



Stormwater Management Report and Servicing Brief

Third Storey Addition Site Plan Control
1186 Shillington Ave.
Ottawa, Ontario K1Z 7Z4

Prepared for:

Eric Charette
18 Tammela Crescent
Ottawa, Ontario
K1T 2E7

Attention: Mr. Eric Charette

LRL File No.: 190002

May 08th, 2019



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1 INTRODUCTION AND SITE DESCRIPTION

LRL Associates Ltd. Was retained by Eric Charette to complete a Stormwater Analysis and Servicing Brief for a proposed third story addition on top of the existing structure at 1186 Shillington Ave. The property is legally described as Plan 252 PT Lot 54; Shillington S. The location of the proposed development can be seen in **Figure 1**.



Figure 1: Ariel View of Proposed Third Story Addition

The portion of land to be developed has a rectangular shape with a frontage of 19.3 m along Shillington Ave. and a depth of 36.58 m. With these dimensions, the property has a surface area of roughly 706.14 m².

Currently, the land is developed with a two story, 196 m², apartment complex with 12 units. The building is surrounded by a paved parking area as well as a grassed area along the east side of the property and along the frontage of the building. The property is bordered by Shillington Ave. to the north as well as three other residential properties to the remaining three sides. The property is access through a shared entrance with the neighbouring property to the east (1196 Shillington Ave.) off of Shillington Ave.

Once developed, the two story apartment building will have a third story addition consisting of eight (8) additional micro apartment units. The new addition will also have a slightly larger footprint than the existing structure as it has a 0.609 m overhang on the east and west side of the structure resulting in a new footprint of about 215m², which represent a total increase in

gross area of the building of 20 m². The parking area will remain however; it will be re-paved with new asphalt. The developed property will maintain roughly 152.4m² of grassed area, and the remaining 338.74m² of asphalt parking.

As the property is already developed, existing infrastructure for storm water management already exists and is sufficient to accommodate the new development. The property also currently has access to water and sanitary services.

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

2 STORMWATER MANAGEMENT

2.1 Existing Stormwater Infrastructure

As previously discussed, the proposed development consists on of adding a third floor to the existing two storey structure located on a developed property. As such, no work will be completed on the storm sewers as the existing surfaces will not be modified. As the property drains overland towards Shillington Ave. right of way, no modifications will be done on the grading hence the existing conditions will remain.

3 WATER SUPPLY AND FIRE PROTECTION

3.1 Existing Water Supply Services

As 1186 Shillington Ave. is a currently developed property, the site has existing water supply services in the form of a 203mm diameter cast iron watermain running along the north side of Shillington Ave. The two (2) fire hydrants that can be accessed by the property are located on the north side of Shillington Ave at the intersections of Shillington Ave. and Sheridan Ave. and at the intersection of Shillington Ave. and Admiral Ave. These two (2) fire hydrants are within the 90 meter radius distance between the fire hydrant and the build, as required by the City of Ottawa.

3.2 Water Supply Demand and Fire Flow

As per the AWWA Standards and the City of Ottawa Design Guidelines, the average water demand for residential developments was calculated using an average water demand per fixture unit of **3.33L/min** and a daily and hourly peak factors of **1.5** and **1.8**, respectively. The peak water demand was calculated for the 50 fixtures units included in the proposed building. The average daily domestic water demand for the proposed building is **1.18L/s**, the maximum daily demand is **1.76L/s** and the maximum hourly demand is **2.12L/s**. Refer to Appendix A for the water demand calculation sheet.

The fire flow demand was estimated in accordance with the Fire Underwriters Survey (FUS). This method is based on the floor area of the building to be protected, type and combustibility of the structural frame and the separation distances with adjoining buildings. The fire flow demand was calculated to be **50.0L/s**. Refer to Appendix B for the fire flow calculation sheet.

3.3 Water Supply Servicing Design

The existing building service will be replaced with a new 50mm dia. service. The proposed service will connect to the existing watermain on Shillington Ave. and will be connected at the north-west corner of the building. Refer to LRL drawing C.401 for the layout of the proposed water services.

3.4 Boundary Conditions

The existing boundary conditions provided by the City of Ottawa for the site are as follow:

Minimum HGL = 125.5m

Maximum HGL = 134.5 m

Available fire flow = 67 L/s and a ground elevation of 119.0.

As the available fire flow provided by the City is above the minimum fire flow requirement for the proposed development, no additional fire protection and storage are required for this site. Refer to Appendix C for property boundaries provided by the City.

4 SANITARY SERVICE

4.1 Existing Sanitary Sewer Services

The site is currently being serviced by a 100mm dia. service. The service is connected to the existing 300mm dia. sanitary sewer on Shillington Ave., which conveys the sewage west onto Presland Road.

4.2 Sanitary Sewer Servicing Design

The existing building service will be replaced with a new 150mm dia. sanitary service which will connect to the existing 300mm dia. sanitary server on Shillington Ave. The new service will be located at the north-west corner of the building. The new proposed 150mm PVC sanitary service will be installed at a 2.0% gradient, as per the City of Ottawa Sewer Design Guidelines. Refer to LRL drawing C.401 for the proposed sanitary servicing.

The parameters used to calculate the anticipated sanitary flows are: residential average population per unit of 1.4 person for single units and 2.1 persons for double units, a residential peaking factor of 4.0 and an infiltration rate of 0.28 L/s/ha. Based on these parameters and the total site area of 0.074 ha, the total anticipated sanitary flow was estimated to **0.65 L/s**. Refer to Appendix D for the site sanitary sewer design sheet.

5 CONCLUSION

In accordance with the report objectives, the analyses of the proposed development can be summarized as follows:

Stormwater Management

- No storm sewer modifications will be completed.

Water Service

- The anticipated maximum domestic water demand of the site is 2.12L/s.
- The maximum required fire flow was calculated at 50.0 L/s using the FUS method.
- There are two existing fire hydrants on Shillington Ave. within the 90m radius.
- The existing building expansion will be serviced with a new 50mmØ watermain connected to the existing 203mmØ watermain on Shillington Ave.

Sanitary Service

- The anticipated sanitary flow from the proposed development is 0.65 L/s.
- The existing building will be serviced by a new 150mm sanitary service connection to the existing 300mm dia. sanitary sewer on Shillington Ave.

6 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 insure 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.



Guillaume Brunet, P. Eng.

Civil Engineer

APPENDIX A
Proposed Development Water Demands



Domestic Water Supply Calculations
LRL File No. 190002
Project: Third Story Addition Site Plan Control
Location: 1186 Shillington Avenue, Ottawa
Date: May 8, 2019
Designed: G. Brunet

Domestic Post Construction Flow Demand

Total Building Floor Area =	215	m ²	(includes existing and proposed building)		
Site Total Area =	0.706	ha			
Total Proposed Fixture Unit =	81				
Average Demand Per Fixture Unit =	0.8704	L/min	As per AWWA Standard		
Average Commercial Water Demand =	71	L/min	1.18	L/s	
Maximum Daily Peak Factor =	1.5	* As per City of Ottawa			
Maximum Daily Commercial =	106	L/min	1.76	L/s	
Maximum Hourly Peak Factor =	1.8	* As per City of Ottawa			
Maximum Hourly Commercial =	127	L/min	2.12	L/s	
 Therefore,					
Domestic Peak Hourly Flow Rate	2.12	L/s			
Required Fire Flow rate=	50.0	L/s			

Water Service Pipe Sizing

$$Q = VA$$

Where: V = velocity (1.1 m/s)

A = area of watermain pipe

Q = water supply flow rate

By deriving the above formula, obtain the required diameter of the pipe:

Minimum pipe diameter:

$$d \geq (4Q/\pi V)^{1/2}$$

$$d \geq 0.049 \text{ m}$$

$$d \geq 49 \text{ mm}$$

Proposed pipe diameter:

50

mm

APPENDIX B
FUS Fire Flow Calculation



Fire Flow Calculations

LRL File No. 190002
Project Third Story Addition Site Plan Control
Date May 8, 2019
Method Fire Underwriters Survey (FUS)
Designed by G. Brunet

Multi-level Development	215	
	215	m^2

APPENDIX C

Boundary Conditions

Guillaume Brunet

From: Sharif, Sharif <sharif.sharif@ottawa.ca>
Sent: April-30-19 10:58 AM
To: Guillaume Brunet
Subject: RE: 1186 Shillington Ave. Ottawa - Boundary Conditions
Attachments: 1186 Shillington April 2019.pdf

Hello Guillaume,

Here are the boundary condition as requested:

The following are boundary conditions, HGL, for hydraulic analysis at 1186 Shillington (zone 2W) assumed to be connected to the 203mm on Shillington (see attached PDF for location).

Minimum HGL = 125.5m

Maximum HGL = 134.5m

MaxDay + Fireflow (67 L/s) = 119.0m

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 water mains 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.

Thanks,

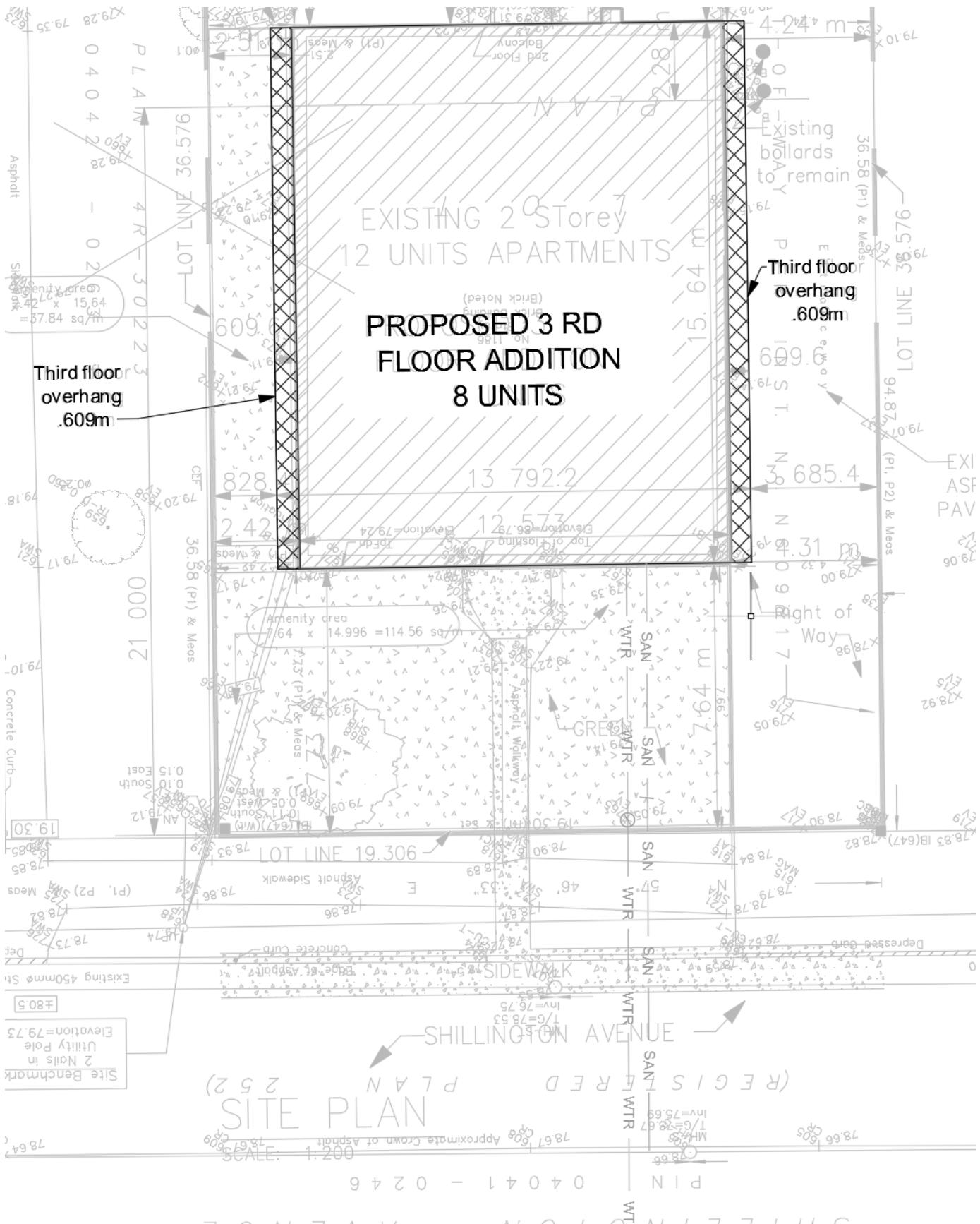
Sharif

From: Guillaume Brunet <gbrunet@irl.ca>
Sent: April 26, 2019 11:36 AM
To: Sharif, Sharif <sharif.sharif@ottawa.ca>
Subject: RE: 1186 Shillington Ave. Ottawa - Boundary Conditions

CAUTION: This email originated from an External Sender. Please do not click links or open attachments unless you recognize the source.

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Refer to picture



From: Sharif, Sharif <sharif.sharif@ottawa.ca>
Sent: April-26-19 11:29 AM

To: Guillaume Brunet <gbrunet@irl.ca>
Subject: RE: 1186 Shillington Ave. Ottawa - Boundary Conditions

I only have online access. May be you can try record drawings at ISD? Also please send the figure showing the connection. Thanks.

sharif

From: Guillaume Brunet <gbrunet@irl.ca>
Sent: April 26, 2019 11:25 AM
To: Sharif, Sharif <sharif.sharif@ottawa.ca>
Subject: RE: 1186 Shillington Ave. Ottawa - Boundary Conditions

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Your memo doesn't say the size of service on my property, only the 200mm Cast Iron on the street. City has no record of the service I'm assuming?

From: Sharif, Sharif <sharif.sharif@ottawa.ca>
Sent: April-26-19 11:10 AM
To: Guillaume Brunet <gbrunet@irl.ca>
Subject: RE: 1186 Shillington Ave. Ottawa - Boundary Conditions

Hi Guillaume,

Could you please send me the FUS calculation and also a figure showing the location of the proposed connection? Here is the pre consultation memo for the dimension.

Regards,

Sharif

From: Guillaume Brunet <gbrunet@irl.ca>
Sent: April 26, 2019 10:34 AM
To: Sharif, Sharif <sharif.sharif@ottawa.ca>
Subject: 1186 Shillington Ave. Ottawa - Boundary Conditions

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Hi Golam,

Would you be able to provide the boundary conditions for the proposed residential project located at 1186 Shillington Ave. Ottawa, ON?

Please see requested information below:

Location of service: 1186 Shillington Ave

Type of development: Residential

City File No.: PC2018-0198

Amount of fire flow required (as per FUS, 1999): 66.7 L/s

Average daily demand: 1.18/s

Maximum daily demand: 1.76 L/s

Maximum hourly demand: 2.12/s

Hydrant location and spacing to meet City's Water Design guidelines

Also do you have a record of the existing water service dimension.

Thank you



Guillaume Brunet, P.Eng.

Civil Engineer

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Boundary Condition for 1186 Shillington



APPENDIX D
Sanitary Calculations

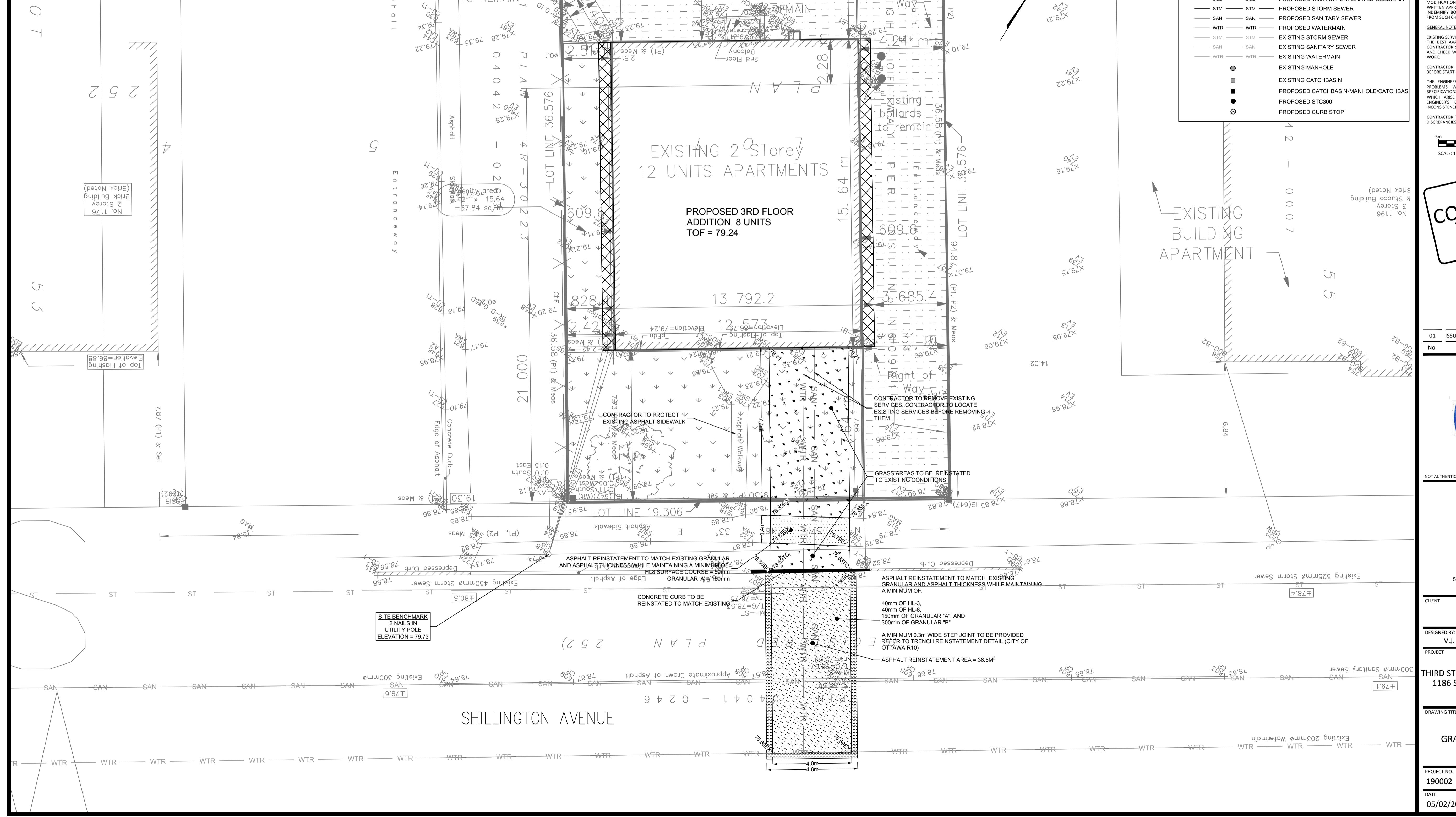
	<p>LRL File No. 190002 Project: Third Story Addition Site Plan Control Location: 1186 Shillington Avenue, Ottawa Date: May 8, 2019 Designed: G. Brunet</p>	<p>Average Daily Flow = 350 L/p/day Commercial & Institutional Flow = 50000 L/ha/day Light Industrial Flow = 35000 L/ha/day Heavy Industrial Flow = 55000 L/ha/day Maximum Residential Peak Factor = 4.0 Commercial & Institutional Peak Factor = 1.5</p>	<p>Sanitary Design Parameters Industrial Peak Factor = as per Appendix 4-B = 7 Extraneous Flow = 0.28 L/s/gross ha</p>	<p>Pipe Design Parameters Minimum Velocity = 0.60 m/s Manning's n = 0.013</p>
---	--	--	---	--

LOCATION			RESIDENTIAL AREA AND POPULATION						COMMERCIAL		INDUSTRIAL		INSTITUTIONAL		C+H+	INFILTRATION		TOTAL FLOW (l/s)	PIPE				MANHOLE				
STREET	FROM MH	TO MH	AREA (Ha)	POP.	CUMMULATIVE		PEAK FLOW (l/s)	AREA (Ha)	ACCU. 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 (%)	MATERA IL	CAP. (FULL) (l/s)	VEL. (FULL) (m/s)	UP INVERT (m)	DOWN INVERT (m)	
					AREA (Ha)	POP.													LENGTH (m)	DIA. (mm)	SLOPE (%)	MATERA IL	CAP. (FULL) (l/s)	VEL. (FULL) (m/s)	UP INVERT (m)	DOWN INVERT (m)	
SITE	STUB	CITY	0.706	28.0	0.7	28.0	4.0	0.45	0.000	0.000	0.00	7.0	0.0	0.0	0.00	0.71	0.71	0.20	0.65	10.0	150	1.00%	PVC	15.23	0.86	90.28	90.18
NOTES																											
Existing invert and slopes are estimated. They are to be confirmed on-site.																											
Designed: G.B.												PROJECT: Third Story Addition Site Plan Control												Sheet No. 1 of 1			
Checked: LOCATION: 1186 Shillington Ave. Ottawa												Dwg. Reference: C401 - Servicing Plan												Date: May-09-19			

APPENDIX E
Civil Engineering Servicing Drawings



KEY PLAN
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 ENVIRONMENTAL CONDITIONS, CONTRACTOR'S REQUIREMENTS, THE CONTRACT, THE SPECIFICATIONS, ADDENDA, AND MODIFICATIONS ISSUED AFTER EXECUTION OF THE CONTRACT. THESE CONDITIONS, DOCUMENTS, AND MODIFICATIONS ARE REFERRED TO AS THE "DRAWINGS". THE DRAWINGS SHALL BE CONSIDERED AS THE SAME MATERIAL AS THE CONTRACT DOCUMENTS WHICH ARE 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 REVIEWED THE SITE, FAMILIARIZED HIMSELF WITH THE DRAWINGS, AND THAT HE HAS MADE FIELD DETERMINATIONS AND OBSERVATIONS WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.

AS INSTRUMENTS OF SERVICE, ALL DRAWINGS, SPECIFICATIONS, CADD FILES OR OTHER ELECTRONIC MEDIA AND COPIES THEREOF FURNISHED BY THE ENGINEER AND RELATED TO THIS PROJECT ARE THE PROPERTY OF THE ENGINEER AND ARE NOT TO BE USED ON ANY OTHER PROJECT; EXCEPT AS OTHERWISE AGREED, CHANGES TO THE DRAWINGS MAY ONLY BE MADE BY THE ENGINEER.

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

THESE DRAWINGS ILLUSTRATE THE WORK TO BE DONE. THE ENGINEER IS NOT RESPONSIBLE FOR THE MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES USED TO DO THE WORK, OR THE SAFETY ASPECTS OF CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING WHETHER CHANGES THIS CONDITION. CONTRACTOR SHALL DETERMINE ALL CONDITIONS AT THE SITE AND SHALL BE RESPONSIBLE FOR KNOWING HOW THEY AFFECT THE WORK. THE CONTRACTOR SHALL NOT BE HELD LIABLE FOR ANY INJURY OR DAMAGE TO PERSONS OR PROPERTY WHICH OCCURS AS A RESULT OF THE CONTRACTOR'S NEGLIGENCE OR CARELESSNESS, OR AS A RESULT OF THE CONTRACTOR'S 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 THAT THE CLIENT, THE CLIENT'S CONTRACTORS OR SUBCONTRACTORS, OR ANY OTHER PERSONS ACTING AS AGENTS OF THE CLIENT, MAKE OR TEND TO MAKE ANY CHANGES TO ANY REPORTS, PLANS, SPECIFICATIONS OR OTHER CONSTRUCTION DOCUMENTS PREPARED BY LRL ASSOCIATES LTD. (LRL) WITHOUT OBTAINING WRITTEN APPROVAL FROM LRL, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE RESULTS OF SUCH CHANGES. THEREFORE THE CLIENT AGREES TO WAIVE ANY CLAIM AGAINST LRL AND TO RELEASE LRL FROM ANY LIABILITY ARISING DIRECTLY OR INDIRECTLY FROM SUCH UNAUTHORIZED CHANGES.

IN ADDITION, THE CLIENT AGREES TO THE FULLEST EXTENT PERMITTED BY LAW, TO INDEMNIFY AND HOLD HARMLESS LRL FROM ANY DAMAGES, LIABILITIES OR COSTS, INCLUDING 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 THE CONTRACTOR FROM MAKING ANY CHANGES TO THE CONSTRUCTION DOCUMENTS WITHOUT THE FIRM WRITTEN APPROVAL OF LRL AND THAT FURTHER REQUIRES THE CONTRACTOR TO INFORM 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 DATE-ACCURATE. THE 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 ELEMENTS THEY CONVEY, OR FOR ANY UNINTENDED OR OTHER FAILURES WHICH OCCUR. THE CONTRACTOR SHALL 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.

SCALE: 1:250

NOT FOR CONSTRUCTION TENDER OR PERMIT

01 ISSUED FOR SUBMISSION G.B. 06 MAY 2019

No. REVISIONS BY DATE

LICENSED PROFESSIONAL ENGINEER
G.L. BRUNET
08/05/2019
PROVINCE OF ONTARIO
NOT AUTHENTIC UNLESS SIGNED AND DATED

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

CLIENT

Eric Charette

DESIGNED BY: DRAWN BY: APPROVED BY:
V.J. M.L. V.J.
PROJECT

THIRD STORY ADDITION SITE PLAN CONTROL
1186 SHILLINGTON AVE., OTTAWA, ON

DRAWING TITLE

GRADING AND DRAINAGE PLAN

PROJECT NO.
190002

DATE
05/02/2019

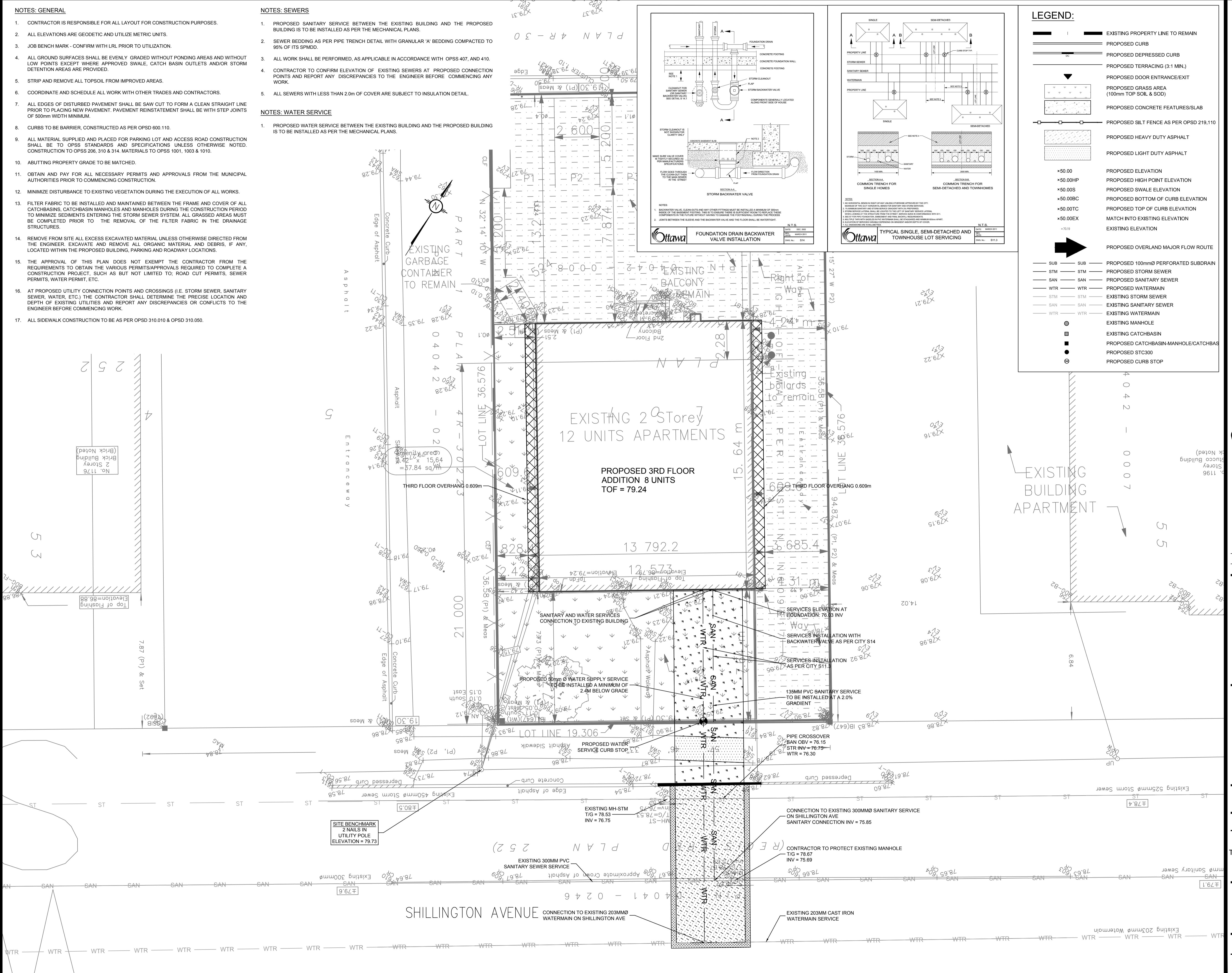
C301

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 WITHIN 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 THE 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.

NOTES: SEWER

1. PROPOSED SANITARY SERVICE BETWEEN THE EXISTING BUILDING AND THE PROPOSED BUILDING IS TO BE INSTALLED AS PER THE MECHANICAL PLANS.
 2. SEWER BEDDING AS PER PIPE TRENCH DETAIL WITH GRANULAR 'A' BEDDING COMPACTED TO 95% OF ITS SPMDD.
 3. ALL WORK SHALL BE PERFORMED, AS APPLICABLE IN ACCORDANCE WITH OPSS 407, AND 410.
 4. CONTRACTOR TO CONFIRM ELEVATION OF EXISTING SEWERS AT PROPOSED CONNECTION POINTS AND REPORT ANY DISCREPANCIES TO THE ENGINEER BEFORE COMMENCING ANY WORK.
 5. ALL SEWERS WITH LESS THAN 2.0m OF COVER ARE SUBJECT TO INSULATION DETAIL.



LEGEND:

		EXISTING PROPERTY LINE TO REMAIN
		PROPOSED CURB
	DC	PROPOSED DEPRESSED CURB
		PROPOSED TERRACING (3:1 MIN.)
		PROPOSED DOOR ENTRANCE/EXIT
		PROPOSED GRASS AREA (100mm TOP SOIL & SOD)
		PROPOSED CONCRETE FEATURES/SLAB
		PROPOSED SILT FENCE AS PER OPSD 219.110
		PROPOSED HEAVY DUTY ASPHALT
		PROPOSED LIGHT DUTY ASPHALT
×50.00		PROPOSED ELEVATION
×50.00HP		PROPOSED HIGH POINT ELEVATION
×50.00S		PROPOSED SWALE ELEVATION
×50.00BC		PROPOSED BOTTOM OF CURB ELEVATION
×50.00TC		PROPOSED TOP OF CURB ELEVATION
×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
●		EXISTING MANHOLE
■		EXISTING CATCHBASIN
■		PROPOSED CATCHBASIN-MANHOLE/CATCHBAS
●		PROPOSED STC300
⊗		PROPOSED CURB STOP

INTERPRETATION OF DRAWINGS

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

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

MENTS OF SERVICE, ALL DRAWINGS, SPECIFICATIONS, CADD FILES OR ELECTRONIC MEDIA AND COPIED THERE OF FURNISHED BY THE ENGINEER 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. CO THE DRAWINGS MAY ONLY BE MADE BY THE ENGINEER.

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

DRAWINGS ILLUSTRATES THE WORK TO BE DONE. THE ENGINEER IS NOT RESPONSIBLE FOR THE MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCESSES USED TO DO THE WORK, OR THE SAFETY ASPECTS OF THE WORK. CONTRACTOR SHALL DETERMINE ALL CONDITIONS AT WHICH THE WORK IS TO BE PERFORMED. CONTRACTOR SHALL BE RESPONSIBLE FOR KNOWING HOW THEY AFFECT THE WORK. SUBMITTAL OF A BID TO PERFORM THIS WORK IS ACKNOWLEDGEMENT OF CONTRACTOR'S RESPONSIBILITIES, AND THAT THEY HAVE BEEN FULLY CONSIDERED IN THE PREPARATION OF THE WORK, AND THE BID PRICE. NO CLAIMS FOR EXTRA CHARGES FOR UNPREDICTABLE CONDITIONS WILL BE FORTHCOMING.

CHANGES:

UNLESS THE CLIENT, THE CLIENT'S CONTRACTORS OR SUBCONTRACTORS, OR PERSONS FOR WHOM THE CLIENT IS LEGALLY LIABLE MAKES OR PERMITS TO BE MADE CHANGES TO ANY REPORTS, PLANS, SPECIFICATIONS OR OTHER CONTRACT DOCUMENTS PREPARED BY LRL ASSOCIATES LTD. (LRL) WITHOUT LRL'S PRIOR WRITTEN CONSENT, THE CLIENT SHALL ASSUME FULL LIABILITY 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.

N, THE CLIENT AGREES, TO THE FULLEST EXTENT PERMITTED BY LAW, TO DEFEND, INDEMNIFY AND HOLD HARMLESS LRL FROM ANY DAMAGES, LIABILITIES OR EXPENSES, INCLUDING REASONABLE ATTORNEY'S FEES AND COST OF DEFENSE, ARISING OUT OF OR RELATED TO THE CONTRACTS, AGREEMENTS, CHANGES, OR ADDENDA.

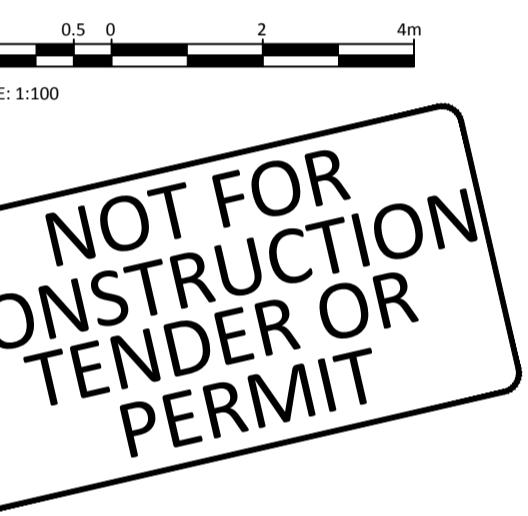
ON, THE CLIENT AGREES TO INCLUDE IN ANY CONTRACTS FOR THE PROJECT APPROPRIATE LANGUAGE THAT PROHIBITS THE CONTRACTOR OR SUBCONTRACTORS OF ANY TIER FROM MAKING ANY CHANGES OR ADDENDA TO LRL'S CONSTRUCTION DOCUMENTS WITHOUT THE PRIOR APPROVAL OF LRL AND THAT FURTHER REQUIRES THE CONTRACTOR TO NOTIFY BOTH LRL AND THE CLIENT FROM ANY LIABILITY OR COST ARISING OUT OF OR RELATED TO THE CONTRACTS, AGREEMENTS, CHANGES, OR ADDENDA MADE WITHOUT SUCH PROPER AUTHORIZATION.

NOTES:

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

OWNER IS ADVISED TO COLLECT INFORMATION ON SOIL CONDITIONS.

PLIER WAIVES ANY AND ALL RESPONSIBILITY AND LIABILITY FOR 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 GUIDANCE WITH RESPECT TO ANY ERRORS, OMISSIONS, INACCURACIES AMBIGUITIES OR CONFLICTS WHICH ARE ALLEGED.



ENGINEERING | INGÉNIERIE

Eric Charette

BY: DRAWN BY: APPROVED BY:
J.J. M.L. V.J.

STORY ADDITION SITE PLAN CONTROL
15 SHILLINGTON AVE., OTTAWA, ON

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