Stormwater Management Report and Servicing Brief

Proposed 3-Storey Low-Rise Apartment
1435/1455 Morisset Avenue
Ottawa, Ontario

Prepared for:

Firm Capital
163 Cartwright Avenue
Toronto, ON
M6A 1V5

Attention: Mr. Eddy Boudiwan

LRL File No.: 200572

June 18, 2021

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

TABLE OF CONTENTS

APPENDICES

Appendix A Pre-consultation/Correspondence

Appendix B Stormwater Management Calculations

Appendix C Water Supply Calculations

Appendix D Sanitary Calculations

Appendix E Civil Engineering Drawings

Appendix F Survey, As-Built Drawings, Architectural Drawings

1 INTRODUCTION AND SITE DESCRIPTION

LRL Associates Ltd. was retained by Firm Capital to complete a Stormwater Management Analysis and Servicing Brief for a proposed three (3) storey residential development located at 1435/1455 Morisset Avenue in Ottawa, Ontario. The property is legally described as Lot 230-238, Registered Plan 327, City of Ottawa, refer to Survey included in Appendix F. The location of the proposed development can be viewed in Figure 1 below.

Figure 1: Arial View of Proposed Development

The proposed new apartment building will have a footprint of 578 m^2 and consist of 31 units (16x1-bedroom and 15x2-bedroom apartments). The site will also encompass a paved parking area in the eastern portion of the lot. The proposed development will have one vehicular entrance with a depressed sidewalk on Morisset Avenue and one pedestrian main entrance via a pathway to Morisset Ave.

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

2 EXISTING SITE AND DRAINAGE DESCRIPTION

The portion of land to be developed has a rectangular shape with a frontage of approximately 61 m along Morisset Avenue and a depth of approximately 30.7 m. With these dimensions, the property has a surface area of approximately 0.19 ha. The property is surrounded with residential buildings to the west and north, parking lot in the east, and Morisset Ave in the south. Currently, the proposed site is a parking lot which is being used by the apartment building in the east of the site. The existing parking lot will be demolished prior to development.

Along the west face of the existing site is an impervious asphalt pavement driveway with a retaining wall. Along the north side of the existing site is a small landscape area separated by a

fence of the existing residential buildings in the north. Overland stormwater from the existing parking lot generally flow uncontrolled towards the low-lying area in the north and in the eastern portion of the parking lot which will eventually drains onto Morisset Ave.

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 in order to obtain municipal approval for site development. No other approval requirements from other regulatory agencies are anticipated.

5 STORMWATER MANAGEMENT

5.1 Existing Stormwater Infrastructure

The topography of the site in pre-development conditions was reviewed to determine the direction of flow from overland runoff. In pre-development conditions, majority of the stormwater appears to flow uncontrolled overland towards Morisset Ave. The balance, at the rear of the property, appears to flow uncontrolled overland into the neighbouring property along the north property border. Refer to Appendix B for pre- and post-development watershed information.

As previously discussed, the south end of the subject property is bordered by Morisset Avenue. Hence, the proposed storm service connection will be located at Morisset Ave. At this location, a

dedicated 375 mm diameter storm sewer, flowing east, is available on the north side of the street for a potential connection.

5.2 Design Criteria

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

5.2.1 Water Quality

Based on correspondence with Rideau Valley Conservation Authority (RVCA), the distance to the downstream outlet is greater than 2 km, therefore, the stormwater runoff from the site does not require any additional on-site water quality controls. Refer to Appendix B for the RVCA's opinion on water quality controls.

5.2.2 Water Quantity

All storm events up to and including the 100-year event will be controlled to the 2-year pre-development level. The sites major overland flow route has been designed to ensure that storm events beyond the 100-year design storm can be safely conveyed overland towards the Morisset Ave Right of Way (ROW). The minor system (storm sewers) within the site are sized to convey the 2-year storm event flow from the site to the municipal storm sewer on Morisset Ave.

Based on the pre-development catchment area calculations, the pre-development weighted runoff was found to be C=0.9. Detailed calculations can be found in Appendix B.

Though post-development conditions are not introducing a large increase in pervious surfaces, quantity control will still have to be implemented. The allowable release rate is calculated using the maximum runoff coefficient of C=0.5, as per the City of Ottawa requirement. The 100-year and 2-year post development flows will be controlled to the 2-year allowable flow rate of the site. Events greater than the 100-year storm are permitted to flow overland to the ROW.

5.3 Method of Analysis

The Modified Rational Method has been used to calculate the runoff rate from the site, and to quantify the detention storage required for quantity control of the development. Refer to Appendix B for allowable release rate as well as storage calculations.

5.4 Allowable Release Rate

The maximum allowable release rate was calculated using the Rational Method for the 2-year pre-development runoff value. Runoff from post-development conditions must be controlled to the 2-year pre-development level using a maximum of C=0.5 for the runoff coefficient, for both minor and major storms (2-year up to 100-year storms), using a time of concentration not less than 10 minutes.

The Rational Method runoff coefficients (C) for each catchment have been calculated based on appropriately assigned coefficients weighted by area of land cover within the drainage area. A summary of catchment areas with calculated C values is included in Appendix B.

Below is the allowable release rate calculation (2-year storm, C=0.5)

$$Q = 2.78CIA = 2.78 \times 0.5 \times 76.80 \times 0.185 = 19.70 \text{ L/s}$$

i.e. the allowable release rate for this site is 19.70 L/s.

5.5 Proposed Stormwater Quantity Controls

The proposed stormwater management quantity control for this development will be accomplished using a flow restrictor in the storm sewer, as well as roof drains restricting the flow leaving the rooftop. Ponding required as a result of quantity control will be accomplished through a combination of rooftop storage and parking lot surface storage.
The proposed site storm sewer and stormwater management system are shown on Site Servicing Plan C-401 (Appendix E) and detailed calculations including the design sheet can be found in Appendix B.
The existing site is delineated by catchment EWS-01 (see drawing C701 in Appendix E) which currently drains uncontrolled off the site towards Morisset Ave ROW and towards the rear of the property.

The site has been analyzed and post-development watersheds have been allocated, see drawing C701 in Appendix E. A small portion of the exterior landscape boundary (along south property line) and ramps (at main entrance and along west property line) will drain off the property uncontrolled. Watersheds WS-05 & WS-07, consisting of mostly grass area and pavers will flow uncontrolled towards Morisset Ave ROW. Watersheds WS-06 & WS-08 consisting of ramp at main entrance and door exit area in the east, will be captured by trench drains and connected with STM sewer downstream of ICD, thus flows uncontrolled. Likewise, stormwater from watershed WS-09 will be captured by a trench drain and conveyed uncontrolled via a storm sewer to the existing sewer on Morisset Ave.

Grading proposed will provide positive overland drainage to the proposed storm water management systems.

Stormwater captured on the roof (WS-04) will be controlled by the roof drains, and conveyed to the storm sewer network, downstream of the ICD.

All overland stormwater captured using catch basins and trench drains will ultimately be conveyed, via underground storm sewers, to the City storm sewer running along Morisset Ave. Table 1 summarizes the drainage areas, calculations can be found in Appendix B.

Table 1: Post-Development Drainage Areas

Drainage Area Name	Area (ha)	Weighted Runoff Coefficient	100-year Weighted Runoff Coefficient (25% increase)
WS-01 (controlled)	0.015	0.32	0.40
WS-02 (controlled)	0.049	0.82	1.00
WS-03 (controlled)	0.042	0.88	1.00
WS-04 (controlled)	0.057	0.90	1.00
WS-05 (uncontrolled)	0.005	0.49	0.61
WS-06 (uncontrolled)	0.003	0.90	1.00
WS-07 (uncontrolled)	0.004	0.20	0.25
WS-08 (uncontrolled)	0.000	0.90	1.00
WS-09 (uncontrolled)	0.010	0.69	0.86
Total	**0.185**	**0.79**	**0.99**

Tables 2 summarizes the release rates and storage volumes required to meet the allowable release rate for 100-, 5- and 2-year flows.

Table 2: Stormwater Release Rate & Storage Volume Summary

Description	Area (ha)	Release Rate (L/s)			Storage Required (m^3)			Storage Provided (m^3)
		100 Yr	5 Yr	2 Yr	100 Yr	5 Yr	2 Yr	
WS-01, WS-02, WS-03 (Controlled)	0.106	9.02	9.02	9.02	26.63	9.30	4.37	29.34
WS-04 (Controlled)	0.057	2.53	2.53	2.53	23.39	9.05	6.04	26.82
Uncontrolled Area	0.022	8.15	3.81	2.81	N/A	N/A	N/A	N/A
Total	**0.185**	**19.70**	**15.36**	**14.36**	**50.02**	**18.35**	**10.41**	**56.16**

The project runoff exceeding the allowable release rate will be stored on-site via surficial ponding and the building rooftop. The 100-year maximum ponding elevation and depths can be found on drawing “C601 – Stormwater Management Plan” of Appendix E.

5.5.1 Proposed Stormwater Quantity Controls

To throttle the 100-year storm flows, the stormwater will be controlled at CBMH03 using an Inlet Control Device (ICD), Hydrovex Vortex Flow Regulator 100VHV-1 (or approved equivalent). This ICD will control the stormwater runoff quantity during the storm events greater than 2-year. The site is graded to have a high-water level (HWL) of 97.82 m while providing storage as required with a maximum controlled release rate of 9.02 L/s (H=1.98 m) from the parking lot portion of the site. The storage created by this ICD can be seen on drawing C601 (Appendix E). Greater details on select ICD can be found in Appendix B.

5.5.2 Rooftop Storage & Release Rates

Rooftop detention of stormwater will be achieved through outlet control with the use of four (4) proposed roof drains. The flow through these drains is dependent on the height of water above the drains (Head) and the type & setting of the drain. The rooftop has been assumed to be low sloping, providing four separate ponding areas, each with a single roof drain restricting the discharge rate to 0.63 L/s per roof drain (at maximum head, during the 100-year storm event). This results in a total release rate of 2.53 L/s from the roof. Each roof control device is appropriately selected to provide a flow rate of 0.63 L/s at a maximum flow depth of 0.15 m.

Stormwater flow from the roof is proposed to be controlled via four Watts roof drains (or approved equivalent). This Watts drains is appropriately selected with an adjustable flow control set to closed which will allow a maximum discharge of 0.63 L/s at a maximum flow depth of 0.15 m. Refer to Appendix B for additional detail on rooftop release rate and storage calculations and drawing C601 (Appendix E) for the extent of roof top storage.

6 WATER SUPPLY AND FIRE PROTECTION

6.1 Existing Water Supply Services and Fire Hydrant Coverage

The subject property is located to the north of an existing 150 mm dia. water main running in the east-west direction on the south side of Morisset Avenue.
There are three (3) existing fire hydrant (FH) along Morisset Ave in proximity to the proposed site: one (1) within 76 m and two (2) additional within 305 m. A figure summarizing the locations of each FH can be seen in Appendix C.

6.2 Water Supply Demand and Fire Flow

According to the City of Ottawa Design Guidelines, the average daily water consumption rate for residential developments is 350 L/c/d.
The interior layout and architectural floor plans (Appendix F) have been reviewed, and it was determined that the building will house sixteen (16) 1-bedroom apartments and fifteen (15) 2-bedroom apartments. Based on the City of Ottawa Design guidelines for population projection,

this translates to approximately 53.9 residents. Table 3 summarizes the population count of the proposed development as interpreted using table 4.1 of the City of Ottawa Design Guidelines-Water Distribution, 2010.

Table 3: Residential Population Estimate

Proposed Unit type	Persons Per Unit	Number of Units	Population
1-Bedroom	1.4	16	22.4
2-Bedroom	2.1	15	31.5
	Total	**31**	**53.9**

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

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

Where,
q = Average water consumption (L/capita/day)
P = Design population (capita)
M = Peak factor

Calculated domestic water demands are summarized below, see Appendix C for calculation details.

- Average day demand = 0.22 L/s
- Maximum daily demand = 1.63 L/s
- Peak hour demand = 18.27 L/s

The fire flow requirements were estimated using the method prescribed by the Fire Underwriters' Survey (FUS). This method is based on the floor area of the building to be protected, the type and combustibility of the structural frame and the separation distances with adjoining building units.

Table 4 summarize the input parameters used for the FUS calculations. A minimum fire flow demand of 75 L/s was calculated, refer to Appendix C for the fire flow calculation sheets.

Table 4: Input Parameters for Fire Flow Calculations

Parameter	Frame used for Building	Combustibility of Contents	Presence of Sprinklers	Separation Distance			
				North	East	South	West
Value according to FUS options	Ordinary Construction	Limited Combustible	Yes	20.1-30 m	>45 m	20.1-30 m	3.1-10 m
Surcharge/reduction from base flow	1	-0.15%	-0.50%	10%	0%	10%	20%

The boundary condition received from the City specified available fire flow of 85 L/s at 20 psi. Therefore, to respect the boundary condition, following revisions have been made since the boundary condition request

- Type of construction - Ordinary (previously wood frame)
- Fully supervised automatic sprinkler (previously no sprinkler)
- 2h fire-resistance assembly to compartmentalize the building into two (see the confirmation letter provided by Architect in Appendix C)

With the inclusion of above modification, it is our professional opinion that the revised fire flow demand will not exceed available fire flow.

6.3 Water Supply Servicing Design

Considering the presence of sprinkler system and a minimum recommended size, the proposed building will be serviced by a new 150 mm dia. water service which. The proposed service will provide water for both domestic and fire protection water demand (i.e. sprinkler system). The proposed service will be connected to the existing watermain on Morisset Ave to the south-east corner of the building. Refer to LRL drawing C401 for the layout of the proposed water services. Table 5 below summarizes the design criteria which have been respected during the design of the water service connections at this development.

Table 5: Water Supply Design Criteria

Design Parameter	Value
Minimum cover	2.4 m
Desired pressure range under maximum daily flow condition	50 and 80 psi
Minimum pressure under peak hourly flow condition	40 psi
Minimum pressure under the maximum day plus fire flow condition	20 psi

The boundary conditions provided by the City at the Morisset Avenue connection expressed as the level of hydraulic grade line (HGL) are summarized in Table 6.

Table 6: Boundary Conditions

Water Pressure at Morisset Ave			
HGL (m)		Pressure	
		kPa	psi
Minimum	143.7	475.79	69.0
Maximum	158.2	618.03	89.6

The maximum pressure is estimated to be more than 80 psi, therefore a pressure check at completion of construction is required to determine if a pressure reducing valve is required as the residual pressure is not to exceed 80 psi.

6.4 Available Fire Flows

Table 7 shows location of existing fire hydrants from the proposed building. Based on Table 18.5.4.3 (Maximum Fire Flow Hydrant Capacity) of City of Ottawa Technical Bulletin ISTB-2018-02, the combined available fire flow of 11,356 L/min exceeds the required fire flow demand of 4500 L/min.

Table 7: Fire Protection Summary

Building	Fire Flow Demand (L/min)	Fire Hydrants along Morisset Ave - Distance to Building (m)		Available Combined Fire Flow (L/min)
		≤ 76	≥ 152 and ≤ 305	
Proposed 3-Storey Low-Rise Building	4500	1	2	(1x5678) + (2x2839) = 11,356

7 SANITARY SERVICE

7.1 Existing Sanitary Sewer Services

Existing infrastructure surrounding the proposed development were reviewed. It was determined that there is an existing 225 mm dia. sanitary sewer running east along Morisset Avenue. Since the existing site is a parking lot, pre-development conditions did not generate sanitary flow. The post-development total peak flow was calculated to be 0.76 L/s as a result of residential population and a small portion of infiltration. Refer to Appendix D for further information on the calculated sanitary flows.

The City of Ottawa official was contacted regarding the remaining capacity of sanitary sewer along Morisset Ave. Based on the information received from the City (see Appendix D), the anticipated sanitary peak flow will not exceed the allowable flow.

7.2 Sanitary Sewer Servicing Design

The parameters used to calculate the anticipated sanitary flows are; residential average population per unit of 1.4 persons for 1-bedroom units and 2.1 persons for 2-bedroom units, a residential peaking factor of 4.0 and an infiltration rate of 0.33 L/s/ha. Based on these parameters and the total site area of 0.185 ha, the total anticipated sanitary flow was estimated to 0.76 L/s. Refer to Appendix D for the site sanitary sewer design sheet.

The proposed new building will be serviced with a new 200 mm dia. sanitary service which will connect to the existing 225 mm dia. sanitary sewer along Morisset Ave. The new service will be located at the south-east corner of the proposed building. The proposed 200mm dia. PVC sanitary service will be installed at a recommended gradient of 2% as per the City of Ottawa Sewer Design Guidelines. Refer to LRL drawing C401 for the proposed sanitary servicing.

8 Erosion and Sediment Control

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

9 Conclusion

This Stormwater Management Report and Servicing Brief for the proposed development at 1435/1455 Morisset Avenue 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:

Stormwater Management

- The storm water release rates from the proposed development will meet the pre-development allowable release rate of 19.70 L/s onto Morisset Ave.
- Stormwater quantity control objectives will be met through on-site stormwater ponding on the roof and parking lot surface storage.

Water Service

- The anticipated maximum hour demand of the proposed development, based on estimated population & calculated peak factor, is 18.27 L/s.
- The maximum required fire flow was calculated at 75 L/s using the FUS method.
- There are three (3) existing fire hydrant along Morisset Ave in proximity to the proposed building: one (1) within 76 m and two (2) additional within 305 m which will provide the required fire flow.
- The proposed building will be serviced by a new 150 mm dia. water service connection to the existing 150 mm dia. watermain on Morisset Ave.

Sanitary Service

- The anticipated sanitary peak flow from the proposed development is 0.76 L/s.
- The proposed building will be serviced by a new 200 mm dia. sanitary service connection to the existing 225 mm dia. sanitary sewer on Morisset Ave.

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.

Mohan Basnet, P.Eng.
Civil Engineer

APPENDIX A

Pre-consultation/Correspondence

Site Plan Pre - Application Consultation Notes

Date: August 28, 2020
Site Location: 1435 Morisset
Type of Development: ☒ **Residential (**☐ **townhomes,** ☐ **stacked,** ☐ **singles,** ☐ **apartments),** ☐ **Office Space,** ☐ **Commercial,** ☐ **Retail,** ☐ **Institutional,** ☐ **Industrial, Other:** N/A
Owner/Agent: Firm Capital Properties/FOTENN Consultants
Project Manager: Adam Baker
Assigned Planner: Kelby Lodoen Unseth

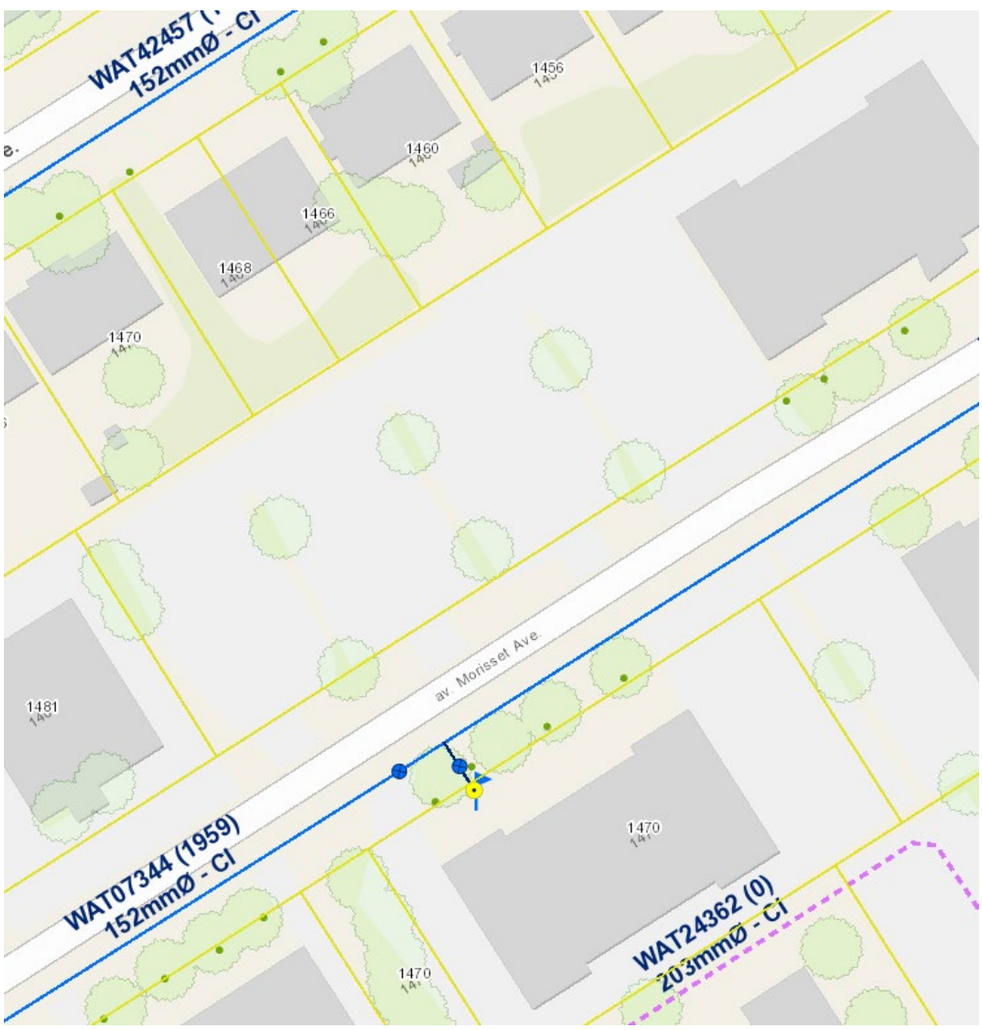
Infrastructure

Water

Please note that watermains in this area may experience lower than average pressures within the acceptable pressure range. Please submit your water boundary request to confirm these details.

Existing nearest public services:

- Morisset – 152mm Cast Iron



Watermain Frontage Fees to be paid ($190.00 per metre) ☐ **Yes** ☒ **No**

- Service areas with a basic demand greater than 50 m^3/day shall be connected with a minimum of two water services, separated by an isolation valve, to avoid creation of vulnerable service area.
- A District Metering Area Chamber (DMA) is required for services 150mm or greater in diameter.

Boundary conditions:
Civil consultant must request boundary conditions from the City's assigned Project Manager prior to first submission.

- Water boundary condition requests must include the location of the service(s) and the expected loads required by the proposed developments. Please provide all the following information:
    - Location of service(s)
    - Type of development and the amount of fire flow required (as per FUS, 1999).
    - Average daily demand: ___ l/s.
    - Maximum daily demand: ___l/s.
    - Maximum hourly daily demand: ___ l/s.
- Fire protection (Fire demand, Hydrant Locations)
- A water meter sizing questionnaire [water card] will have to be completed prior to receiving a water permit (water card will be provided post approval)

Sanitary Sewer

Existing public services:

- Morisset – 225mm Conc.

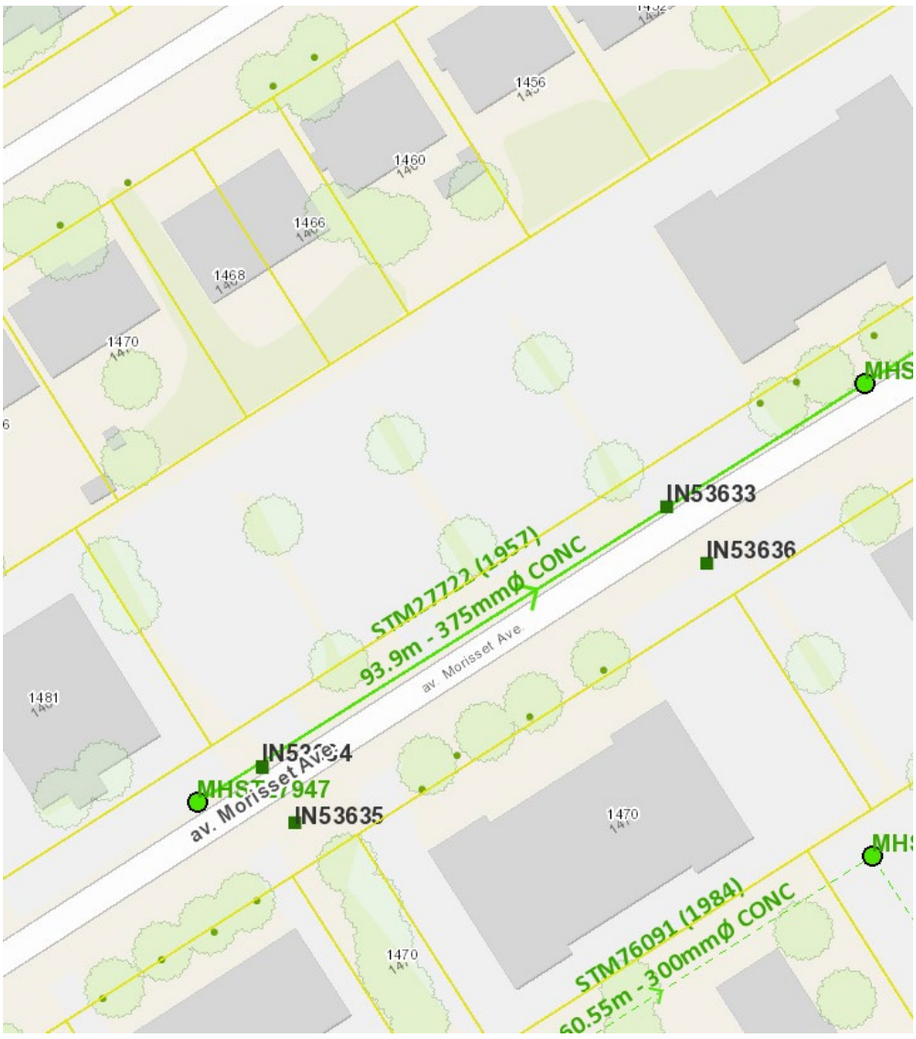
- The designer should be aware there may be limited capacity in the downstream sanitary sewer system. The sanitary demand needs to be coordinated with the City Planning Dept. to determine if the existing sanitary sewer system has sufficient capacity to support the proposed rezoning. Provide sanitary demands to the City project manager for coordination.

- Any premise in which there is commercial or institutional food preparation shall install a grease and oil inceptor on all fixtures.

Storm Sewer

Existing public services:

- Morisset – 375mm Conc.



Storm Sewer Notes:

- For concrete sewer pipe, maintenance holes shall be installed when the service is greater than 50% of the diameter of the mainline concrete pipe
- The Environmental Site Assessment (ESA) may provide recommendations where site contamination may be present. The recommendations from the ESA need to be coordinated with the servicing report to ensure compliance with the Sewer Use By-Law.

Stormwater Management

Quantity Control:

- Stormwater quantity controls will depend upon which outlet is chosen for the site. Once an outlet has been chosen, please confirm with the Project Manager the SWM criteria for the property. For the nearby public services, the criteria is as follows –
    - The pre-development runoff coefficient or a maximum equivalent 'C' of 0.5, whichever is less (§ 8.3.7.3).
    - A calculated time of concentration (Cannot be less than 10 minutes).
    - Flows to the storm sewer in excess of the 2-year storm release rate, up to and including the 100-year storm event, must be detained on site.

Ministry of Environment, Conservation and Parks (MECP)

All development applications should be considered for an Environmental Compliance Approval, under MECP regulations.

a. The consultants determine if an approval for sewage works under Section 53 of OWRA is required and determines what type of application. The City's project manager may help confirm and coordinate with the MECP as required.
b. The project will be either transfer of review (standard), transfer of review (additional), direct submission, or exempt as per O. Reg. 525/98.
c. Pre-consultation is not required if applying for standard or additional works (Schedule A of the Agreement) under Transfer Review.
d. Pre-consultation with local District office of MECP is recommended for direct submission.
e. Consultant completes an MECP request form for a pre-consultation. Sends request to moeccottawasewage@ontario.ca
f. ECA applications are required to be submitted online through the MECP portal. A business account required to submit ECA application. For more information visit https://www.ontario.ca/page/environmental-compliance-approval
g. It is unclear if the proposed development will remain as one property. An ECA will be required where the stormwater management services more than one property parcel.

NOTE: Site Plan Approval, or Draft Approval, is required before any Ministry of the Environment and Climate Change (MOECC) application is sent

General Service Design Comments

- The City of Ottawa requests that all new services be located within the existing service trench to minimize necessary road cuts.
- Monitoring manholes should be located within the property near the property line in an accessible location to City forces and free from obstruction (i.e. not a parking).
- Where service length is greater than 30 m between the building and the first maintenance hole / connection, a cleanout is required.
- The City of Ottawa Standard Detail Drawings should be referenced where possible for all work within the Public Right-of-Way.
- The upstream and downstream manhole top of grate and invert elevations are required for all new sewer connections.
- Services crossing the existing watermain or sewers need to clearly provide the obvert/invert elevations to demonstration minimum separation distances. A watermain crossing table may be provided.

Other

Are there are Capital Works Projects scheduled that will impact the application? ☐ **Yes** ☒ **No**

References and Resources

- As per section 53 of the Professional Engineers Act, O. Reg 941/40, R.S.O. 1990, all documents prepared by engineers must be signed and dated on the seal.
- All required plans are to be submitted on standard A1 size sheets (594mm x 841mm) sheets, utilizing a reasonable and appropriate metric scale as per City of Ottawa Servicing and Grading Plan Requirements: title blocks are to be placed on the right of the sheets and not along the bottom. Engineering plans may be combined, but the Site Plans must be provided separately. Plans shall include the survey monument used to confirm datum. Information shall be provided to enable a non-surveyor to locate the survey monument presented by the consultant.
- All required plans & reports are to be provided in *.pdf format (at application submission and for any, and all, re-submissions)
- Please find relevant City of Ottawa Links to Preparing Studies and Plans below: https://ottawa.ca/en/city-hall/planning-and-development/information-developers/development-application-review-process/development-application-submission/guide-preparing-studies-and-plans#standards-policies-and-guidelines
- To request City of Ottawa plan(s) or report information please contact the City of Ottawa Information Centre: InformationCentre@ottawa.ca<mailto:InformationCentre@ottawa.ca> (613) 580-2424 ext. 44455
- geoOttawa http://maps.ottawa.ca/geoOttawa/

SITE PLAN APPLICATION – Municipal servicing

For information on preparing required studies and plans refer to:

http://ottawa.ca/en/development-application-review-process-0/guide-preparing-studies-and-plans

S/A	Number of copies	ENGINEERING		S/A	Number of copies
S		1. Site Servicing Plan	2. Site Servicing Study	S	
S		3. Grade Control and Drainage Plan	4. Geotechnical Study	S	
		5. Composite Utility Plan	6. Groundwater Impact Study		
		7. Servicing Options Report	8. Wellhead Protection Study		
		9. Community Transportation Study and/or Transportation Impact Study / Brief	10. Erosion and Sediment Control Plan / Brief	S	
S		11. Storm water Management Report	12. Hydro-geological and Terrain Analysis		
		13. Water main Analysis	14. Noise Study	S	
		15. Roadway Modification Design Plan	16. Confederation Line Proximity Study		

It is important to note that the need for additional studies and plans may result during application review. If following the submission of your application, it is determined that material that is not identified in this checklist is required to achieve complete application status, in accordance with the Planning Act and Official Plan requirements, City Planning will notify you of outstanding material required within the required 30 day period. Mandatory pre-application consultation will not shorten the City's standard processing timelines, or guarantee that an application will be approved. It is intended to help educate and inform the applicant about submission requirements as well as municipal processes, policies, and key issues in advance of submitting a formal development application. This list is valid for one year following the meeting date. If the application is not submitted within this timeframe the applicant must again pre-consult with the City.

Notes:

4. Geotechnical Study / Slope Stability Study – required as per Official Plan section 4.8.3. All site plan applications need to demonstrate the soils are suitable for development. A Slope Stability Study may be required with unique circumstances (Schedule K or topography may define slope stability concerns).

10. Erosion and Sediment Control Plan – required with all site plan applications as per Official Plan section 4.7.3.

11. Stormwater Management Report/Brief - required with all site plan applications as per Official Plan section 4.7.6.

14. Noise and Vibration Study – a Noise Study will be required if the noise sensitive development is proposed within 250 metres of an existing or proposed highway or a railway right-of-way, or 100 metres of an arterial or collector roadway or rapid-transit corridor. A Vibration Study will be required if the proposed development is within 75 metres of either an existing or proposed railway ROW. A Noise Study may also be required if the proposed development is adjacent to an existing or proposed stationary noise source..

APPENDIX B

Stormwater Management Calculations

Mohan Basnet

From: Jamie Batchelor <jamie.batchelor@rvca.ca>
Sent: April 29, 2021 9:25 PM
To: Mohan Basnet
Cc: Eric Lalande
Subject: RE: 200572-1435/1455 Morisset Ave Proposed Residential Development - Stormwater Quality Control

Follow Up Flag: Follow up
Flag Status: Flagged

Good Evening Mohan,

Based on the distance of the downstream outlet being more than 2km from the site, the RVCA accepts that no additional on-site water quality treatment measures are required save and except best management practices. The RVCA strongly encourages that you explore the opportunity to incorporate LID measures in the stormwater management plan.

Jamie Batchelor, MCIP, RPP
Planner, ext. 1191
Jamie.batchelor@rvca.ca

Rideau Valley Conservation Authority
3889 Rideau Valley Drive
PO Box 599, Manotick ON K4M 1A5
T 613-692-3571 | 1-800-267-3504 **F** 613-692-0831 | www.rvca.ca

From: Mohan Basnet <mbasnet@lrl.ca>
Sent: Wednesday, April 28, 2021 4:00 PM
To: Jamie Batchelor <jamie.batchelor@rvca.ca>
Subject: 200572-1435/1455 Morisset Ave Proposed Residential Development - Stormwater Quality Control

Hello Jamie,

We are working for a proposed 4-Storey Residential Development at 1435/1455 Morisset Ave, Ottawa. The existing site is a paved surface parking lot. The proposed development will also include paved parking lot providing 28 parking spots.

For stormwater management, we are planning to discharge controlled stormwater in a municipal storm sewer along Morisset Ave. Could you please advise stormwater quality control requirement for this site?

Thank you.

Mohan

Mohan Basnet, P.Eng.

Civil Engineering Services

LRL Associates Ltd.

5430 Canotek Road

Ottawa, Ontario K1J 9G2

T (613) 842-3434 or (877) 632-5664 ext 213

F (613) 842-4338

E mbasnet@lrl.ca

W www.lrl.ca

Given the current COVID-19 situation, please be aware that LRL has implemented alternative working conditions for our team. Many of us have now transitioned to working from home; however, communication and workability remains one of our top priorities.

We will continue to be reachable by cell phone or by calling LRL at 613-842-3434 which will prompt you to enter the extension of the person you are trying to reach.

In addition, we will continue to have access to all e-mail correspondence and do our best to return all inquiries in a timely manner.

Mohan Basnet

From: Baker, Adam <adam.baker@ottawa.ca>
Sent: May 27, 2021 8:22 AM
To: Mohan Basnet
Subject: RE: 200572-1435 Morisset Ave-Proposed Service Connection/SWM criteria

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Mohan,

Please accept the following information with regards to the servicing criteria –

- SWM criteria for an outlet on Morisset Avenue:
  - The 2-yr storm or 5-yr storm event using the IDF information derived from the Meteorological Services of Canada rainfall data, taken from the MacDonald Cartier Airport, collected 1966 to 1997.
  - The pre-development runoff coefficient or a maximum equivalent 'C' of 0.5, whichever is less (§ 8.3.7.3).
  - A calculated time of concentration (Cannot be less than 10 minutes).
  - Flows to the storm sewer in excess of the 2-year storm release rate, up to and including the 100-year storm event, must be detained on site.
  - Please confirm any stormwater quality requirements with the relevant Conservation Authority.

- Sanitary Constraints:
  - Please confirm if the anticipated sanitary flow provided (0.76 L/s) is peak or average. From an average flow of 0.76 L/s, a resulting peak sanitary flow of 3.24 L/s is acceptable for this system. If the peak sanitary flows will exceed this, please let me know and I will re-confirm for you.

Thank you,
Adam

Adam Baker, EIT
Project Manager
Planning, Infrastructure and Economic Development Department - Services de la planification, de l'infrastructure et du développement économique
Development Review - South 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 26552, Adam.Baker@ottawa.ca

From: Mohan Basnet <mbasnet@lrl.ca>
Sent: May 12, 2021 2:09 PM
To: Baker, Adam <adam.baker@ottawa.ca>
Subject: 200572-1435 Morisset Ave-Proposed Service Connection/SWM criteria

Good afternoon Adam,

At LRL, we are working for STM and servicing study for a proposed 3-storey residential apartment building at 1435 Morisset Ave.

As a follow-up from the pre-consultation notes (Aug 28, 2020):

- Can you please advise SWM criteria of the subject site with a proposed STM outlet at Morisset Ave?
- Can you also advise remaining capacity of SAN sewer along Morisset Ave? Anticipated SAN flow from the proposed building is 0.76 L/s

For your reference I have also attached schematic of proposed service connections.

Please let me know if you have any question.

Thank you,

Mohan Basnet, P.Eng.
Civil Engineering Services
LRL Associates Ltd.
5430 Canotek Road
Ottawa, Ontario K1J 9G2
T (613) 842-3434 or (877) 632-5664 ext 213
F (613) 842-4338
E mbasnet@lrl.ca
W www.lrl.ca

Given the current COVID-19 situation, please be aware that LRL has implemented alternative working conditions for our team. Many of us have now transitioned to working from home; however, communication and workability remains one of our top priorities.
We will continue to be reachable by cell phone or by calling LRL at 613-842-3434 which will prompt you to enter the extension of the person you are trying to reach.
In addition, we will continue to have access to all e-mail correspondence and do our best to return all inquiries in a timely manner.

'

'

LRL Associates Ltd.

Storm Watershed Summary

LRL File No. 200572
Project: Proposed 3-Storey Low-rise Apartment
Location: 1435/1455 Morisset Ave, Ottawa
Date: June 16, 2021
Designed: Ayo Oni
Checked: Mohan Basnet
Dwg Reference: C701, C702

Pre-Development Catchments

Watershed	C = 0.20	C = 0.80	C = 0.90	Total Area (ha)	Combined C
EWS-01 (uncontrolled)	0.000	0.000	0.185	0.185	0.90
Total	**0.000**	**0.000**	**0.185**	**0.185**	**0.90**

Post-Development Catchments

Watershed	C = 0.20	C = 0.8	C = 0.90	Total Area (ha)	Combined C
WS-01 (controlled)	0.012	0.003	0.000	0.015	0.32
WS-02 (controlled)	0.005	0.000	0.044	0.049	0.82
WS-03 (controlled)	0.001	0.000	0.041	0.042	0.88
WS-04 (controlled)	0.000	0.000	0.057	0.057	0.90
WS-05 (uncontrolled)	0.003	0.000	0.002	0.005	0.49
WS-06 (uncontrolled)	0.000	0.000	0.003	0.003	0.90
WS-07 (uncontrolled)	0.004	0.000	0.000	0.004	0.20
WS-08 (uncontrolled)	0.000	0.000	0.0004	0.000	0.90
WS-09 (uncontrolled)	0.003	0.000	0.007	0.010	0.69
Total	**0.028**	**0.003**	**0.154**	**0.185**	**0.79**

LRL File No. 200572
Project: Proposed 3-Storey Low-rise Apartment
Location: 1435/1455 Morisset Ave, Ottawa
Date: June 16, 2021
Designed: M. Basnet
Drawing Ref.: C601

Stormwater Management

STORM - 100 YEAR

Runoff Equation

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

Pre-Development Catchments within Development Area

	Total Area =	**0.185**	**ha**	**∑R =**	**0.90**
	EWS-01 (uncontrolled)	0.185	ha	R =	0.90
	Total Un-controlled =	**0.185**	**ha**	**∑R =**	**0.90**

Pre-Development Release Rate

IDF Curve Equations

100-Year, $I_{100} = 1735.688 / (Td + 6.014)^{0.820}$ A = 1735.688 B = 0.820 C = 6.014

5-Year, $I_5 = 998.071 / (Td + 6.053)^{0.814}$ A = 998.071 B = 0.814 C = 6.053

2-Year, $I_2 = 732.951 / (Td + 6.199)^{0.810}$ A = 732.951 B = 0.810 C = 6.199

C =	0.50	(max 0.5 as per City Guidelines-Sewer)
I_{100} =	178.6	mm/hr
I_5 =	104.2	mm/hr
I_2 =	76.8	mm/hr
Td =	10	min
100-year Release Rate =	45.79	L/s
5-year Release Rate =	26.72	L/s
2-year Release Rate =	19.70	L/s
Allowable Release Rate =	**19.70**	L/s
(2-year pre-development level)		

Post-development Stormwater Management

					$\sum R_{2\&5}$	$\sum R_{100}$
	Total Site Area =	**0.185**	**ha**	**∑R =**	**0.79**	**0.99**
	WS-01 (controlled)	0.015	ha	R =	0.32	0.40
	WS-02 (controlled)	0.049	ha	R =	0.82	1.00
	WS-03 (controlled)	0.042	ha	R =	0.88	1.00
Roof	WS-04 (controlled)	0.057	ha	R =	0.90	1.00
	Total (Controlled)	**0.163**	**ha**	**R =**	**0.82**	**1.00**
	WS-05 (uncontrolled)	0.005	ha	R =	0.49	0.61
	WS-06 (uncontrolled)	0.003	ha	R =	0.90	1.00
	WS-07 (uncontrolled)	0.004	ha	R =	0.20	0.25
	WS-08 (uncontrolled)	0.000	ha	R =	0.90	1.00
	WS-09 (uncontrolled)	0.010	ha	R =	0.69	0.86
	Total (Uncontrolled)	**0.022**	**ha**	**R =**	**0.59**	**0.74**
	Total	**0.185**	**ha**	**R =**	**0.79**	**0.99**

100-Year Post-development Stormwater Management (WS-04 Roof)

Time (min)	Intensity (mm/hr)	Controlled Runoff (L/s)	Storage Volume (m^3)	Controlled Release Rate (L/s)	Uncontrolled Runoff (L/s)	Total Release Rate (L/s)
10	178.56	28.29	15.46	2.53	0.00	2.53
15	142.89	22.64	18.10	2.53	0.00	2.53
20	119.95	19.01	19.78	2.53	0.00	2.53
25	103.85	16.46	20.89	2.53	0.00	2.53
30	91.87	14.56	21.66	2.53	0.00	2.53
35	82.58	13.09	22.17	2.53	0.00	2.53
40	75.15	11.91	22.51	2.53	0.00	2.53
45	69.05	10.94	22.72	2.53	0.00	2.53
50	63.95	10.13	22.82	2.53	0.00	2.53

LRL File No. 200572
Project: Proposed 3-Storey Low-rise Apartment
Location: 1435/1455 Morisset Ave, Ottawa
Date: June 16, 2021
Designed: M. Basnet
Drawing Ref.: C601

Stormwater Management

55	59.62	9.45	22.84	2.53	0.00	2.53
60	55.89	8.86	22.79	2.53	0.00	2.53
65	52.65	8.34	22.68	2.53	0.00	2.53
70	49.79	7.89	22.52	2.53	0.00	2.53
75	47.26	7.49	22.33	2.53	0.00	2.53
80	44.99	7.13	22.09	2.53	0.00	2.53
85	42.95	6.81	21.83	2.53	0.00	2.53
90	41.11	6.51	21.53	2.53	0.00	2.53
95	39.43	6.25	21.22	2.53	0.00	2.53
100	37.90	6.01	20.88	2.53	0.00	2.53
105	36.50	5.78	20.52	2.53	0.00	2.53
110	35.20	5.58	20.14	2.53	0.00	2.53
115	34.01	5.39	19.75	2.53	0.00	2.53
120	32.89	5.21	19.34	2.53	0.00	2.53

On-site stormwater detention

Storage required = 22.84 m^3

Storage provided

Avaiable roof surface for storage = 536.45 m^2
Maximum ponding depth = 150 mm
Avaialbe roof storage = 26.82 m^3
Proposed roof drains: WATTS adjustable roof drain w/ weir opening-closed
Maximum flow per roof drain = 0.63 L/s
Number of roof drain = 4
Total flow from roof drains = 2.53 L/s

100-Year Post-development Stormwater Management (except WS-04 Roof)

Time (min)	Intensity (mm/hr)	Controlled Runoff (L/s)	Storage Volume (m^3)	Controlled Release Rate (L/s)	Uncontrolled Runoff (L/s)	Total Release Rate (L/s)
10	178.56	48.08	23.44	9.02	8.15	17.17
15	142.89	38.47	26.51	9.02	6.52	15.54
20	119.95	32.30	27.94	9.02	5.48	14.49
25	103.85	27.96	28.42	9.02	4.74	13.76
30	91.87	24.74	28.29	9.02	4.19	13.21
35	82.58	22.23	27.76	9.02	3.77	12.79
40	75.15	20.23	26.92	9.02	3.43	12.45
45	69.05	18.59	25.85	9.02	3.15	12.17
50	63.95	17.22	24.61	9.02	2.92	11.94
55	59.62	16.05	23.22	9.02	2.72	11.74
60	55.89	15.05	21.72	9.02	2.55	11.57
65	52.65	14.18	20.12	9.02	2.40	11.42
70	49.79	13.41	18.43	9.02	2.27	11.29
75	47.26	12.72	16.68	9.02	2.16	11.17
80	44.99	12.11	14.86	9.02	2.05	11.07
85	42.95	11.57	13.00	9.02	1.96	10.98
90	41.11	11.07	11.08	9.02	1.88	10.89
95	39.43	10.62	9.12	9.02	1.80	10.82
100	37.90	10.21	7.13	9.02	1.73	10.75
105	36.50	9.83	5.10	9.02	1.67	10.68
110	35.20	9.48	3.04	9.02	1.61	10.62
115	34.01	9.16	0.96	9.02	1.55	10.57
120	32.89	8.86	0.00	9.02	1.50	10.52

On-site stormwater detention

Storage required = 28.42 m^3
Storage provided = 29.34 m^3 (Parking lot surface storage)

LRL File No. 200572
Project: Proposed 3-Storey Low-rise Apartment
Location: 1435/1455 Morisset Ave, Ottawa
Date: June 16, 2021
Designed: M. Basnet
Drawing Ref.: C601

Stormwater Management

STORM - 5 YEAR

Runoff Equation

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

Pre-Development Catchments within Development Area

	Total Area =	**0.185**	**ha**	**∑R =**	**0.90**
	EWS-01 (uncontrolled)	0.185	ha	R =	0.90
	Total Un-controlled =	**0.185**	**ha**	**∑R =**	**0.90**

Pre-Development Release Rate

IDF Curve Equations

100-Year, I_{100} = 1735.688 / (Td + 6.014)$^{0.820}$ A = 1735.688 B = 0.820 C = 6.014

5-Year, I_5 = 998.071 / (Td + 6.053)$^{0.814}$ A = 998.071 B = 0.814 C = 6.053

2-Year, I_2 = 732.951 / (Td + 6.199)$^{0.810}$ A = 732.951 B = 0.810 C = 6.199

C =	0.50	(max 0.5 as per City Guidelines-Sewer)
I_{100} =	178.6	mm/hr
I_5 =	104.2	mm/hr
I_2 =	76.8	mm/hr
Td =	10	min
100-year Release Rate =	45.79	L/s
5-year Release Rate =	26.72	L/s
2-year Release Rate =	19.70	L/s
Allowable Release Rate = (2-year pre-development level)	**19.70**	L/s

Post-development Stormwater Management

					$\sum R_{2\&5}$	$\sum R_{100}$
	Total Site Area =	**0.185**	**ha**	**∑R =**	**0.79**	**0.99**
	WS-01 (controlled)	0.015	ha	R =	0.32	0.40
	WS-02 (controlled)	0.049	ha	R =	0.82	1.00
	WS-03 (controlled)	0.042	ha	R =	0.88	1.00
Roof	WS-04 (controlled)	0.057	ha	R =	0.90	1.00
	Total (Controlled)	**0.163**	**ha**	**R =**	**0.82**	**1.00**
	WS-05 (uncontrolled)	0.005	ha	R =	0.49	0.61
	WS-06 (uncontrolled)	0.003	ha	R =	0.90	1.00
	WS-07 (uncontrolled)	0.004	ha	R =	0.20	0.25
	WS-08 (uncontrolled)	0.000	ha	R =	0.90	1.00
	WS-09 (uncontrolled)	0.010	ha	R =	0.69	0.86
	Total (Uncontrolled)	**0.022**	**ha**	**R =**	**0.59**	**0.74**
	Total	**0.185**	**ha**	**R =**	**0.79**	**0.99**

5-Year Post-development Stormwater Management (WS-04 Roof)

Time (min)	Intensity (mm/hr)	Controlled Runoff (L/s)	Storage Volume (m^3)	Controlled Release Rate (L/s)	Uncontrolled Runoff (L/s)	Total Release Rate (L/s)
10	104.19	14.86	7.40	2.53	0.00	2.53
15	83.56	11.92	8.45	2.53	0.00	2.53
20	70.25	10.02	8.99	2.53	0.00	2.53
25	60.90	8.68	9.24	2.53	0.00	2.53
30	53.93	7.69	9.30	2.53	0.00	2.53
35	48.52	6.92	9.22	2.53	0.00	2.53
40	44.18	6.30	9.06	2.53	0.00	2.53
45	40.63	5.79	8.82	2.53	0.00	2.53
50	37.65	5.37	8.53	2.53	0.00	2.53

LRL File No. 200572
Project: Proposed 3-Storey Low-rise Apartment
Location: 1435/1455 Morisset Ave, Ottawa
Date: June 16, 2021
Designed: M. Basnet
Drawing Ref.: C601

Stormwater Management

55	35.12	5.01	8.19	2.53	0.00	2.53
60	32.94	4.70	7.82	2.53	0.00	2.53
65	31.04	4.43	7.41	2.53	0.00	2.53
70	29.37	4.19	6.98	2.53	0.00	2.53
75	27.89	3.98	6.53	2.53	0.00	2.53
80	26.56	3.79	6.05	2.53	0.00	2.53
85	25.37	3.62	5.57	2.53	0.00	2.53
90	24.29	3.46	5.06	2.53	0.00	2.53
95	23.31	3.32	4.54	2.53	0.00	2.53
100	22.41	3.20	4.01	2.53	0.00	2.53
105	21.58	3.08	3.47	2.53	0.00	2.53
110	20.82	2.97	2.92	2.53	0.00	2.53
115	20.12	2.87	2.36	2.53	0.00	2.53
120	19.47	2.78	1.80	2.53	0.00	2.53

On-site stormwater detention

Storage required = 9.30 m^3

Storage provided

Avaiable roof surface for storage = 536.45 m^2
Maximum ponding depth = 150 mm
Avaialbe roof storage = 26.82 m^3
Proposed roof drains = Four (4) WATTS adjustable roof drain w/ weir opening-closed

5-Year Post-development Stormwater Management (except WS-04 Roof)

Time (min)	Intensity (mm/hr)	Controlled Runoff (L/s)	Storage Volume (m^3)	Controlled Release Rate (L/s)	Uncontrolled Runoff (L/s)	Total Release Rate (L/s)
10	104.19	23.79	8.86	9.02	3.81	12.82
15	83.56	19.07	9.05	9.02	3.05	12.07
20	70.25	16.04	8.42	9.02	2.57	11.58
25	60.90	13.90	7.33	9.02	2.22	11.24
30	53.93	12.31	5.93	9.02	1.97	10.99
35	48.52	11.08	4.32	9.02	1.77	10.79
40	44.18	10.09	2.57	9.02	1.61	10.63
45	40.63	9.27	0.70	9.02	1.48	10.50
50	37.65	8.60	0.00	9.02	1.38	10.39
55	35.12	8.02	0.00	9.02	1.28	10.30
60	32.94	7.52	0.00	9.02	1.20	10.22
65	31.04	7.09	0.00	9.02	1.13	10.15
70	29.37	6.71	0.00	9.02	1.07	10.09
75	27.89	6.37	0.00	9.02	1.02	10.04
80	26.56	6.06	0.00	9.02	0.97	9.99
85	25.37	5.79	0.00	9.02	0.93	9.94
90	24.29	5.54	0.00	9.02	0.89	9.90
95	23.31	5.32	0.00	9.02	0.85	9.87
100	22.41	5.12	0.00	9.02	0.82	9.84
105	21.58	4.93	0.00	9.02	0.79	9.81
110	20.82	4.75	0.00	9.02	0.76	9.78
115	20.12	4.59	0.00	9.02	0.73	9.75
120	19.47	4.44	0.00	9.02	0.71	9.73

On-site stormwater detention

Storage required = 9.05 m^3
Storage provided = 29.34 m^3 (Parking lot surface storage)

LRL File No. 200572
Project: Proposed 3-Storey Low-rise Apartment
Location: 1435/1455 Morisset Ave, Ottawa
Date: June 16, 2021
Designed: M. Basnet
Drawing Ref.: C601

Stormwater Management

STORM - 2 YEAR

Runoff Equation

Q = 2.78CIA (L/s)

C = Runoff coefficient

I = Rainfall intensity (mm/hr) = $A / (Td + C)^B$

A = Area (ha)

Td = Time of duration (min)

Pre-Development Catchments within Development Area

	Total Area =	**0.185**	**ha**	**∑R =**	**0.90**
	EWS-01 (uncontrolled)	0.185	ha	R =	0.90
	Total Un-controlled =	**0.185**	**ha**	**∑R =**	**0.90**

Pre-Development Release Rate

IDF Curve Equations

100-Year, $I_{100} = 1735.688 / (Td + 6.014)^{0.820}$ A = 1735.688 B = 0.820 C = 6.014

5-Year, $I_5 = 998.071 / (Td + 6.053)^{0.814}$ A = 998.071 B = 0.814 C = 6.053

2-Year, $I_2 = 732.951 / (Td + 6.199)^{0.810}$ A = 732.951 B = 0.810 C = 6.199

C =	0.50	(max 0.5 as per City Guidelines-Sewer)
I_{100} =	178.6	mm/hr
I_5 =	104.2	mm/hr
I_2 =	76.8	mm/hr
Td =	10	min
100-year Release Rate =	45.79	L/s
5-year Release Rate =	26.72	L/s
2-year Release Rate =	19.70	L/s
Allowable Release Rate = (2-year pre-development level)	**19.70**	L/s

Post-development Stormwater Management

					$\sum R_{2\&5}$	$\sum R_{100}$
	Total Site Area =	**0.185**	**ha**	**∑R =**	**0.79**	**0.99**
	WS-01 (controlled)	0.015	ha	R =	0.32	0.40
	WS-02 (controlled)	0.049	ha	R =	0.82	1.00
	WS-03 (controlled)	0.042	ha	R =	0.88	1.00
Roof	WS-04 (controlled)	0.057	ha	R =	0.90	1.00
	Total (Controlled)	**0.163**	**ha**	**R =**	**0.82**	**1.00**
	WS-05 (uncontrolled)	0.005	ha	R =	0.49	0.61
	WS-06 (uncontrolled)	0.003	ha	R =	0.90	1.00
	WS-07 (uncontrolled)	0.004	ha	R =	0.20	0.25
	WS-08 (uncontrolled)	0.000	ha	R =	0.90	1.00
	WS-09 (uncontrolled)	0.010	ha	R =	0.69	0.86
	Total (Uncontrolled)	**0.022**	**ha**	**R =**	**0.59**	**0.74**
	Total	**0.185**	**ha**	**R =**	**0.79**	**0.99**

2-Year Post-development Stormwater Management (WS-04 Roof)

Time (min)	Intensity (mm/hr)	Controlled Runoff (L/s)	Storage Volume (m^3)	Controlled Release Rate (L/s)	Uncontrolled Runoff (L/s)	Total Release Rate (L/s)
10	76.81	10.95	5.06	2.53	0.00	2.53
15	61.77	8.81	5.65	2.53	0.00	2.53
20	52.03	7.42	5.87	2.53	0.00	2.53
25	45.17	6.44	5.87	2.53	0.00	2.53
30	40.04	5.71	5.73	2.53	0.00	2.53
35	36.06	5.14	5.49	2.53	0.00	2.53
40	32.86	4.69	5.18	2.53	0.00	2.53

LRL File No. 200572
Project: Proposed 3-Storey Low-rise Apartment
Location: 1435/1455 Morisset Ave, Ottawa
Date: June 16, 2021
Designed: M. Basnet
Drawing Ref.: C601

Stormwater Management

45	30.24	4.31	4.82	2.53	0.00	2.53
50	28.04	4.00	4.42	2.53	0.00	2.53
55	26.17	3.73	3.98	2.53	0.00	2.53
60	24.56	3.50	3.51	2.53	0.00	2.53
65	23.15	3.30	3.02	2.53	0.00	2.53
70	21.91	3.13	2.51	2.53	0.00	2.53
75	20.81	2.97	1.99	2.53	0.00	2.53
80	19.83	2.83	1.45	2.53	0.00	2.53
85	18.94	2.70	0.89	2.53	0.00	2.53
90	18.14	2.59	0.33	2.53	0.00	2.53
95	17.41	2.48	0.00	2.53	0.00	2.53
100	16.75	2.39	0.00	2.53	0.00	2.53
105	16.13	2.30	0.00	2.53	0.00	2.53
110	15.57	2.22	0.00	2.53	0.00	2.53
115	15.05	2.15	0.00	2.53	0.00	2.53
120	14.56	2.08	0.00	2.53	0.00	2.53

On-site stormwater detention

Storage required = 5.87 m^3

Storage provided

Avaiable roof surface for storage = #REF! m^2
Maximum ponding depth = 150 mm
Avaialbe roof storage = #REF! m^3
Proposed roof drains = Four (4) WATTS adjustable roof drain w/ weir opening-closed

2-Year Post-development Stormwater Management (except WS-04 Roof)

Time (min)	Intensity (mm/hr)	Controlled Runoff (L/s)	Storage Volume (m^3)	Controlled Release Rate (L/s)	Uncontrolled Runoff (L/s)	Total Release Rate (L/s)
10	76.81	17.53	5.11	9.02	2.81	11.82
15	61.77	14.10	4.58	9.02	2.26	11.27
20	52.03	11.88	3.43	9.02	1.90	10.92
25	45.17	10.31	1.94	9.02	1.65	10.67
30	40.04	9.14	0.22	9.02	1.46	10.48
35	36.06	8.23	0.00	9.02	1.32	10.33
40	32.86	7.50	0.00	9.02	1.20	10.22
45	30.24	6.90	0.00	9.02	1.10	10.12
50	28.04	6.40	0.00	9.02	1.02	10.04
55	26.17	5.97	0.00	9.02	0.96	9.97
60	24.56	5.61	0.00	9.02	0.90	9.91
65	23.15	5.29	0.00	9.02	0.85	9.86
70	21.91	5.00	0.00	9.02	0.80	9.82
75	20.81	4.75	0.00	9.02	0.76	9.78
80	19.83	4.53	0.00	9.02	0.72	9.74
85	18.94	4.32	0.00	9.02	0.69	9.71
90	18.14	4.14	0.00	9.02	0.66	9.68
95	17.41	3.98	0.00	9.02	0.64	9.65
100	16.75	3.82	0.00	9.02	0.61	9.63
105	16.13	3.68	0.00	9.02	0.59	9.61
110	15.57	3.55	0.00	9.02	0.57	9.59
115	15.05	3.43	0.00	9.02	0.55	9.57
120	14.56	3.32	0.00	9.02	0.53	9.55

On-site stormwater detention

Storage required = 5.11 m^3
Storage provided = 29.34 m^3 (Parking lot surface storage)

LRL File No. 200572
Project: Proposed 3-Storey Low-rise Apartment
Location: 1435/1455 Morisset Ave, Ottawa
Date: June 16, 2021
Designed: M. Basnet
Dwg. Reference: C401,C702

Rational Method
Q = 2.78CIA
Q = Peak flow (L/s)
A = Drainage area (ha)
C = Runoff coefficient
I = Rainfall intensity (mm/hr)

Runoff coefficient (C)
Grass = 0.2
Gravel = 0.8
Asphalt / rooftop = 0.9

IDF curve
Ottawa Macdonald-Cartier International Airport
Storm event: 2 Years
Intensity equation:
$I_2 = 732.951 / (Td + 6.199)^{0.810}$ (mm/hr)

Pipe Design Parameters
Minimum velocity = 0.80 m/s
Manning's "n" = 0.013

LOCATION			AREA (ha)			FLOW						STORM SEWER							
WATERSHED / STREET	From MH	To MH	C = 0.20	C = 0.80	C = 0.90	Indiv. 2.78AC	Accum. 2.78AC	Time of Conc.	Rainfall Intensity	Peak Flow (Q)	Controlled Flow (Q)	Pipe Dia.	Type	Slope	Length	Capacity Full (Q_{FULL})	Velocity Full	Time of Flow	Ratio Q/Q_{FULL}
								(min)	(mm/hr)	(L/s)	(L/s)	(mm)		(%)	(m)	(L/s)	(m/s)	(min)	
WS-01	CB01	CBMH02	0.012	0.003	0.000	0.01	0.01	10.00	76.81	1.01		250	PVC	0.50%	24.7	42.05	0.86	0.48	0.02
WS-02	CBMH02	CBMH03	0.005	0.000	0.044	0.11	0.13	10.48	75.01	9.46		250	PVC	0.50%	16.3	42.05	0.86	0.32	0.23
WS-04			0.000	0.000	0.057	0.14	0.14	10.00	76.81	10.95		150	PVC	2.00%	21.5	21.54	1.22	0.29	0.51
WS-06			0.000	0.000	0.003	0.01	0.01	10.00	76.81	0.58		150	PVC	2.00%	24.7	21.54	1.22	0.34	0.03
WS-08			0.000	0.000	0.000	0.00	0.00	10.00	76.81	0.08		150	PVC	2.00%	23.0	21.54	1.22	0.31	0.00
WS-03	*CBMH03	MH04	0.001	0.000	0.041	0.10	0.38	10.80	73.87	28.03	9.02	300	PVC	1.00%	13.0	96.70	1.37	0.16	0.29

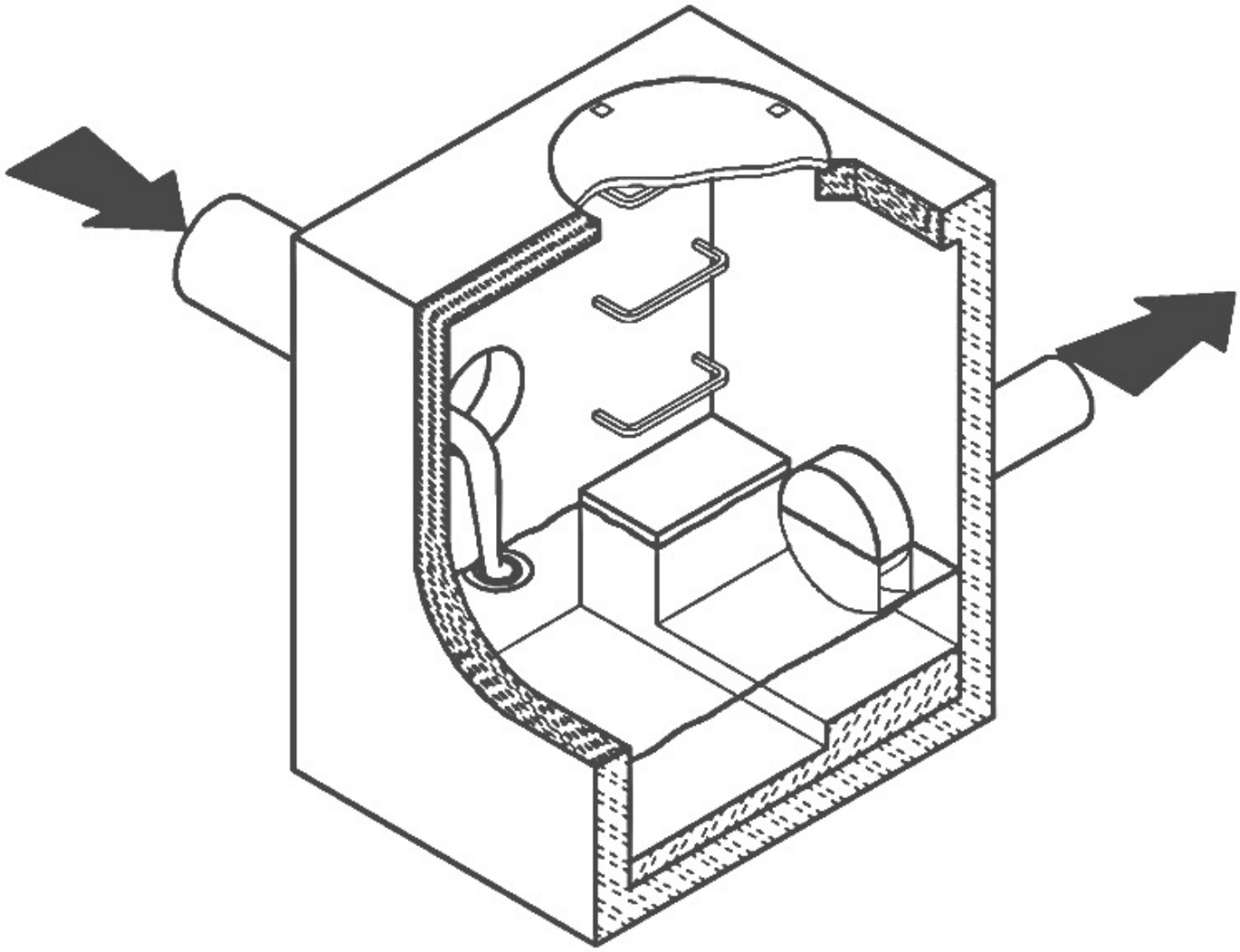
Note:

An ICD installed at CBMH03 will control flow at 9.02 L/s (H=1.98 m)

CSO/STORMWATER MANAGEMENT

HYDROVEX® VHV / SVHV

Vertical Vortex Flow Regulator



JOHN MEUNIER

APPLICATIONS

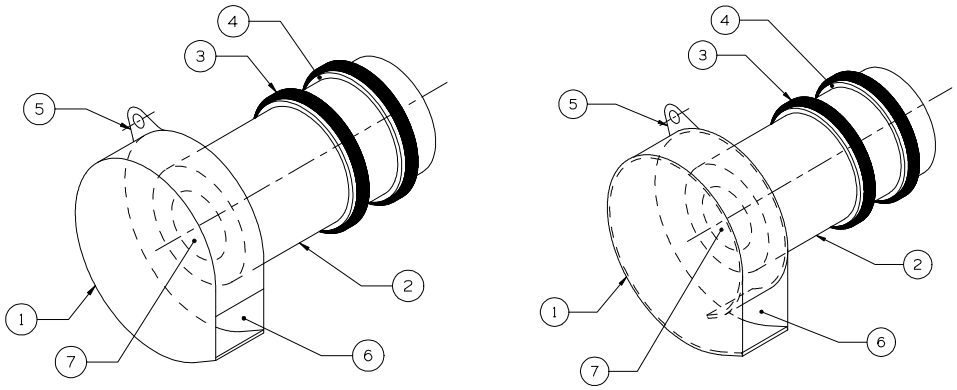
One of the major problems of urban wet weather flow management is the runoff generated after a heavy rainfall. During a storm, uncontrolled flows may overload the drainage system and cause flooding. Due to increased velocities, sewer pipe wear is increased dramatically and results in network deterioration. In a combined sewer system, the wastewater treatment plant may also experience significant increases in flows during storms, thereby losing its treatment efficiency.

A simple means of controlling excessive water runoff is by controlling excessive flows at their origin (manholes). **John Meunier Inc.** manufactures the **HYDROVEX® VHV / SVHV** line of vortex flow regulators to control stormwater flows in sewer networks, as well as manholes.

The vortex flow regulator design is based on the fluid mechanics principle of the forced vortex. This grants flow regulation without any moving parts, thus reducing maintenance. The operation of the regulator, depending on the upstream head and discharge, switches between orifice flow (gravity flow) and vortex flow. Although the concept is quite simple, over 12 years of research have been carried out in order to get a high performance.

The **HYDROVEX® VHV / SVHV** Vertical Vortex Flow Regulators **(refer to Figure 1)** are manufactured entirely of stainless steel, and consist of a hollow body (**1**) (in which flow control takes place) and an outlet orifice (**7**). Two rubber "O" rings (**3**) seal and retain the unit inside the outlet pipe. Two stainless steel retaining rings (**4**) are welded on the outlet sleeve to ensure that there is no shifting of the "O" rings during installation and use.

1. **BODY**
2. **SLEEVE**
3. **O-RING**
4. **RETAINING RINGS (SQUARE BAR)**
5. **ANCHOR PLATE**
6. **INLET**
7. **OUTLET ORIFICE**



VHV ***SVHV***

FIGURE 1: HYDROVEX® VHV-SVHV VERTICAL VORTREX FLOW REGULATORS

ADVANTAGES

- The **HYDROVEX® VHV / SVHV** line of flow regulators are manufactured entirely of stainless steel, making them durable and corrosion resistant.
- Having no moving parts, they require minimal maintenance.
- The geometry of the **HYDROVEX® VHV / SVHV** flow regulators allows a control equal to an orifice plate, having a cross section area 4 to 6 times smaller. This decreases the chance of blockage of the regulator, due to sediments and debris found in stormwater flows. **Figure 2** illustrates the comparison between a regulator model 100 SVHV-2 and an equivalent orifice plate. One can see that for the same height of water, the regulator controls a flow approximately four times smaller than an equivalent orifice plate.
- Installation of the **HYDROVEX® VHV / SVHV** flow regulators is quick and straightforward and is performed after all civil works are completed.
- Installation requires no special tools or equipment and may be carried out by any contractor.
- Installation may be carried out in existing structures.

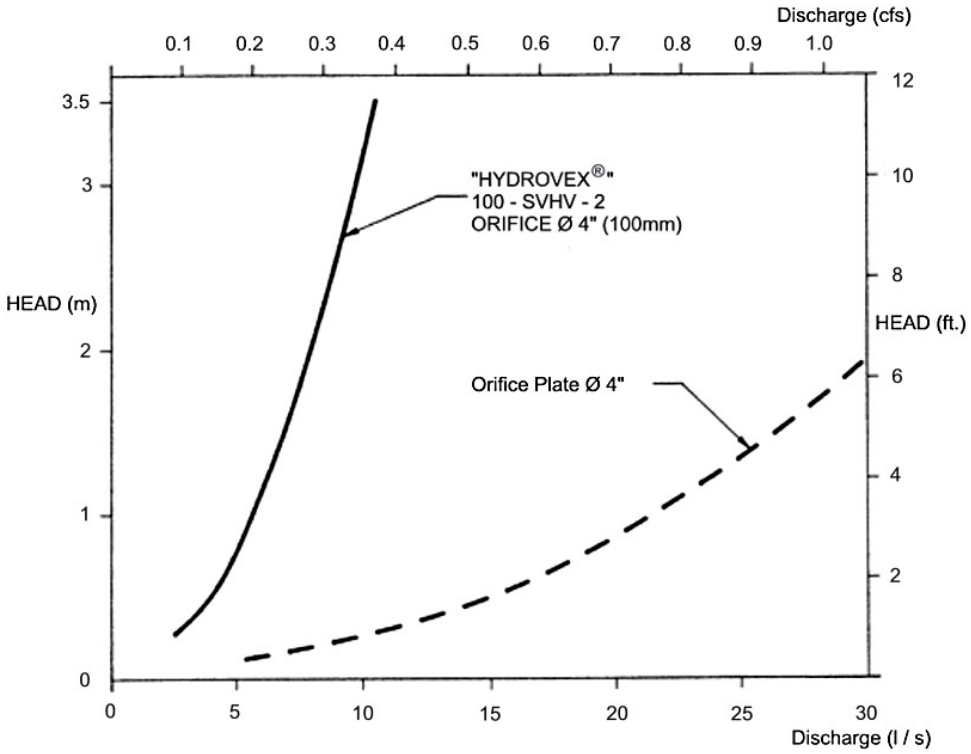


FIGURE 2: DISCHARGE CURVE SHOWING A HYDROVEX® FLOW REGULATOR VS AN ORIFICE PLATE

SELECTION

Selection of a **VHV or SVHV** regulator can be easily made using the selection charts found at the back of this brochure (see **Figure 3)**. These charts are a graphical representation of the maximum upstream water pressure (head) and the maximum discharge at the manhole outlet. The maximum design head is the difference between the maximum upstream water level and the invert of the outlet pipe. All selections should be verified by John Meunier Inc. personnel prior to fabrication.

Example:

✓ Maximum design head	2m (6.56 ft.)
✓ Maximum discharge	6 L/s (0.2 cfs)
✓ Using **Figure 3** - VHV	model required is a **75 VHV-1**

INSTALLATION REQUIREMENTS

All **HYDROVEX® VHV / SVHV** flow regulators can be installed in circular or square manholes. **Figure 4** gives the various minimum dimensions required for a given regulator. ***It is imperative to respect the minimum clearances shown to ensure easy installation and proper functioning of the regulator.***

SPECIFICATIONS

In order to specify a **HYDROVEX®** regulator, the following parameters must be defined:

- The model number (ex: 75-VHV-1)
- The diameter and type of outlet pipe (ex: 6" diam. SDR 35)
- The desired discharge (ex: 6 l/s or 0.21 CFS)
- The upstream head (ex: 2 m or 6.56 ft.) *
- The manhole diameter (ex: 36" diam.)
- The minimum clearance "H" (ex: 10 inches)
- The material type (ex: 304 s/s, 11 Ga. standard)

* ***Upstream head is defined as the difference in elevation between the maximum upstream water level and the invert of the outlet pipe where the HYDROVEX® flow regulator is to be installed.***

PLEASE NOTE THAT WHEN REQUESTING A PROPOSAL, WE SIMPLY REQUIRE THAT YOU PROVIDE US WITH THE FOLLOWING:

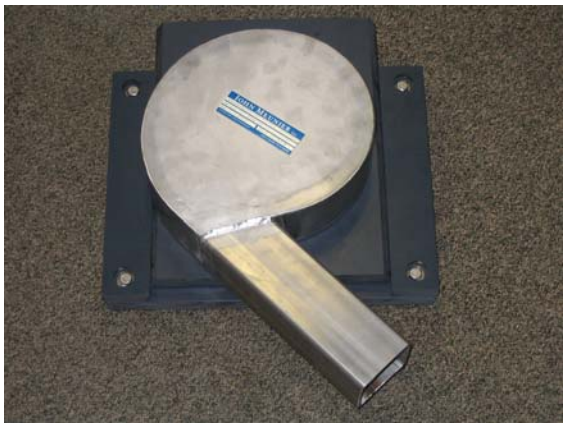
- ***project design flow rate***
- ***pressure head***
- ***chamber's outlet pipe diameter and type***

Typical VHV model in factory

OPTIONS

FV – SVHV (mounted on sliding plate)

VHV-1-O (standard model with odour control inlet)



FV – VHV-O (mounted on sliding plate with odour control inlet)

VHV with Gooseneck assembly in existing chamber without minimum release at the bottom

VHV with air vent for minimal slopes

HYDROVEX®

VHV Vertical Vortex Flow Regulator

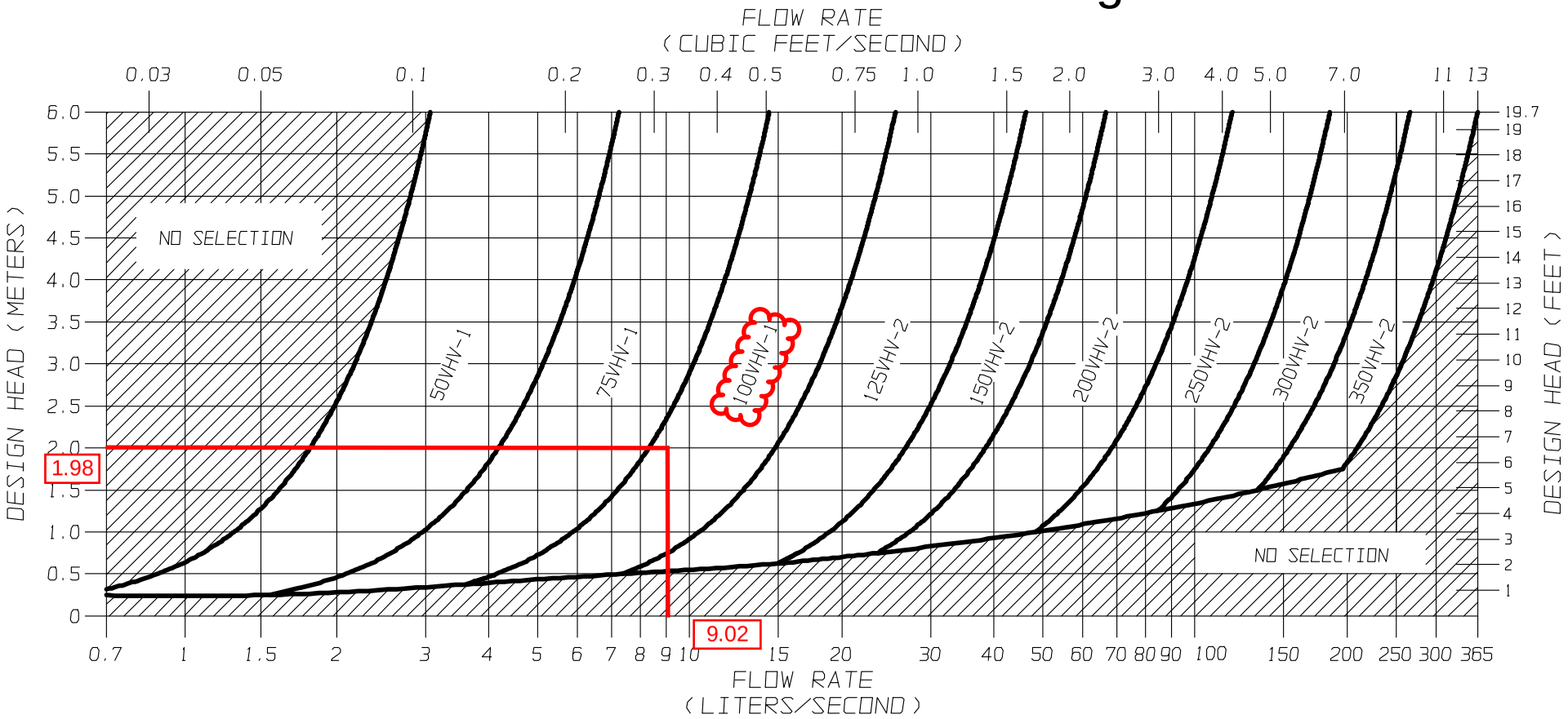
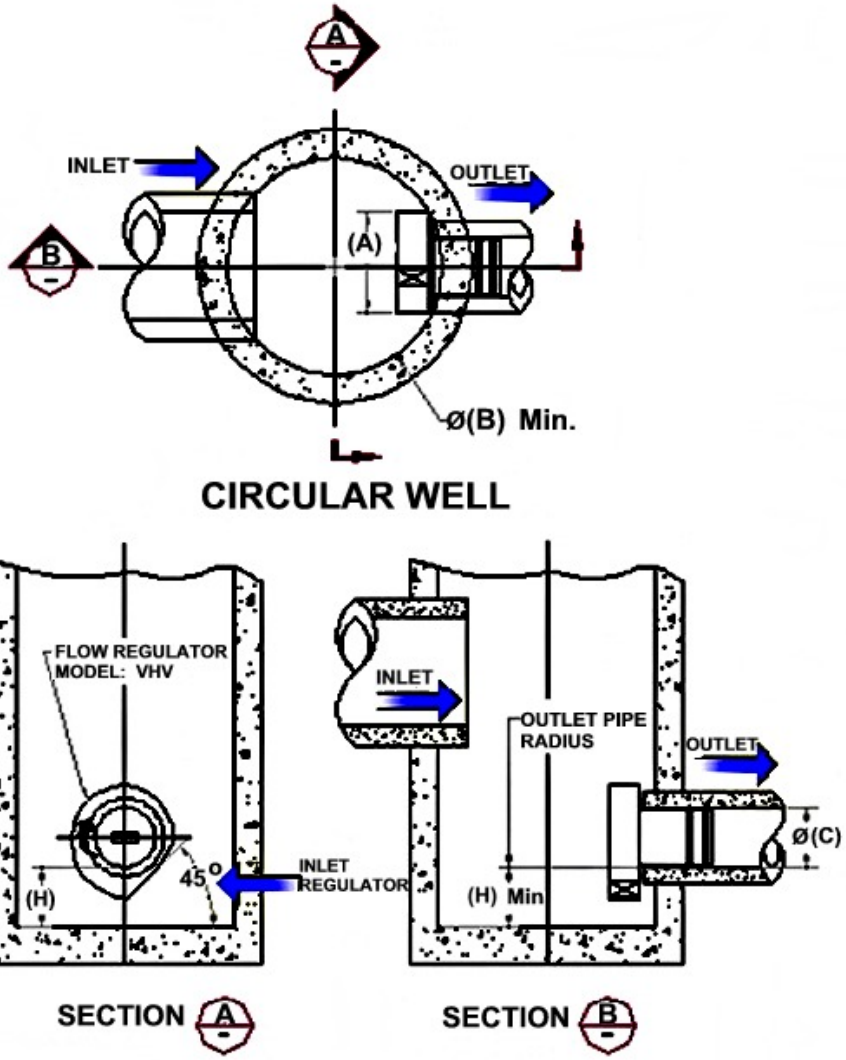


FIGURE 3 - VHV

JOHN MEUNIER

FLOW REGULATOR TYPICAL INSTALLATION IN CIRCULAR MANHOLE
FIGURE 4 (MODEL VHV)

Model Number	Regulator Diameter		Minimum Manhole Diameter		Minimum Outlet Pipe Diameter		Minimum Clearance	
	A (mm)	**A** (in.)	**B** (mm)	**B** (in.)	**C** (mm)	**C** (in.)	**H** (mm)	**H** (in.)
50VHV-1	150	6	600	24	150	6	150	6
75VHV-1	250	10	600	24	150	6	150	6
100VHV-1	325	13	900	36	150	6	200	8
125VHV-2	275	11	900	36	150	6	200	8
150VHV-2	350	14	900	36	150	6	225	9
200VHV-2	450	18	1200	48	200	8	300	12
250VHV-2	575	23	1200	48	250	10	350	14
300VHV-2	675	27	1600	64	250	10	400	16
350VHV-2	800	32	1800	72	300	12	500	20



INSTALLATION

The installation of a **HYDROVEX®** regulator may be undertaken once the manhole and piping is in place. Installation consists of simply fitting the regulator into the outlet pipe of the manhole. **John Meunier Inc.** recommends the use of a lubricant on the outlet pipe, in order to facilitate the insertion and orientation of the flow controller.

MAINTENANCE

HYDROVEX® regulators are manufactured in such a way as to be maintenance free; however, a periodic inspection (every 3-6 months) is suggested in order to ensure that neither the inlet nor the outlet has become blocked with debris. The manhole should undergo periodically, particularly after major storms, inspection and cleaning as established by the municipality

GUARANTY

The **HYDROVEX®** line of **VHV / SVHV** regulators are guaranteed against both design and manufacturing defects for a period of 5 years. Should a unit be defective, **John Meunier Inc.** is solely responsible for either modification or replacement of the unit.

John Meunier Inc.
ISO 9001 : 2008

Head Office
4105 Sartelon
Saint-Laurent (Quebec) Canada H4S 2B3
Tel.: 514-334-7230 www.johnmeunier.com
Fax: 514-334-5070 cso@johnmeunier.com

Ontario Office
2000 Argentia Road, Plaza 4, Unit 430
Mississauga (Ontario) Canada L5N 1W1
Tel.: 905-286-4846 www.johnmeunier.com
Fax: 905-286-0488 ontario@johnmeunier.com

USA Office
2209 Menlo Avenue
Glenside, PA USA 19038
Tel.: 412- 417-6614 www.johnmeunier.com
Fax: 215-885-4741 asteele@johnmeunier.com

Revised: 2011-05-03

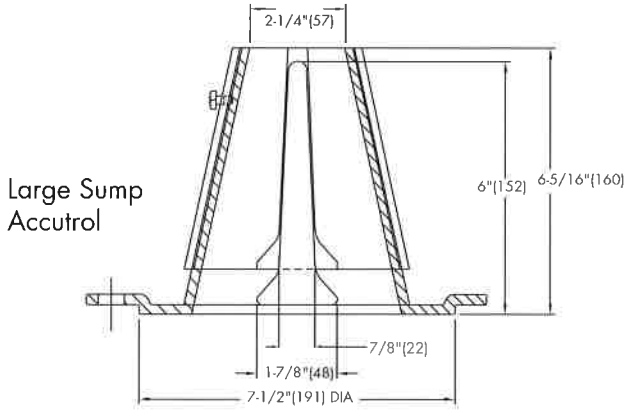
ADJUSTABLE ACCUTROL (for Large Sump Roof Drains only)

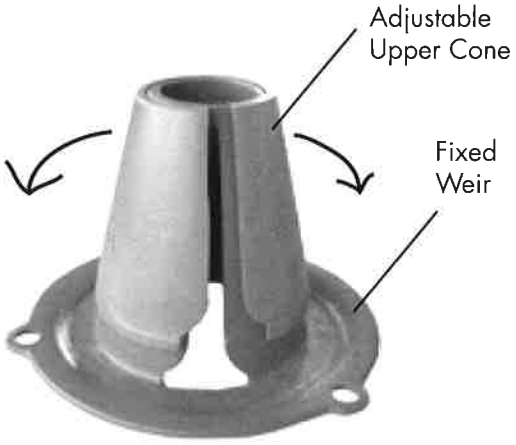
For more flexibility in controlling flow with heads deeper than 2", Watts Drainage offers the Adjustable Accutrol. The Adjustable Accutrol Weir is designed with a single parabolic opening that can be covered to restrict flow above 2" of head to less than 5 gpm per inch, up to 6" of head. To adjust the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

EXAMPLE:

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

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





1/2 Weir Opening Exposed Shown Above

TABLE 1. Adjustable Accutrol Flow Rate Settings

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

Job Name _____ **Model No.** _____

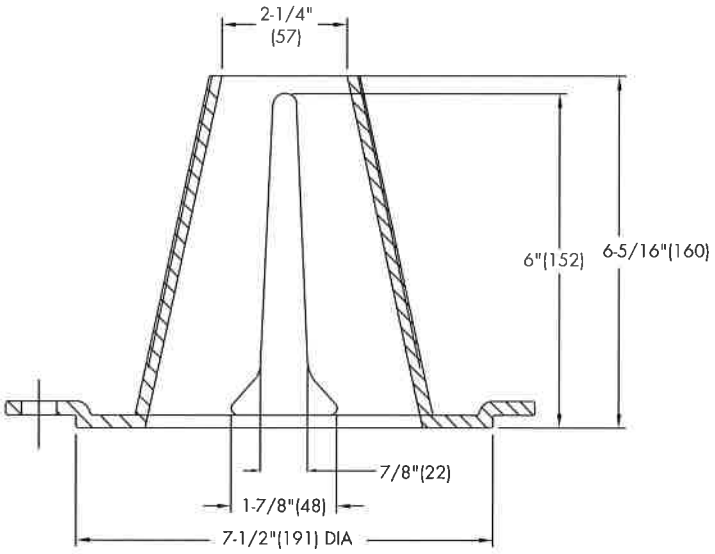
Job Location _____ Contractor _____

Engineer _____ Representative _____

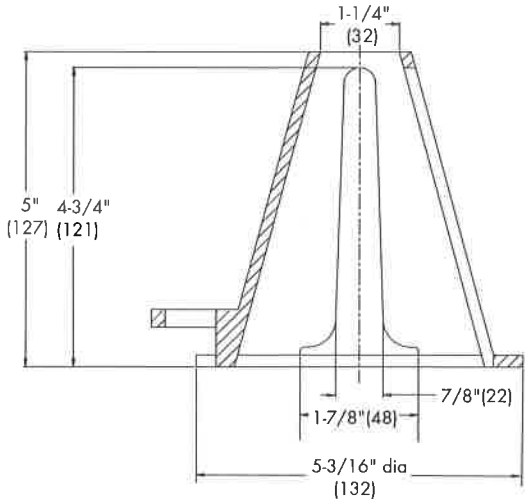
ACCUTROL WEIR FLOW CONTROL

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

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



LARGE SUMP ACCUTROL WEIR



SMALL SUMP ACCUTROL WEIR

Job Name _____ **Model No.** _____

Job Location _____ Contractor _____

Engineer _____ Representative _____

APPENDIX C

Water Supply Calculations

Water Supply Calculations

LRL File No. 200572
Project: Proposed 3-Storey Low-Rise Apartment
Location: 1435/1455 Morisset Ave, Ottawa, ON
Date: June 16, 2021
Prepared by: M. Basnet

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

Unit Type	Persons Per Uni	Number of Units	Population
1-Bedroom Apartment	1.4	16	22.4
2-Bedroom Apartment	2.1	15	31.5
	Total	**31**	**53.9**

Average Water Consumption Rate	350	L/c/d		
Average Day Demand	**18,865**	**L/d**	**0.22**	**L/s**
Maximum Day Factor	7.5		(MOE Table 3-3)	
Maximum Daily Demand	**140,721**	**L/d**	**1.63**	**L/s**
Peak Hour Factor	11.2		(MOE Table 3-3)	
Maximum Hour Demand	**1,578,953**	**L/d**	**18.27**	**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) = $(4Q/\pi V)^{1/2}$
= 0.114 m
= 114 mm

Proposed pipe diameter (d) = 150 mm
(considering the presence of sprinkler system)

Fire Flow Calculations

LRL File No. 200572
Project: Proposed 3-Storey Low-Rise Apartment
Location: 1435/1455 Morisset Ave, Ottawa
Date: June 16, 2021
Method: Fire Underwriter's Survey (FUS)
Prepared by: M. Basnet

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	Ordinary Construction	**1**		
			Ordinary Construction	1.0				
			Non-combustible construction	0.8				
			Fire resistive construction <2 hrs	0.7				
			Fire resistive construction >2 hrs	0.6				
Floor Space Area (A)								
2	*Total area					**1,198**	m^2	
3	Obtain fire flow before reductions	Required fire flow	Fire Flow = 220 x C x $A^{0.5}$				L/min	**7,613**
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	**6,471**
			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	**3,236**
			Water supply is standard for both the system and fire department hose lines	-10%	True	**-10%**		
			Fully supervised system	-10%	True	**-10%**		
6	Choose separation	Exposure distance between units	North side	20.1 to 30m	10%		L/min	**4,530**
			East side	>45m	0%			
			South side	20.1 to 30m	10%			
			West side	3.1 to 10m	20%	**40%**		
Net required fire flow								
7	Obtain fire flow, duration, and volume		Minimum required fire flow rate (rounded to nearest 100)				L/min	**4,500**
			Minimum required fire flow rate				L/s	**75.0**
			Required duration of fire flow				hr	**1.75**

Note:
*The floor between level 2 and 3 will be separated by a 2h fire-resistance assembly to compartmentalize the building into two (see confirmation letter by the Architect)

figurr

architects collective

June 10, 2021

Kelby Lodoen Unseth | **Planner II, Development Review (South Services)**
Planning, Infrastructure and Economic Development Department

Re: **Letter of Confirmation- Fire Separations**
Proposed 3-storey low-rise apartment building
1435-1455 Morisset Avenue

Kelby,

In coordination with available fire flow rates on Morisset Ave., the proposed 3-storey low rise apartment building will be sprinklered and be constructed with the following fire separations. All floor assemblies will be separated by 1 h fire-resistance assemblies as per OBC section 9.10.9.11 (1). The floor between level 2 and level 3 will be separated by a 2 h fire-resistance assembly to compartmentalize the building into two. All walls at stair wells and shafts will also have a fire-resistance rating of 2 h.

Regards,

Roberto Campos, **Architect | OAA | M.Arch. | MRAIC | ORSA**
Partner

FIG. 1
3550, Saint-Antoine O.
Montréal, Québec
H4C 1A9
T 514 861-5122

FIG. 2
190 Somerset St. West
Suite 206
Ottawa ON K2P 0J4
T 613 695-6122

figurr.ca


Fire Hydrant Distance to Bldg.
≤76 m
≥152 ≤305 m
SUBJECT SITE
av Edgecliffe Ave
av Morisset Ave
av Mayview Ave
av Rosenthal Ave
rue Medford St

Mohan Basnet

From: Baker, Adam <adam.baker@ottawa.ca>
Sent: May 26, 2021 3:38 PM
To: Mohan Basnet
Subject: RE: 200572-1435 Morisset Ave-Water Boundary Conditions
Attachments: 1435 Morisset Avenue May 2021.pdf

Hi Mohan,

Please find attached the water boundary results modelled for 1435 Morisset. Please note the available flow would not meet the current fire flow requirements –

The following are boundary conditions, HGL, for hydraulic analysis at 1435 Morisset (zone ME) assumed to be connected to 152 mm on Morisset Avenue (see attached PDF for location).

Minimum HGL = 143.7 m

Maximum HGL = 158.2 m

Available Flow at 20 psi = 85 L/s, assuming ground elevation of 97.6 m

The maximum pressure is estimated to be more than 80 psi. A pressure check at completion of construction is recommended to determine if pressure control is required.

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.

Thank you,
Adam

Adam Baker, EIT
Project Manager
Planning, Infrastructure and Economic Development Department - Services de la planification, de l'infrastructure et du développement économique
Development Review - South 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 26552, Adam.Baker@ottawa.ca

From: Mohan Basnet <mbasnet@lrl.ca>
Sent: May 11, 2021 4:03 PM
To: Baker, Adam <adam.baker@ottawa.ca>
Subject: 200572-1435 Morisset Ave-Water Boundary Conditions

Hello Adam,

We are working on serviceability of the proposed residential development at 1435 Morisset Ave and require boundary conditions at this site to proceed. Please use the following data to provide the required boundary conditions.

- Service location: please see schematic below
- Type of development: proposed 3-Storey apartment
- Average daily demand: 0.22 L/s
- Maximum daily demand: 1.63 L/s
- Peak hourly demand: 18.27 L/s
- FUS fire flow demand: 320 L/s

For your reference, I have also included copies of domestic water demand calculations, FUS fire flow calculations and nearby hydrant location along with this email.

Thank you and please let me know if you have any questions.

Mohan

Mohan Basnet, P.Eng.
Civil Engineering Services
LRL Associates Ltd.
5430 Canotek Road
Ottawa, Ontario K1J 9G2

T (613) 842-3434 or (877) 632-5664 ext 213
F (613) 842-4338
E mbasnet@lrl.ca
W www.lrl.ca

LRL
ENGINEERING | INGÉNIERIE

Given the current COVID-19 situation, please be aware that LRL has implemented alternative working conditions for our team. Many of us have now transitioned to working from home; however, communication and workability remains one of our top priorities.
We will continue to be reachable by cell phone or by calling LRL at 613-842-3434 which will prompt you to enter the extension of the person you are trying to reach.
In addition, we will continue to have access to all e-mail correspondence and do our best to return all inquiries in a timely manner.

'

'

APPENDIX D

Sanitary Calculations

Mohan Basnet

From: Baker, Adam <adam.baker@ottawa.ca>
Sent: May 27, 2021 8:22 AM
To: Mohan Basnet
Subject: RE: 200572-1435 Morisset Ave-Proposed Service Connection/SWM criteria

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Mohan,

Please accept the following information with regards to the servicing criteria –

- SWM criteria for an outlet on Morisset Avenue:
  - The 2-yr storm or 5-yr storm event using the IDF information derived from the Meteorological Services of Canada rainfall data, taken from the MacDonald Cartier Airport, collected 1966 to 1997.
  - The pre-development runoff coefficient or a maximum equivalent 'C' of 0.5, whichever is less (§ 8.3.7.3).
  - A calculated time of concentration (Cannot be less than 10 minutes).
  - Flows to the storm sewer in excess of the 2-year storm release rate, up to and including the 100-year storm event, must be detained on site.
  - Please confirm any stormwater quality requirements with the relevant Conservation Authority.

- Sanitary Constraints:
  - Please confirm if the anticipated sanitary flow provided (0.76 L/s) is peak or average. From an average flow of 0.76 L/s, a resulting peak sanitary flow of 3.24 L/s is acceptable for this system. If the peak sanitary flows will exceed this, please let me know and I will re-confirm for you.

Thank you,
Adam

Adam Baker, EIT
Project Manager
Planning, Infrastructure and Economic Development Department - Services de la planification, de l'infrastructure et du développement économique
Development Review - South 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 26552, Adam.Baker@ottawa.ca

From: Mohan Basnet <mbasnet@lrl.ca>
Sent: May 12, 2021 2:09 PM
To: Baker, Adam <adam.baker@ottawa.ca>
Subject: 200572-1435 Morisset Ave-Proposed Service Connection/SWM criteria

Good afternoon Adam,

At LRL, we are working for STM and servicing study for a proposed 3-storey residential apartment building at 1435 Morisset Ave.

As a follow-up from the pre-consultation notes (Aug 28, 2020):

- Can you please advise SWM criteria of the subject site with a proposed STM outlet at Morisset Ave?
- Can you also advise remaining capacity of SAN sewer along Morisset Ave? Anticipated SAN flow from the proposed building is 0.76 L/s

For your reference I have also attached schematic of proposed service connections.

Please let me know if you have any question.

Thank you,

Mohan Basnet, P.Eng.
Civil Engineering Services
LRL Associates Ltd.
5430 Canotek Road
Ottawa, Ontario K1J 9G2
T (613) 842-3434 or (877) 632-5664 ext 213
F (613) 842-4338
E mbasnet@lrl.ca
W www.lrl.ca

Given the current COVID-19 situation, please be aware that LRL has implemented alternative working conditions for our team. Many of us have now transitioned to working from home; however, communication and workability remains one of our top priorities.
We will continue to be reachable by cell phone or by calling LRL at 613-842-3434 which will prompt you to enter the extension of the person you are trying to reach.
In addition, we will continue to have access to all e-mail correspondence and do our best to return all inquiries in a timely manner.

'

'

LRL File No.: 200572
Project: Proposed Residential Building
Location: 1435/1455 Morisset Ave, Ottawa, ON
Date: June 16, 2021
Designed: Mohan Basnet

Sanitary Design Parameters

Average Daily Flow = 280 L/p/day
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
Industrial Peak Factor = as per Appendix 4-B
Extraneous Flow = 0.33 L/s/gross ha
(as Per Tech Bulleting ISTB-2018-01)

Pipe Design Parameters

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

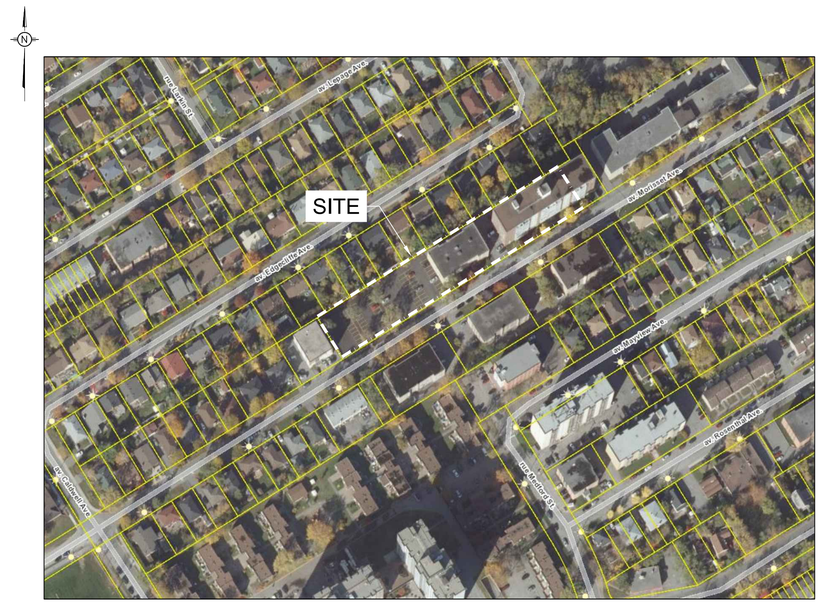
LOCATION			RESIDENTIAL AREA AND POPULATION						COMMERCIAL		INDUSTRIAL			INSTITUTIONAL		C+I+I	INFILTRATION			TOTAL FLOW (l/s)	PIPE					
STREET/ SITE	FROM MH	TO MH	AREA (Ha)	POP.	CUMMULATIVE AREA (Ha)	CUMMULATIVE POP.	PEAK FACT.	PEAK FLOW (l/s)	AREA (Ha)	ACCU. AREA (Ha)	AREA (Ha)	ACCU. AREA (Ha)	PEAK FACT.	AREA (Ha)	ACCU. AREA (Ha)	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)
	Bldg.	SAN MH01	0.185	53.9	0.19	53.9	4.0	0.70									0.19	0.19	0.06	0.76	12.5	200	2.00%	PVC	46.38	1.48

APPENDIX E

Civil Engineering Drawings

PROPOSED 3-STOREY LOW-RISE APARTMENT
1435 &1455 MORISSET AVE, OTTAWA, ON

REVISION 00



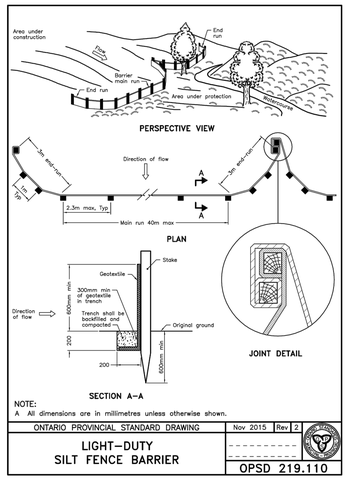
KEY PLAN (N.T.S.)

DRAWING INDEX	
TITLE PAGE	
SEDIMENT AND EROSION CONTROL PLAN	C101
DEMOLITION PLAN	C102
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
5430 Canotek Road | Ottawa, ON, K1J 9G2
www.lrl.ca | (613) 842-3434

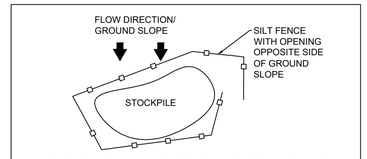
PROPOSED 3-STOREY LOW-RISE APARTMENT
1435 & 1455 MORISSET AVE, OTTAWA, ON
REV.00 - ISSUED FOR APPROVAL - JUNE 18, 2021
LRL PROJECT no: 200572

LICENSED PROFESSIONAL ENGINEER
M. BASNET
100501996
2021-06-18
PROVINCE OF ONTARIO
NOT AUTHENTIC UNLESS SIGNED AND DATED

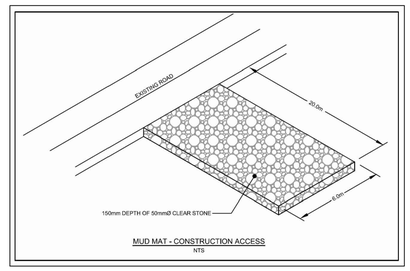


NOTE:
A All dimensions are in millimetres unless otherwise shown.

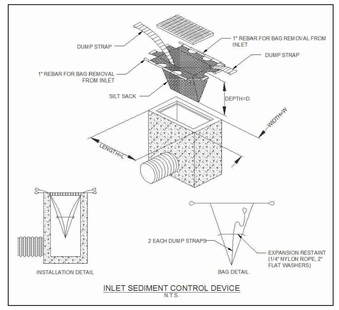
ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2015	Rev 2
LIGHT-DUTY SILT FENCE BARRIER		OPSD 219.110



STOCKPILE EROSION PROTECTION
N.T.S.



MUD MAT - CONSTRUCTION ACCESS
NTS

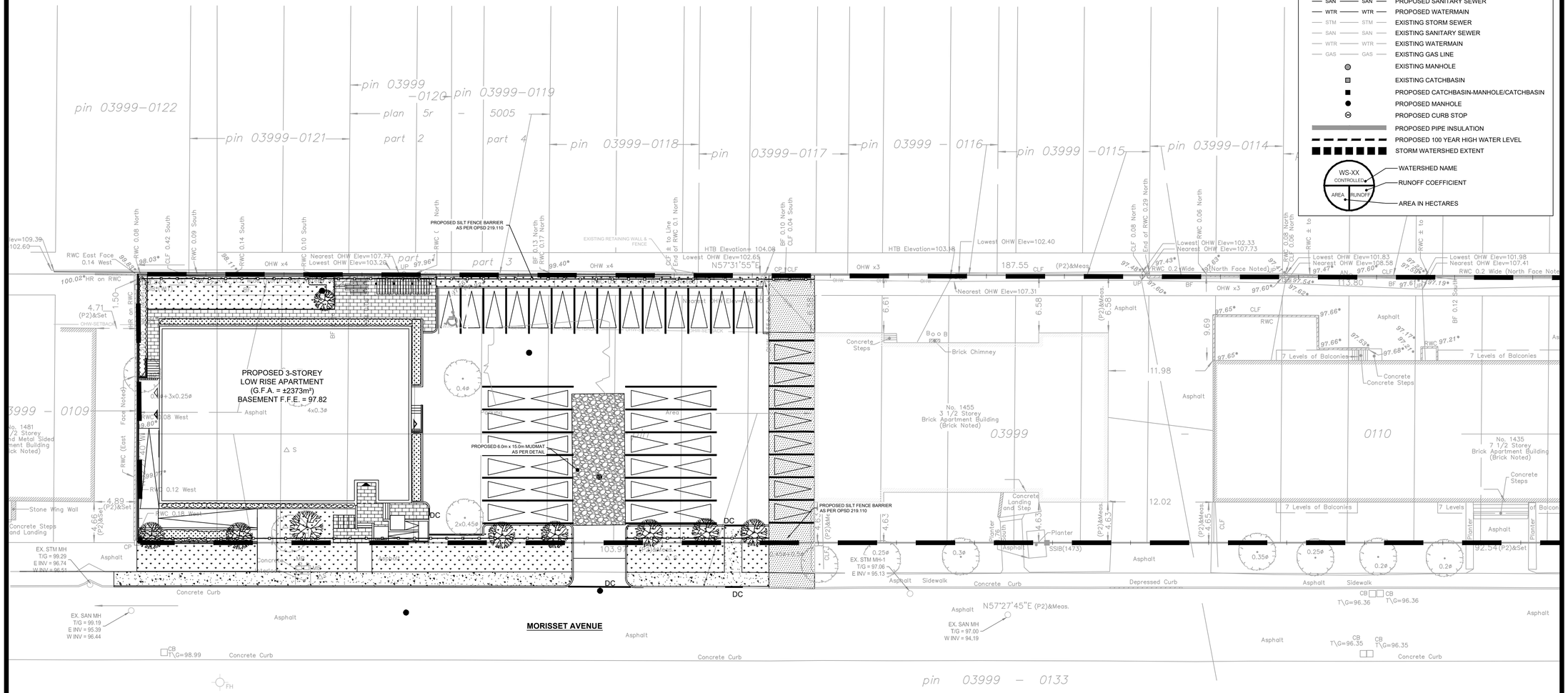


INLET SEDIMENT CONTROL DEVICE
N.T.S.

LEGEND:

- EXISTING PROPERTY LINE TO REMAIN
- PROPOSED CURB
- PROPOSED DEPRESSED CURB
- PROPOSED TERRACING (3:1 MIN.)
- PROPOSED SILT FENCE AS PER OPSD 219.110
- 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 (WATERSHED NAME) / CONTROLLED (RUNOFF COEFFICIENT) / AREA (AREA IN HECTARES)



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 AVAILABE 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.

5m 2 0 5m
SCALE: 1:200

LICENSED PROFESSIONAL ENGINEER
M. BASNET
100501996
2021-06-18
PROVINCE OF ONTARIO

No.	REVISIONS	BY	DATE
00	ISSUED FOR APPROVAL	M.B.	18 JUNE 2021

NOT AUTHENTIC UNLESS SIGNED AND DATED

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

CLIENT
FIRM CAPITAL

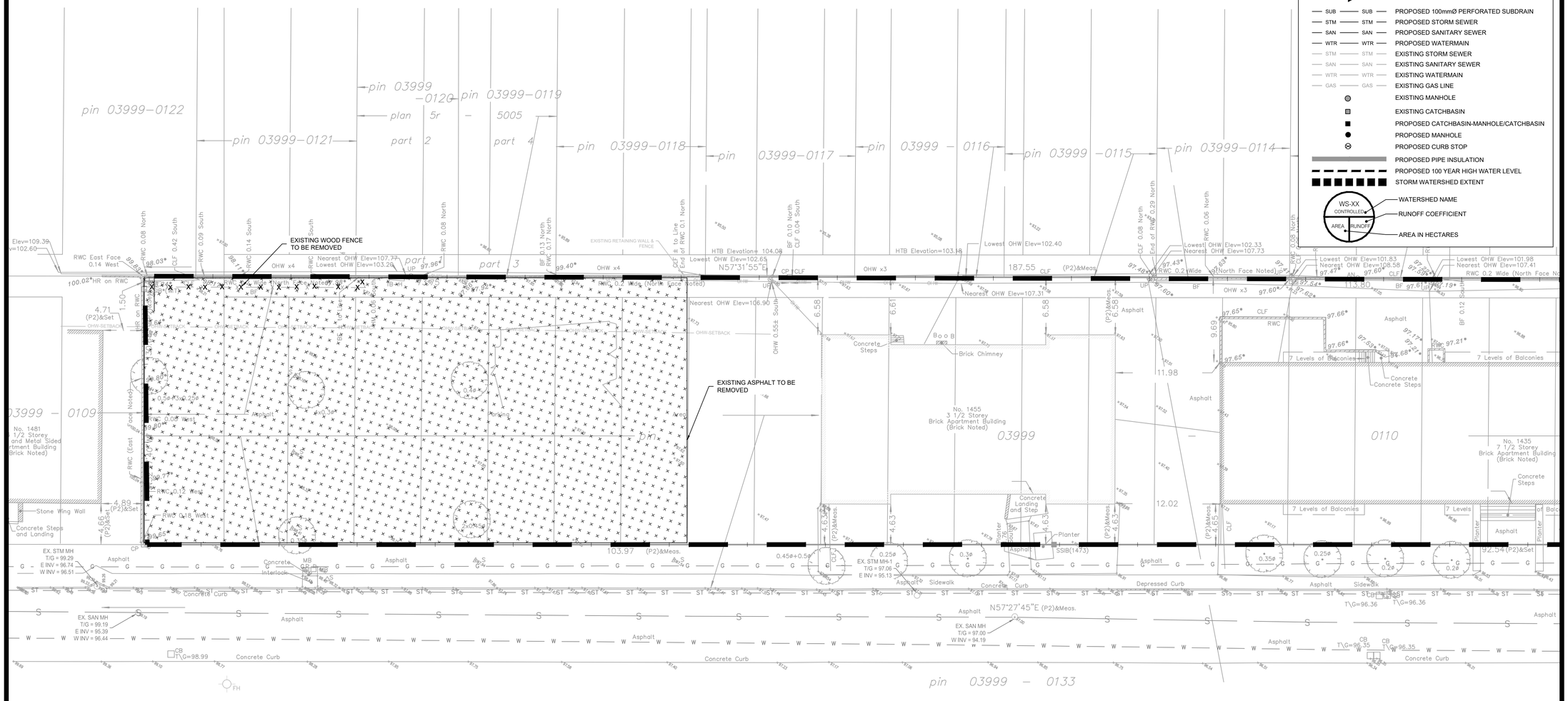
DESIGNED BY:	DRAWN BY:	APPROVED BY:
M.B.	A.O.	M.B.

PROJECT
PROPOSED 3-STOREY LOW-RISE APARTMENT
1435 & 1455 MORISSET AVE, OTTAWA (ON)

DRAWING TITLE
EROSION AND SEDIMENT CONTROL PLAN

PROJECT NO. 200572
DATE JANUARY 2021

C101



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 CONTROLLED AREA RUNOFF
- WATERSHED NAME
- RUNOFF COEFFICIENT
- AREA IN HECTARES

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 AVAILABE 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.

5m 2 0 5m
SCALE: 1:200

LICENSED PROFESSIONAL ENGINEER
M. BASNET
100501996
2021-06-18
PROVINCE OF ONTARIO

No.	REVISIONS	BY	DATE
00	ISSUED FOR APPROVAL	M.B.	18 JUNE 2021

NOT AUTHENTIC UNLESS SIGNED AND DATED

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

CLIENT
FIRM CAPITAL

DESIGNED BY:	DRAWN BY:	APPROVED BY:
M.B.	A.O.	M.B.

PROJECT
PROPOSED 3-STOREY LOW-RISE APARTMENT
1435 & 1455 MORISSET AVE, OTTAWA (ON)

DRAWING TITLE
DEMOLITION PLAN

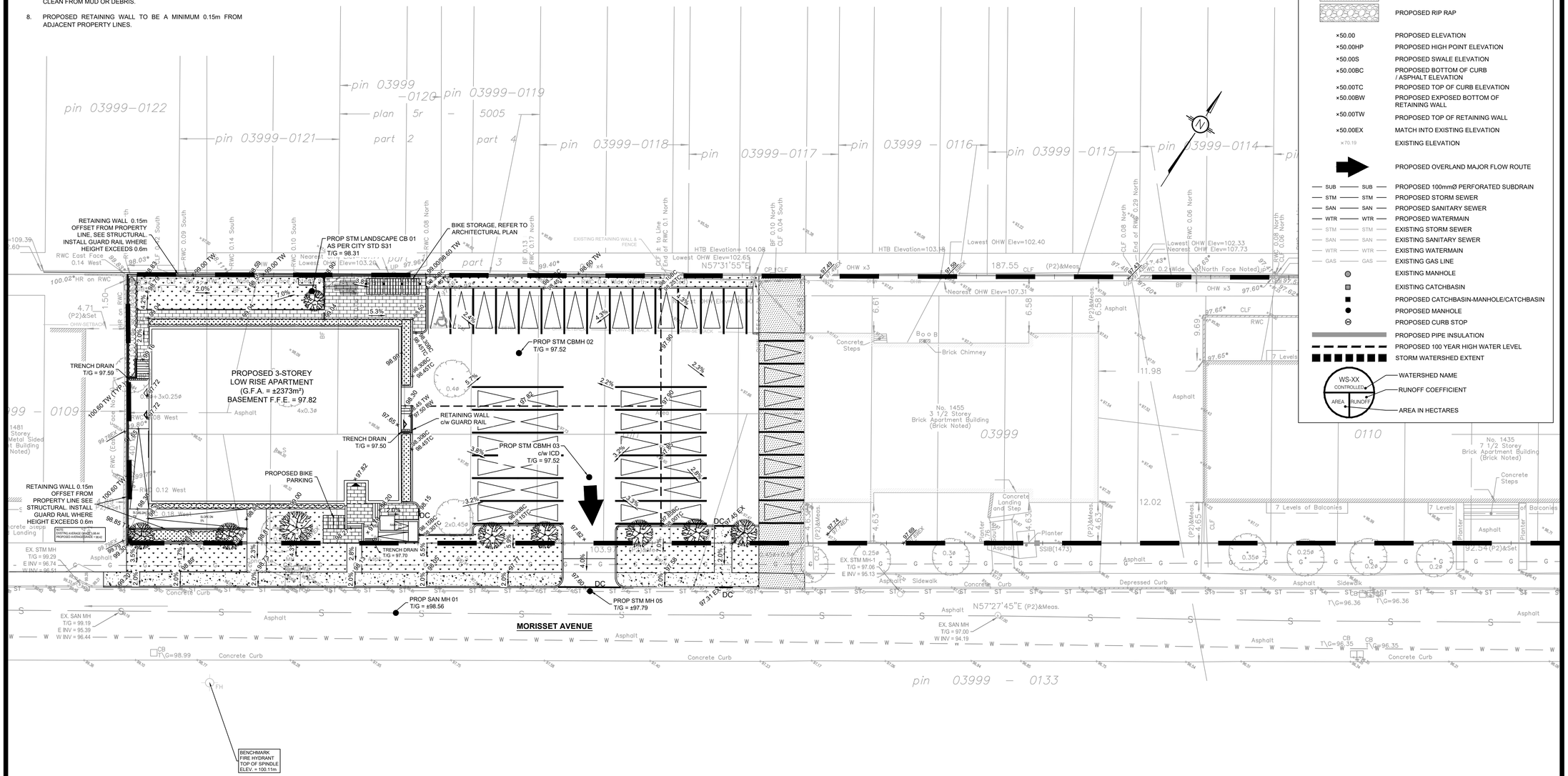
PROJECT NO.
200572

DATE
JANUARY 2021

C102

GENERALGRADING NOTES

1. ANY MODIFICATIONS IN ELEVATION BETWEEN THE SURVEY AND CONSTRUCTION THAT WILL AFFECT THE PROJECT ARE TO BE COMMUNICATED WITH THE ENGINEER PRIOR TO START OF CONSTRUCTION.
2. PRIOR TO START OF ANY WORK ON SITE, THE CONTRACTOR IS RESPONSIBLE TO FIELD VERIFY EXISTING GRADES AND ENSURE OVERLAND DRAINAGE IS FEASIBLE WITH ACTUAL SITE CONDITIONS.
3. ANY DISCREPANCIES ARE TO BE COMMUNICATED WITH THE ENGINEER PRIOR TO CONSTRUCTION.
4. NO EXCESS DRAINAGE, EITHER DURING OR AFTER CONSTRUCTION, WILL BE DIRECTED TOWARDS NEIGHBOURING PROPERTIES.
5. NO ALTERATION OF EXISTING GRADES AND DRAINAGE PATTERNS ON PROPERTY BOUNDARIES.
6. ENSURE POSITIVE DRAINAGE AWAY FROM FOUNDATION.
7. CONTRACTOR IS RESPONSIBLE TO KEEP THE ROADS FREE AND CLEAN FROM MUD OR DEBRIS.
8. PROPOSED RETAINING WALL TO BE A MINIMUM 0.15m FROM ADJACENT PROPERTY LINES.



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 PROPOSED 100mmØ PERFORATED SUBDRAIN
- STM PROPOSED STORM SEWER
- SAN PROPOSED SANITARY SEWER
- WTR PROPOSED WATERMAIN
- STM EXISTING STORM SEWER
- SAN EXISTING SANITARY SEWER
- WTR EXISTING WATERMAIN
- 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

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.

5m 2 0 5m

SCALE: 1:200

LICENSED PROFESSIONAL ENGINEER M. BASNET 100501996 2021-06-18 PROVINCE OF ONTARIO

No.	REVISIONS	BY	DATE
00	ISSUED FOR APPROVAL	M.B	18 JUNE 2021

NOT AUTHENTIC UNLESS SIGNED AND DATED

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

CLIENT: FIRM CAPITAL

DESIGNED BY:	DRAWN BY:	APPROVED BY:
M.B.	A.O.	M.B.

PROJECT: PROPOSED 3-STOREY LOW-RISE APARTMENT 1435 & 1455 MORISSET AVE, OTTAWA (ON)

DRAWING TITLE: GRADING AND DRAINAGE PLAN

PROJECT NO. 200572

DATE JANUARY 2021

C301

NOTES: GENERAL

1. CONTRACTOR IS RESPONSIBLE FOR ALL LAYOUT FOR CONSTRUCTION PURPOSES.
2. ALL ELEVATIONS ARE GEODETIC AND UTILIZE METRIC UNITS.
3. JOB BENCH MARK - CONFIRM WITH LRL PRIOR TO UTILIZATION.
4. ALL GROUND SURFACES SHALL BE EVENLY GRADED WITHOUT PONDING AREAS AND WITHOUT LOW POINTS EXCEPT WHERE APPROVED SWALE, CATCH BASIN OUTLETS AND/OR STORM DETENTION AREAS ARE PROVIDED.
5. STRIP AND REMOVE ALL TOPSOIL FROM IMPROVED AREAS.
6. COORDINATE AND SCHEDULE ALL WORK WITH OTHER TRADES AND CONTRACTORS.
7. ALL EDGES OF DISTURBED PAVEMENT SHALL BE SAW CUT TO FORM A CLEAN STRAIGHT LINE PRIOR TO PLACING NEW PAVEMENT. PAVEMENT REINSTATEMENT SHALL BE WITH STEP JOINTS OF 500mm WIDTH MINIMUM.
8. CURBS TO BE BARRIER, CONSTRUCTED AS PER OPSD 600.110.
9. ALL MATERIAL SUPPLIED AND PLACED FOR PARKING LOT AND ACCESS ROAD CONSTRUCTION SHALL BE TO OPSS STANDARDS AND SPECIFICATIONS UNLESS OTHERWISE NOTED. CONSTRUCTION TO OPSS 206, 310 & 314. MATERIALS TO OPSS 1001, 1003 & 1010.
10. ABUTTING PROPERTY GRADE TO BE MATCHED.
11. OBTAIN AND PAY FOR ALL NECESSARY PERMITS AND APPROVALS FROM THE MUNICIPAL AUTHORITIES PRIOR TO COMMENCING CONSTRUCTION.
12. MINIMIZE DISTURBANCE TO EXISTING VEGETATION DURING THE EXECUTION OF ALL WORKS.
13. FILTER FABRIC TO BE INSTALLED AND MAINTAINED BETWEEN THE FRAME AND COVER OF ALL CATCHBASINS, CATCHBASIN MANHOLES AND MANHOLES DURING THE CONSTRUCTION PERIOD TO MINIMIZE SEDIMENTS ENTERING THE STORM SEWER SYSTEM. ALL GRASSED AREAS MUST BE COMPLETED PRIOR TO THE REMOVAL OF THE FILTER FABRIC IN THE DRAINAGE STRUCTURES.
14. REMOVE FROM SITE ALL EXCESS EXCAVATED MATERIAL UNLESS OTHERWISE DIRECTED FROM THE ENGINEER. EXCAVATE AND REMOVE ALL ORGANIC MATERIAL AND DEBRIS, IF ANY, LOCATED WITHIN THE PROPOSED BUILDING, PARKING AND ROADWAY LOCATIONS.
15. THE APPROVAL OF THIS PLAN DOES NOT EXEMPT THE CONTRACTOR FROM THE REQUIREMENTS TO OBTAIN THE VARIOUS PERMITS/APPROVALS REQUIRED TO COMPLETE A CONSTRUCTION PROJECT, SUCH AS BUT NOT LIMITED TO; ROAD CUT PERMITS, SEWER PERMITS, WATER PERMIT, ETC.
16. AT PROPOSED UTILITY CONNECTION POINTS AND CROSSINGS (I.E. STORM SEWER, SANITARY SEWER, WATER, ETC.) THE CONTRACTOR SHALL DETERMINE THE PRECISE LOCATION AND DEPTH OF EXISTING UTILITIES AND REPORT ANY DISCREPANCIES OR CONFLICTS TO THE ENGINEER BEFORE COMMENCING WORK.
17. ALL SIDEWALK CONSTRUCTION TO BE AS PER OPSD 310.010 & OPSD 310.050.
18. EXISTING BUILDINGS REQUIRE A CCTV INSPECTION AND REPORT TO ENSURE EXISTING SERVICES TO BE RE-USED ARE IN GOOD WORKING ORDER AND MEET CURRENT MINIMUM SIZE REQUIREMENTS.
19. ALL MATERIALS AND CONSTRUCTION TO BE IN ACCORDANCE WITH CURRENT CITY OF OTTAWA (COA) STANDARDS AND ONTARIO PROVINCIAL STANDARDS AND SPECIFICATIONS (OPSS & OPSD); SEWER AND WATERMAIN MATERIAL TYPES AND DISINFECTION.
20. SUPPLY AND CONSTRUCT ALL SEWERS AND APPURTENANCES IN ACCORDANCE WITH CURRENT CITY OF OTTAWA (COA) STANDARDS AND ONTARIO PROVINCIAL STANDARDS AND SPECIFICATIONS (OPSS & OPSD); ROADS AND PUBLIC WORKS.

NOTES: SEWERS

1. SEWER BEDDING AS PER PIPE TRENCH DETAIL WITH GRANULAR 'A' BEDDING COMPACTED TO 95% OF ITS SPMDD.
2. ALL WORK SHALL BE PERFORMED, AS APPLICABLE IN ACCORDANCE WITH OPSS 407, AND 410.
3. CONTRACTOR TO CONFIRM ELEVATION OF EXISTING SEWERS AT PROPOSED CONNECTION POINTS AND REPORT ANY DISCREPANCIES TO THE ENGINEER BEFORE COMMENCING ANY WORK.
4. ALL SEWERS WITH LESS THAN 2.0m OF COVER ARE SUBJECT TO INSULATION DETAIL.
5. INSULATE ALL STORM PIPES WITH LESS THAN 2.0m COVER AND ALL SANITARY PIPES WITH LESS THAN 2.1m COVER WITH APPROPRIATE DEPTH OF THERMAL INSULATION AS PER CITY OF OTTAWA SEWER DESIGN GUIDELINES SECTION 5.7.1.3 & 5.10 AS WELL. ALSO REFER TO COO STD. DWGS. W21-23.
6. FLEXIBLE CONNECTIONS ARE REQUIRED FOR CONNECTION SEWER PIPES TO MANHOLES. SANITARY RUBBER GASKET TYPE JOINTS TO CONFORM TO CSA.
7. QUALITY CONTROL FIELD TESTS, LEAKAGE & DYE TESTS FOR SEWERS TO BE COMPLETED IN ACCORDANCE TO OTTAWA SEWER DESIGN GUIDELINES SECTION 6.1.14 & 6.1.15.

SANITARY

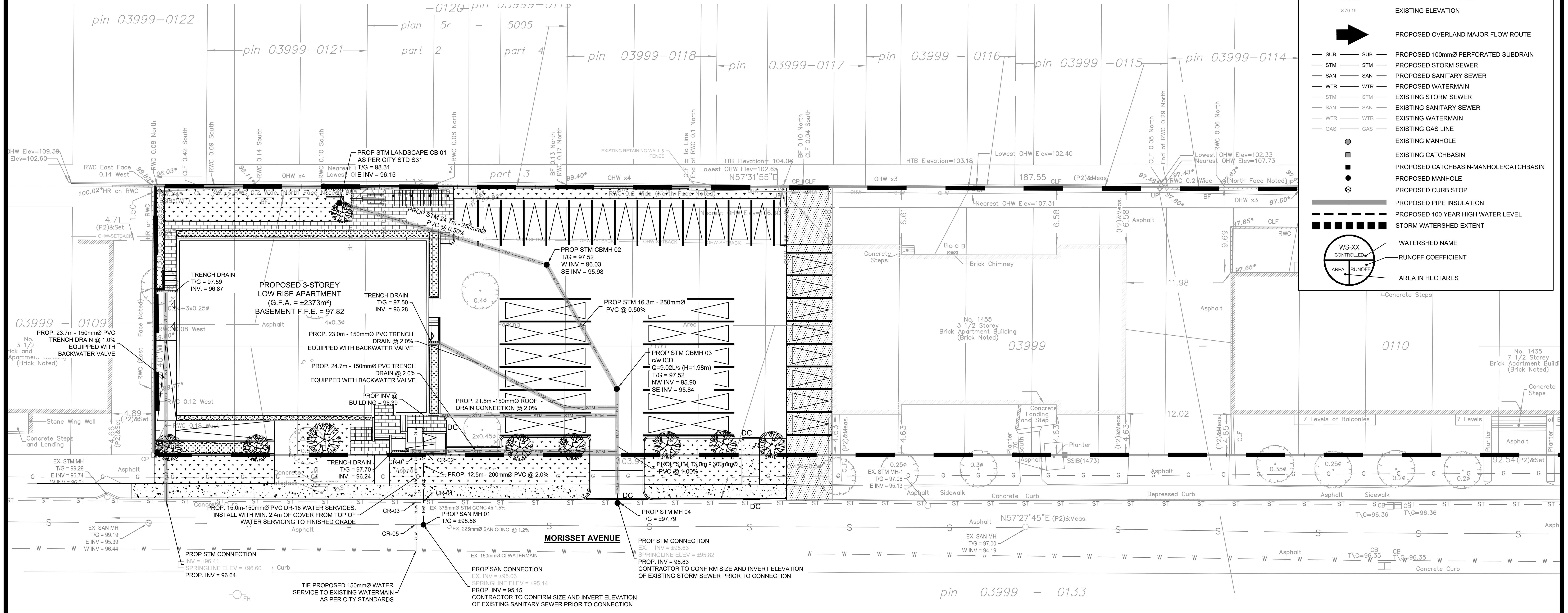
8. ALL SANITARY GRAVITY SEWER SHALL BE PVC SDR 35, IPEX 'RING-TITE' (OR APPROVED EQUIVALENT) PER CSA STANDARD B182.2 OR LATEST AMENDMENT, UNLESS SPECIFIED OTHERWISE.
9. EXISTING MAINTENANCE STRUCTURES TO BE RE-BECNHED WHERE A NEW CONNECTION IS MADE.
10. SANITARY GRAVITY SEWER TRENCH AND BEDDING SHALL BE PER CITY OF OTTAWA STD. S6 AND S7, CLASS 'B' BEDDING, UNLESS SPECIFIED OTHERWISE.
11. SANITARY MAINTENANCE STRUCTURE FRAME AND COVERS SHALL BE PER CITY OF OTTAWA STD. S24 AND S25.
12. SANITARY MAINTENANCE STRUCTURES SHALL BE BENCHED PER OPSD 701.021.

STORM

13. STORM GRAVITY SEWER TRENCH AND BEDDING SHALL BE PER CITY OF OTTAWA STD. S6 AND S7, CLASS 'B' BEDDING, UNLESS SPECIFIED OTHERWISE. BEDDING AND COVER MATERIAL TO BE SPECIFIED BY GEOTECHNICAL ENGINEER.
14. ALL PVC STORM SEWERS ARE TO BE SDR 35 APPROVED PER C.S.A. B182.2 OR LATEST AMENDMENT, UNLESS OTHERWISE SPECIFIED.
15. CATCH BASINS SHALL BE IN ACCORDANCE WITH OPSD 705.010.
16. CATCH BASIN LEADS SHALL BE 200mm DIA. AT 1.0% SLOPE (MIN) UNLESS SPECIFIED OTHERWISE.
17. ALL CATCH BASINS SHALL HAVE 600mm SUMPS, UNLESS SPECIFIED OTHERWISE.
18. ALL CATCH BASIN LEAD INVERTS TO BE 1.5m BELOW FINISHED GRADE UNLESS SPECIFIED OTHERWISE.
19. STORM MAINTENANCE STRUCTURE FRAME AND COVERS SHALL BE PER CITY OF OTTAWA STD 25 AND S24.1, UNLESS SPECIFIED OTHERWISE.
20. CATCHBASIN FRAME AND COVER SHALL BE PER OPSD 400.010 UNLESS OTHERWISE NOTED.

NOTES: WATERMAIN

1. PROPOSED WATER SERVICE TO BE 2.4m BELOW GRADE, WHERE LESS THAN 2.4M COVER, THERMAL INSULATION IS TO BE PROVIDED AS PER COO STD. DWGS. W 21 (DITCHED AREAS), W22 (SHALLOW TRENCHES), W23 (AT OPEN STRUCTURES) AND CITY OF OTTAWA DESIGN GUIDELINES (COODG) -WATER DISTRIBUTION (WD) SECTION 4.3.13.
2. ALL PVC WATERMAINS SHALL BE AWWA C-900 CLASS 150, SDR 18 OR APPROVED EQUIVALENT.
3. WATERMAIN TRENCH AND BEDDING SHALL BE IN ACCORDANCE WITH OPSD 802.010/802.010 AND CITY OF OTTAWA STANDARD W17, UNLESS SPECIFIED OTHERWISE. BEDDING AND COVER MATERIAL TO BE SPECIFIED BY GEOTECHNICAL ENGINEER.
4. FIRE HYDRANT INSTALLATION AS PER CITY STD 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 UNLESS OTHERWISE NOTED.
5. BUILDING SERVICE TO BE CAPPED OFF 1.0m OFF THE FACE OF BUILDING UNLESS OTHERWISE NOTED AND MUST BE RESTRAINED A MINIMUM OF 12m BACK FROM STUB.
6. ALL WATERMAIN STUBS SHALL BE TERMINATED WITH A PLUG AND 500mm BLOW OFF UNLESS OTHERWISE NOTED.
7. METALLIC WARNING TAPE SHALL BE USED OVER ALL WATERMAINS.
8. INSTALL AND TEST TRACER WIRE FOR ALL PROPOSED WATERMAIN IN ACCORDANCE WITH THE COODG-WD AS SPECIFIED IN SECTION 4.3.12 AND COO STD. DWG. W36.
9. WATER SHUTOFF VALVE AND VALVE BOX TO BE WITHIN THE ROW AND LOCATED A MINIMUM DISTANCE OF 1.0 M FROM THE BUILDING FOUNDATION (IF APPLICABLE). TYPICAL PRIVATE SERVICES AS PER COO STD. DWG. W50 (≥ 100MM SERVICE CONNECTION). VALVE BOX ASSEMBLY AS PER COO STD. DWG. W24.
10. ALL CONNECTIONS, RESTRAINT RODS AND VALVE BOLTS TO BE STAINLESS STEEL AS PER COADG – WATER DISTRIBUTION SECTION 4.3.11 AND COO STD DWGS .
11. VALVES TO BE OPERATED BY CITY OF OTTAWA STAFF ONLY.
12. NO CONNECTION TO EXISTING WATER NETWORK SHALL BE COMPLETED UNTIL A WATER PERMIT IS OBTAINED FROM THE CITY OF OTTAWA (COO). COA FORCES TO COMPLETE WATERMAIN CONNECTIONS. EXCAVATION, BACKFILLING AND REINSTATEMENT TO BE COMPLETED BY CONTRACTOR.
13. CATHODIC PROTECTION AS PER OPSD 1109.010, COADG – WATER DISTRIBUTION SECTION 4.8 AND COO STD. DWGS. W39 (DI), W40 (PVC) AND/OR W41-W45 & 48 AS APPLICABLE.
14. PRESSURE TESTING AS PER AWWA C-605-5 & COADG – WATER DISTRIBUTION SECTION 4.6.13.
15. CHLORINATION AS PER AWA C-651-05, COADG – WATER DISTRIBUTION SECTION 4.6.13 & COO STD. DWG. W46.



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 PROPOSED 100mmØ PERFORATED SUBDRAIN
- STM PROPOSED STORM SEWER
- SAN PROPOSED SANITARY SEWER
- WTR PROPOSED WATERMAIN
- STM EXISTING STORM SEWER
- SAN EXISTING SANITARY SEWER
- WTR EXISTING WATERMAIN
- 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 WATERSHED NAME
- CONTROLLED RUNOFF COEFFICIENT
- AREA AREA IN HECTARES

TABLE: PIPE CROSSING

Crossing #	PROP. SAN	PROP. WM	PROP. STM	EX. STM (375mm)	EX. SAN (225mm)	Depth Separation (m)
CR-01	N/A	95.70 (obv.)	96.21 (inv.)	N/A	N/A	±0.5
CR-02	95.51 (obv.)	N/A	96.18 (inv.)	N/A	N/A	±0.7
CR-03	N/A	95.70 (obv.)	N/A	±95.99 (inv.)	N/A	±0.3
CR-04	95.39 (obv.)	N/A	N/A	±95.97 (inv.)	N/A	±0.6
CR-05	N/A	95.60 (inv.)	N/A	N/A	±95.27 (obv.)	±0.3

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.

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.

5m 2 0 5m

SCALE: 1:200

LICENSED PROFESSIONAL ENGINEER
M. BASNET
100501996
2021-6-18
PROVINCE OF ONTARIO

No.	REVISIONS	BY	DATE
00	ISSUED FOR APPROVAL	M.B.	18 JUNE 2021

NOT AUTHENTIC UNLESS SIGNED AND DATED

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

CLIENT
FIRM CAPITAL

DESIGNED BY:	DRAWN BY:	APPROVED BY:
M.B.	A.O.	M.B.

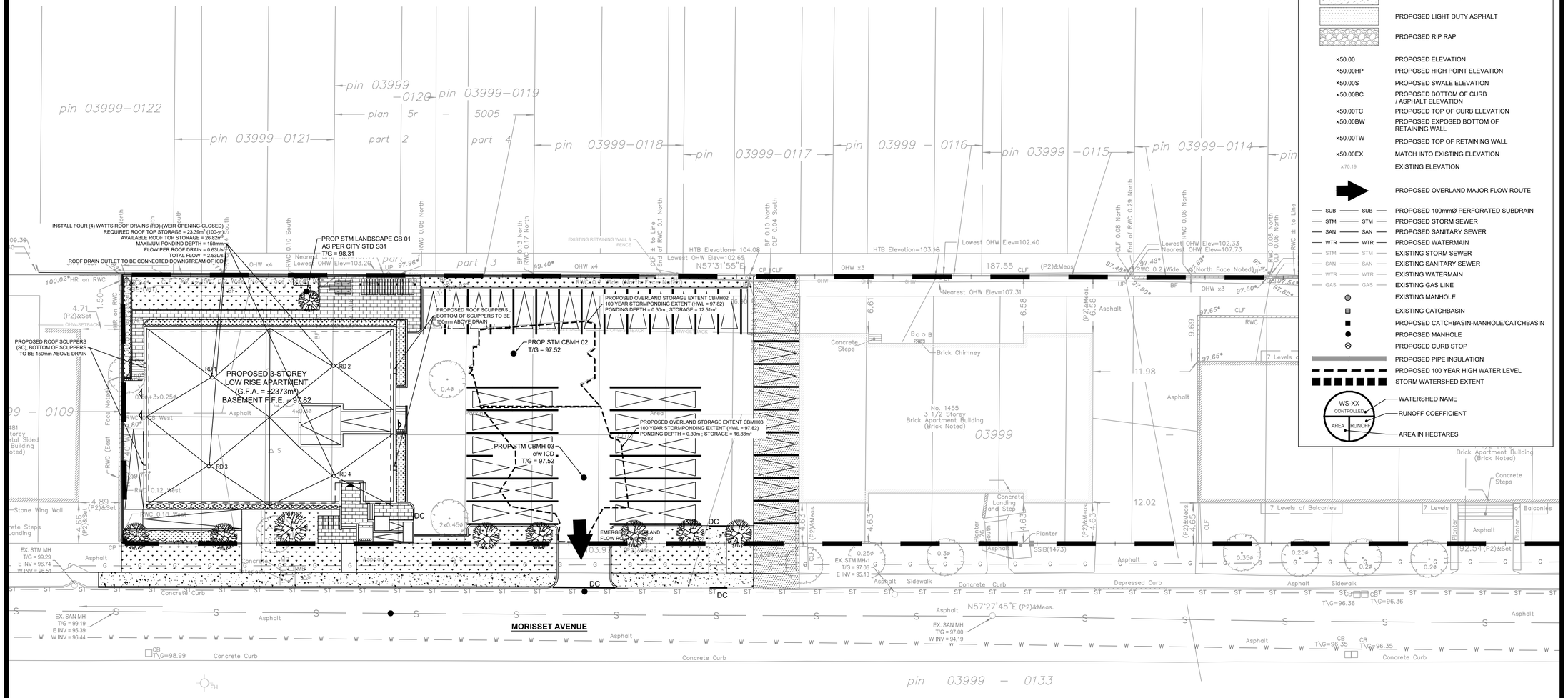
PROJECT
PROPOSED 3-STOREY LOW-RISE APARTMENT
1435 & 1455 MORISSET AVE, OTTAWA (ON)

DRAWING TITLE
SERVICING PLAN

PROJECT NO.
200572

DATE
JANUARY 2021

C401



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 CONTROLLED AREA RUNOFF — WATERSHED NAME, RUNOFF COEFFICIENT, AREA IN HECTARES

SCALE: 1:200

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.

LICENSED PROFESSIONAL ENGINEER
M. BASNET
100501996
2021-06-18
PROVINCE OF ONTARIO

No.	REVISIONS	BY	DATE
00	ISSUED FOR APPROVAL	M.B.	18 JUNE 2021

NOT AUTHENTIC UNLESS SIGNED AND DATED

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

CLIENT

FIRM CAPITAL

DESIGNED BY:	DRAWN BY:	APPROVED BY:
M.B.	A.O.	M.B.

PROJECT

PROPOSED 3-STOREY LOW-RISE APARTMENT
1435 & 1455 MORISSET AVE, OTTAWA (ON)

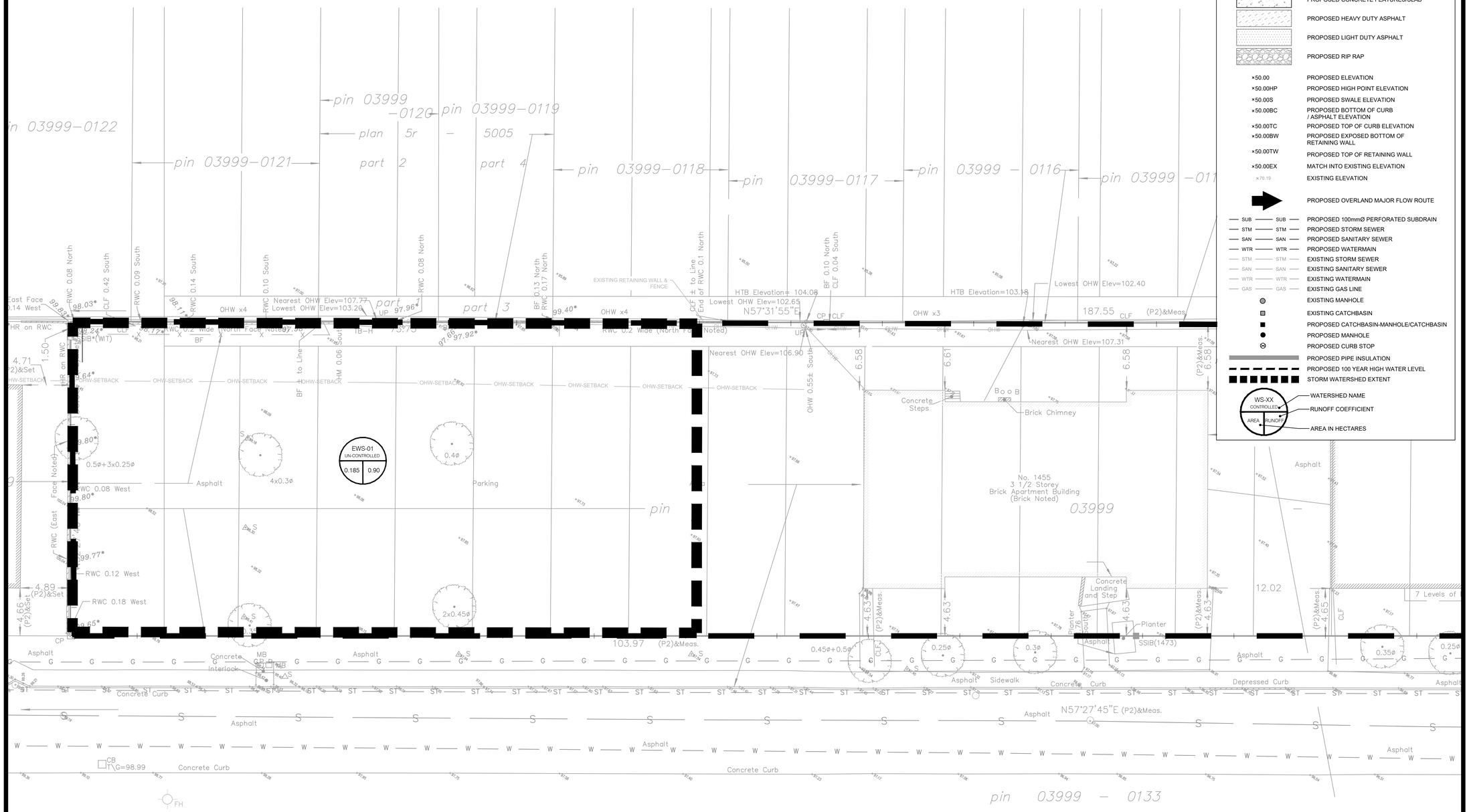
DRAWING TITLE

STORMWATER MANAGEMENT PLAN

PROJECT NO.
200572

DATE
JANUARY 2021

C601



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 PROPOSED 100mmØ PERFORATED SUBDRAIN
- STM PROPOSED STORM SEWER
- SAN PROPOSED SANITARY SEWER
- WTR PROPOSED WATERMAIN
- STM EXISTING STORM SEWER
- SAN EXISTING SANITARY SEWER
- WTR EXISTING WATERMAIN
- 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 (CONTROLLED / UNCONTROLLED) — AREA — RUNOFF

- WATERSHED NAME
- RUNOFF COEFFICIENT
- AREA IN HECTARES

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 AVAILABE 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.

5m 2 0 5m
SCALE: 1:200

LICENSED PROFESSIONAL ENGINEER
M. BASNET
100501996
2021-06-18
PROVINCE OF ONTARIO

No.	REVISIONS	BY	DATE
00	ISSUED FOR APPROVAL	M.B.	18 JUNE 2021

NOT AUTHENTIC UNLESS SIGNED AND DATED

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

CLIENT
FIRM CAPITAL

DESIGNED BY:	DRAWN BY:	APPROVED BY:
M.B.	A.O.	M.B.

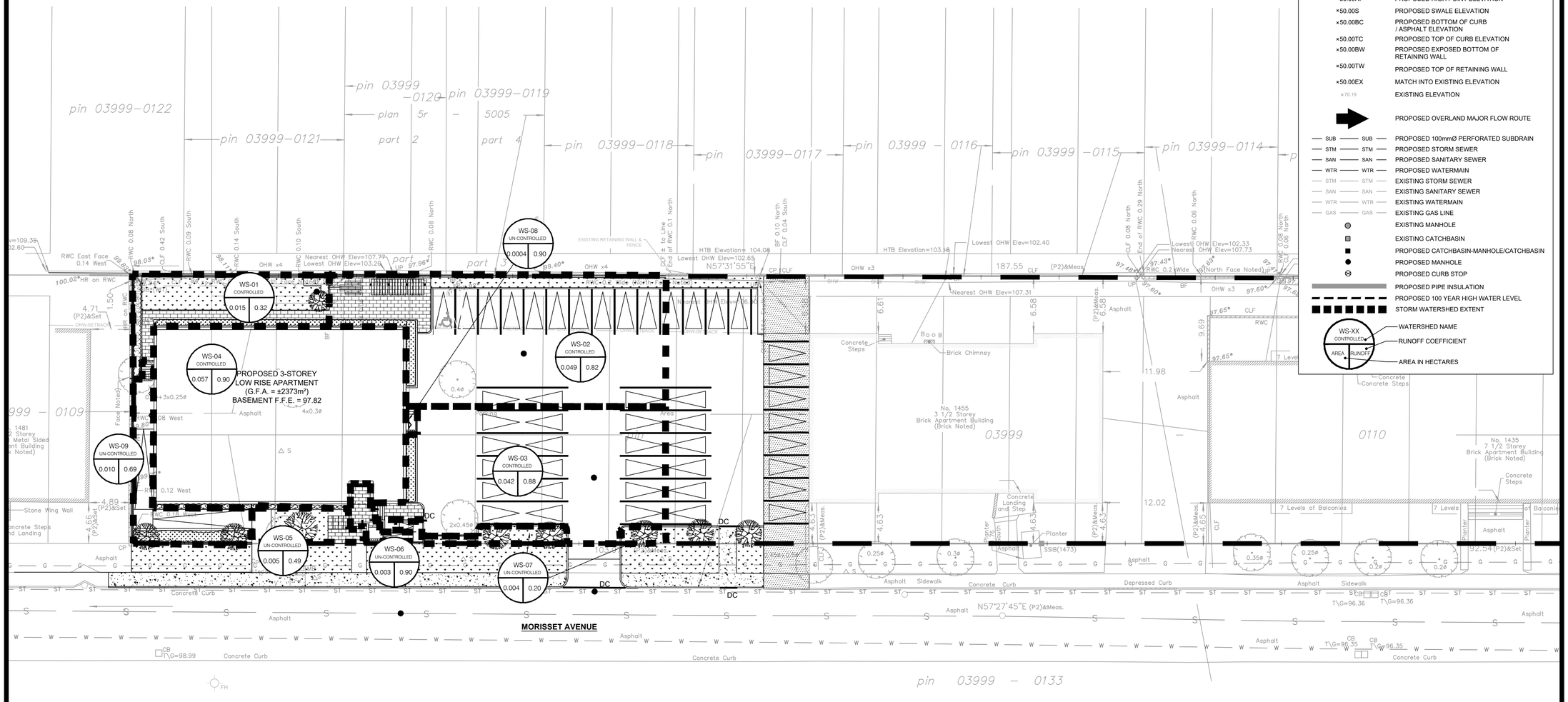
PROJECT
PROPOSED 3-STOREY LOW-RISE APARTMENT
1435 & 1455 MORISSET AVE, OTTAWA (ON)

DRAWING TITLE
PRE-DEVELOPMENT
WATERSHED PLAN

PROJECT NO.
200572

DATE
JANUARY 2021

C701



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 CONTROLLED / AREA / RUNOFF
- WATERSHED NAME
- RUNOFF COEFFICIENT
- AREA IN HECTARES

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 AVAILABE 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.

5m 2 0 5m
SCALE: 1:200

LICENSED PROFESSIONAL ENGINEER
M. BASNET
100501996
2021-06-18
PROVINCE OF ONTARIO

No.	REVISIONS	BY	DATE
00	ISSUED FOR APPROVAL	M.B.	18 JUNE 2021

NOT AUTHENTIC UNLESS SIGNED AND DATED

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

CLIENT
FIRM CAPITAL

DESIGNED BY:	DRAWN BY:	APPROVED BY:
M.B.	A.O.	M.B.

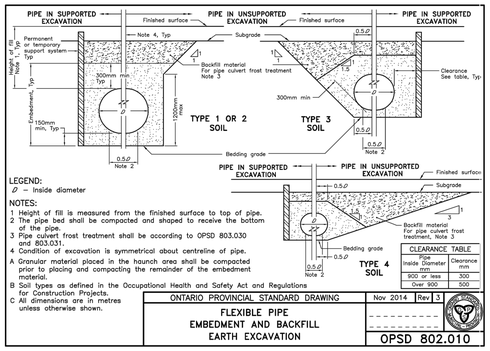
PROJECT
PROPOSED 3-STOREY LOW-RISE APARTMENT
1435 & 1455 MORISSET AVE, OTTAWA (ON)

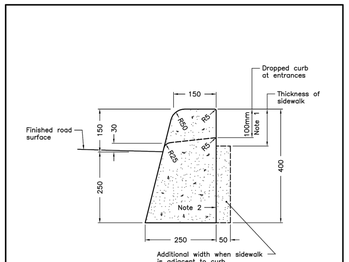
DRAWING TITLE
POST-DEVELOPMENT WATERSHED PLAN

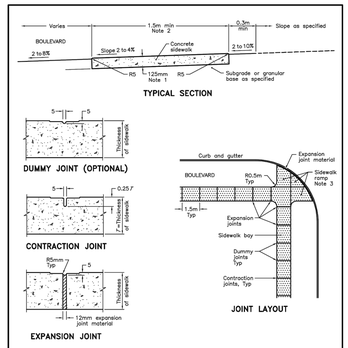
PROJECT NO.
200572

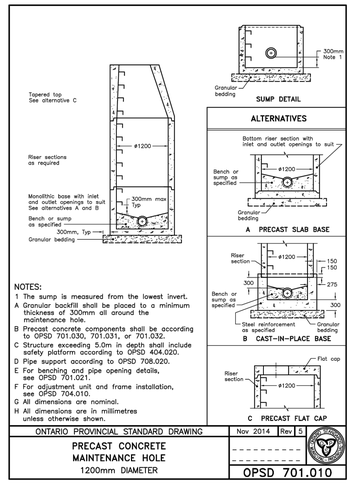
DATE
JANUARY 2021

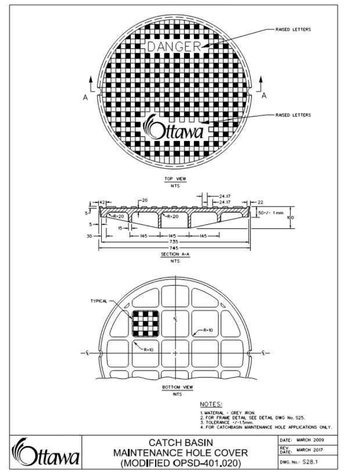
C702

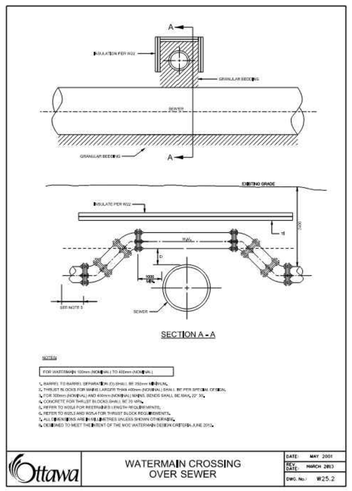


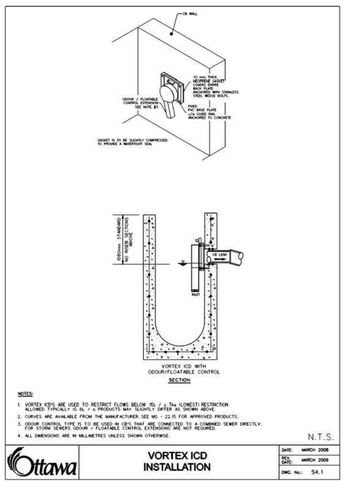


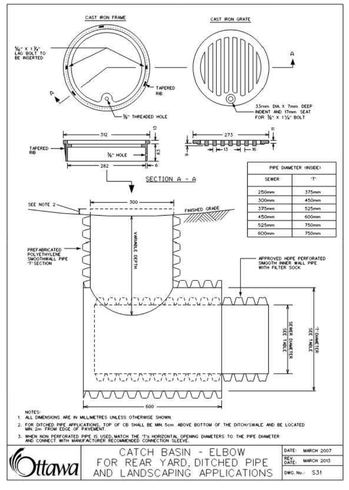


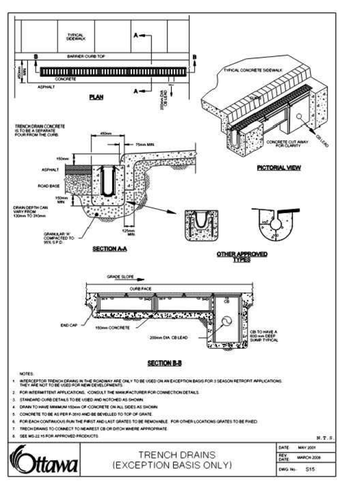


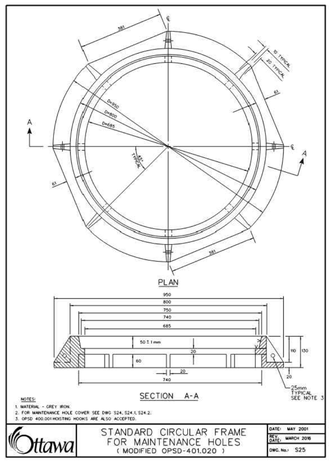


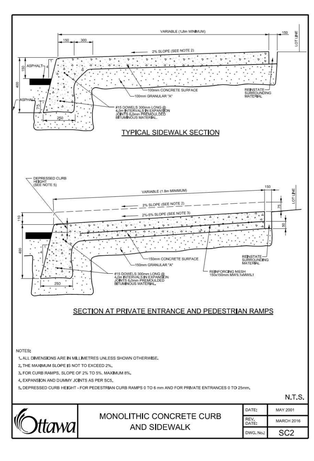


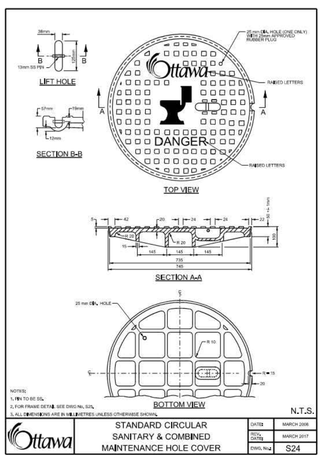


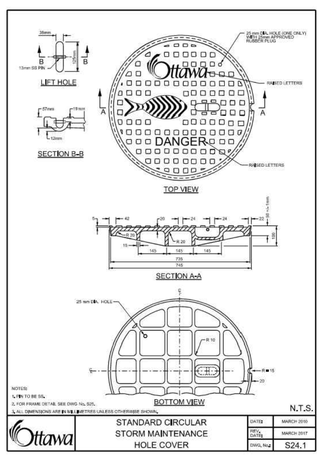


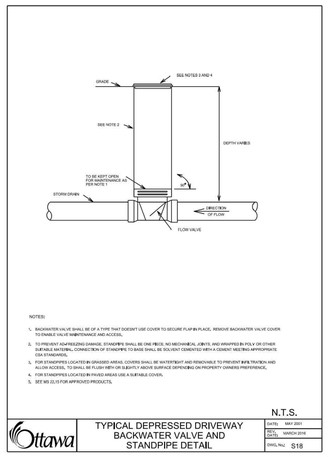


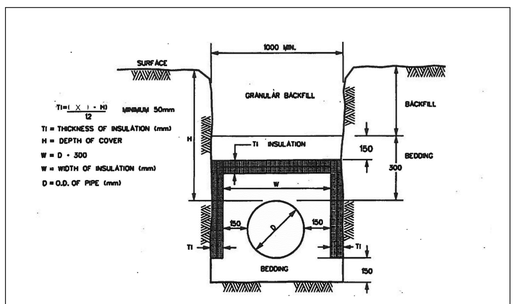












NOTES:
-FOR STORM INSULATION USE AN X VALUE OF 2000 IN THE ABOVE "TI" EQUATION.
-FOR SANITARY INSULATION USE AN X VALUE OF 2500 IN THE ABOVE "TI" EQUATION.
-FOR WATERMAIN INSULATION USE AN X VALUE OF 2400 IN THE ABOVE "TI" EQUATION.
-INCREMENTS OF INSULATION THICKNESS SHALL BE ADJUSTABLE TO 25mm.
-STAGGER JOINTS OF MULTIPLE SHEETS.
-ALL DIMENSIONS ARE IN MILLIMETERS UNLESS SHOWN OTHERWISE.

TYPICAL STORM AND SANITARYSEWER AND WATERMAIN INSULATION DETAIL
(N.T.S.)

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 AVAILABE 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
00	ISSUED FOR APPROVAL	M.B.	18 JUNE 2021

LICENSED PROFESSIONAL ENGINEER
M. BASNET
100501996
2021-06-18
PROVINCE OF ONTARIO

NOT AUTHENTIC UNLESS SIGNED AND DATED

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

CLIENT
FIRM CAPITAL

DESIGNED BY:	DRAWN BY:	APPROVED BY:
M.B.	A.O.	M.B.

PROJECT
PROPOSED 3-STOREY LOW-RISE APARTMENT
1435 & 1455 MORISSET AVE, OTTAWA (ON)

DRAWING TITLE
CONSTRUCTION DETAIL PLAN

PROJECT NO.
200572

DATE
JANUARY 2021

C901

APPENDIX F

Survey
As-Built
Architectural Drawings

Bearings are grid, derived from Can-Net 2016 Real Time Network GPS observations and are referred to the Central Meridian of MTM Zone 9 (76°30' West Longitude) NAD-83 (original).

For comparison purposes, a rotation of 0°30'50" counter-clockwise was applied to bearings on P2.

ELEVATION NOTES

1. Elevations shown are geodetic and are referred to the CGVD28 geodetic datum, derived from City of Ottawa Benchmark No. N-29, having an elevation of 77.347.
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. A field location of underground plant by the pertinent utility authority is mandatory before any work involving breaking ground, probing, excavating etc.
4. Underground utility locations derived by City of Ottawa Utility Coordinate Committee Sheets numbers H-05-12 and H-05-17; and utility inverts provided by City of Ottawa Engineering Department plans dated July 2, 1999, April 4, 1963 (Storm Sewer), and April 4, 1963 (Sewer).

Notes & Legend

Symbol	Denotes	
—□—	"	Survey Monument Planted
—■—	"	Survey Monument Found
SIB	"	Standard Iron Bar
SSIB	"	Short Standard Iron Bar
*	"	Survey Monument 0.3 Long
CP	"	Concrete Pin
(WIT)	"	Witness
Meas.	"	Measured
(AOG)	"	Annis, O'Sullivan, Vollebekk Ltd.
(P1)	"	Registered Plan 327
(P2)	"	(1473) Plan dated January 11, 1996
(D1)	"	Inst. N633820
(tree symbol)	"	Deciduous Tree
○ FH	"	Fire Hydrant
○ MH–ST	"	Maintenance Hole (Storm Sewer)
○ MH-S	"	Maintenance Hole (Sanitary)
—— ST ——	"	Underground Storm Sewer
—— S ——	"	Underground Sanitary Sewer
—— W ——	"	Underground Water
—— G ——	"	Underground Gas
—— R ——	"	Underground Rogers
—— OHW ——	"	Overhead Wires
□ CB	"	Catch Basin
T\G	"	Top of Grate
Inv.	"	Invert
▭ GM	"	Gas Meter
▭ HM	"	Hydro Meter
▫ TB–C	"	Cable Terminal Box
▫ TB–H	"	Hydro Terminal Box
○ B	"	Bollard
△ S	"	Sign
CLF	"	Chain Link Fence
BF	"	Board Fence
HR	"	Handrail
RWC	"	Concrete Retaining Wall
○ UP	"	Utility Pole
○ AN	"	Anchor
HTB	"	Hydro Transformer Bolt
○ LS	"	Light Standard
MB	"	Mail Box
Ø	"	Diameter
+ 65.00	"	Location of Elevations
+ 65.00*	"	Top of Concrete Curb and Retaining Wall Elevation
Elev	"	Elevation
C/L	"	Centreline

PLAN OF SURVEY OF

LOTS 230 TO 251 (BOTH INCLUSIVE) AND PART OF CAVAN STREET (Closed by Judge's Order Inst. CR394977) AND PART OF LARKIN STREET (Closed by Judge's Order Inst. CR394977) AND PART OF THE LANE (Closed by Judge's Order Inst. CR404252) REGISTERED PLAN 327 CITY OF OTTAWA

Surveyed by Annis, O'Sullivan, Vollebekk Ltd.

Scale 1 : 300

12 9 6 3 0 6 12 Metres

Metric

DISTANCES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048

Surveyor's Certificate

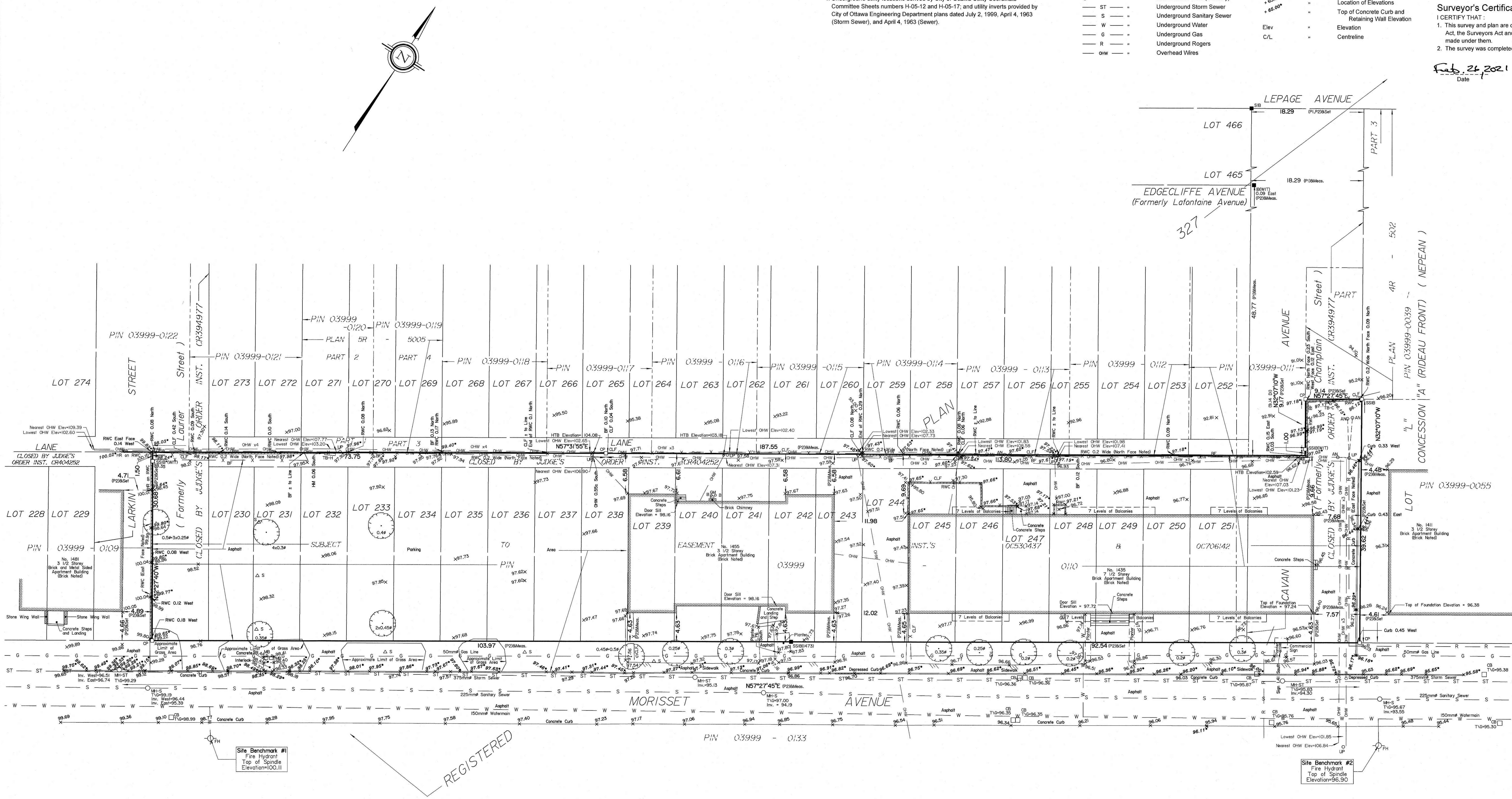
I CERTIFY THAT :

1. This survey and plan are correct and in accordance with the Surveys Act, the Surveyors Act and the Land Titles Act and the regulations made under them.
2. The survey was completed on the 12th day of February, 2021.

Feb. 26, 2021 (signature)

Date

E. H. Herweyer
Ontario Land Surveyor



ASSOCIATION OF ONTARIO LAND SURVEYORS

PLAN SUBMISSION FORM

2165226

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

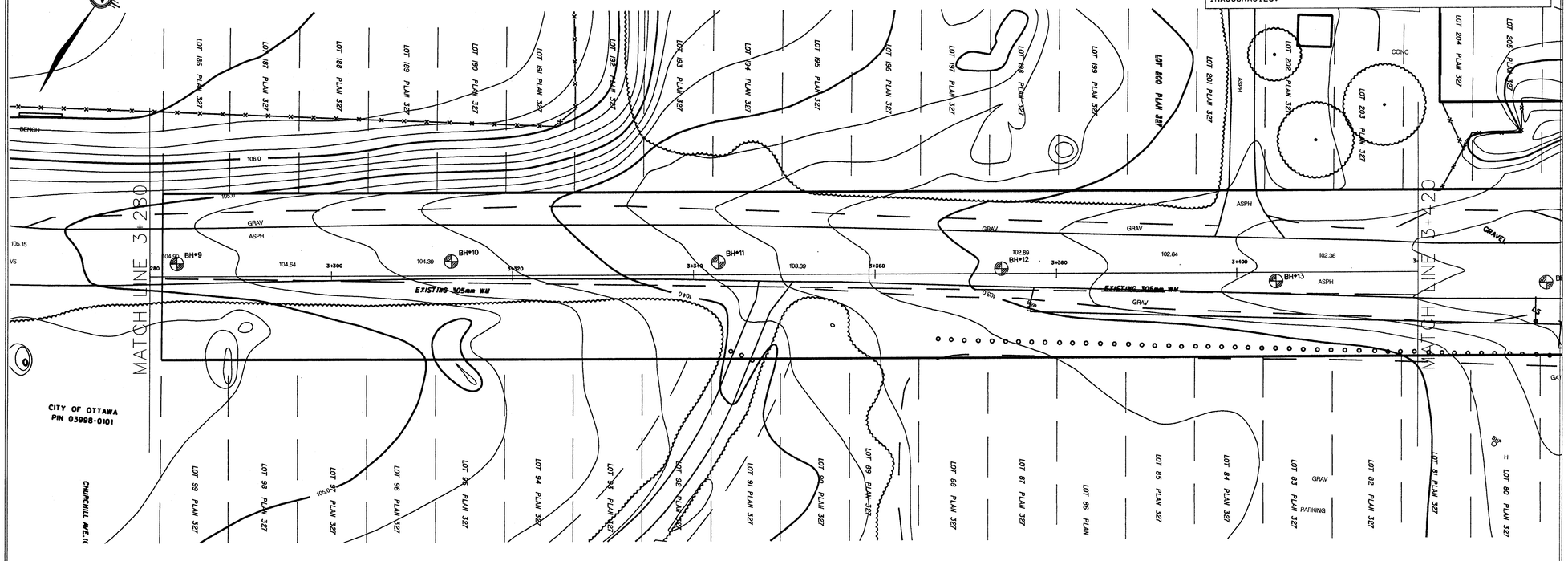
ANNIS, O'SULLIVAN, VOLLEBEKK LTD.
14 Concourse Gate, Suite 500
Nepean, Ont. K2E 7S6
Phone: (613) 727-0850 / Fax: (613) 727-1079
Email: Nepean@aovltd.com
Ontario Land Surveyors

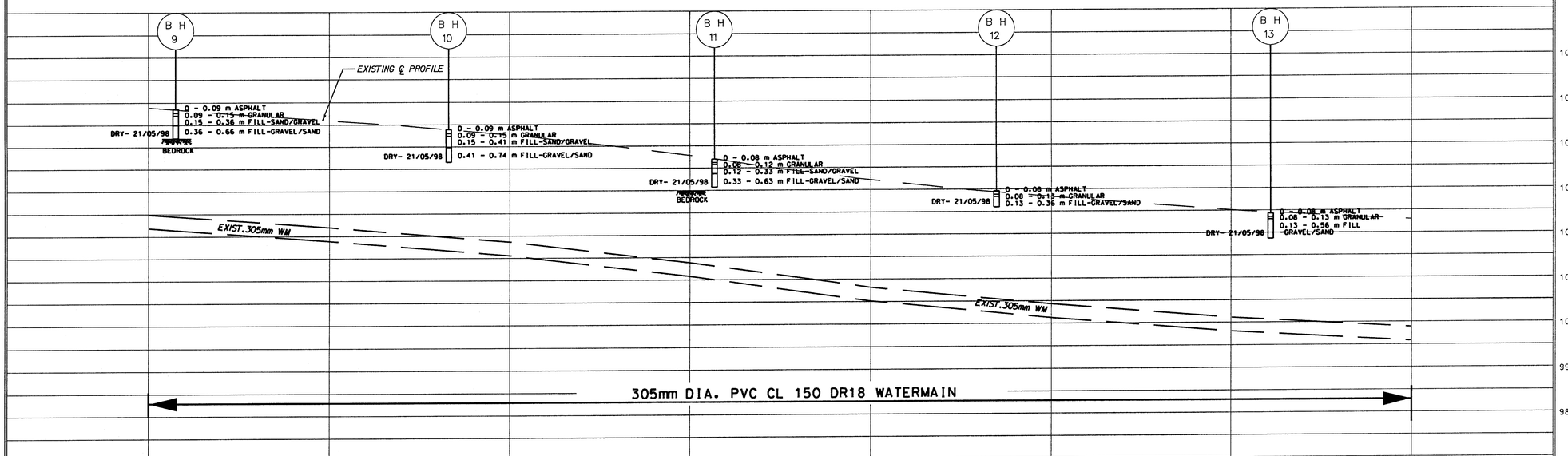
Job No. 21193-21 Firm Capital Lts230-251 PL327 T DI | AR

MORISSET AVENUE

CAUTION

THE INFORMATION SHOWN ON THE AS-BUILT DRAWINGS WAS COLLECTED BY CITY STAFF DURING CONSTRUCTION. R.V. ANDERSON ASSOCIATES LIMITED CONVERTED THE HARD COPY INFORMATION INTO THE ELECTRONIC VERSION AS DEPICTED ON THESE DRAWINGS. AS SUCH, R.V. ANDERSON ASSOCIATES LIMITED CANNOT VERIFY THE ACCURACY OF INFORMATION AS PROVIDED BY THE CITY AND ASSUMES NO RESPONSIBILITY FOR ANY INACCURACIES.





104.89		104.60		104.27	103.79	103.23	102.83	102.51	102.29	ELEVATION AT ℄ ROAD
102.49	102.34	102.20	102.02	101.79	101.37	100.81	100.43	100.14	99.95	AS BUILT TOP WATERMAIN
3+280	3+290	3+300	3+310	3+320	3+340	3+360	3+380	3+400	3+420	STATION

98-3293.dgn 2007-Aug-01 07:48:05 AM

Ottawa-Carleton

ENVIRONMENT and TRANSPORTATION DEPARTMENT

M.J.E. SHEFLIN P.Eng.
ENVIRONMENT and TRANSPORTATION COMMISSIONER

Approved by:

Environmental Projects Branch

Date:

Project Manager: Ziad A. Ghadban		Date
Drawn by: W. Curry	Sokkia #	Date
Survey details by:	Book #	Date
"As Built" Inspection by:		Date

NOTES ARE TYPICAL FROM SHEET 01

R.V. Anderson Associates Limited
consulting engineers, architects, technology managers
RVA 4925
1750 Courtwood Crescent, Suite 220, Ottawa, Ontario, Canada, K2C 2B5
Telephone: (613)226-1844 Fax: (613) 226-6530, E-mail: ottawa@rvanderson.com

By	Description	Date
KPT	AS BUILT RECORD	MARCH 10 2003
GAB	ISSUED FOR TENDER	MARCH 02 1999

Scales: HORIZ. 1:250
VERT. 1:50

Project Title:

PART A
MORISSET AVENUE

AS BUILT
305mm WATERMAIN

STA. 3+280.000
to
STA. 3+420.000

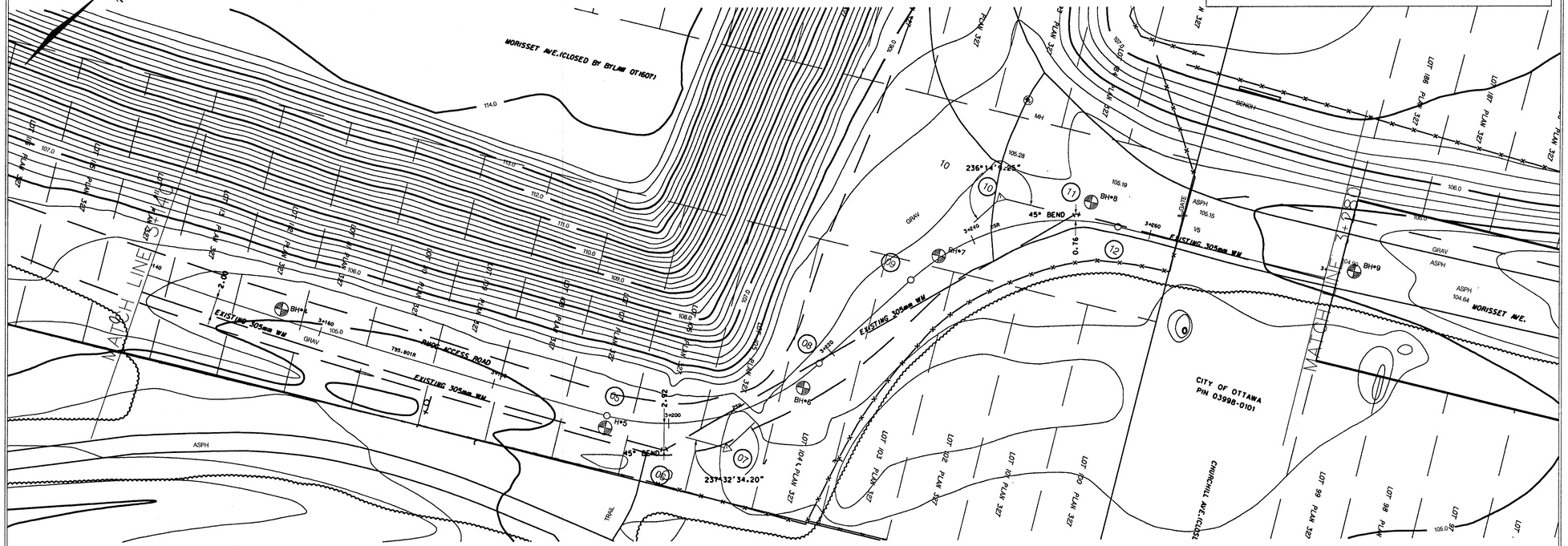
Drawing No.: 98-3293
Sheet No.: 03

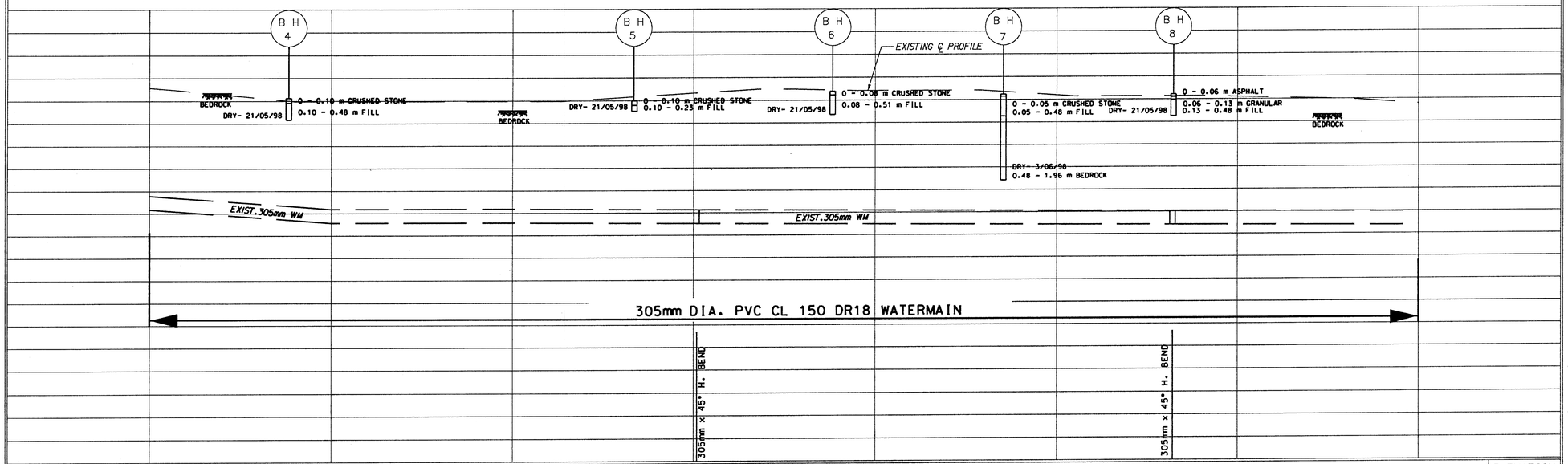
9236

RMOC ACCESS ROAD AND MORISSET AVENUE

CAUTION

THE INFORMATION SHOWN ON THE AS-BUILT DRAWINGS WAS COLLECTED BY CITY STAFF DURING CONSTRUCTION. R.V. ANDERSON ASSOCIATES LIMITED CONVERTED THE HARD COPY INFORMATION INTO THE ELECTRONIC VERSION AS DEPICTED ON THESE DRAWINGS. AS SUCH, R.V. ANDERSON ASSOCIATES LIMITED CANNOT VERIFY THE ACCURACY OF INFORMATION AS PROVIDED BY THE CITY AND ASSUMES NO RESPONSIBILITY FOR ANY INACCURACIES.





105.30	104.95	104.99	105.16 / 105.16	105.21	105.10	105.07	105.05		104.89	ELEVATION AT ℄ ROAD
102.90	102.55	102.51	102.57 / 102.58	102.52	102.53	102.58	102.41	102.35	102.47	AS BUILT TOP WATERMAIN
3+140	3+160	3+180	3+200 / 3+200.56	3+220	3+240	3+252.80	3+260	3+270	3+280	STATION

98-3292.dgn 2007-Aug-01 07:33:39 AM

Ottawa-Carleton

ENVIRONMENT and TRANSPORTATION DEPARTMENT

M.J.E. SHEFLIN P.Eng.
ENVIRONMENT and TRANSPORTATION COMMISSIONER

Approved by: _____
Environmental Projects Branch
Date: _____

Project Manager: Ziad A. Ghadban — Date: _____

Drawn by: W. Curry — Sokkia # _____ — Date: _____

Survey details by: _____ — Book # _____ — Date: _____

"As Built" Inspection by: _____ — Date: _____

NOTES ARE TYPICAL FROM SHEET 01

R.V. Anderson Associates Limited
consulting engineers, architects, technology managers
RVA 4925
1750 Courtwood Crescent, Suite 220, Ottawa, Ontario, Canada, K2C 2B5
Telephone: (613)226-1644 Fax: (613) 226-9930, E-mail: ottawa@rvanderson.com

By	Description	Date
KPT	AS BUILT RECORD	MARCH 10 2003
GAB	ISSUED FOR TENDER	MARCH 02 1999

Scales: HORIZ. 1:250
VERT. 1:50

Project Title:

PART A
RMOC ACCESS ROAD AND MORISSET AVENUE
AS BUILT
305mm WATERMAIN

STA. 3+140.000
to
STA. 3+280.000

Drawing No.: 98-3292 | Sheet No.: 02

9236

 T A V E.
LARKIN ST.
CAVAN ST.
MERIVALE ROAD
Edge of Quarry
LOT LETTER "L"
CONCESSION "A"
R.F. TOWNSHIP OF NEPEAN
PROPOSED 15" STORM SEWER
9" CONCRETE PIPE SANITARY SEWER
6" WATER MAIN
CLOSED BY JUDGES ORDER
CLOSED BY CITY BY-LAW 354-60
CLOSED BY CITY BY-LAW 431-60
LANE
NOTE: SANITARY SEWER LARKIN TO LOTS 20 & 74
Work commenced: Oct.1/59
Work Completed: Oct.15/59
Contractor: Purcell
Inspector: Z. Gusewski
Final Measurements: Book: 478
Page: 21
Date: Oct.28/59
WORK COMMENCED: AUG. 1957
WORK COMPLETED: SEPT. 1957
CONTRACTOR: N.P. HEAFEY
INSPECTOR: K.HAY.
FINAL MEASUREMENTS: BOOK 331 Pg.10
DATE: SEPT 6 1957
MORISSET AVENUE
MERIVALE RD TO LARKIN AVE.
STORM SEWER
SEWER DESIGN ENGINEER
DESIGNED BY
DRAWN BY G.L.P.
CHECKED BY C.R.W.
DATE APR 4/63
F. E. AYERS P.Eng.
DIRECTOR OF PLANNING AND WORKS
Survey:- Book 503 page 9-10
Levels:- Book 501 " 68-69-70-71-72
QUANTITIES
592 lin ft 9" dia conc pipe
2 only manholes
Commenced
Completed April/54
Final Measurements April/54 Book 266 Page 11
Inspector: R. Charron
Contractor: Taggart Const.
Rock Elevations
Note: Rock elevation is same as ground profile
Note: Rock Elevation same as ground profile
Rock from surface
Actual Rock
Flat Bed of Limestone Exposed across
15" ASTM C14 STANDARD STRENGTH CONCRETE PIPE STORM SEWER
GRADIENT 1 IN 58.1 OR 1.72%
GRADIENT 1 IN 111.1 OR 0.90%
9" CONCRETE PIPE SANITARY SEWER
GRADIENT 1 in 83.3 OR 1.20%
9 INCH DIA CONCRETE PIPE SANITARY SEWER
ALL PIPES BEDDED ON CONCRETE AS DRAWING
1 IN 58.4 OR 1.71%
1 IN 60 OR 1.7%
STATION
INVERT
CITY OF OTTAWA
ENGINEERING DEPARTMENT
MORISSET AVE.
MERIVALE RD.
Commissioner of Works
Asst Commissioner of Works
Designing Engineer

LOCATION PLAN

PROPERTY DESCRIPTION

THREE STOREY LOW RISE APARTMENT BUILDING	
CITY OF OTTAWA PIN NUMBER	03999 0110
MUNICIPAL ADDRESS	1435/1455 MORISSET AVE., OTTAWA, ON

SITE INFORMATION

LOT AREA:	6,092 m²
LOT FRONTAGE:	884 m
LOT DEPTH:	30.7m

BUILDING INFORMATION

FLOOR AREA:	563m² [6,060 sf]
GROSS AREA:	2252m² [24,240 sf]
PROPOSED USE:	APARTMENT DWELLING, LOW RISE

UNIT BREAKDOWN:

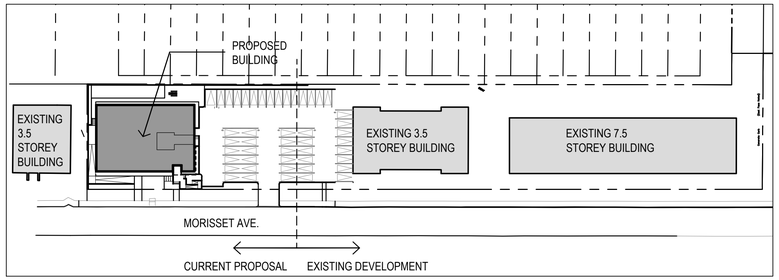
FIRST FLOOR:	7 UNITS	4- 1B, 3- 2B	TOTAL UNITS IN EXISTING 3.5 AND 7.5 STOREY BUILDING: 135
SECOND FLOOR:	8 UNITS	4- 1B, 4- 2B	
THIRD FLOOR:	8 UNITS	4- 1B, 4- 2B	
FOURTH FLOOR:	8 UNITS	4- 1B, 4- 2B	TOTAL PROPOSED: 31
TOTAL:	31 UNITS	16 1B, 15 2B	DEVELOPMENT TOTAL: 166

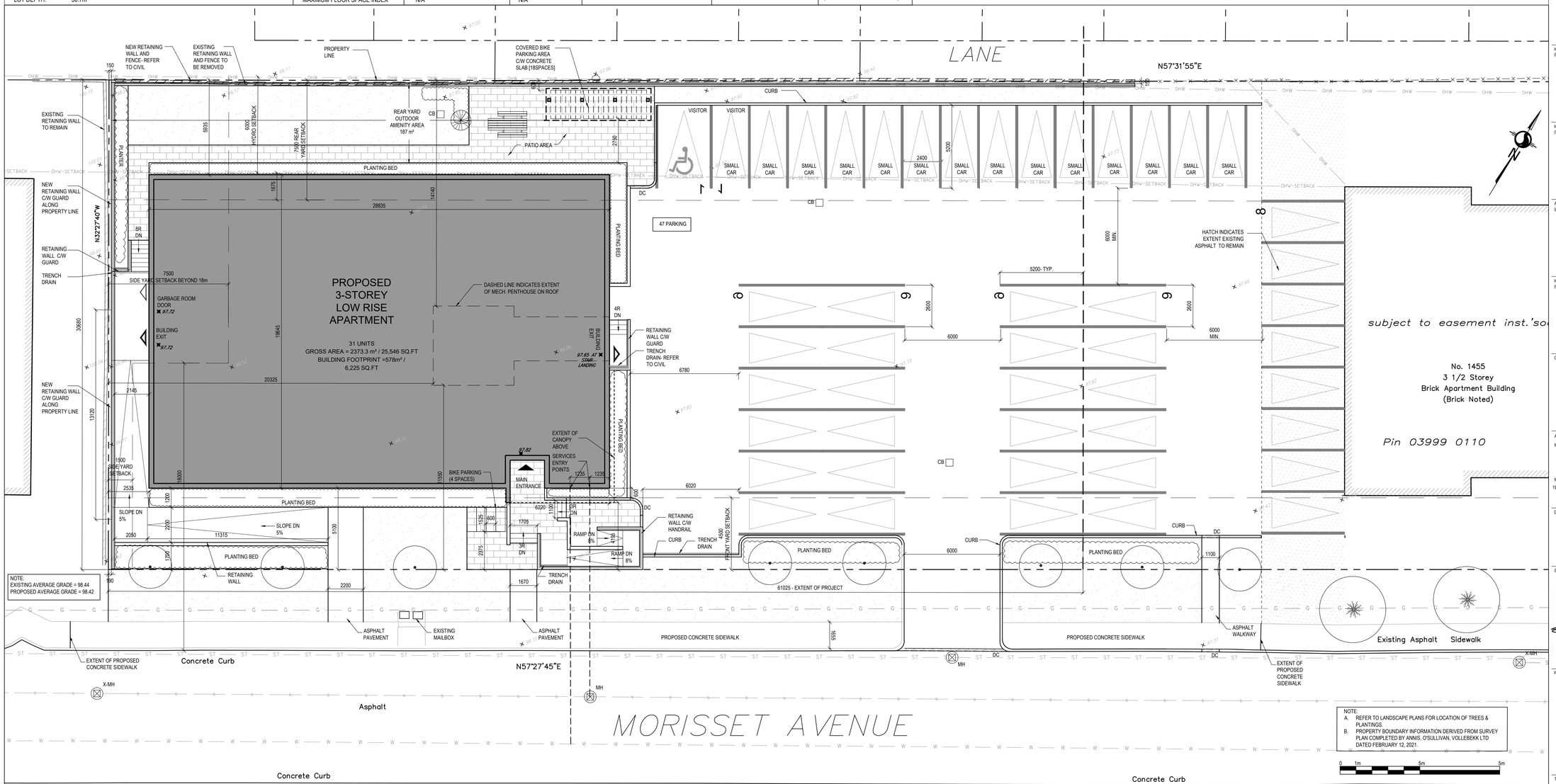
ZONING TABLE — R4 - UC

CITY OF OTTAWA ZONING BY-LAW No. 2008-250	REQUIRED	PROPOSED
MINIMUM LOT AREA	1,400m²	6,092m²
MINIMUM LOT WIDTH	N/A	61m CURRENT SCOPE 196.5m EXISTING
FRONT YARD SETBACK	4.5m	4.5m
MINIMUM REAR YARD SETBACK	7.5m	5.9m
MINIMUM SIDE YARD SETBACK	1.5m FROM 18m FROM STREET, 7.5M BEYOND 18m	2.5m
HYDRO SETBACK	6m	6m
MAXIMUM BUILDING HEIGHT	11m	11.1m
MAXIMUM FLOOR SPACE INDEX	N/A	N/A

LANDSCAPED AREA	30% OF LOT AREA 50% OF REAR YARD 40% OF FRONT YARD	20% OF LOT AREA 60% OF REAR YARD 47% OF FRONT YARD *TAKEN FROM AREA WITHIN CURRENT PROPOSAL
VEHICLE PARKING REQUIREMENTS (AREA Y, SCHEDULE 1A)	0.5/ UNIT-TENANT AFTER FIRST 12 19 UNITS= 10 67 SPACES REQUIRED FOR EXISTING UNITS 77 SPACES TOTAL REQUIRED	64 SPACES TOTAL 45 SPACES WITHIN AREA OF WORK 19 SPACES EXISTING
VISITOR PARKING REQUIREMENTS (AREA Y, SCHEDULE 1A)	0.1 / DWELLING UNIT AFTER 12 UNITS 19 UNITS = 2 13 SPACES REQUIRED FOR EXISTING UNITS 15 SPACES TOTAL REQUIRED	15 SPACES TOTAL 2 SPACES WITHIN AREA OF WORK 13 SPACES EXISTING
AMENITY AREA REQUIREMENTS	6m² per dwelling unit = 186m²	187 m² REAR YARD AMENITY
BICYCLE PARKING SPACES	0.5 PER DWELLING UNIT 31 UNITS= 16 REQUIRED	22 SPACES PROVIDED (18 EXT. COVERED & 4 EXT.)

KEY PLAN





LEGEND

- SOFT LANDSCAPING
- UNIT PAVERS REFER TO LANDSCAPE
- ASPHALT PAVING
- RIVERSTONE REFER TO LANDSCAPE
- EXISTING BUILDING ELEMENT TO BE REMOVED
- EXISTING FENCE
- PRIVACY FENCE
- LOT LINE
- SETBACK LINE
- EXISTING TREE TO REMAIN (REFER TO LANDSCAPE DRAWINGS)
- NEW TREE (REFER TO LANDSCAPE DRAWINGS)
- NEW SHRUBS (REFER TO LANDSCAPE DRAWINGS)
- NEW EVERGREEN SHRUB (REFER TO LANDSCAPE DRAWINGS)
- EXISTING GROUND ELEVATION (TO DETERMINE EXISTING AVERAGE GRADE)
- NEW GROUND ELEVATION REFER TO CIVIL
- FIRE DEPARTMENT CONNECTION
- DESIGNATED BUILDING ENTRANCE / EXIT
- FIRE HYDRANT. REFER TO CIVIL
- CATCH BASIN
- MANHOLE
- AREA DRAIN- REFER TO CIVIL
- UTILITY POLE
- OVERHEAD UTILITY WIRES
- UNDERGROUND POWER
- LIGHT STANDARD
- NOTE: 'X'-E INDICATES EXISTING TO REMAIN
- DEPRESSED CURB
- TRAFFIC SIGNAL POST

No.	Date	Émis pour / Object
1	2021-03-18	FOR COORD.
2	2021-03-29	FOR COORD.
3	2021-05-12	FOR COORD.
4	2021-05-17	FOR COORD.
5	2021-05-26	FOR COORD
6	2021-06-18	SITE PLAN CONTROL
–	– – –	– – –

Ingénieur / Engineer
(Mécanique & Électricité / Mechanical & Electrical)

Ingénieur / Engineer
(Structure / Structure)

Architecte/ Architect
(paysagiste / Landscape)

FOTENN Planning + Design

Ingénieur / Engineer
(Civil / Civil)

LRJ ENGINEERING / ENGENIERIE

Client / Client

Firm Capital

Architecte / Architect
fig. 1
3550, Saint-Antoine O.
Montréal QC H4C 1A9
T. 514 861-5122

fig. 2
190 Somerset St W #206
Ottawa ON K2P 0J4
T.. 613.695-6122

Collectif d'architectes / Architects Collective

figurr
www.figurr.ca

Droit d'auteur / Copyright

Ce dessin est sujet au droit d'auteur. Il ne peut être reproduit pour quelques intentions ou usages que ce soit, il ne peut être utilisé uniquement avec l'approbation de la signature et de l'estampe originale.

This drawing is subject to copyright. It is not to be reproduced for any purpose or by any means, and may only be used if it bears an original stamp and signature.

Sceau / Seal

ONTARIO ASSOCIATION OF ARCHITECTS
ROBERTO CAMPOS
LICENCE
7401

Note:

L'entrepreneur doit vérifier toutes les dimensions et informations sur le site et aviser immédiatement l'architecte de toutes erreurs ou omissions.

Contractor shall verify all information and dimensions on site and immediately report any errors or omissions to the architect.

Projet / Project

3-STOREY LOW RISE APARTMENT

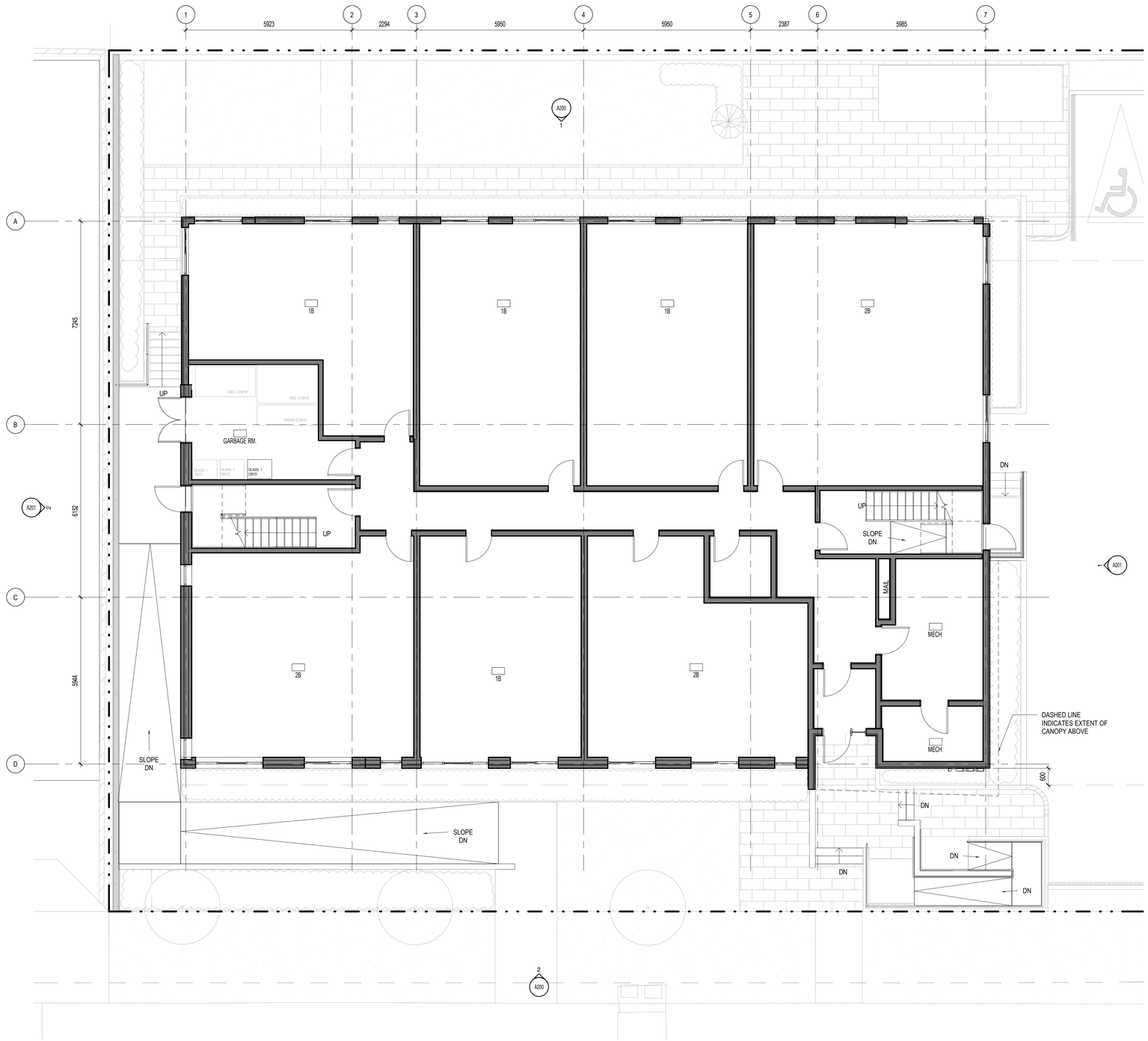
1435/1455 MORISSET AVE

OTTAWA, ON

Titre / Title

SITE PLAN

Dessiné par / Drawn by: RD	No. projet / Project number: 2104
Vérifié par / Verified by: MD	No. dessin / Drawing number: A-105
Échelle / Scale: AS SHOWN	Révision / Revision: 0
Date de création du dessin / Drawing creation date: 2021-03-17	



GENERAL NOTES

No.	Date	Émis pour / Object
2	2021-06-18	SITE PLAN APPLICATION

Ingénieur / Engineer
(paysagiste / Landscape)

FOTENN Planning + Design

Ingénieur / Engineer
(Civil / Civil)

LRJ ENGINEERING | INGÉNIERIE

Client / Client

Firm Capital

Architecte / Architect

fig. 1
3550, Saint-Antoine O.
Montréal QC H4C 1A9
T. 514 861-5122

fig. 2
190 Somerset St W #206
Ottawa ON K2P 0J4
T. 613 695-6122

Collectif d'architectes

figurr

www.figurr.ca

Droit d'auteur / Copyright

Sceau / Seal

ONTARIO ASSOCIATION OF ARCHITECTS
ROBERTO CAMPOS
LICENCE
7401

Note:

L'entrepreneur doit vérifier toutes les dimensions et informations sur le site et aviser immédiatement l'architecte de toutes erreurs ou omissions.

Contractor shall verify all information and dimensions on site and immediately report any errors or omissions to the architect.

Projet / Project

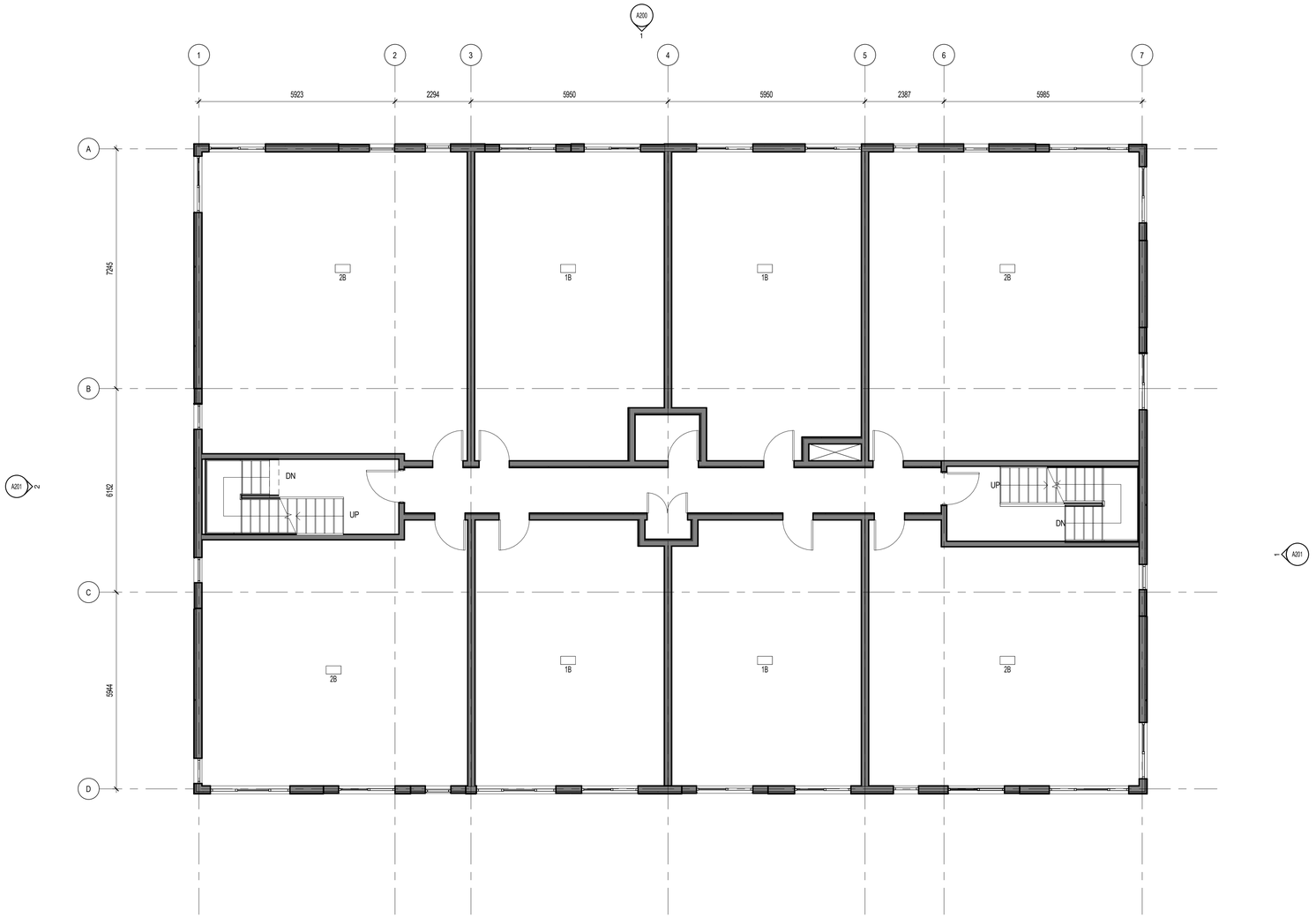
3-STOREY LOW RISE APARTMENT

1435 & 1455 MORISSET AVE.
OTTAWA, ON

Titre / Title

LEVEL 1 (BASEMENT) PLAN

Dessiné par / Drawn by: RD	No. projet / Project number: 2104
Vérifié par / Verified by: MD	No. dessin / Drawing number: A120
Échelle / Scale: 1 : 75	Révision / Revision: 2
Date de création du dessin / Drawing creation date: 2021-05-28	



GENERAL NOTES

No.	Date	Émis pour / Object
2	2021-06-18	SITE PLAN APPLICATION

Ingénieur / Engineer
(paysagiste / Landscape)

FOTENN Planning + Design

Ingénieur / Engineer
(Civil / Civil)

LRJ ENGINEERING / INGÉNIERIE

Client / Client

Firm Capital

Architecte / Architect

fig. 1
3550, Saint-Antoine O.
Montréal QC H4C 1A9
T. 514 861-5122

fig. 2
190 Somerset St W #206
Ottawa ON K2P 0J4
T. 613 695-6122

Collectif d'architectes

figurr
www.figurr.ca

Droit d'auteur / Copyright

Sceau / Seal

ONTARIO ASSOCIATION OF ARCHITECTS
ROBERTO CAMPOS
LICENCE
7401

Note:

L'entrepreneur doit vérifier toutes les dimensions et informations sur le site et aviser immédiatement l'architecte de toutes erreurs ou omissions.

Contractor shall verify all information and dimensions on site and immediately report any errors or omissions to the architect.

Projet / Project

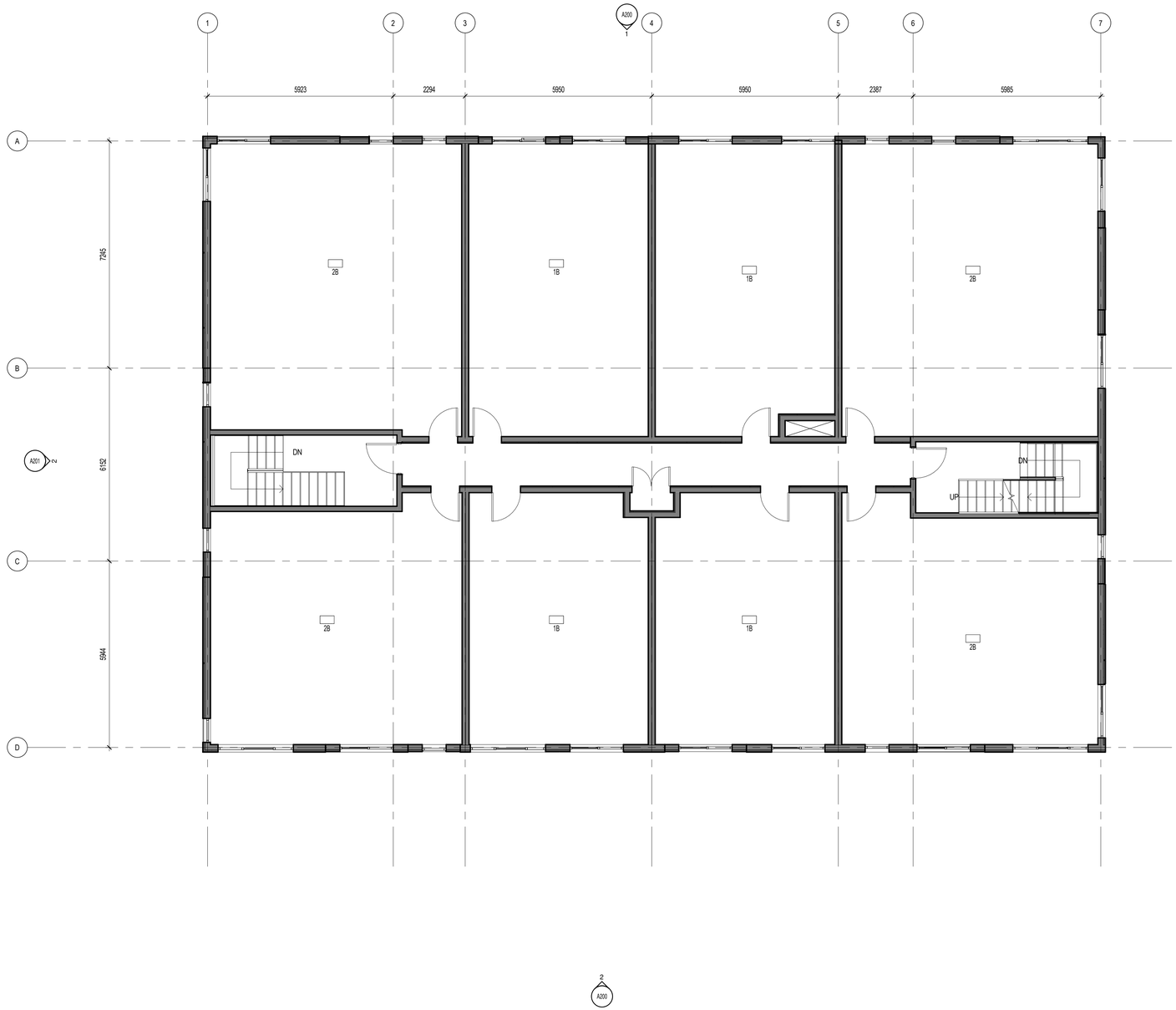
3-STOREY LOW RISE APARTMENT

1435 & 1455 MORISSET AVE.
OTTAWA, ON

Titre / Title

LEVEL 2-3 PLAN

Dessiné par / Drawn by RD	No. projet / Project number 2104	
Vérifié par / Verified by MD	No. dessin / Drawing number	Révision / Revision 2
Échelle / Scale 1 : 75		
Date de création du dessin / Drawing creation date 2021-05-28	A121	



GENERAL NOTES

No.	Date	Émis pour / Object
2	2021-06-18	SITE PLAN APPLICATION

Ingénieur / Engineer
(paysagiste / Landscape)

FOTENN
Planning + Design

Ingénieur / Engineer
(Civil / Civil)

LRJ
ENGINEERING / INGÉNIERIE

Client / Client

Firm Capital

Architecte / Architect

fig. 1
3550, Saint-Antoine O.
Montréal QC H4C 1A9
T. 514 861-5122

fig. 2
190 Somerset St W #206
Ottawa ON K2P 0J4
T. 613 695-6122

Collectif d'architectes

figurr

www.figurr.ca

Sceau / Seal

ONTARIO ASSOCIATION OF ARCHITECTS
ROBERTO CAMPOS
LICENCE
7401

Note:

L'entrepreneur doit vérifier toutes les dimensions et informations sur le site et aviser immédiatement l'architecte de toutes erreurs ou omissions.

Contractor shall verify all information and dimensions on site and immediately report any errors or omissions to the architect.

Projet / Project

3-STOREY LOW RISE APARTMENT

1435 & 1455 MORISSET AVE.
OTTAWA, ON

Titre / Title

LEVEL 4 PLAN

Dessiné par / Drawn by RD	No. projet / Project number 2104	
Vérifié par / Verified by MD	No. dessin / Drawing number	Révision / Revision 2
Échelle / Scale 1 : 75		
Date de création du dessin / Drawing creation date 2021-05-28	A122	

2 A200 SOUTH ELEVATION

ÉCHELLE /SCALE: 1 : 75

1 A200 NORTH ELEVATION

ÉCHELLE /SCALE: 1 : 75

LEGEND

1. **CONCRETE PARGED FOUNDATION WALL**
   MIN. 6" BELOW GRADE
   COLOUR: MEDIUM GREY
2. **BRICK VENEER**
   SIZE:
   BY:
   COLOUR: DARK GREY
3. **METAL PANELS**
   BY:
   FINISH: SMOOTH
   COLOUR: DARK GREY
4. **METAL PANELS**
   BY:
   FINISH:
   COLOUR: WOOD SIMULATION
5. **METAL PANELS**
   BY:
   FINISH: CORRUGATED
   COLOUR: DARK GREY

OPERABLE WINDOW

No.	Date	Émis pour / Object
2	2021-05-18	SITE PLAN APPLICATION

Ingénieur / Engineer
(paysagiste / Landscape)

FOTENN Planning + Design

Ingénieur / Engineer
(Civil / Civil)

LRJ ENGINEERING | INGÉNIERIE

Client / Client

Firm Capital

Architecte / Architect

fig. 1
3550, Saint-Antoine O.
Montréal QC H4C 1A9
T. 514 861-5122

fig. 2
190 Somerset St W #206
Ottawa ON K2P 0J4
T. 613 695-8122

Collectif d'architectes

figurr
www.figurr.ca

Droit d'auteur / Copyright

Ce dessin est sujet au droit d'auteur. Il ne peut être reproduit pour quelques intentions ou usages que ce soit, il ne peut être utilisé uniquement avec l'apposition de la signature et de l'estampe originale.

This drawing is subject to copyright. It is not to be reproduced for any purpose or by any means, and may only be used if it bears an original stamp and signature.

Sceau / Seal

ONTARIO ASSOCIATION OF ARCHITECTS
ROBERTO CAMPOS
LICENCE
7401

Note:

L'entrepreneur doit vérifier toutes les dimensions et informations sur le site et aviser immédiatement l'architecte de toutes erreurs ou omissions.

Contractor shall verify all information and dimensions on site and immediately report any errors or omissions to the architect.

Projet / Project

3-STOREY LOW RISE APARTMENT

1435 & 1455 MORISSET AVE.
OTTAWA, ON

Titre / Title

ELEVATIONS- SOUTH + NORTH

Dessiné par / Drawn by	No. projet / Project number
RD	2104
Vérifié par / Verified by	No. dessin / Drawing number
MD	
Échelle / Scale	Révision / Revision
As indicated	2
Date de création du dessin / Drawing creation date	
2021-05-28	A200

2 / A201 **WEST ELEVATION**

ÉCHELLE / *SCALE:* 1 : 75

1 / A201 **EAST ELEVATION**

ÉCHELLE / *SCALE:* 1 : 75

LEGEND

1. **CONCRETE PARGED FOUNDATION WALL**
   MIN. 6" BELOW GRADE
   COLOUR: MEDIUM GREY
2. **BRICK VENEER**
   SIZE:
   BY:
   COLOUR: DARK GREY
3. **METAL PANELS**
   BY:
   FINISH: SMOOTH
   COLOUR: DARK GREY
4. **METAL PANELS**
   BY:
   FINISH:
   COLOUR: WOOD SIMULATION
5. **METAL PANELS**
   BY:
   FINISH: CORRUGATED
   COLOUR: DARK GREY

OPERABLE WINDOW

No.	Date	Émis pour / Object
2	2021-05-18	SITE PLAN APPLICATION

Ingénieur / Engineer (paysagiste / Landscape)

FOTENN Planning + Design

Ingénieur / Engineer (Civil / Civil)

LRJ ENGINEERING | INGÉNIERIE

Client / Client

Firm Capital

Architecte / Architect

fig. 1
3550, Saint-Antoine O.
Montréal QC H4C 1A9
T. 514 861-5122

fig. 2
190 Somerset St W #206
Ottawa ON K2P 0J4
T. 613 695-8122

Collectif d'architectes

figurr

www.figurr.ca

Droit d'auteur / Copyright

Sceau / Seal

ONTARIO ASSOCIATION OF ARCHITECTS
ROBERTO CAMPOS
LICENCE
7401

Note:

L'entrepreneur doit vérifier toutes les dimensions et informations sur le site et aviser immédiatement l'architecte de toutes erreurs ou omissions.

Contractor shall verify all information and dimensions on site and immediately report any errors or omissions to the architect.

Projet / Project

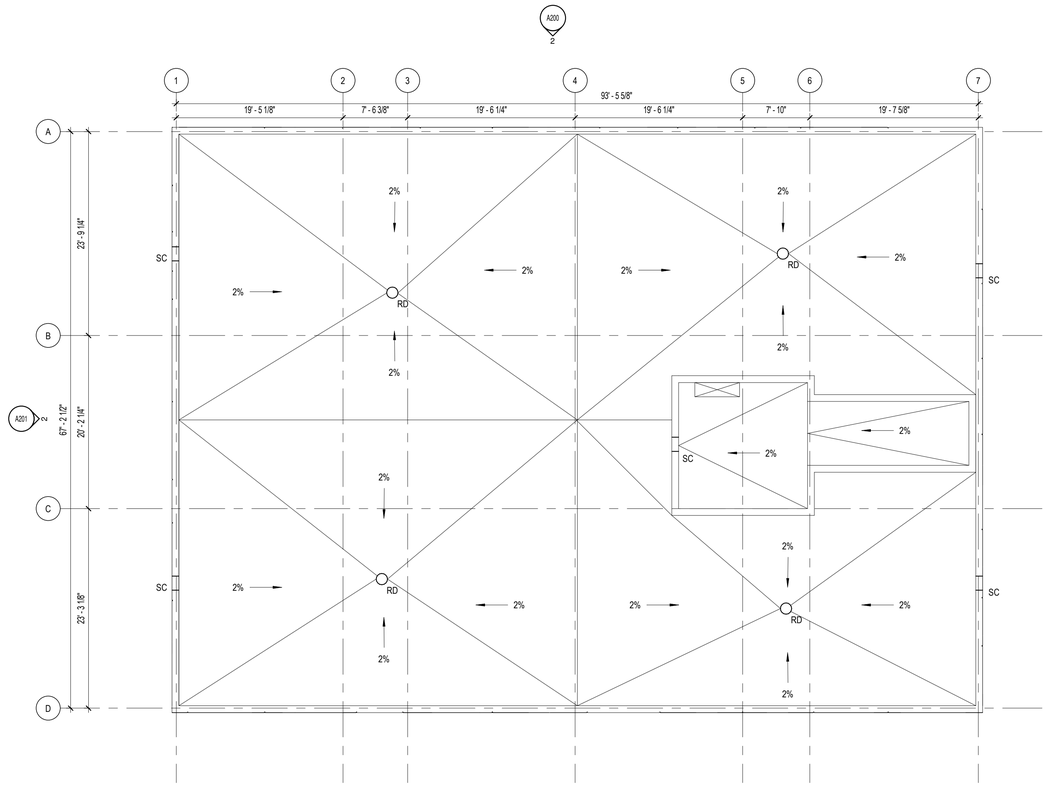
3-STOREY LOW RISE APARTMENT

1435 & 1455 MORISSET AVE.
OTTAWA, ON

Titre / Title

ELEVATIONS- EAST & WEST

Dessiné par / *Drawn by*	No. projet / *Project number*
RD	2104
Vérifié par / *Verified by*	No. dessin / *Drawing number*
MD	
Échelle / *Scale*	Révision / *Revision*
As indicated	2
Date de création du dessin / *Drawing creation date*	
2021-05-28	A201



1 / A130 ROOF PLAN

ÉCHELLE / *SCALE:* 1 : 100

No.	Date	Émis pour / Object
1	2021-04-22	COORDINATION

Ingénieur / Engineer
(Mécanique & Électricité / Mechanical & Electrical)

Ingénieur / Engineer
(Structure / Structure)

Client / Client

Architecte / *Architect*

Collectif d'architectes

fig. 1
3550, Saint-Antoine O.
Montréal QC H4C 1A9
T. 514 861-5122

fig. 2
190 Somerset St W #206
Ottawa ON K2P 0J4
T. 613 695-6122

www.figurr.ca

Droit d'auteur / *Copyright*

Sceau / *Seal*

Note:

L'entrepreneur doit vérifier toutes les dimensions et informations sur le site et aviser immédiatement l'architecte de toutes erreurs ou omissions.

Contractor shall verify all information and dimensions on site and immediately report any errors or omissions to the architect.

Projet / *Project*

3-STOREY APARTMENT

1455 MORISSET AVE.

Titre / *Title*

ROOF PLAN

Dessiné par / *Drawn by*	No. projet / *Project number*	
Author		
Vérifié par / *Verified by*	No. dessin / *Drawing number*	Révision / *Revision*
Checker		1
Échelle / *Scale*		
1 : 100		
Date de création du dessin / *Drawing creation date*	A130	
06/05/18		