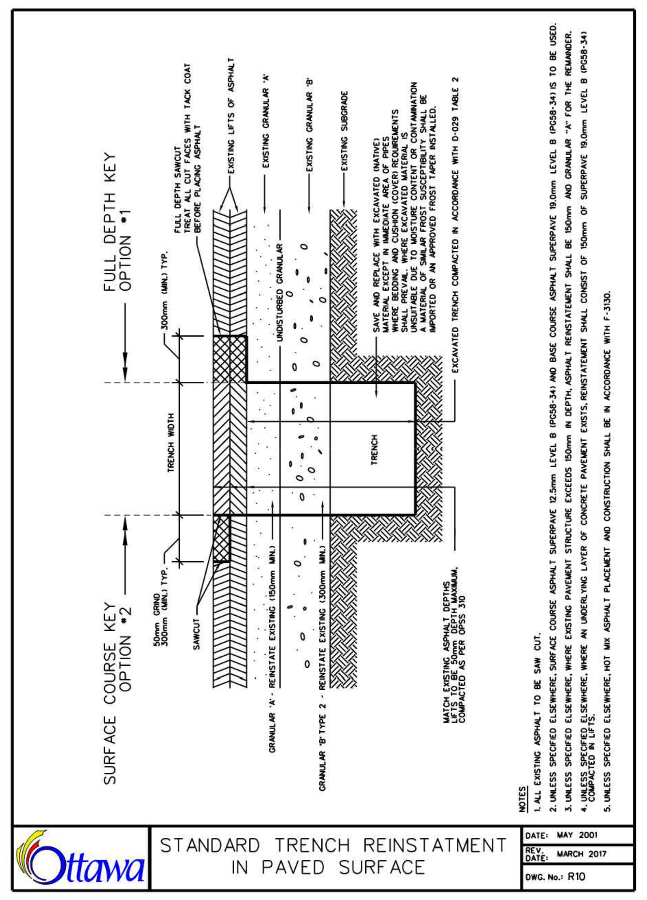
| T.H. | T.H. | V.B. |

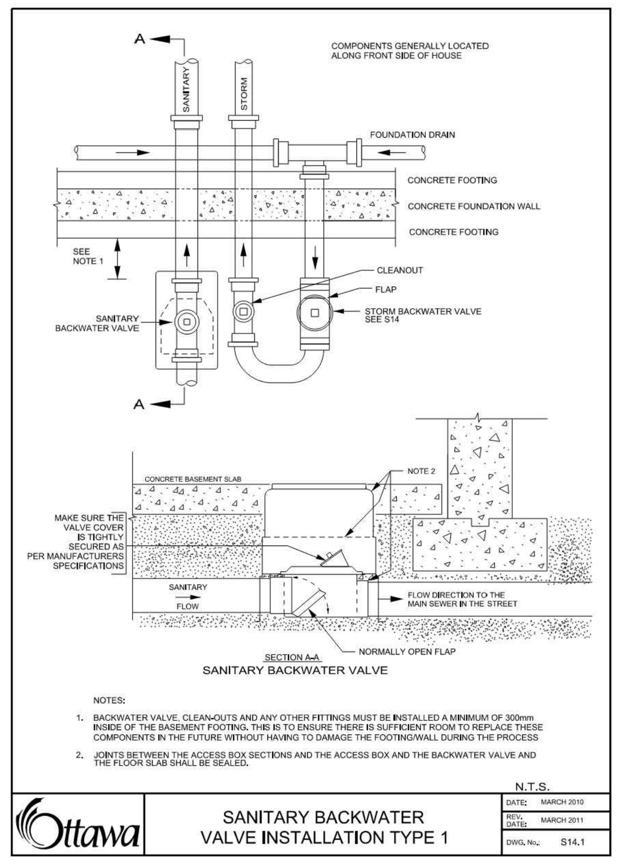
PROJECT
SITE PLAN CONTROL DESIGN
630 MONTREAL ROAD
OTTAWA, ON

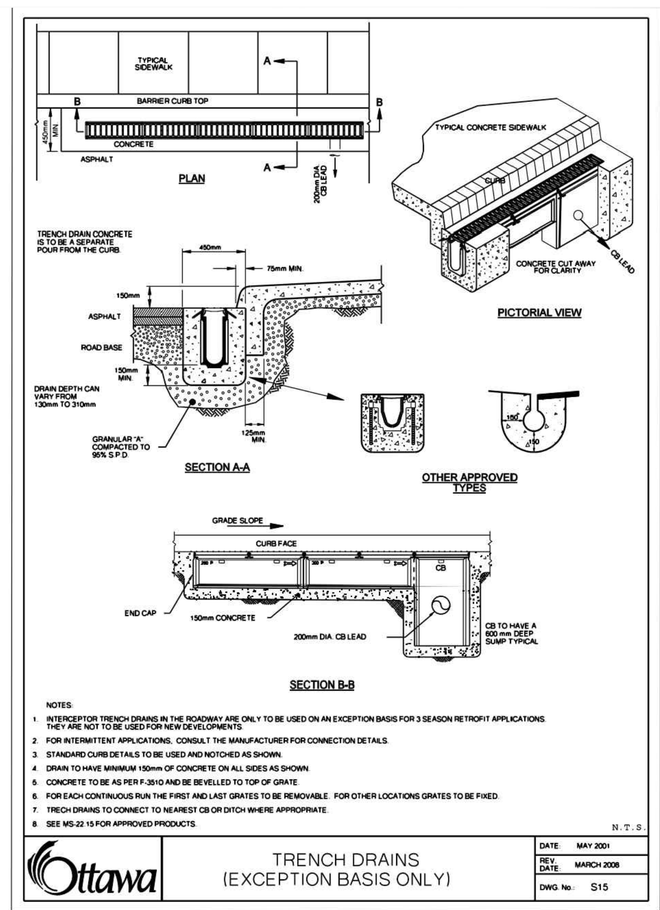
DRAWING TITLE
POST-DEVELOPMENT WATERSHED PLAN

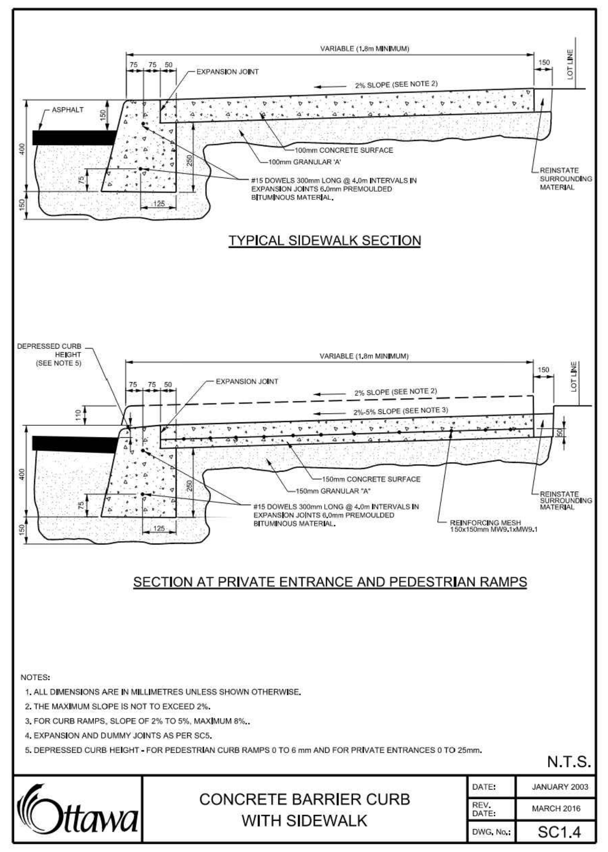
PROJECT NO. 210682
DATE APRIL, 2023

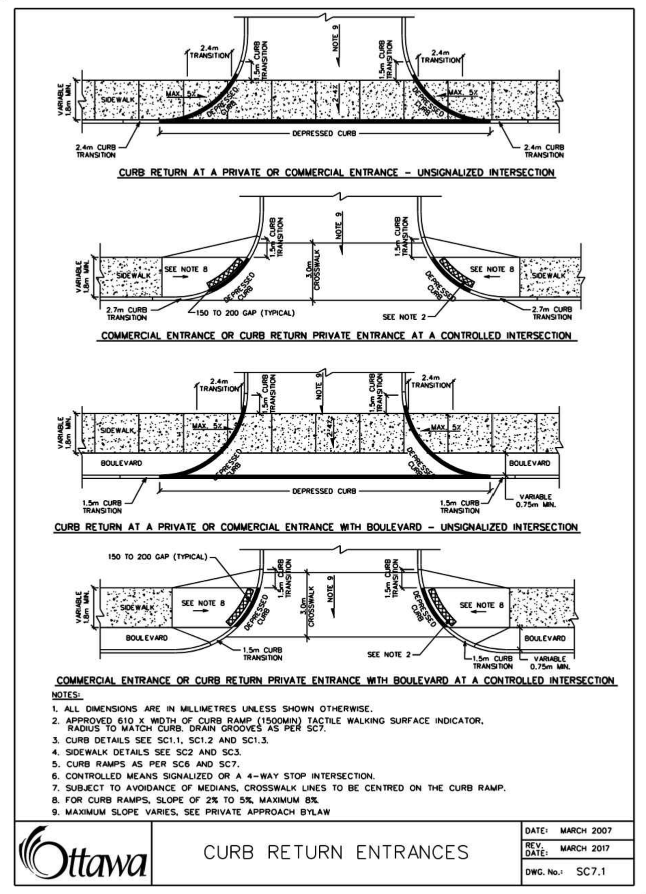
C702

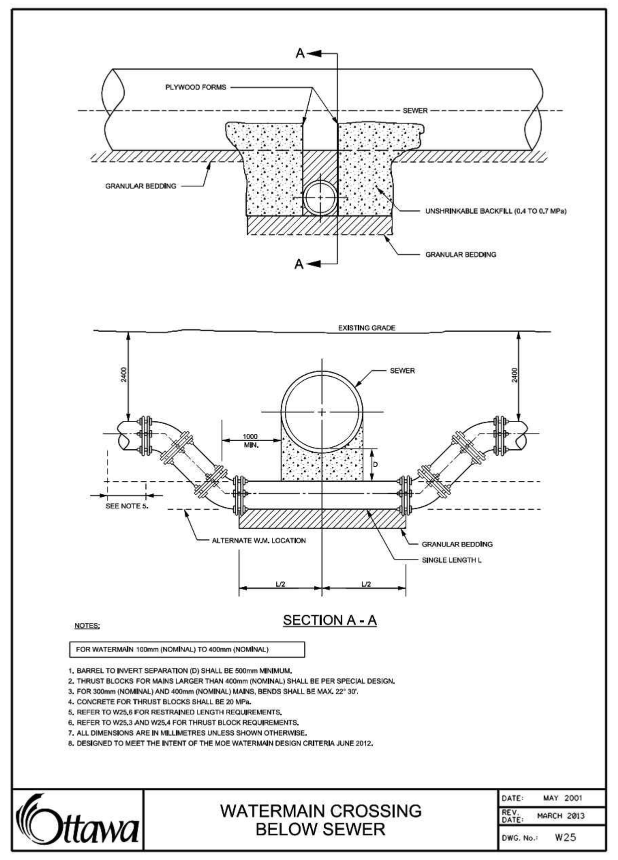


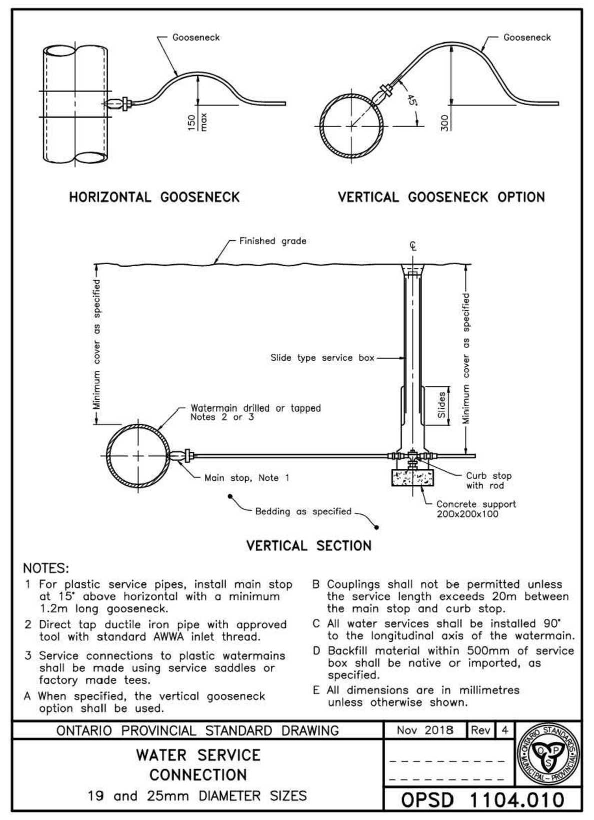



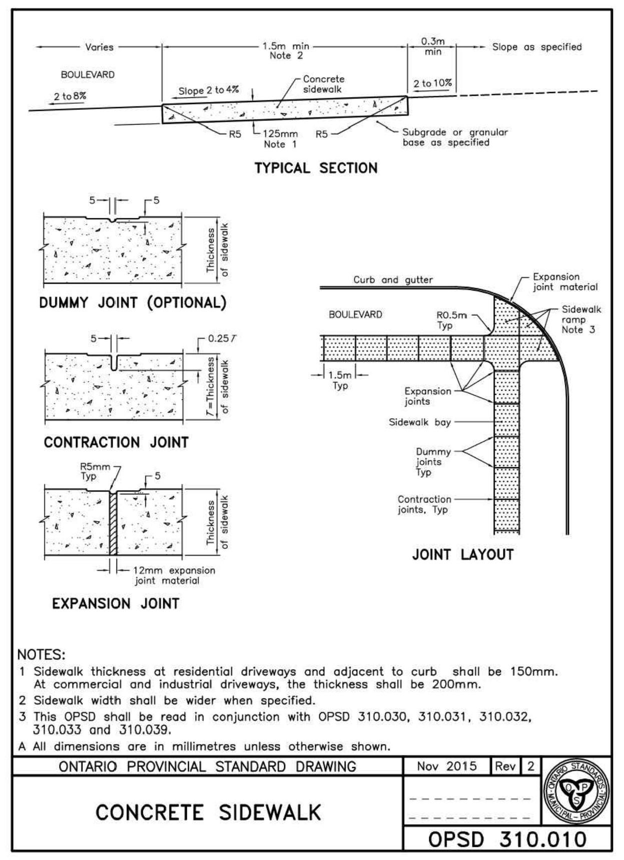



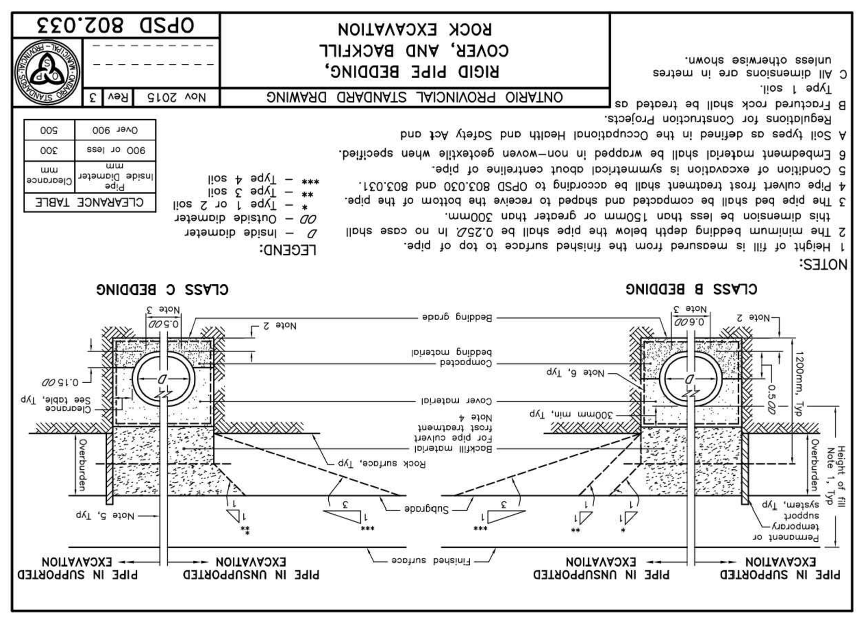



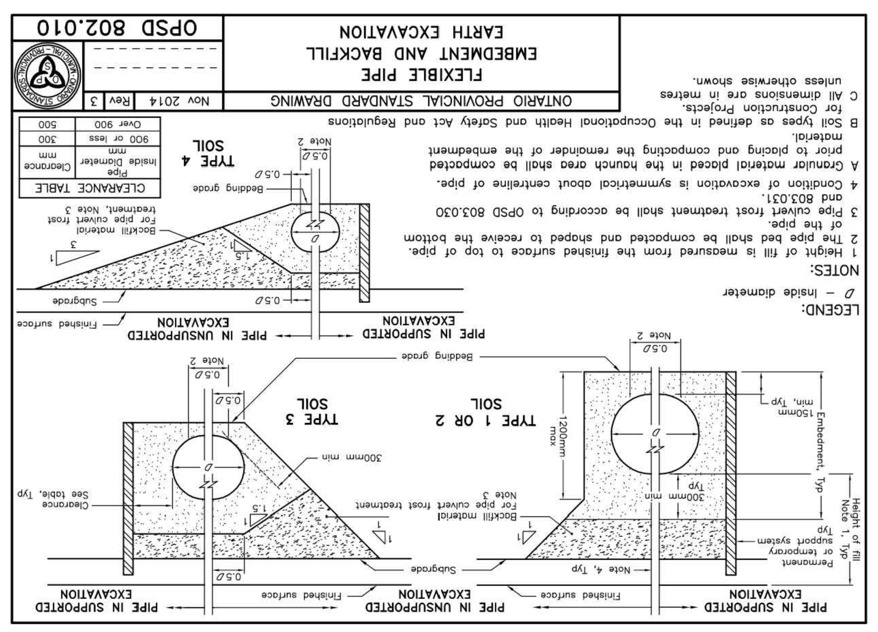




USE AND INTERPRETATION OF DRAWINGS

GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION ARE PART OF THE CONTRACT DOCUMENTS AND DESCRIBE USE AND INTENT OF THE DRAWING. 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 IF 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, CADD FILES OR OTHER ELECTRONIC MEDIA AND COPIED THERE OF 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 ILLUSTRATES 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. SUBMITTAL OF A BID TO PERFORM THIS WORK IS 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 ANY REPORTS, 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 COST, INCLUDING REASONABLE ATTORNEY'S FEES AND COST OF DEFENSE, ARISING FROM SUCH CHANGES.

IN ADDITION, THE CLIENT AGREES TO INCLUDE IN ANY CONTRACTS FOR CONSTRUCTION APPROPRIATE LANGUAGE THAT PROHIBITS THE CONTRACTOR OR ANY SUBCONTRACTORS OF ANY TIER FROM MAKING ANY CHANGES OR MODIFICATIONS TO LRL'S 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.

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 THE DESIGN INTENT THEY CONVEY, OR FOR PROBLEMS WHICH ARISE FROM OTHERS' FAILURE TO OBTAIN AND/OR FOLLOW THE ENGINEER'S GUIDANCE WITH RESPECT TO ANY ERRORS, OMISSIONS, INCONSISTENCIES AMBIGUITIES OR CONFLICTS WHICH ARE ALLEGED.

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

| No. | REVISIONS | BY | DATE |
|---|---|---|---|
| 01 | ISSUED FOR APPROVAL | T.H. | 04-19-2023 |

LICENSED PROFESSIONAL ENGINEER
V. JOHNSON
100510576
04-19-2023
PROVINCE OF ONTARIO

NOT AUTHENTIC UNLESS SIGNED AND DATED

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

CLIENT
MB GROUP ET ASSOCIES INC.

| DESIGNED BY: | DRAWN BY: | APPROVED BY: |
|---|---|---|
| T.H. | T.H. | V.B. |

PROJECT
SITE PLAN CONTROL DESIGN
630 MONTREAL ROAD
OTTAWA, ON

DRAWING TITLE
CONSTRUCTION DETAIL PLAN

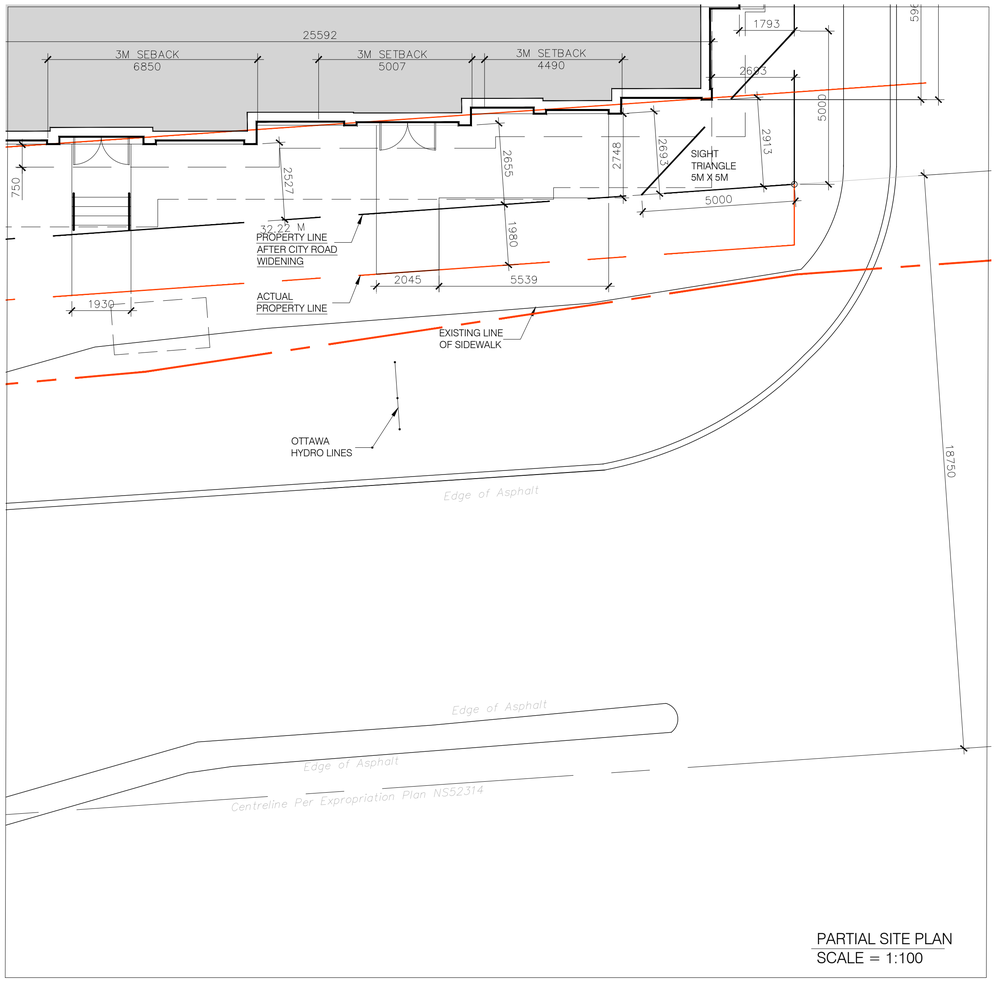
PROJECT NO.
210682

DATE
APRIL, 2023

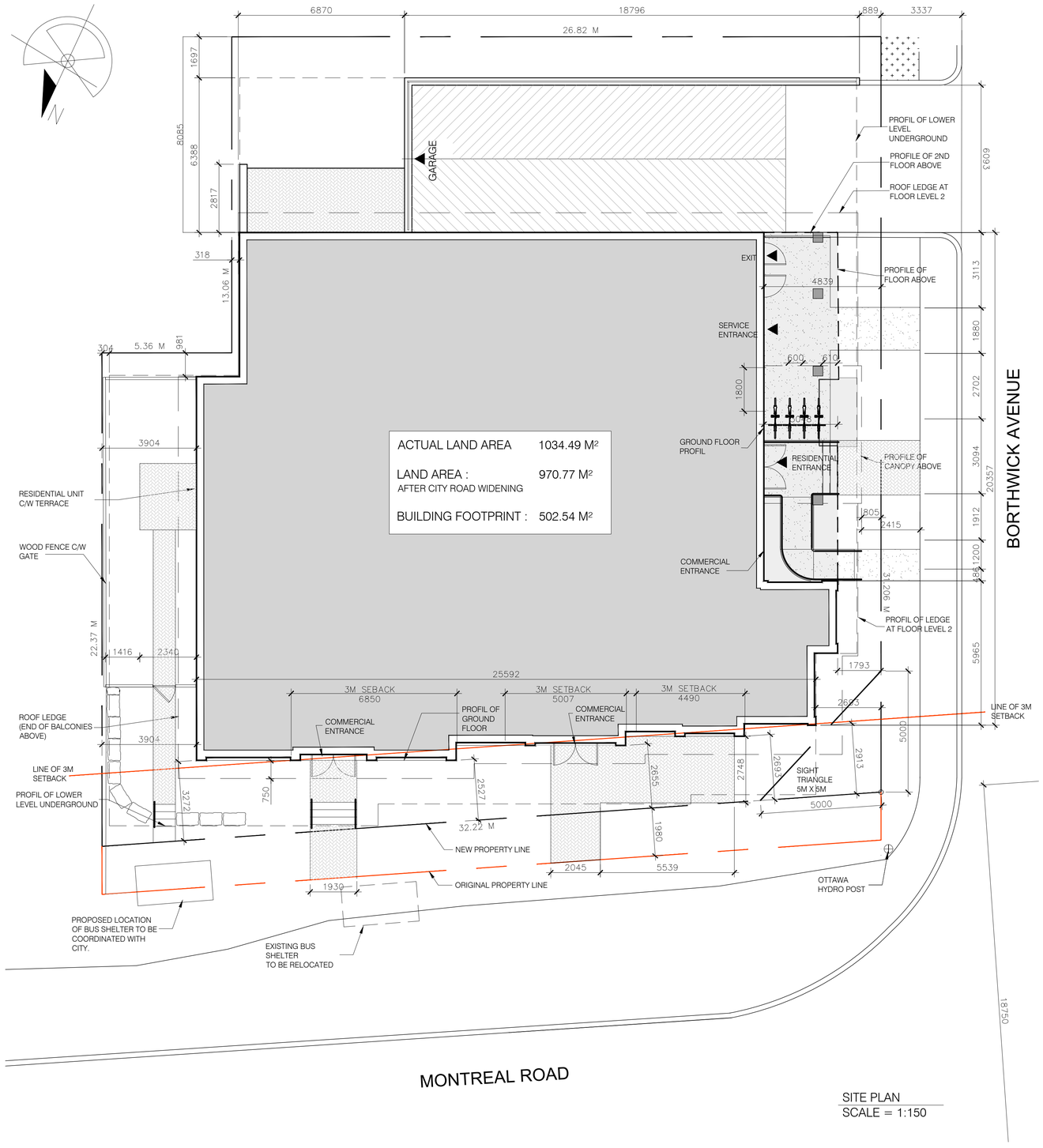
C901

# APPENDIX F

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




PARTIAL SITE PLAN
SCALE = 1:100




| | |
|---|---|
| ACTUAL LAND AREA | 1034.49 M² |
| LAND AREA : AFTER CITY ROAD WIDENING | 970.77 M² |
| BUILDING FOOTPRINT : | 502.54 M² |

SITE PLAN
SCALE = 1:150

**ZONING COMPLIANCE TABLE**

| Zoning Provision | Requirement | Proposed |
|---|---|---|
| Minimum **lot width** | No minimum | 32.2 m |
| Minimum **lot area** | No minimum | 970,77 m2 |
| Maximun **building height** | (ii) in any area up to and including 20 metres from a property line abutting a R4 residential zone | 30.1 m |
| | (iii) in any area over 20 metres and up to 30 metres from a property line abutting a R4 zone | 30.1 m |
| | (iv) in any area : 1. Outside of the areas identified in (i) through (iii) | 30.1 m |
| Minimum **front yard setback** | 0 m | 3.15 m |
| Minimum **interior setback** | (i) First 20 metres from the street: 3.0 m | 3.9 m |
| | (i) Beyond 20 metres from the street: 7.5 m | 0.32 m |
| Minimum **rear yard setback** | (i) Any building wall within 20 metres of a lot line abutting a public street: 3.0 m | 7.4 m |
| | All other cases: 7.5 m | 7.4 m |

| Zoning Provision | Requirement | Proposed |
|---|---|---|
| Minimum required **amenity area** Apartment Building, mid-high rise | Total Amenity Area: 6m2 per dwelling unit, and 10% of the gross floor area of each rooming unit. | 348 m2 |
| | Communal Amenity Area: A minimum of 50% of the required total amenity area | 174 m2 |
| Parking: Minimum **parking space** rate for Area X – Sec. 102, Table 101, dwelling, mid-high-rise apartment | 0.5 per dwelling unit (55 units x0.5) = 27.5 spaces | 28 parking spaces |
| Minimum **visitor parking** space rate for Area X, apartment dwelling low or mid-high-rise apartment – Sec. 102, Table 102 (iii) No visitor parking required for the first 12 units on a lot within areas X, Y, Z and B – Sec. 102(2) | 0.1 per dwelling unit (55 units - 12 spaces = 43 spaces) | 4 parking spaces |
| Minimum **parking retail store** space rate for Area X, retail store - Sec. 102, Table 102 | 1.25 per 100m2 of gross floor area (206.5 m2/100 m2 x 1.25 = 2.6 spaces) | 3 parking spaces |
| | **Note** 2 parking spaces are less then 2.6m wide Actual dimension is 2.49 m | |


Maître dans l'art du développement immobilier
MB Groupe Canada
DEVELOPPER

YVES LUSSIER ARCHITECT
263 IBERVILLE, GRANBY, QC
(514) 924-8306 OAA 10140

ONTARIO ASSOCIATION OF ARCHITECTS
YVES LUSSIER
LICENCE
10140


R A C I N E ▪ O T T A W A
630 Montréal Road, Ottawa, On

| | |
|---|---|
| LOT 45 AND PART OF LOTS 3, 4 & 5, REGISTEDED PLAN 343 (CITY OF OTTAWA) | |
| . ACTUAL LAND AREA | 970.77 M²* |
| *AFTER CITY ROAD WIDENING | |
| . BUILDING FOOTPRINT (GFA): | 502.55 M² |
| . NUMBER OF DWELLINGS: | 55 UNITS |

SITE PLAN
A 06 | 16
REVISION 6 / 17 -11 - 2022

6861-12-21-2020

NO DE DOSSIER 2020-117

371970, 5034005

TOPOGRAPHIC PLAN OF SURVEY OF

# LOT 45 AND PART OF LOTS 3, 4 & 5 REGISTERED PLAN 343 CITY OF OTTAWA

*FARLEY, SMITH & DENIS SURVEYING LTD. 2021*

Scale 1: 100

0 2.5 5 7.5 10 metres

## Metric Note

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

## Bearing Note

Bearings are astronomic and are referred to the easterly limit of Borthwick Avenue having a bearing of N 21° 34' 40" E as shown on Plan 5R-14833.

## Elevation Notes

1. Elevations shown are geodetic and are referred to Geodetic Datum CGVD-1928 :1978. (See FSD File No. 629-19)
2. It is the responsibility of the user of this information to verify that the job benchmark has not been altered or disturbed and that it's 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: C-21-10, E33e-01, 6004p&p, 6078p&p01, 10166p&p2, 10166p&p3 & 12574p&p01.
4. Sanitary and storm sewer grades were derived from field measurements and inverts were compiled from: City of Ottawa Utility Sheets.
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

| | | |
|---|---|---|
| ○ | = | Survey Monument Planted |
| ■ | = | Survey Monument Found |
| SIB | = | Standard Iron Bar |
| SSIB | = | Short Standard Iron Bar |
| IB | = | Iron Bar |
| (Wit) | = | Witness |
| Meas | = | Measured |
| (P1) | = | Registered Plan 343 |
| (P2) | = | Plan 5R-14833 |
| (P3) | = | Plan by (1287) dated August 26, 1986 (Job No. 490/86) |
| (P4) | = | Plan by (AOG) dated July 4, 1994 (Job No. 0-354-94) |
| (P5) | = | Plan 5R-3853 |
| ○ MH–ST | = | Maintenance Hole (Storm) |
| ○ MH–S | = | Maintenance Hole (Sanitary) |
| —— ST —— | = | Underground Storm Sewer |
| —— S —— | = | Underground Sanitary Sewer |
| —— W —— | = | Underground Water |
| —— P —— | = | Underground Power |
| —— G —— | = | Underground Gas |
| —— B —— | = | Underground Bell |
| —— TV —— | = | Underground Cable |
| —— OHW —— | = | Overhead Wires |
| ○ UP | = | Utility Pole |
| ○ AN | = | Anchor |
| □ CB | = | Catch Basin |
| □ GM | = | Gas Meter |
| ○ B | = | Bollard |
| △ S | = | Sign |
| □ | = | Air Conditioner |
| ○ M–W | = | Monitoring Well |
| Ø | = | Diameter |
| CLF | = | Chain Link Fence |
| CRW | = | Concrete Retaining Wall |
| SRW | = | Stone Retaining Wall |
| Inv. | = | Invert |
| Inv(City) | = | Invert From City of Ottawa Utility Sheets |
| T/G | = | Top of Grate |
| U/Eave | = | Underside of Eave |
| TpFdn | = | Top of Foundation |
| C/L | = | 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. |
| | = | Coniferous 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. |

**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., 2021.

### 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 3rd day of June, 2021.

Date

Emad Alrefaai
Ontario Land Surveyor

ASSOCIATION OF ONTARIO LAND SURVEYORS
PLAN SUBMISSION FORM
*V - 1 3 1 2 3*

THIS PLAN IS NOT VALID UNLESS IT IS AN EMBOSSED ORIGINAL COPY ISSUED BY THE SURVEYOR
In accordance with Regulation 1026, Section 29 (3).

*FARLEY, SMITH & DENIS SURVEYING LTD.*

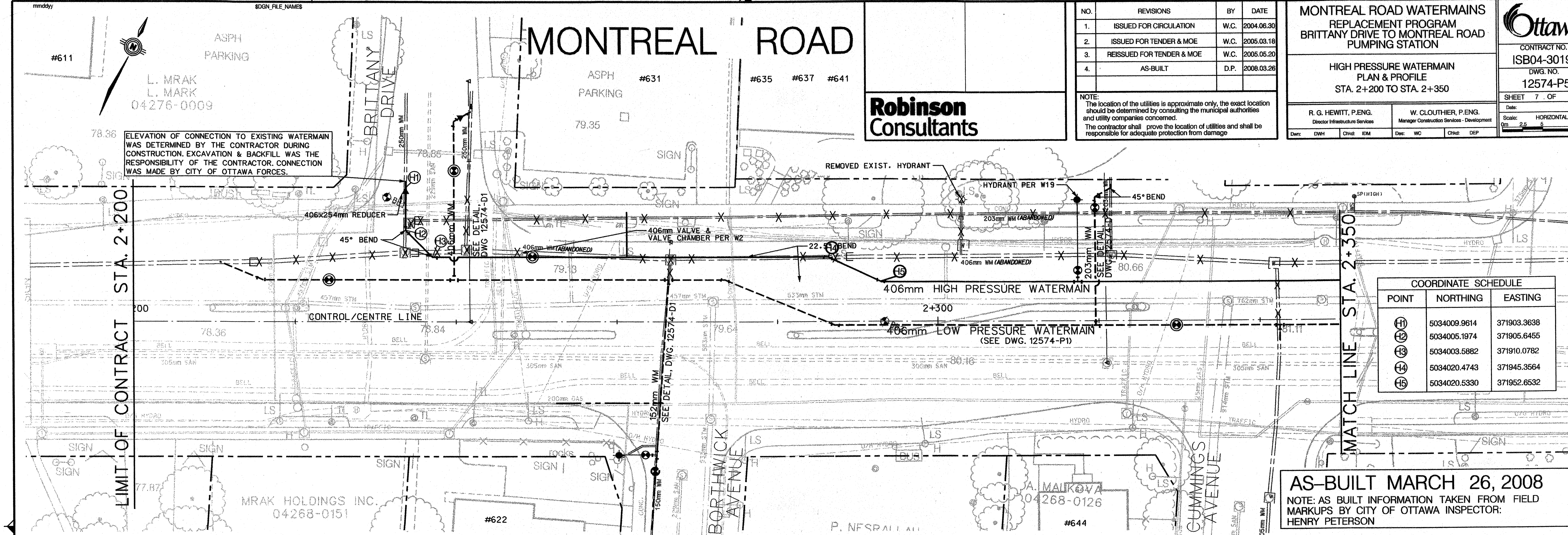
ONTARIO LAND SURVEYORS
CANADA LAND SURVEYORS

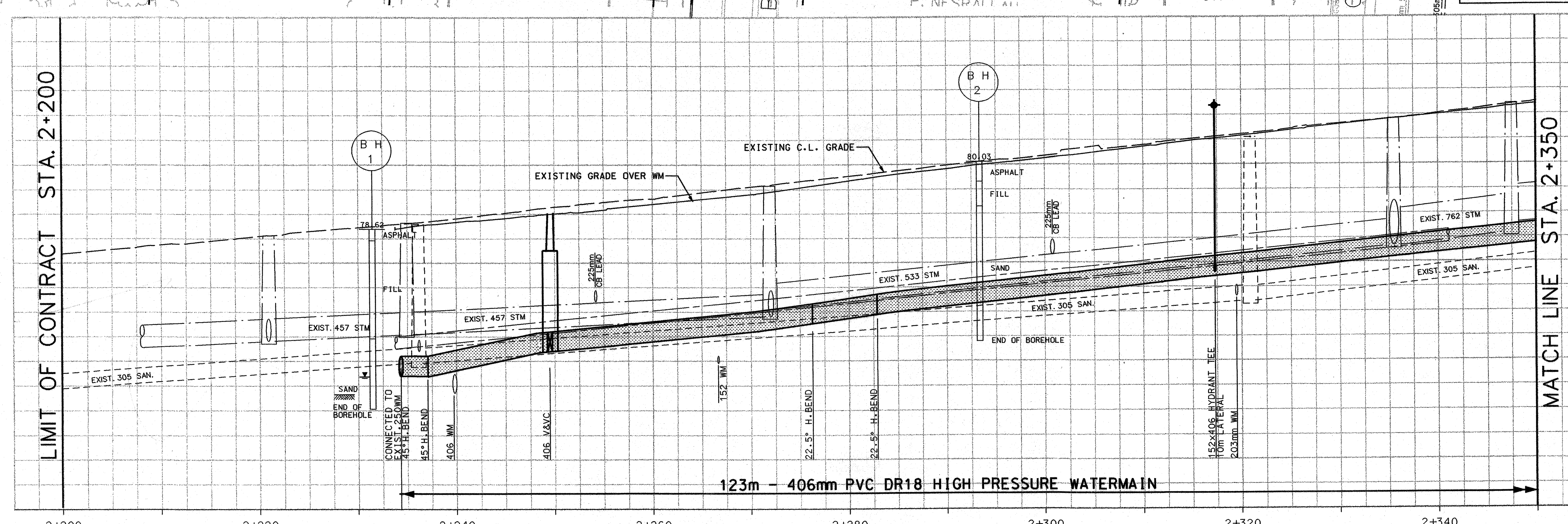
Unit 275, 30 COLONNADE ROAD, OTTAWA, ONTARIO K2E 7J6
TEL. (613) 727-8226 E-mail: fsdsurveys@bellnet.ca

FILE No. : 291-21

TOPO 24X36

W:\FILES 2021\210682\03 Background&ProjectInformation\01 TopographicalPlans\291-21_630 Montreal Rd_Lt45 Pl3,4&5 RP343_T_Fnoveau.dwg




| STATION | +200.0 | +220.0 | +234.3 | +237.1 | +240.0 | +249.5 | +260.0 | +276.3 | +280.0 | +282.9 | +300.0 | +317.3 | +320.0 | +340.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EXISTING GRADE OVER WATERMAIN | 78.18 | 78.54 | 78.79 | 78.84 | 78.90 | 79.13 | 79.31 | 79.68 | 79.76 | 79.83 | 80.17 | 80.55 | 80.60 | 81.01 |
| PROPOSED TOP OF WATERMAIN | | | 76.00 / 76.09 | 76.00 / 76.10 | 76.00 / 76.22 | 76.50 / 76.59 | 76.79 | 77.16 | 77.27 | 77.35 | 77.72 | 78.12 | 78.17 | 78.62 / 78.59 |

| | |
|---|---|
| EARTH EXCAVATION | |
| ROCK EXCAVATION | |
| EARTH FILL | |

| NO. | REVISIONS | BY | DATE |
|---|---|---|---|
| 1. | ISSUED FOR CIRCULATION | W.C. | 2004.06.30 |
| 2. | ISSUED FOR TENDER & MOE | W.C. | 2005.03.18 |
| 3. | REISSUED FOR TENDER & MOE | W.C. | 2005.05.20 |
| 4. | AS-BUILT | D.P. | 2008.03.26 |

NOTE:
The location of the utilities is approximate only, the exact location should be determined by consulting the municipal authorities and utility companies concerned.
The contractor shall prove the location of utilities and shall be responsible for adequate protection from damage

Robinson Consultants

# MONTREAL ROAD WATERMAINS
## REPLACEMENT PROGRAM BRITTANY DRIVE TO MONTREAL ROAD PUMPING STATION

HIGH PRESSURE WATERMAIN
PLAN & PROFILE
STA. 2+200 TO STA. 2+350

R. G. HEWITT, P.ENG.
Director Infrastructure Services

W. CLOUTHIER, P.ENG.
Manager Construction Services - Development

Dwn: DWH | Chkd: IDM | Des: WC | Chkd: DEP

Ottawa
CONTRACT NO. ISB04-3019
DWG. NO. 12574-P5
SHEET 7 . OF
Date:
Scale: HORIZONTAL 0m 2.5 5 10

| COORDINATE SCHEDULE | | |
|---|---|---|
| POINT | NORTHING | EASTING |
| H1 | 5034009.9614 | 371903.3638 |
| H2 | 5034005.1974 | 371905.6455 |
| H3 | 5034003.5882 | 371910.0782 |
| H4 | 5034020.4743 | 371945.3564 |
| H5 | 5034020.5330 | 371952.6532 |

## AS–BUILT MARCH 26, 2008
NOTE: AS BUILT INFORMATION TAKEN FROM FIELD MARKUPS BY CITY OF OTTAWA INSPECTOR: HENRY PETERSON

12574

ISSUED

DWG. FRAME 790mm x 534mm RMOC-06/93-WG

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# MONTREAL ROAD WATERMAINS
## REPLACEMENT PROGRAM
## BRITTANY DRIVE TO MONTREAL ROAD PUMPING STATION

LOW PRESSURE WATERMAIN
PLAN & PROFILE
STA. 2+200 TO STA. 2+350

Ottawa

CONTRACT NO. ISB04-3019
DWG. NO. 12574-P1
SHEET . OF
Date:
Scale: HORIZONTAL 0m 2.5 5 10

R. G. HEWITT, P.ENG. — Director Infrastructure Services
W. CLOUTHIER, P.ENG. — Manager Construction Services - Development

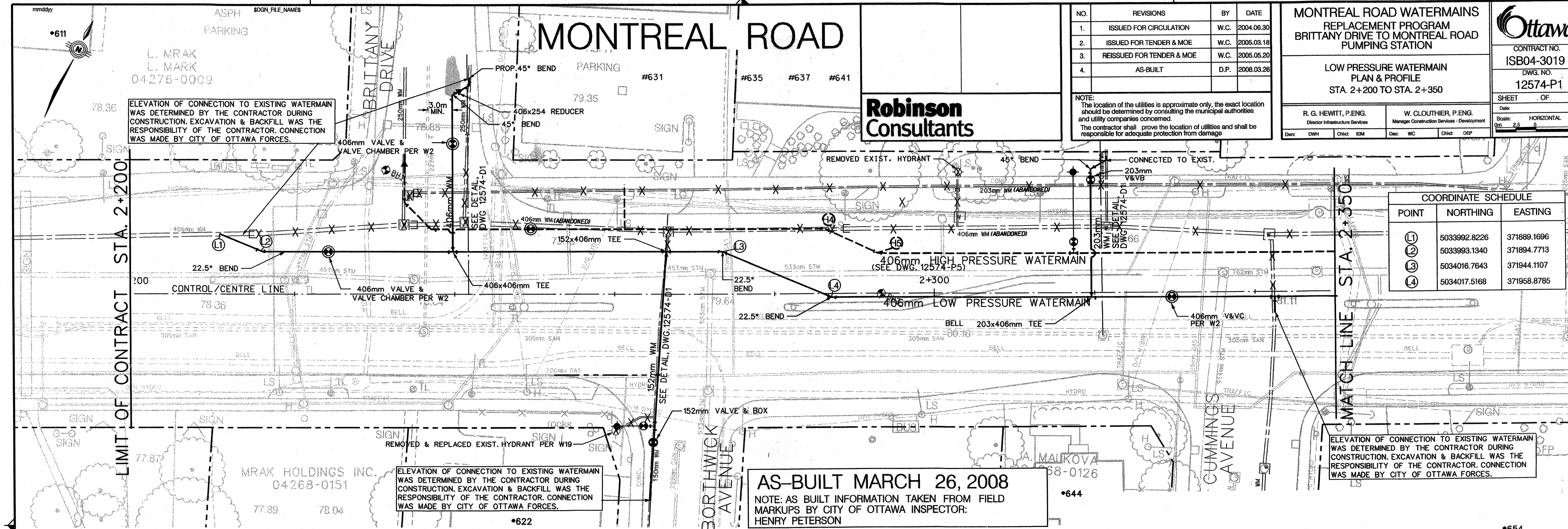
Dwn: DWH | Chkd: IDM | Des: WC | Chkd: DEP

Robinson Consultants

| NO. | REVISIONS | BY | DATE |
|---|---|---|---|
| 1. | ISSUED FOR CIRCULATION | W.C. | 2004.06.30 |
| 2. | ISSUED FOR TENDER & MOE | W.C. | 2005.03.18 |
| 3. | REISSUED FOR TENDER & MOE | W.C. | 2005.05.20 |
| 4. | AS-BUILT | D.P. | 2008.03.26 |

NOTE:
The location of the utilities is approximate only, the exact location should be determined by consulting the municipal authorities and utility companies concerned.
The contractor shall prove the location of utilities and shall be responsible for adequate protection from damage

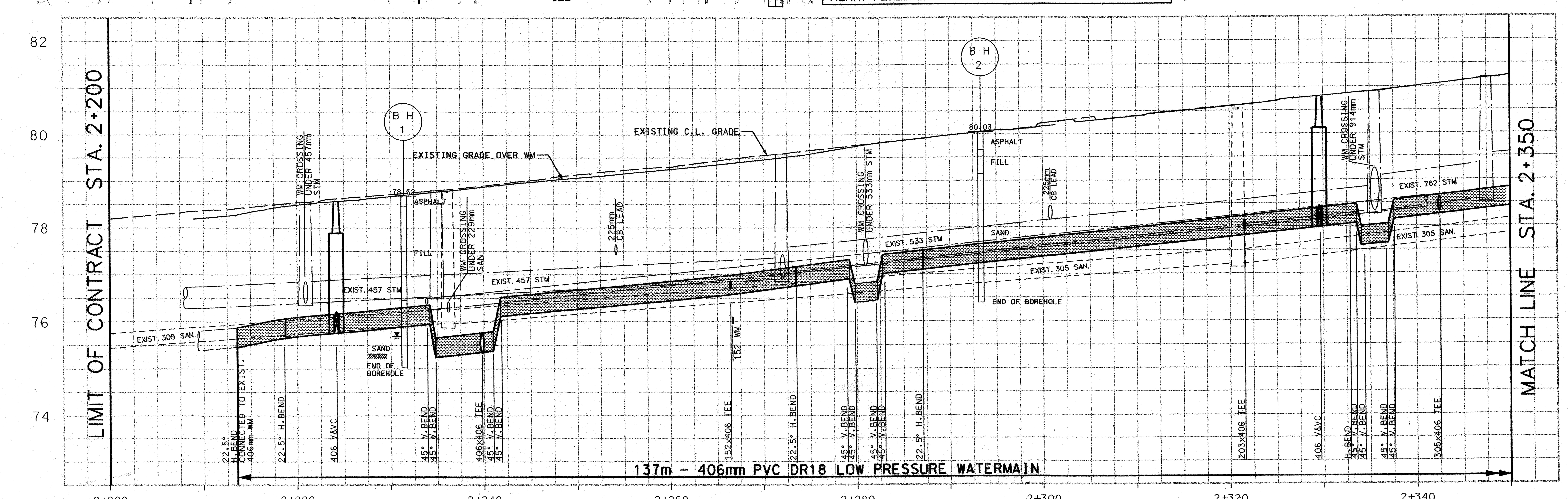
# MONTREAL ROAD




| COORDINATE SCHEDULE | | |
|---|---|---|
| POINT | NORTHING | EASTING |
| L1 | 5033992.8226 | 371889.1696 |
| L2 | 5033993.1340 | 371894.7713 |
| L3 | 5034016.7643 | 371944.1107 |
| L4 | 5034017.5168 | 371958.8785 |

## AS-BUILT MARCH 26, 2008

NOTE: AS BUILT INFORMATION TAKEN FROM FIELD MARKUPS BY CITY OF OTTAWA INSPECTOR: HENRY PETERSON




| | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EXISTING GRADE OVER WATERMAIN | 78.18 | 78.41 | 78.52 78.54 | 78.63 | 78.79 78.80 | 78.90 78.92 78.94 | 79.31 | 79.47 | 79.62 | 79.75 79.76 | 79.81 79.82 | 79.91 | 80.17 | 80.60 80.63 | 80.80 | 80.87 80.88 | 80.93 80.95 | 81.01 | 81.06 | |
| PROPOSED TOP OF WATERMAIN | | 75.87 | 76.06 76.08 | 76.16 | 76.35 75.65 | 75.77 75.79 76.52 | 76.85 | 76.98 | 77.15 77.17 | 77.31 76.80 | 76.85 77.42 | 77.51 | 77.78 | 78.19 78.22 | 78.39 | 78.06 78.48 78.00 | 78.05 78.55 | 78.61 | 78.66 78.88 | |
| STATION | +200.0 | +213.6 | +218.7 +220.0 | +224.2 | +234.2 +234.8 | +240.0 +241.0 +241.8 | +260.0 | +266.5 | +275 +273.5 | +278 +278.6 +279 | +282.5 +282.6 +273.5 | +287.1 | +300.0 | +320.0 +321.6 | +329.6 | +333 +333.6 +334.1 | +337.0 +337.6 | +340.0 | +342.5 | |

| EARTH EXCAVATION | |
|---|---|
| ROCK EXCAVATION | |
| EARTH FILL | |

DWG. FRAME 790mm x 534mm RMOC-06/93-WG

ISSUED

12574

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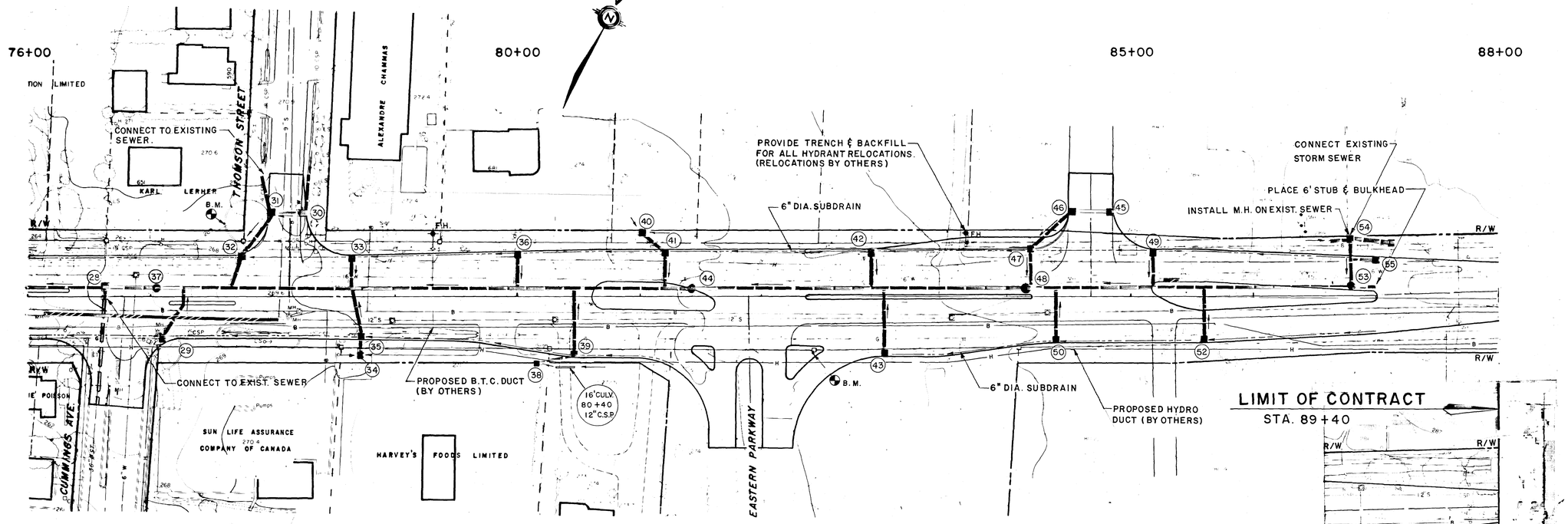
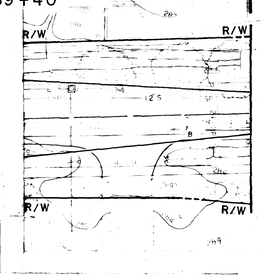
CITY OF OTTAWA

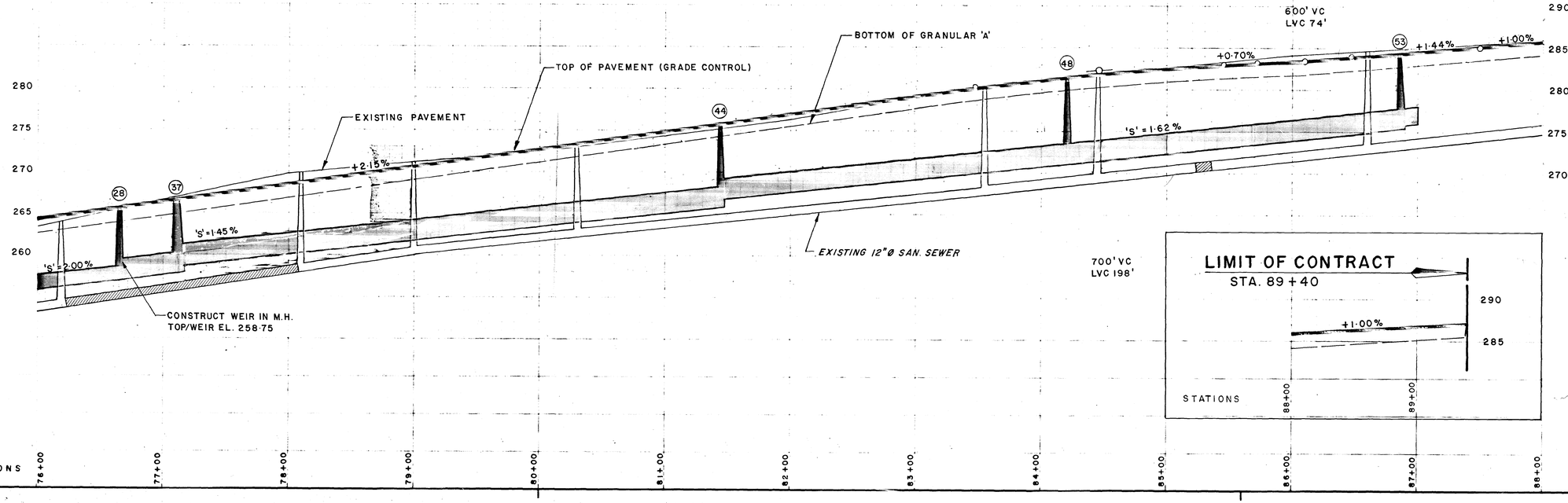



LIMIT OF CONTRACT
STA. 89+40




B.M. ELEV. 269·71
CUT 'X' IN CURB O/S 58'LT.
STA. 77+65

B.M. ELEV. 276·65
M.T.C. CONTROL MONUMENT
O/S 46'RT. STA. 82+45




LIMIT OF CONTRACT
STA. 89+40




## MANHOLE AND CATCHBASIN DATA

| No. | STATION | OFFSET | TYPE | | ELEVATION | |
|---|---|---|---|---|---|---|
| | | | STRUCT. | COVER | GRATE | LOW INV. |
| 28 | 76+65 | 7'LT | S-3·4 | S-3·7 | 265·31 | 257·06 |
| 29 | 77+10 | 34'RT | MR-133 | S-3·18, S-3·7 | 265·69 | 262·27 |
| 30 | T.O+66 | 15'RT | MR-134 | S-3·18 | 269·02 | 264·22 |
| 31 | T.O+70 | 15'LT | MR-134 | S-3·18 | 269·03 | 263·83 |
| 32 | 77+76 | 34'LT | MR-134 | S-3·18 | 267·22 | 261·02 |
| 33 | 78+55 | 32'LT | MR-134 | S-3·16 | 268·77 | 263·07 |
| 34 | 78+73 | 52'RT | S-3·11 | S-3·15 | 269·81 | 265·56 |
| 35 | 78+70 | 33'RT | MR-133 | S-3·18, S-3·7 | 269·29 | 264·67 |
| 36 | 80+0 | 36 LT | MR-134 | S-3·18 | 271·99 | 266·89 |
| 37 | 77+04 | 7'LT | S-3·4 | S-3·7 | 266·18 | 257·68 |
| 38 | 80+15 | 58'RT | S-3·11 | J-3·4 | 271·16 | 267·86 |
| 39 | 80+45 | 50'RT | MR-134 | S-3·18 | 272·64 | 267·14 |
| 40 | 81+00 | 55'LT | J-3·5 | J-3·4 | 272·62 | 270·79 |
| 41 | 81+20 | 38 LT | MR-133 | S-3·18 | 274·59 | 272·04 |
| 42 | 82+81 | 35'LT | MR-134 | S-3·18 | 278·19 | 273·39 |
| 43 | 83+00 | 49'RT | MR-134 | S-3·18 | 278·08 | 273·28 |
| 44 | 81+41 | 9'LT | S-3·4 | S-3·7 | 275·69 | 265·64 |
| 45 | H.O+65 | 18'RT | MR-134 | S-3·18 | 281·88 | 277·48 |
| 46 | H.O+70 | 17'LT | MR-134 | S-3·18 | 280·83 | 276·13 |
| 47 | 84+16 | 41'LT | MR-134 | S-3·18 | 280·82 | 275·91 |
| 48 | 84+14 | 7'LT | S-3·4 | S-3·7 | 280·36 | 270·98 |
| 49 | 85+16 | 38'LT | MR-134 | S-3·18 | 281·91 | 276·41 |
| 50 | 84+33 | 38'RT | MR-134 | S-3·18 | 280·01 | 275·41 |
| | | | | | | |
| 52 | 85+60 | 38'RT | MR-134 | S-3·18 | 282·31 | 277·21 |
| 53 | 86+87 | 6'LT | S-3·4 | S-3·7 | 284·51 | 275·56 |
| 54 | 86+83 | 45'LT | S-3·13 | S-3·18 | 284·23 | 278·23 |
| 55 | 87+08 | 42' LT | S-3·11 | S-3·18, S-3·7 | 284·08 | 280·63 |

## SEWER DATA

| No. to No. | | SIZE | LENGTH | CLASS | INVERTS | |
|---|---|---|---|---|---|---|
| | | | | | INLET | OUTLET |
| 28 | EXIST | 36" | 6' | C-76-IV | 257·00 | 256·8± |
| 29 | TRUNK | 9" | 39' | C-14-ES | 261·26 | 259·5± |
| INLET | 30 | 12" | 30' | C-14-ES | 269·0± | 264·11 |
| 30 | 31 | 12" | 28' | C-14-ES | 264·11 | 263·61 |
| EXIST. | 31 | 12" | 30' | C-14-ES | 264·1± | 263·61 |
| 31 | 32 | 15" | 50' | C-14-ES | 263·61 | 262·12 |
| 32 | TRUNK | 15" | 25' | C-14-ES | 262·12 | 260·0± |
| 33 | 37 | 9" | 25' | C-14-ES | 264·27 | 262·30 |
| 34 | 35 | 12" | 14' | C-14-ES | 264·88 | 264·4± |
| 35 | 37 | 12" | 39' | C-14-ES | 264·37 | 262·30 |
| 36 | TRUNK | 9" | 29' | C-14-ES | 267·15 | 264·5± |
| 37 | 28 | 30" | 195' | C-76-IV | 260·86 | 257·00 |
| 38 | 39 | 12" | 30' | C-14-ES | 267·40 | 267·15 |
| 39 | TRUNK | 12" | 56' | C-14-ES | 267·15 | 265·0± |
| 40 | 41 | 12" | 26' | C-14-ES | 268·50 | 268·18 |
| 41 | TRUNK | 12" | 30' | C-14-ES | 268·18 | 267·9± |
| 42 | TRUNK | 9" | 30' | C-14-ES | 273·20 | 270·7± |
| 43 | TRUNK | 9" | 56 | C-14-ES | 273·28 | 270·4± |
| 44 | 37 | 30" | 285' | C-76-IV | 265·68 | 261·06 |
| 45 | 46 | 12" | 34' | C-14-ES | 276·97 | 276·54 |
| 46 | 47 | 12" | 48' | C-14-ES | 276·54 | 275·91 |
| 47 | 48 | 12" | 30' | C-14-ES | 275·91 | 272·0± |
| 48 | 44 | 30" | 275' | C-76-IV | 271·14 | 266·68 |
| 49 | TRUNK | 9" | 30' | C-14-ES | 277·16 | 274·0± |
| 50 | TRUNK | 9" | 44 | C-14-ES | 276·20 | 273·0± |
| 51 | 52 | 12" | 24' | C-14-ES | 277·50 | 277·20 |
| 52 | TRUNK | 12" | 44' | C-14-ES | 277·20 | 274·0± |
| 53 | 48 | 30" | 265' | C-76-IV | 275·43 | 271·14 |
| INLET | 53 | 27" | 16' | C-76-IV | 275·83 | 275·68 |
| 54 | 53 | 18" | 40' | C-76-IV | 279·40 | 278·00 |
| INLET | 54 | 12" | 8' | C-14-ES | 272·0± | 279·40 |
| 55 | TRUNK | 9" | 15' | C-14-ES | 279·23 | 278·5± |

REGISTERED PROFESSIONAL ENGINEER M. A. RICHARDS PROVINCE OF ONTARIO

REGISTERED PROFESSIONAL ENGINEER P. TURNER PROVINCE OF ONTARIO

McCORMICK, RANKIN & ASSOCIATES LIMITED
CONSULTING ENGINEERS

AS BUILT

| NO. | REVISION | BY | DATE |
|---|---|---|---|
| 6 | BRITTANY DR. & ANTRANCES | H.R. | JULY,79 |
| 5 | MEDIAN ADDITIONS | H.R. | JULY,79 |
| 1 | WEIR IN M.H. No. 28 | H.R. | JUNE,79 |

THE REGIONAL MUNICIPALITY OF
OTTAWA—CARLETON
*Transportation Department*

# MONTREAL ROAD

ST. LAURENT BOULEVARD TO THE EASTERN PARKWAY

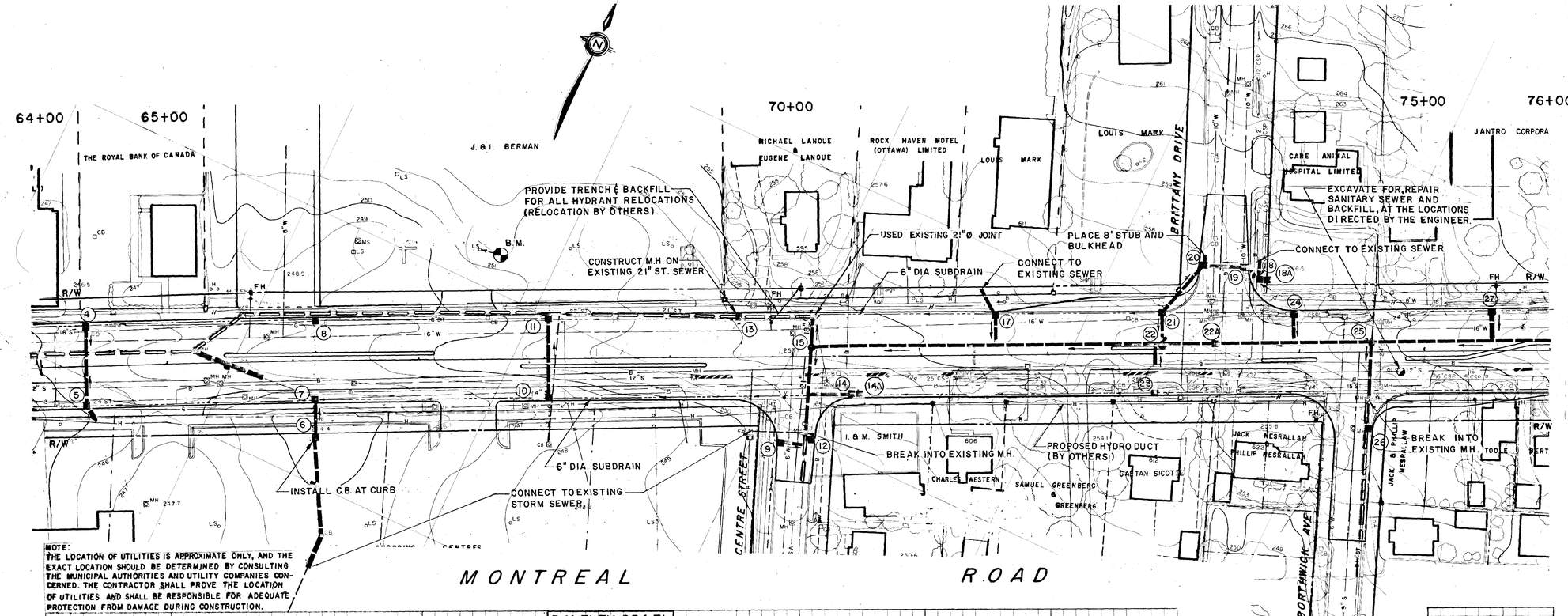
## STORM & SANITARY SEWER

STA. 76+00 TO STA. 89+40

| | | |
|---|---|---|
| Des. P.T. | Chkd. M.R. | N.H. ORR P. ENG. |
| Dwn. H.R. | Chkd. P.T. | *Director Design & Construction* |
| Date: MAY, 1977 | | |
| Scale: Horiz. 1" = 40' Vert. 1" = 6' | | W.B. Severidge *Chief Design Engineer* |
| CONTRACT NO. 77-533 | | DWG. NO. R979-R-8 |
| | | SHEET 8 OF 14 |

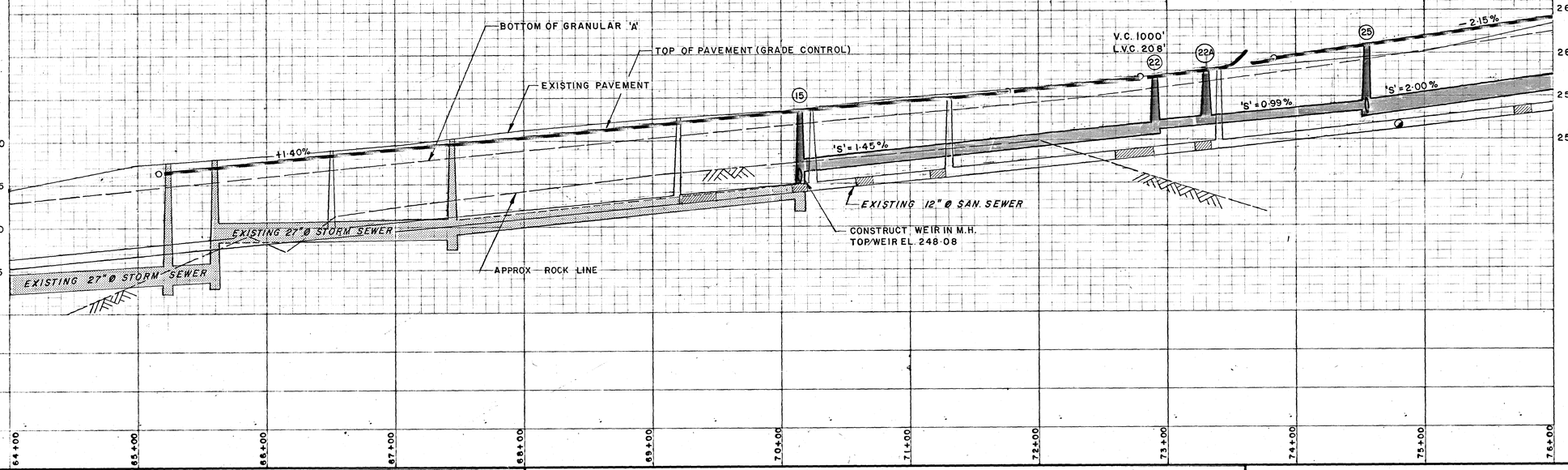
10166 R9727

# CITY OF OTTAWA




NOTE:
THE LOCATION OF UTILITIES IS APPROXIMATE ONLY, AND THE EXACT LOCATION SHOULD BE DETERMINED BY CONSULTING THE MUNICIPAL AUTHORITIES AND UTILITY COMPANIES CONCERNED. THE CONTRACTOR SHALL PROVE THE LOCATION OF UTILITIES AND SHALL BE RESPONSIBLE FOR ADEQUATE PROTECTION FROM DAMAGE DURING CONSTRUCTION.

B.M. ELEV. 254.71
TOP OF S.E. FLANGE LIGHT STD. STEINBERG PARKING LOT O/S 87' LT. STA. 67+40




## MANHOLE AND CATCHBASIN DATA

| No. | STATION | OFFSET | TYPE | | ELEVATION | |
|---|---|---|---|---|---|---|
| | | | STRUCT. | COVER | GRATE | LOW INV. |
| 4 | 64+38 | 33' LT | MR-134 | S-3.18 | 244.52 | 237.97 |
| 5 | 64+40 | 33' RT | MR-134 | S-3.18 | 244.42 | 240.42 |
| 6 | 66+20 | 54' RT | S-3.11 | S-3.15 | 244.04 | 239.54 |
| 7 | 66+19 | 33' RT | MR-134 | S-3.18 | 247.20 | 240.10 |
| 8 | 66+19 | 33' LT | MR-134 | S-3.18 | 247.35 | 239.95 |
| 9 | C.O+62 | 15' RT | MR-134 | S-3.4 | 251.50 | 245.58 |
| 10 | 68+00 | 31' RT | MR-134 | S-3.18 | 249.84 | 243.64 |
| 11 | 68+00 | 33' LT | MR-134 | S-3.18 | 249.72 | 244.07 |
| 12 | C.O+69 | 15' LT | MR-134 | S-3.18 | 251.60 | 247.12 |
| 13 | 69+60 | 32' LT | S-3.1 | S-3.18 | 251.98 | 242.28 |
| 14 | 70+45 | 34' RT | MR-134 | S-3.18,S-3.7 | 252.92 | 248.12 |
| 15 | 70+26 | 8' LT | S-3.4 | S-3.7 | 253.39 | 246.29 |
| 14A | 71+40 | 34' RT | MR-133 | S-3.18,S-3.7 | 252.92 | 248.02 |
| 17 | 71+60 | 33' LT | MR-134 | S-3.18 | 254.60 | 249.85 |
| 18 | B.O+60 | 29' RT | S-3.11 | S-3.15 | 254.56 | 250.13 |
| 19 | B.O+70 | 19' RT | S-3.1 | S-3.18 | 258.39 | 251.94 |
| 20 | B.O+70 | 20' LT | S-3.1 | S-3.18 | 258.50 | 251.1± |
| 21 | 72+95 | 32' LT | S-3.13 | S-3.18 | 256.92 | 250.91 |
| 22 | 72+90 | 7' LT | S-3.4 | S-3.7 | 257.69 | 250.44 |
| 23 | 72+84 | 32' RT | MR-133 | S-3.18,S-3.7 | 256.83 | 253.58 |
| 24 | 73+95 | 33' LT | MR-134 | S-3.18 | 258.98 | 254.38 |
| 25 | 74+55 | 8' LT | S-3.1 | S-3.7 | 260.88 | 252.28 |
| 26 | B.O+60 | 14' LT | MR-134 | S-3.18 | 258.25 | 253.95 |
| 27 | 75+54 | 32' LT | MR-133 | S-3.18,S-3.7 | 262.24 | 255.99 |
| 22A | 73+33 | 6' LT | S-3.1 | | 258.35 | 249.85 |
| 18A | B.O+62 | 30' RT | S-3.1 | | | |

## SEWER DATA

| No. to No. | | SIZE | LENGTH | CLASS | INVERTS | |
|---|---|---|---|---|---|---|
| | | | | | INLET | OUTLET |
| 4 | TRUNK | 9" | 22' | C-14-ES | 239.69 | 234.0± |
| 5 | TRUNK | 9" | 42' | C-14-ES | 239.69 | 234.0± |
| 6 | 7 | 12" | 24' | C-14-ES | 240.00 | 239.88 |
| 7 | 8 | 12" | 64' | C-14-ES | 239.60 | 239.48 |
| 8 | TRUNK | 12" | 4' | C-14-ES | 239.48 | 239.4± |
| 10 | 11 | 12" | 64' | C-14-ES | 244.82 | 243.86 |
| 11 | TRUNK | 12" | ' | C-14-ES | 243.86 | 240.5± |
| 12 | TRUNK | 9" | 6' | C-14-ES | 246.83 | 245.4± |
| 9 | TRUNK | 9" | 22' | C-14-ES | 246.72 | 245.4± |
| 14 | TRUNK | 9" | 38' | C-14-ES | 248.47 | 246.3± |
| 15 | EXIST. | 18" | 25' | C-76-IV | 246.58 | 246.20 |
| 16 | TRUNK | 9" | 39' | C-14-ES | 249.73 | 248.7± |
| 17 | TRUNK | 9" | 25' | C-14-ES | 250.01 | 249.0± |
| 18 | 19 | 12" | 16' | C-14-ES | 252.10 | 251.92 |
| 19 | 20 | 12" | 34' | C-14-ES | 251.92 | 251.58 |
| 20 | 21 | 18" | 50' | C-76-IV | 251.32 | 250.82 |
| 21 | 22 | 18" | 25' | C-76-IV | 250.82 | 250.57 |
| 22 | 15 | 21" | 275' | C-76-IV | 250.57 | 246.58 |
| 23 | TRUNK | 9" | 39' | C-14-ES | 253.22 | 252.0± |
| 24 | TRUNK | 9" | 25' | C-14-ES | 254.21 | 252.6± |
| 25 | 22 | 18" | 165' | C-76-IV | 252.30 | 250.67 |
| 25 | EXIST. | 21" | 46' | C-76-IV | 252.30 | 251.80 |
| 26 | EXIST. | 9" | 4' | C-14-ES | 253.36 | 252.0± |
| 27 | TRUNK | 9" | 25' | C-14-ES | 258.14 | 256.5± |
| 15 | EXIST. | 21" | 68' | C-76-IV | 246.20 | 245.56 |
| EXIST. | 10 | 12" | 32' | C-14-ES | 245.50 | 244.82 |
| EXIST. | 9 | 9" | 20' | C-14-ES | 246.8± | 246.72 |
| 26 | 25 | 21" | 210' | C-76-IV | 257.00 | 252.80 |
| EXIST. | 20 | 18" | 8' | C-76-IV | 252.7± | 251.58 |

McCORMICK, RANKIN & ASSOCIATES LIMITED
CONSULTING ENGINEERS

AS BUILT

| NO. | REVISION | BY | DATE |
|---|---|---|---|
| 6 | BRITTANY DR. & ENTRANCES | H. R. | JULY, 79 |
| 5 | MEDIAN ADDITIONS | H. R. | JULY, 79 |
| 1 | SEWER DIA'S. & M.H. No. 15 WEIR | H. R. | JUNE, 79 |

THE REGIONAL MUNICIPALITY OF OTTAWA—CARLETON
*Transportation Department*

REGISTERED PROFESSIONAL ENGINEER M. J. RICHARDS PROVINCE OF ONTARIO

REGISTERED PROFESSIONAL ENGINEER P. TURNER PROVINCE OF ONTARIO

# MONTREAL ROAD

ST. LAURENT BOULEVARD TO THE EASTERN PARKWAY

## STORM & SANITARY SEWER STA. 64+00 TO STA. 76+00

| | | |
|---|---|---|
| Des: P. T. | Chkd: M.R. | N.H. ORR P. ENG. |
| Dwn: H. R. | Chkd: P.T. | *Director Design & Construction* |
| Date: MAY, 1977 | | W.L. Bevington *Chief Design Engineer* |
| Scale: Horiz. 1" = 40' Vert. 1" = 6' | | |

CONTRACT NO. 77-533

DWG. NO. R979-R-7

SHEET 7 OF 14

MONTREAL ROAD
See Plan E-4-C
WILSON STREET
See Plan D-8-c
EXISTING 16" W/M
8" W.M.
UNDERGROUND BELL TEL. CONDUIT
EXISTING 12" CONC. PIPE SANITARY SEWER
UNDERGROUND BELL TELEPHONE CONDUIT
PROPOSED 21" STORM SEWER 236.70'
EXISTING 9" CONCRETE PIPE SANITARY SEWER 231.2'
PROPOSED 24" CONCRETE PIPE STORM 229.80
EXISTING 9" CONCRETE PIPE SANITARY SEWER 300.0'
NEW M.H.
237.10'
EXISTING 9" CONCRETE PIPE SANITARY SEWER 214.5'
9" C.P. SANITARY SEWER 86.1'
EXISTING 9" CONCRETE PIPE SANITARY SEWER 298.0'
6" W.M.
6" WATER MAIN
PROPOSED 24" CONCRETE PIPE 325.10'
EXISTING 4" GAS MAIN
4" GAS MAIN
PARKING LOT Asphalt
GARAGE
609
625
635
645
673
675
677
679 & 685
687
689
662
GERARD & GERARD #5
616 618 620 622 624 626 628 630 632
638 640 642 644 646 648 650 652 654
670 672 676 682 690 692
Crushed Stone
Picket Fence
Wooden Fence
12" Culvert
18" Culvert
24" Culvert
9" CONCRETE PIPE SANITARY SEWER
GRADIENT: 1 in 42.4 or 2.36%
GRADIENT: 1 in 943.4 or 0.106%
GRADIENT: 1 in 119 or 0.84%
GR: 1 in 323 or 0.31%
GRADIENT: 1 in 133.3 or 0.75%
12" SANITARY SEWER
Frame 258.61
Frame 249.95
Frame 247.79
Frame 247.26
Frame 246.89
Frame 243.78
SAND
BLACK MUCK
HARD PAN
HARD SAND
HARD
TOP W.M.
APPROX. ROCKLINE
250
240
230
PROPOSED 21" CONC. PIPE CLASS III STORM SEWER
GRADIENT: 1 in 50 or 2.0%
PROPOSED 24" C.P. CLASS III STORM SEWER
GRADIENT: 1 in 250 or 0.4%
PROPOSED 24" CONCRETE
GRADIENT: 1 in 250 or 0.4%
PIPE CLASS III STORM SEWER
GRADIENT: 1 in 153.8 or 0.65%
PROPOSED
GRADIENT:
257.20 253.10 250.10 248.60 248.40 248.10 247.70 247.20 246.60 243.50 244.70 243.90
245.67 240.18 239.86 238.05 237.78 235.54
0+00 1+00 1+17 2+00 3+00 3+48 4+00 5+00 5+35 6+00 6+48 7+00 8+00 8+63 9+00 9+49 10+00 11+00 12+00 12+47
KEUFFEL & ESSER CO. NEW YORK
PROFILE PLATE B 4 X 30

MONTREAL ROAD
See Plan E-4-C
WILSON STREET
See Plan D-8-C
EXISTING 16" W.M.
PIPE SANITARY SEWER
UNDERGROUND BELL TELEPHONE CONDUIT
EXISTING 12" CONC.
21" Class III connection with concrete inlet at Montreal Rd.
PROPOSED 21" STORM SEWER
EXISTING 9" CONCRETE PIPE SANITARY SEWER
231.2'
300.0'
M.H. FOUNDED BY CENTRAL RATS
214.5'
9" C.P. SANITARY SEWER
86.1'
298.0'
287.2'
6" W.M.
6" WATER MAIN
PROPOSED 24" CONCRETE PIPE STORM SEWER
EXISTING 4" GASMAIN
4" GAS MAIN
PARKING LOT Asphalt
Wooden Fence
Picket Fence
Crushed Stone
Stone Wall
GARAGE
Laneway
GERARD & GERARD #5
12" Culvert
18" Culvert
Ditch
609
625
635
645
662
616
618
620
622
624
626
628
630
632
638
640
642
644
646
648
650
652
654
670
672
673
675
676
677
679 & 685
682
687
689
690
692
693
696
697
700
701
702
9" CONCRETE PIPE SANITARY SEWER
GRADIENT 1 in 42.4 or 2.36%
GRADIENT: 1 in 943.4 or 0.106%
GRADIENT: 1 in 119 or 0.84%
GR: 1 in 323 or 0.31%
GRADIENT: 1 in 133.3 or 0.75%
GRADIENT: 1 in 83.33
12" SANITARY SEWER
SAND
BLACK MUCK
HARD PAN
HARD
HARD SAND
APPROX. ROCK LINE
TOP W.A.
250
240
230
PROPOSED 21" CONC. PIPE CLASS III STORM SEWER
GRADIENT: 1 in 50 or 2.0%
PROPOSED 24" C.P. CLASS III STORM SEWER
GRADIENT: 1 in 250 or 0.4%
PROPOSED 24" CONCRETE PIPE CLASS III STORM SEWER
GRADIENT: 1 in 250 or 0.4%
GRADIENT: 1 in 153.8 or 0.65%
PROPOSED 24" C.P. CLASS III
GRADIENT: 1 in 100
257.20
253.10
250.10
248.60
248.40
248.10
247.70
247.20
246.60
245.50
244.70
243.90
243.00
242.00
249.33
245.63
244.35
243.67
240.18
241.79
239.86
241.78
241.60
240.64
238.05
237.78
238.40
235.54
0+00
0+81
1+00
1+17
2+00
3+00
3+30
3+48
4+00
5+00
5+35
5+64
6+00
6+48
7+00
8+00
8+32
8+63
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9+49
10+00
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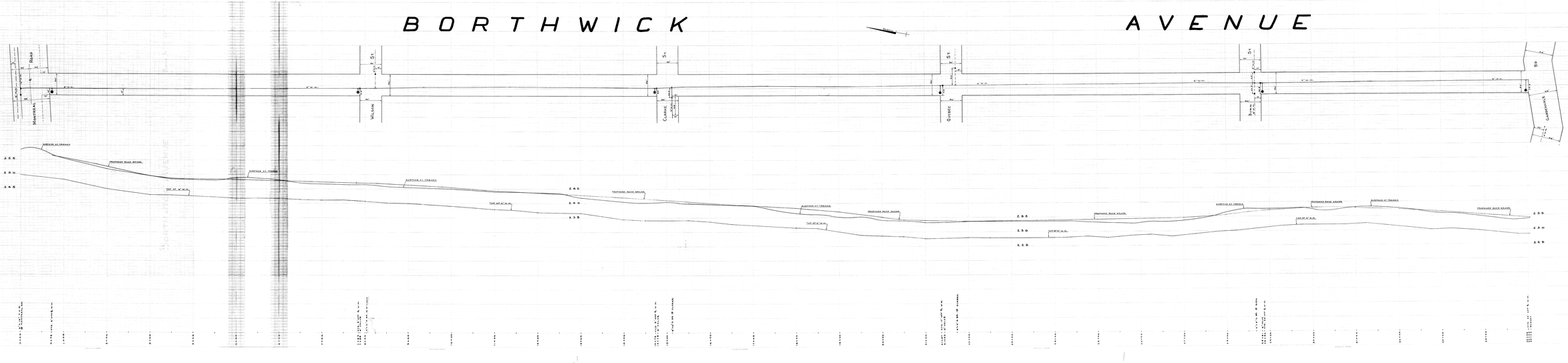
11+76
12+00
12+47
13+00
14+00
e-3




CITY OF OTTAWA
WATER WORKS DEPARTMENT

6" WATER MAIN INSTALLED ON
BORTHWICK AVENUE FROM
MONTREAL RD. TO GARDENVALE RD.

| | | |
|---|---|---|
| PAN BY | | DATE MAY 10 1963 |
| | ENGINEER | SCALE 1" = 40' |
| | | DRAWN BY |
| | | DATE |
| | DIVISION OF WATER WORKS | DWG. NO. 348 |
| | | SHEET 348 |

INSTALLED 1963 - 1964

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