REPORT

SITE SERVICING REPORT
93 NORMAN STREET

Project: 132469-7.03.04

Prepared for Tamarack (Norman Corporation)
by IBI Group
March 8, 2021

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1 INTRODUCTION

1.1 Scope

The purpose of this report is to outline the required municipal services, including water supply, stormwater management and wastewater disposal, needed to support the redevelopment of the subject property. The property is approximately 0.236 hectares in area and is currently identified as 93 Norman Street. The project lands were subject to an earlier re-zoning application, which has been approved, hence, this report builds on the findings of the approved re-zoning application.

The site is located in Ottawa's Little Italy neighbourhood and bound by existing residential to the north, Norman Street to the south, the O-Train corridor to the west and existing commercial, which fronts Preston St. to the east. Please refer to **Figure 1 – Existing Conditions** for location information.

This Site Servicing Study, which also includes the Stormwater Management Plan, Watermain Analysis and Erosion and Sedimentation Control Plans, is being completed in support of the Site Plan Application.

1.2 Subject Site

Tamarack (Norman Corporation) proposes to construct a 9 storey residential apartment building with 113 units. The proposed development also includes 2 levels of underground parking. Vehicular access to the site will be from Norman Street. Please refer to **Figure 2 – Site Plan** for more information.

The site currently consists of vacant lots. All previously existing structures within the subject property have been demolished to facilitate the proposed development.

1.3 Pre-consultation

An engineering pre-consultation with the City was held on December 17, 2020 regarding the proposed development. Notes from this meeting may be found in **Appendix A**. The only significant item relating to the site engineering at said meeting was the need for a secondary water connection, which will be addressed in section 2 below.

2 WATER DISTRIBUTION

2.1 Existing Conditions

The only watermain adjacent to the site is an existing 200 mm diameter PVC watermain, located within the Norman Street right of way. This is a dead-end watermain which terminates at the end of Norman Street at the O-Train corridor. The nearest other watermain is a 400 mm diameter PVC watermain located within the Preston Street ROW. This main is approximately 45m east of the subject lands. These watermains fall within the City of Ottawa's pressure zone 1W which will provide the water supply to the site.

2.2 Design Criteria

2.2.1 Water Demands

The population for apartment buildings is assumed at 1.8 persons per unit as found in Table 4.1 of the Design Guidelines. A watermain demand calculation sheet is included in **Appendix A** and the total water demands are summarized as follows:

	Subject Site
Average Day	0.66 l/s
Maximum Day	1.65 l/s
Peak Hour	3.63 l/s

2.2.2 System Pressure

The Ottawa Design Guidelines – Water Distribution (WDG001), July 2010, City of Ottawa, Clause 4.2.2 states that the preferred practice for design of a new distribution system is to have normal operating pressures range between 345 kPa (50 psi) and 480 kPa (80 psi) under maximum daily flow conditions. Other pressure criteria identified in Clause 4.2.2 of the guidelines are as follows:

Minimum Pressure	Minimum system pressure under peak hour demand conditions shall not be less than 276 kPa (40 psi)
Fire Flow	During the period of maximum day demand, the system pressure shall not be less than 140 kPa (20 psi) during a fire flow event.
Maximum Pressure	In accordance with the Ontario Building/Plumbing Code, the maximum pressure should not exceed 552 kPa (80 psi). Pressure reduction controls will be required for buildings where it is not possible/feasible to maintain the system pressure below 552 kPa.

2.2.3 Fire Flow Rates

A calculation using the Fire Underwriting Survey (FUS) method was conducted to determine the fire flow requirement for the site. The building is considered non-combustible construction. Results of the analysis provides a maximum fire flow rate of 9,000 l/min or 150 l/s is required which is used in the hydraulic analysis. A copy of the FUS calculation is included in **Appendix A**.

2.2.4 Boundary Conditions

A boundary condition was provided by the City of Ottawa for the 200 mm diameter watermain on Norman Street adjacent to the development. A copy of the boundary conditions is included in **Appendix A** and summarized as follows:

BOUNDARY CONDITIONS	
SCENARIO	HGL (m) Norman (proposed connection)
Maximum HGL	114.8m
Minimum HGL (Peak Hour)	107.3m
Max Day + Fire Flow	102.4m

2.3 Second Watermain

As identified in the pre-consultation meeting with the City of Ottawa, a second watermain connection is required for the proposed building for redundancy purposes. At this time it is proposed that this watermain will connect to the 400mm watermain in Preston, separated from the connection of the existing 200 mm Norman watermain by a valve box and run down the north side of Norman Street.

Upon the City's concurrence with the above, a municipal consent application will be completed in order to obtain approval to construct the above noted second watermain in Norman Street.

2.4 Proposed Water Plan

The minimum water pressure inside the building at the connection is determined by the difference between the water entry elevation of 59.15m and the minimum HGL condition, resulting in a pressure 472.4 kPa [(107.3 m - 59.15 m) x 9.81 m/s^2] which exceeds the minimum requirement of 276 kPa per the guidelines. Because the pressure at the 9th floor under minimum HGL conditions is less than the minimum requirement of 276 kPa, a domestic water pump will be necessary for this building.

Maximum water pressure is determined by the difference between the water entry elevation of 59.15m and the maximum HGL condition resulting in a pressure of 545.9 kPa [(114.8 m – 59.15 m) x 9.81 m/s^2], which is less than the 552 kPa threshold in the guideline in which pressure control is required. Based on this result, pressure control is not required for this building.

The boundary condition for Maximum Day and Fire Flow results in a pressure of 424.3 kPa at the ground floor level. In the guidelines, a minimum residual pressure of 140 kPa must be maintained in the distribution system for a fire flow and maximum day event. As a pressure of 424.3 kPa is achieved, the fire flow requirement is exceeded.

To service the property twin 152mm dia water services, one from the existing 200mm watermain in Norman separated and the other from the proposed 200mm watermain to be constructed in Norman Street are proposed, see site servicing plan 132469-C-001 in **Appendix D.** The proposed 152mm dia services will provide adequate supply to the building to meet demands while twining the service will provide service redundancy for this building.

With 2 AA hydrants within 75m of the building the minimum number of hydrants needed to deliver the required fire flow to the structure is being provided in accordance with Technical Bulletin ISTB-2018-02 dated March 21, 2018. Furthermore, the fire dept. connection is located within 45m of a private hydrant located on Norman Street, as such a new hydrant is not needed.

BUILDING ID	FIRE FLOW DEMAND (L/MIN)	FIRE HYDRANT(S) WITHIN 75M (5,700 L/MIN)	FIRE HYDRANT(S) WITHIN 150M (3,800 L/MIN)	COMBINED FIRE FLOW (L/MIN)
Norman	9,000	2	2	19,200

3 WASTEWATER

3.1 Existing Conditions

Adjacent to the site is a 300mm, increasing in size to a 375mm, PVC combined sewer located in the Norman Street ROW, and this sewer will be the outlet for the subject development.

3.2 Design Criteria

The sanitary sewers for the subject site will be based on the City of Ottawa design criteria. It should be noted that the sanitary sewer design for this study incorporates the latest City of Ottawa design parameters identified in Technical Bulletin ISTB-2018-01. Some of the key criteria will include the following:

- Commercial/Institutional flow 28,000 l/ha/d
- Residential flow 280 l/c/d
- Peaking factor 1.5 if ICI in contributing area >20%
1.0 if ICI in contributing area <20%
- Infiltration allowance 0.33 l/s/ha
- Velocities 0.60 m/s min. to 3.0 m/s max.

Given the above criteria, total wastewater flow from the proposed development will 2.40 l/s, the detailed sanitary sewer calculations are included in **Appendix B**.

3.3 Recommended Wastewater Plan

A 200mm dia sanitary service lateral is proposed to connect to the existing combined sewer in Norman Street to service this site. Please refer to the site servicing plan 132469-C-001 in **Appendix D** for connection location details.

4 STORMWATER SYSTEM

4.1 Existing Conditions

As noted above, currently adjacent to the site is a 300mm, increasing in size to a 375mm, PVC combined sewer located in the Norman street ROW. This is both the current outlet for the overland flow generated from the undeveloped site and the proposed outlet for the storm sewer connection servicing the proposed building.

4.2 Design Criteria

Criteria for the stormwater management of existing infill sites discharging to separated sewers within the City of Ottawa are as follows;

- Existing adjacent storm sewers were designed to a 2 year level of service
- Site to be designed to limit the 100 year post development flow to a maximum of the 2 year pre development flow
- Pre development flow to use a maximum C of 0.4 and a minimum TC of 10 min.

The stormwater system was designed following the principles of dual drainage, making accommodations for both major and minor flow.

Some of the key criteria include the following:

• Design Storm	1:2 year return (Ottawa) 1:100 year return (External Areas)
• Rational Method Sewer Sizing	
• Initial Time of Concentration	10 minutes
• Runoff Coefficients	
- Landscaped Areas	C = 0.30
- Asphalt/Concrete	C = 0.90
- Roof	C = 0.90
• Pipe Velocities	0.80 m/s to 6.0 m/s
• Minimum Pipe Size	250 mm diameter (200 mm CB Leads)

4.3 Proposed Minor System

The detailed design for this site shows a storm sewer connection along with some uncontrolled surface drainage entering into the 300mm/375mm combined sewer within the Norman Street ROW.

Using the above-noted criteria, the proposed storm sewer connection was sized accordingly. A detailed storm sewer design sheet and the associated storm sewer drainage area plan are included in **Appendix C**.

4.4 Stormwater Management

The subject site will be limited to a release rate established using the criteria described in section 4.2. This will be achieved through roof flow control devices and an inlet control device (ICD) at the outlet of the cistern.

Flows generated that are in excess of the site`s allowable release rate will be stored both on the roof and within the cistern located at the parking garage structure.

At certain locations within the site, the opportunity to store runoff is limited due to grading constraints and building geometry. These locations are generally located at the perimeter of the site where it is necessary to tie into public boulevards and adjacent properties, and it is not always feasible to capture or store stormwater runoff.

In this case, the building frontage along Norman Street will discharge uncontrolled to the street CBs. Also, the north and east landscaping areas will be captured by the proposed landscaping catchbasins and pipe system; however, as this area is 100 year capture (due to the external lands) and flows are uncontrolled, these site areas are included in the uncontrolled flow as well. These “uncontrolled” areas, 0.02 hectares in total, have an average C value of 0.75. Based on 1:100 year storm uncontrolled flows, the uncontrolled areas generate 7.45 l/s runoff (refer to Section 4.5 for calculation). The cistern has been sized to control water generated during the 1:100-year event, with no overflow leaving the site. Please refer to the SWM calculations in **Appendix C**.

4.5 Inlet Controls

The allowable release rate for the 0.236 Ha site can be calculated as follows:

$\mathbf{Q_{allowable}}$	= **2.78** x **C** x $\mathbf{i_{2yr}}$ x **A** where:
C	= 0.4 (pre-development C*)
$\mathbf{I_{2yr}}$	= Intensity of 2-year storm event (mm/hr)
	= $732.951 \times (T_c + 6.199)^{0.81}$ = 76.81 mm/hr; where T_c = 10 minutes*
A	= Area = 0.24 Ha
	= **20.16 L/s**

*based on pre development calculations, see Appendix C

As noted in Section 4.4, a portion of the site will be left to discharge to the surrounding boulevard at an uncontrolled rate.

Based on a 1:100 year event, the flow from the 0.02 Ha uncontrolled areas can be determined as:

$\mathbf{Q_{uncontrolled}}$	= **2.78** x **C** x $\mathbf{i_{100yr}}$ x **A** where:
C	= Average runoff coefficient of uncontrolled area = 0.75
$\mathbf{i_{100yr}}$	= Intensity of 100-year storm event (mm/hr)
	= $1735.688 \times (T_c + 6.014)^{0.820}$ = 178.56 mm/hr; where T_c = 10 minutes
A	= Uncontrolled Area = 0.02 Ha

Therefore, the uncontrolled release rate can be determined as:

$Q_{uncontrolled}$ = **2.78** x **C** x i_{100yr} x **A**

= 2.78 x 0.75 x 178.56 x 0.02

= **7.45L/s**

The maximum allowable release rate from the remainder of the site can then be determined as:

$Q_{max\ allowable}$ = $Q_{restricted}$ – $Q_{uncontrolled}$

= 20.16 L/s – 7.45 L/s

= **12.71 L/s**

4.6 On-Site Detention

As noted in section 4.4 any excess storm water up to the 100-year event is to be stored on-site via roof top storage and within the building cistern in order to not surcharge the downstream municipal storm sewer system. As the cistern is located inside the building, coordination with the architect, structural and mechanical engineers will be needed to design the structure and associated inlet control device.

4.6.1 Site Inlet Control

The following Table summarizes the on-site storage requirements during both the 1:5-year and 1:100-year events.

ICD AREA	TRIBUTARY AREA	AVAILABLE STORAGE (M^3)	100-YEAR STORM		5-YEAR STORM	
			RESTRICTED FLOW (L/S)	REQUIRED STORAGE (M^3)	RESTRICTED FLOW (L/S)	REQUIRED STORAGE (M^3)
Cistern	0.13	45	9	43.15	9	16.63
Roof	0.08	50	3	33.29	3	14.09
Unrestricted	0.02					
TOTAL	**0.23**	**95**	**12**	**76.43**	**12**	**30.73**

In all instances the required storage is met. The mechanical engineer has noted that the cistern will be fitted with a constant flow pump set at 9 litres/second, as such no reduction in flow values for reduced head at the beginning of storm events has been accounted for in these calculations.

4.6.2 Overall Release Rate

As demonstrated above, the site uses an inlet control device to restrict the 100 year storm event to the criteria approved by the City of Ottawa. Restricted stormwater will be contained onsite by rooftop storage and the building cistern. In the 100 year event, there will be no overflow off-site from restricted areas.

The sum of restrictions on the site is 12 l/s, which is equal to the allowable release of 12.71 l/s noted in section 4.5.

4.6.3 Total Site Release Rate

The predevelopment flows from the subject site can be calculated as follows:

$\mathbf{Q_{existing}}$ = **2.78** x **C** x $\mathbf{i_{2yr}}$ x **A** where:

C = 0.83 (pre-development C from Re-Zoning)

$\mathbf{I_{2yr}}$ = Intensity of 2-year storm event (mm/hr)

= $732.951 \times (T_c + 6.199)^{0.81}$ = 61.77 mm/hr; where T_c = 15 minutes*

A = Area = 0.236 Ha

= **33.64 L/s**

The new total flow from the site is calculated by adding the new sanitary flow, plus the unrestricted storm flow and the restricted storm flow (2.4 L/s + 7.45 L/s + 12 L/s).

The total post development 100 year flow is **21.85 L/s** which is less than the pre-development 2 year flow of 33.64 L/s

4.7 External Drainage

The previous Re-Zoning Application identified the rear yards of the lots north of the subject site, which front onto Beech Street as draining through the subject lands. This area is identified as EXT on the drainage area plan C-500. The storm sewer design sheet has ensured these lands flow through the on-site site storm sewer system at 100 year uncontrolled flow values, as such no impact to these lands is anticipated.

4.8 Norman Combined Sewer Capacity

Additional lines to the storm sewer design sheet in **Appendix C** were added to analyze the capacity of the Norman Street combined sewer for the total drainage area contributory to the sewer. The design sheet demonstrates the sewer still has residual capacity and is a conservative estimate as it does not account for the on-site storm restrictions being put in place on the subject property.

5 SEDIMENT AND EROSION CONTROL PLAN

During construction, existing storm water conveyance systems can be exposed to significant sediment loadings. A number of construction techniques designed to reduce unnecessary construction sediment loadings may be used such as;

- Filter socks will remain on open surface structures such as manholes and catchbasins until these structures are commissioned and put into use;
- Installation of silt fence, where applicable, around the perimeter of the proposed work area.

During construction of the services, any trench dewatering using pumps will be fitted with a “filter sock.” Thus, any pumped groundwater will be filtered prior to release to the existing surface runoff. The contractor will inspect and maintain the filter sock as needed including sediment removal and disposal.

All catchbasins, and to a lesser degree manholes, convey surface water to sewers. Consequently, until the surrounding surface has been completed these structures will be protected with a sediment capture filter sock to prevent sediment from entering the minor storm sewer system. These will stay in place and be maintained during construction and build-out until it is appropriate to remove them.

The Sediment and Erosion Control Plan 132469-C-010 is included in **Appendix D**.

6 CONCLUSIONS

Municipal water, wastewater and stormwater systems required to accommodate the proposed development are available to service the proposed development. Prior to construction, existing sewers are to be CCTV inspected to assess sewer condition.

This report has demonstrated sanitary and storm flows from and water supply to the subject site can be accommodated by the existing infrastructure; however, for redundancy purposes a second watemain connection is recommended and will be approved via municipal consent application. Also, the proposed servicing has been designed in accordance with MECP and City of Ottawa current level of service requirements.

The use of lot level controls, conveyance controls and end of pipe controls outlined in the report will result in effective treatment of surface stormwater runoff from the site. Adherence to the sediment and erosion control plan during construction will minimize harmful impacts on surface water.

Based on the information provided herein, the development can be serviced to meet City of Ottawa requirements.

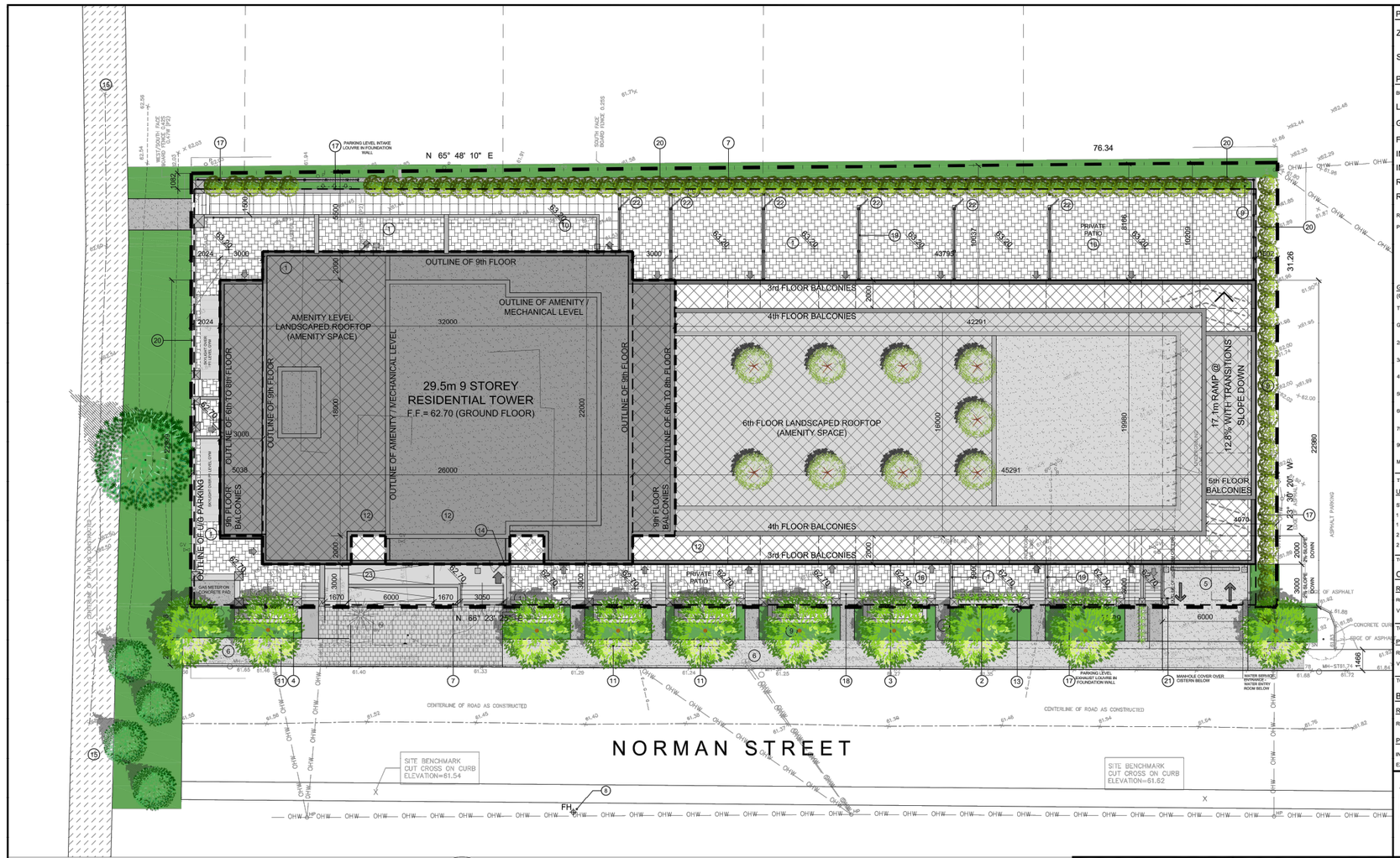
Report prepared by:

Terry Brule, P. Eng.
Associate Director, Practice Lead

James Battison C.E.T.

J: \132469_93_Norman \7.0_Production \7.03_Design \04_Civil _LAND \Figures \Figure1.dwg Layout Name: FIGURE1 Plot Scale: 1:5.13 Plotted At: 3/3/2021 Last Saved By: ddore Last Saved At: Mar. 3, 21

Scale	Project Title	Drawing Title	Sheet No.
NTS	93 NORMAN STREET	EXISTING CONDITIONS	FIGURE 1



0m 5 10 15
SCALE 1: 100

KEY MAP

OMB Case No. PL141147 & PL141223
93-105 Norman Street, Ottawa

PROJECT INFORMATION

ZONING	R5B [22147] S(329)
SITE AREA	2,356.2 sq. m. 25,361 sq. ft.

PROJECT STATISTICS

BUILDING HEIGHT (9 STOREY'S)	29.5 m
LANDSCAPED AREA(35.5%)	836.2 sq. m. 9,000 sq. ft.
GROSS FLOOR AREA	
FRONT YARD SETBACK	3.0 m
INT. YARD SETBACK (WEST)	2.0 m
INT. YARD SETBACK (EAST)	1.5 m
REAR YARD SETBACK (TOWER)	5.5 m
REAR YARD SETBACK (PARKING)	1.08 m
REQUIRED AMENITY SPACE (50% COMMUNAL)	756 sq. m.
PROVIDED AMENITY SPACE	
PRIVATE PATIOS =	1022 sq. m.
COMMUNAL (5TH) =	115 sq. m.
COMMUNAL (AT GRADE) =	82 sq. m.
COMMUNAL (9th FLOOR) =	346 sq. m.
COMMUNAL (ROOF) =	213 sq. m.
TOTAL =	1778 sq. m.

GROSS BUILDING - AREAS
(CITY OF OTTAWA DEFINITION)

TYPICAL PARKING LEVEL		2,177.6 sq. m. 23,440 sq. ft.
GROUND FLOOR		1021.9 sq. m. 11,000 sq. ft.
2nd FLOOR		1,244.5 sq. m. 13,396 sq. ft.
3rd FLOOR		1,206.2 sq. m. 12,983 sq. ft.
4th FLOOR		1,087.9 sq. m. 11,710 sq. ft.
5th FLOOR		1,032.0 sq. m. 11,108 sq. ft.
6th FLOOR		524.7 sq. m. 5,648 sq. ft.
7th & 8th FLOOR	2 x 544.4 sq. m. 2 x 5,860 sq. ft.	1,088.8 sq. m. 11,720 sq. ft.
9th FLOOR		430.0 sq. m. 4,628 sq. ft.
MECHANICAL PENTHOUSE		0.0 sq. m. 3,000 sq. ft.
TOTAL ABOVE GROUND GFA		7,636.0 sq. m. 82,193 sq. ft.

UNIT STATISTICS

STUDIO UNIT	20
1 BEDROOM UNIT	64
1 BEDROOM + DEN UNIT	11
2 BEDROOM UNIT	26
2 BEDROOM + DEN UNIT	5
TOTAL	126

CAR PARKING

REQUIRED		
RESIDENCE	NOT REQUIRED	0
VISITOR	- 0.2 PER DWELLING UNIT (AFTER 12 UNITS)	23
TOTAL		23
PROVIDED		
RESIDENCE	- 0.51 PER UNIT (126 UNITS)	64
VISITOR	- 0.2 PER DWELLING UNIT (AFTER 12 UNITS)	23
TOTAL		92

BICYCLE PARKING

REQUIRED		
RESIDENCE	- 1.0 PER UNIT (126 UNITS)	126
PROVIDED		
INTERIOR		126
EXTERIOR		0

LEGAL DESCRIPTION

LOTS 1503, 1504, 1505, 1506, 1507
REGISTERED PLAN 38
CITY OF OTTAWA
MUNICIPALITY OF OTTAWA-CARLETON

Stantec Geomatics Ltd.

DRAWING NOTES

1. HARD SURFACE PAVING, SEE LANDSCAPE PLAN FOR PATTERN AND TYPE
2. PROPERTY LINE
3. BUILDING SETBACK LINE
4. LOW PLANTER WALL
5. VEHICLE ENTRANCE RAMP WITH TRENCH DRAIN TO U/G PARKING GARAGE
6. REPLACE CITY SIDEWALK & CURB WITH NEW 2.0 METRE WIDE SIDEWALK & CURB, TO CITY STANDARDS
7. OUTLINE OF UNDERGROUND PARKING LEVELS
8. APPROXIMATE LOCATION EXISTING FIRE HYDRANT
9. SOFT LANDSCAPING, SEE LANDSCAPE PLAN
10. OUTLINE OF PRIVATE TERRACE ABOVE
11. BICYCLE RACKS, SEE LANDSCAPE FOR SPEC
12. EXISTING RESIDENTIAL / COMMERCIAL BUILDING TO BE REMOVED
13. SIAMESE CONNECTION
14. WALL MOUNTED LIGHT FIXTURE
15. EXISTING ASPHALT RECREATION PATH
16. PRIVATE TERRACES FOR GROUND FLOOR UNITS
17. AIR INTAKE / EXHAUST GRILL
18. CONCRETE STEPS
19. PRIVACY SCREEN
20. EDGE OF RAISED LANDSCAPED PATIO
21. MANHOLE COVER
22. GATE
23. BARRIER-FREE RAMP

SITE PLAN SYMBOLS

- CONCRETE UNIT PAVERS SURFACE MAIN ENTRY
- CONCRETE UNIT PAVERS SURFACE PRIVATE PATIOS
- CONCRETE UNIT PAVERS SURFACE COMMUNAL PATIO
- EXISTING ASPHALT REC PATH / WALK
- CONCRETE SURFACE
- CONCRETE CITY SIDEWALK
- ROOF DECK / BALCONIES
- GRAVEL ROOF DECK
- WALL MOUNTED LIGHT
- TWO WAY VEHICLE CIRCULATION
- MAIN ENTRANCE
- COMMERCIAL ENTRANCE AND OR FIRE EXIT
- BOLLARD STYLE BIKE RACK
- PROPERTY LINE
- RETAINING WALL

PROJECT DEVELOPER

TAMARACK HOMES
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SURVEYOR

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Ontario Land Surveyors
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CIVIL ENGINEER

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333 Preston St, Unit 400
Ottawa, ON K1S 5N4
Tel: (613) 225-1311
Fax: (613) 225-9868

LANDSCAPE ARCHITECT

LASHLEY + ASSOCIATES
SUITE 202, 950 GLADSTONE AVENUE
OTTAWA, ON K1Y 3E6
Tel: (613) 233 8579
Fax: (613) 233 4051

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

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

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

DO NOT SCALE DRAWINGS.

NOTATION SYMBOLS:

- (W) INDICATES DRAWING NOTES, LISTED ON EACH SHEET.
- (XX) INDICATES ASSEMBLIE TYPE; REFER TO TYPICAL ASSEMBLIES SCHEDUAL.
- (W) INDICATES WINDOW TYPE; REFER TO WINDOW ELEVATIONS AND DETAILS ON A900 SERIES.
- (000) INDICATES DOOR TYPE; REFER TO DOOR SCHEDULE AND DETAILS ON A800 SERIES.
- DETAIL NUMBER
- TITLE
- SHEET
- DETAIL REFERENCE PAGE
- DETAIL CROSS REFERENCE PAGE

GENERAL NOTES:

A. REFER TO TYPICAL ASSEMBLIES SHEET FOR WALL, PARTITION, ROOF CEILING & FLOOR TYPES.

B. FOR DOOR TYPES AND HARDWARE REQUIREMENTS REFER TO DOOR SCHEDULE ON A900 SERIES.

C. ALL INTERIOR DIMENSIONS ARE TAKEN FROM THE FACE OF DRYWALL.

D. ALL EXTERIOR DIMENSIONS ARE TAKEN FROM THE FACE OF CLADDING.

E. ALL EXTERIOR WALLS ARE TO BE TYPE 'W1' UNLESS NOTED OTHER WISE.

F. ALL INTERIOR PARTITIONS ARE TO BE TYPE 'P1' UNLESS NOTED OTHER WISE.

No.	DESCRIPTION	DATE
1	ISSUED FOR SITE PLAN APPROVAL	Mar 05, 21
1	ISSUED FOR ZONING AMENDMENT	Oct 16, 13

REVISIONS:

ARCHITECT SEAL: ONTARIO ASSOCIATION OF ARCHITECTS — ROBERT LA COREY — LICENCE 4379
SEAL DATE: STAMP DATE

NORTH ARROW:

CLIENT: TAMARACK — TAMARACKHOMES.COM

ARCHITECT: rla/architecture

PROJECT TITLE:
93 NORMAN STREET
OTTAWA ONTARIO

SHEET TITLE:
ZONING SITE PLAN

DRAWN: RV	CHECKED: J.S.
SCALE: 1:100	SHEET No. ZSP-1
PROJECT No. 1115	

PAPER SIZE: ISO_B1_(707.00_x_1000.00_MM) | PLOT DATE: Tuesday, March 02, 2021 | PLOT SCALE: 1:1 | PEN STYLE: 0-RLA-MASTER-100%.ctb | F:\2020\2032 - 93 Norman Street\01 Design Development\03 Models And Drawings\01 CAD\1115 SP-1 Site Plan.dwg

Scale	Project Title	Drawing Title	Sheet No.
NTS	93 NORMAN STREET	SITE PLAN	FIGURE 2

APPENDIX A

Pre-Application Consultation Meeting Notes

93-101 Norman Street
December 17, 2020
PC2020-0311
TEAMS software

Attendees:

Simon Deiaco, City of Ottawa, Planning (SD)
Christopher Moise, City of Ottawa, Urban Design (CM)
John Wu, City of Ottawa, Engineering (JW)
Kevin Reid, RLA Architecture (KR)
Victoria McCartney, RLA Architecture
Bria Arid, Fotenn (BA)
Jamie Posen, Fotenn (JP)
Alex Turner, Taggart (AT)
Derrick Howe, Taggart (DH)
Matthew Mantle, Parsons, (MM)
Eric Darwin, Dalhouise CA (ED)
David Seaborn, Dalhousie CA (DS)
Terry Brule, IBI Group (TB)

Regrets:
Neeti Paudel, City of Ottawa, Transportation (NP)

Subject: 93-101 Norman Street

Meeting notes:

Opening & attendee introduction

- Introduction of meeting attendees (all)
- **Overview of proposal (JP and KR):**
  - Long history on the site.
  - Overview of the surrounding built form and context. Former homes on the properties have been removed and amalgamated into 93 Norman.
  - Site specific provisions in the secondary plan and zoning approved through the OMB (Order File #PL141223 and PL141147, issued March 14, 2016) (By-law 2014-310).
  - Proposed 9 storey building with multiple transitions down to 5 storeys, 112 total units with a mix of bedrooms and size (600-1,000 square feet).
  - Amenity space on the rooftop of the 5th floor.
  - Two levels of below grade parking and storage lockers. Access from the eastern portion of the site.

- Intention is to comply with the zoning schedule in place and proceed only with SPC.

Preliminary comments and questions from staff and agencies, including follow-up actions:

- **Planning (SD)**
  - Zoning established through the OMB, R5B Exception 2147, Schedule 329.
    - Exception regulates matters such as height and setbacks, balconies, glazing, access, and parking rates.
  - Site is within a design priority area and will need to present to the UDRP.
  - Site is within the Preston Carling Secondary Plan Area, Schedule A – Mixed-Use Neighbourhood designation and Schedule B – 9 storeys as the maximum height.
  - Specific policy related to the site, 4.1.5(5).
  - Consider bird friendly design guidelines in the design concept.
  - Proximity study will be required given the abutting rail line.
  - Application for site plan control – complex will be required.
  - Potential concern regarding the roof-top amenity however JP showed this was addressed through the site-specific zoning provisions.

- **Urban Design (CM)**
  - Staff appreciate that the design fits within the zoning schedule. Can a drawing be provided that overlaps the two that will illustrate this;
  - Staff appreciate the drawings that illustrate the surrounding planned context which clearly identify the relationships we can expect as this community develops into the future. Perhaps additional attention could be made to the interface with the MUP to the west;
  - The entire site is hard surface, are there any opportunities for additional landscaping?
  - This proposal sits within one of the City's Design Priority Areas and must attend the City's UDRP;
  - A Design Brief is a required submittal for all Site Plan/Re-zoning applications. Please see the Design Brief Terms of Reference provided and consult the City's website for details regarding the UDRP schedule.

- **Engineering (JW)**
  - The project will need two services to ensure property water service and capacity.
  - Ottawa Water Design Guideline requires two water service lines if the daily water consumption is over 50 cubic meters.
  - There are options to create the second loop (through the MUP or run a second water service to connect back to Preston Street).
  - TB – previous concepts raised no concerns with a single feed. This would need to be validated. Will speak to JW off-line to resolve this issue.
  - ED noted the shallow overburden along the MUP which may impact the amount of greenspace and/or loss or greenery.
  - A follow up meeting should be scheduled to resolve this issue prior to an application being submitted. TB to contact JW in the new year to resolve.

- **Transportation (NP)**

        - TIA will be required.
        - Staff recommended starting this process as soon as possible.
        - Applicant is advised that their application will not be deemed complete until the submission of the draft step 1-4, including the functional draft RMA package (if applicable) and/or monitoring report (if applicable).
        - Request base mapping asap if RMA is required. Contact Engineering Services (https://ottawa.ca/en/city-hall/planning-and-development/engineering-services)
    - On site plan:
        - Show all details of the roads abutting the site up to and including the opposite curb; include such items as pavement markings, accesses and/or sidewalks.
        - Show all curb radii measurements; ensure that all curb radii are reduced as much as possible
        - Sidewalk is to be continuous across access as per City Specification 7.1.
        - Ensure the sidewalk is upgraded as per City standards. Sidewalk should only be depressed at the proposed access.
    - The City recommends development on private property be in accordance with the Accessibility Design Standards (AODA legislation). As the site proposed is residential, it is suggested that the design conforms to the Site Plan Checklist, which summarizes AODA requirements (attached).
    - There are concerns regarding garbage trucks/loading trucks turnaround on Norman Street. An acceptable space for turnaround must be provided.

    - **Parks**
        - Cash-in-lieu of parkland payment will be required through the SPC process.

    - **Questions and comments from the Community Association representative**
        - Questions about garbage trucks and moving vans? This would be difficult given the width of the street and no defined turning area at the end of the street.
            - Moving vans would be via street access. Garbage would be brought up from the building to the street for collection.
        - How do you make sure that they move through the garage?
        - 415 Gilmour was shown as an example of how a turning area could be integrated onto the site
            - The team acknowledged that this will have be examined as part of the SPC submission.
        - Question about noise mitigation and design, such as triple glazing?
            - Study to identify recommendations.
        - Landscape plan – looking for native tree species and techniques to enhance plantings such as Silva cells etc. The CA would expect to see any damaged trees to be replaced.
        - Plans should show an appropriate bike parking supply
        - Appropriate setback of the rooftop amenity space should be provided.

Submission requirements and fees

Next steps

- Encourage applicant to discuss the proposal with Councillor, community groups and neighbours

WATERMAIN DEMAND CALCULATION SHEET

IBI GROUP
333 PRESTON STREET
OTTAWA, ON
K1S 5N4

PROJECT : 93 Norman Ave.
LOCATION : City of Ottawa

FILE: 125564-6.4.4
DATE PRINTED: 2021-02-04
DESIGN: 2021-02-04
PAGE : 1 OF 1

NODE	RESIDENTIAL				NON-RESIDENTIAL			AVERAGE DAILY DEMAND (l/s)			MAXIMUM DAILY DEMAND (l/s)			MAXIMUM HOURLY DEMAND (l/s)			FIRE DEMAND
	Single	Town	Apt	POP'N	INDTRL (ha.)	COMM. (ha.)	RETAIL (m^2)	Res.	Non-res.	Total	Res.	Non-res.	Total	Res.	Non-res.	Total	(l/min)
BUILDING			113	203			0	0.66	0.00	**0.66**	1.65	0.00	**1.65**	3.63	0.00	**3.63**	**9,000**

ASSUMPTIONS

RESIDENTIAL DENSITIES

Apartment (ave) 1.8 p / p / u

** Residential Daily Demand reduced to coincide with current waste water guidelines

AVG. DAILY DEMAND

Residential:**	280	l / cap / day
Industrial:		l / ha / day
Commercial:		l / ha / day
Retail:	2,500	l / 1000m^2 / day

MAX. DAILY DEMAND

Residential:	700	l / cap / day
Industrial:		l / ha / day
Commercial:		l / ha / day
Retail:	6,250	l / 1000m^2 / day

MAX. HOURLY DEMAND

Residential:	1,540	l / cap / day
Industrial:		l / ha / day
Commercial:		l / ha / day
Retail:	11,250	l / 1000m^2 / day

FIRE FLOW

From FUS Calculation 8,000 l / min

Fire Flow Requirement from Fire Underwriters Survey

93 Norman Ave.

Floor	Area (m^2)	Two Largerst Floor	Floors Above at 50%
1	1502	1502	
2	1502	1502	
3	1502		751
4	1502		751
5	1502		751
6	673		337
7	673		337
8	673		337
9	626		313
10	626		313
Total	10781		**6893**

(**Note**: For fire-resistive buildings, consider two largest adjoining floors plus 50% of each of any floors immediately above them up to eight.)

Total Floor Area 6,893 m^2

F = 220C√A

C	0.8	C =	1.5	wood frame
A	6,893 m^2		1.0	ordinary
			0.8	non-combustible
F	14,612 l/min		0.6	fire-resistive
use	15,000 l/min			

Occupancy Adjustment

		-25%	non-combustible
		-15%	limited combustible
Use	-15%	0%	combustible
		+15%	free burning
Adjustment	-2250 l/min	+25%	rapid burning
Fire flow	12,750 l/min		

Sprinkler Adjustment

		-30%	system conforming to NFPA 13
		-50%	complete automatic system
Use	-30%		
Adjustment	-3825 l/min		

Exposure Adjustment

Building Face	Separation (m)	Adjacent Exposed Wall Length	Stories	L*H Factor	Exposure Charge *
north					
east					
south					
west					
Total					0%

(**Note**: According to Page G-104 in **Tech bulletin ISTB-2018-02** Revisions to Ottawa Design Guidelines - Water Distribution, "If the exposing wall of the building being considered is taller than the exposed wall of the adjacent structure, no exposure charge applies".)

Adjustment	-	l/min
Total adjustments	(3,825)	l/min
Fire flow	8,925	l/min
Use	**9,000**	**l/min**
	150	**l/s**

RE: 93 Norman - Boundary Condition Request

Wu, John <John.Wu@ottawa.ca>

Thu 2/25/2021 10:04 AM

To: James Battison <James.Battison@ibigroup.com>

1 attachments (77 KB)

93 Norman Street February 2021.pdf;

Hi, James:

The following are boundary conditions, HGL, for hydraulic analysis at 93 Norman (zone 1W) assumed to be connected to the 203 mm on Norman Street (see attached PDF for location).

Minimum HGL = 107.3 m

Maximum HGL = 114.8 m

Max Day + Fire Flow (150 L/s) = 102.4 m

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

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

John

APPENDIX B

IBI GROUP
400-333 Preston Street
Ottawa, Ontario K1S 5N4 Canada
tel 613 225 1311 fax 613 225 9868
ibigroup.com

SANITARY SEWER DESIGN SHEET

93 Norman Street
CITY OF OTTAWA
Taggart Realty Management

LOCATION				RESIDENTIAL									ICI AREAS								INFILTRATION ALLOWANCE			FIXED FLOW (L/s)		TOTAL FLOW	PROPOSED SEWER DESIGN						
				AREA w/ Units (Ha)	UNIT TYPES				AREA w/o Units (Ha)	POPULATION		RES PEAK FACTOR	PEAK FLOW (L/s)	AREA (Ha)						ICI PEAK FACTOR	PEAK FLOW (L/s)	AREA (Ha)		FLOW				CAPACITY	LENGTH	DIA	SLOPE	VELOCITY (full)	AVAILABLE CAPACITY	
STREET	AREA ID	FROM MH	TO MH		SF	SD	TH	APT		IND	CUM			INSTITUTIONAL		COMMERCIAL		INDUSTRIAL				IND	CUM	(L/s)	IND	CUM	(L/s)	(L/s)	(m)	(mm)	(%)	(m/s)	L/s	(%)
														IND	CUM	IND	CUM	IND	CUM														
Site		Building	MH1A	0.24				113		203.4	203.4	3.52	2.32									0.24	0.24	0.08			2.40	34.22	3.27	200	1.00	1.055	31.82	93.00%
Site		MH1A	Main							0.0	203.4	3.52	2.32									0.00	0.24	0.08			2.40	34.22	5.02	200	1.00	1.055	31.82	93.00%

Design Parameters:

Residential			ICI Areas			
SF	3.4	p/p/u	INST	28,000	L/Ha/day	
TH/SD	2.7	p/p/u	COM	28,000	L/Ha/day	
APT	1.8	p/p/u	IND	35,000	L/Ha/day	MOE Chart
Other	60	p/p/Ha		17000	L/Ha/day	

Notes:
1. Mannings coefficient (n) = 0.013
2. Demand (per capita): 280 L/day 200 L/day
3. Infiltration allowance: 0.33 L/s/Ha
4. Residential Peaking Factor:
   Harmon Formula = 1+(14/(4+(P/1000)^0.5))0.8
   where K = 0.8 Correction Factor
5. Commercial and Institutional Peak Factors based on total area, 1.5 if greater than 20%, otherwise 1.0

Designed: JEB
Checked: TRB
Dwg. Reference: 132469-C-001

No.	Revision	Date
1.	Issued for Site Plan Application	2021-02-26

File Reference: 132469.00
Date: 2021-02-26
Sheet No: 1 of 1

APPENDIX C

IBI GROUP
400-333 Preston Street
Ottawa, Ontario K1S 5N4 Canada
tel 613 225 1311 fax 613 225 9868
ibigroup.com

STORM SEWER DESIGN SHEET

93 Norman Street
City of Ottawa
Taggart Realty Management

LOCATION				AREA (Ha)										RATIONAL DESIGN FLOW													SEWER DATA								
STREET	AREA ID	FROM	TO	C= 0.20	C= 0.25	C= 0.30	C= 0.50	C= 0.57	C= 0.60	C= 0.69	C= 0.70	C= 0.77	C= 0.90	IND 2.78AC	CUM 2.78AC	INLET (min)	TIME IN PIPE	TOTAL (min)	i (2) (mm/hr)	i (5) (mm/hr)	i (10) (mm/hr)	i (100) (mm/hr)	2yr PEAK FLOW (L/s)	5yr PEAK FLOW (L/s)	10yr PEAK FLOW (L/s)	100yr PEAK FLOW (L/s)	FIXED FLOW IND	FIXED FLOW CUM	DESIGN FLOW (L/s)	CAPACITY (L/s)	LENGTH (m)	PIPE SIZE (mm) DIA	PIPE SIZE (mm) W	PIPE SIZE (mm) H	SLOPE (%)	VELOCITY (m/s)	AVAIL CAP (2yr) (L/s)	AVAIL CAP (2yr) (%)
Site, External	EXT, L1	ECB1	CB1			0.01			0.24					0.41	0.41	15.00	0.73	15.73	61.77	83.56	97.85	142.89	25.45	34.43	40.31	*58.87*	0.00	0.00	*58.87*	62.04	53.87	250			1.00	1.224	3.17	5.10%
Site	CISTERN, ROOF	BLDG	MH1										0.21	0.53	0.53	10.00	0.02	10.02	76.81	104.19	122.14	178.56	40.35	54.75	64.18	93.82	0.00	0.00	40.35	62.04	1.74	250			1.00	1.224	21.68	34.95%
Site		MH1	Main											0.00	0.53	15.73	0.08	15.81	60.09	81.26	95.15	138.93	31.57	42.70	49.99	73.00	0.00	0.00	31.57									
Site		MH1	Main											0.00	0.41	15.73	0.08	15.81	60.09	81.26	95.15	138.93	24.76	33.48	39.20	*57.24*	0.00	0.00	*57.24*									
																													88.81	100.88	6.68	300			1.00	1.383	12.07	11.97%
Norman	ROW + South Property	MH2	MH1									0.42		0.90	1.43	15.81	0.70	16.52	59.91	81.02	94.86	138.51	85.60	115.75	135.54	197.90	0.00	0.00	85.60									
														0.00	0.41	15.81	0.70	16.52	59.91	81.02	94.86	138.51	24.68	33.38	39.08	*57.07*	0.00	0.00	*57.07*									
																													142.66	153.91	57.00	375			0.71	1.350	11.24	7.30%

Definitions:
Q = 2.78CiA, where:
Q = Peak Flow in Litres per Second (L/s)
A = Area in Hectares (Ha)
i = Rainfall intensity in millimeters per hour (mm/hr)
[i = 732.951 / (TC+6.199)^0.810] 2 YEAR
[i = 998.071 / (TC+6.053)^0.814] 5 YEAR
[i = 1174.184 / (TC+6.014)^0.816] 10 YEAR
[i = 1735.688 / (TC+6.014)^0.820] 100 YEAR

Notes:
1. Mannings coefficient (n) = 0.013

Designed: JEB
Checked: TRB
Dwg. Reference: 132469-500

No.	Revision	Date
1.	Issued for Site Plan Application	2021-02-26

File Reference: 132469.00
Date: 2021-02-26
Sheet No: 1 of 1

IBI GROUP
333 PRESTON STREET
OTTAWA, ON
K1S 5N4

PROJECT: 93 Norman
DATE: 2021-02-26
FILE: 132469
REV #: 1
DESIGNED BY: JB
CHECKED BY: TB

STORMWATER MANAGEMENT

Formulas and Descriptions

i_{2yr} = 1:2 year Intensity = 732.951 / $(T_c+6.199)^{0.810}$
i_{5yr} = 1:5 year Intensity = 998.071 / $(T_c+6.053)^{0.814}$
i_{100yr} = 1:100 year Intensity = 1735.688 / $(T_c+6.014)^{0.820}$
T_c = Time of Concentration (min)
C = Average Runoff Coefficient
A = Area (Ha)
Q = Flow = 2.78CiA (L/s)

Maximum Allowable Release Rate

Flow Allocation

C	=	0.4	(Pre-Development)
T_c	=	10	min
i_{2yr}	=	76.81	mm/hr
A_{TOTAL}	=	0.24	Ha
Q_{TOTAL}	=	20.16	L/s

Uncontrolled Release ($Q_{uncontrolled} = 2.78*C*i_{100yr}*A_{uncontrolled}$)

C	=	0.75	
T_c	=	10	min
i_{100yr}	=	178.56	mm/hr
$A_{uncontrolled}$	=	0.020	Ha
$Q_{uncontrolled}$	=	7.45	L/s

Maximum Allowable Release Rate ($Q_{max\ allowable} = Q_{restricted} - Q_{uncontrolled}$)

$Q_{max\ allowable}$	=	12.71 L/s

MODIFIED RATIONAL METHOD (100-Year & 5-YearPonding)

Drainage Area	Roof		
Area (Ha)	0.080		
C =	0.99	Restricted Flow Q_r (L/s)=	3.00

100-Year Ponding

T_c Variable (min)	i_{100yr} (mm/hour)	Peak Flow $Q_p=2.78xCi_{100yr}A$ (L/s)	Q_r (L/s)	Q_p-Q_r (L/s)	Volume 100yr (m^3)
48	65.89	14.51	3.00	11.51	33.14
50	63.95	14.08	3.00	11.08	33.24
51	63.03	13.88	3.00	10.88	**33.29**
52	62.14	13.68	3.00	10.68	33.33
54	60.44	13.31	3.00	10.31	33.39

Storage (m^3)

Overflow	Required	Surface	Cistern	Balance
0.00	33.29	50.00		0.00

Drainage Area	Roof		
Area (Ha)	0.080		
C =	0.90	Restricted Flow Q_r (L/s)=	3.00

5-Year Ponding

T_c Variable (min)	i_{5yr} (mm/hour)	Peak Flow $Q_p=2.78xCi_{5yr}A$ (L/s)	Q_r (L/s)	Q_p-Q_r (L/s)	Volume 5yr (m^3)
32	51.61	10.33	3.00	7.33	14.07
34	49.50	9.91	3.00	6.91	14.09
35	48.52	9.71	3.00	6.71	**14.09**
36	47.58	9.52	3.00	6.52	14.09
38	45.81	9.17	3.00	6.17	14.07

Storage (m^3)

Overflow	Required	Surface	Cistern	Balance
0.00	14.09	50.00	0.00	0.00

Drainage Area	Cistern		
Area (Ha)	0.130		
C =	0.99	Restricted Flow Q_r (L/s)=	9.00

100-Year Ponding

T_c Variable (min)	i_{100yr} (mm/hour)	Peak Flow $Q_p=2.78xCi_{100yr}A$ (L/s)	Q_r (L/s)	Q_p-Q_r (L/s)	Volume 100yr (m^3)
31	89.83	32.14	9.00	23.14	43.04
33	86.03	30.78	9.00	21.78	43.13
34	84.27	30.15	9.00	21.15	**43.15**
35	82.58	29.55	9.00	20.55	43.15
37	79.42	28.41	9.00	19.41	43.10

Storage (m^3)

Overflow	Required	Surface	Cistern	Balance
0.00	43.15	0.00	45.00	0.00

Drainage Area	Cistern		
Area (Ha)	0.130		
C =	0.90	Restricted Flow Q_r (L/s)=	9.00

5-Year Ponding

T_c Variable (min)	i_{5yr} (mm/hour)	Peak Flow $Q_p=2.78xCi_{5yr}A$ (L/s)	Q_r (L/s)	Q_p-Q_r (L/s)	Volume 5yr (m^3)
16	80.46	26.17	9.00	17.17	16.48
18	74.97	24.38	9.00	15.38	16.62
19	72.53	23.59	9.00	14.59	**16.63**
20	70.25	22.85	9.00	13.85	16.62
22	66.15	21.51	9.00	12.51	16.52

Storage (m^3)

Overflow	Required	Surface	Cistern	Balance
0.00	16.63	0.00	45.00	0.00

LEGEND:

X1 | 0.08 | 0.90
- AREA IDENTIFICATION
- COEFFICIENT
- AREA IN HECTARES

Project North

EXT. 0.242 | 0.60

ECB1 250mmØ

TCB1 250mmØ

TCB2 250mmØ

TCB3 250mmØ

CISTERN 0.13 | 0.90

29.5m 9 STOREY RESIDENTIAL TOWER
F.F.= 62.70 (GROUND FLOOR)

ROOF 0.08 | 0.90

17.1m RAMP @ 12.5% WITH TRANSITIONS 'SLOPE DOWN'

L1 0.01 | 0.30

UN 0.01 | 0.90

250mmØ

MH1

RYCB1 250mmØ

300mmØ

OUTLINE OF U/G PARKING

PRIVATE PATIO

NORMAN STREET

PRESTON STREET

SITE BENCHMARK
CUT CROSS ON CURB
ELEVATION=61.54

SITE BENCHMARK
ELEVATION=61.62
(TO BE CONFIRMED

CLIENT
TAMARACK HOMES

3187 ALBION ROAD SOUTH

ISSUES

No.	DESCRIPTION	DATE
1	ISSUED FOR CITY REVIEW	2021-03-05

NOT FOR CONSTRUCTION

KEY PLAN

CONSULTANTS

Project Coordinator
Tamarack Homes
Architect:
RLA Architecture
Landscape:
Lashley + Associates
Surveyor:
Stantec Geomatics Ltd.
Geotech:
Paterson Group

1:200 0 2 6 10m

SEAL

LICENSED PROFESSIONAL ENGINEER
T. R. BRULE
2021/03/05
PROVINCE OF ONTARIO

IBI GROUP
Suite 400 – 333 Preston Street
Ottawa ON K1S 5N4 Canada
tel 613 225 1311 / 613 241 3300 fax 613 225 9868
ibigroup.com

PROJECT
93 NORMAN STREET

PROJECT NO: 132469	
DRAWN BY: D.D.	CHECKED BY: J.B.
PROJECT MGR: T.R.B.	APPROVED BY: T.R.B.

SHEET TITLE
STORM DRAINAGE AREA PLAN

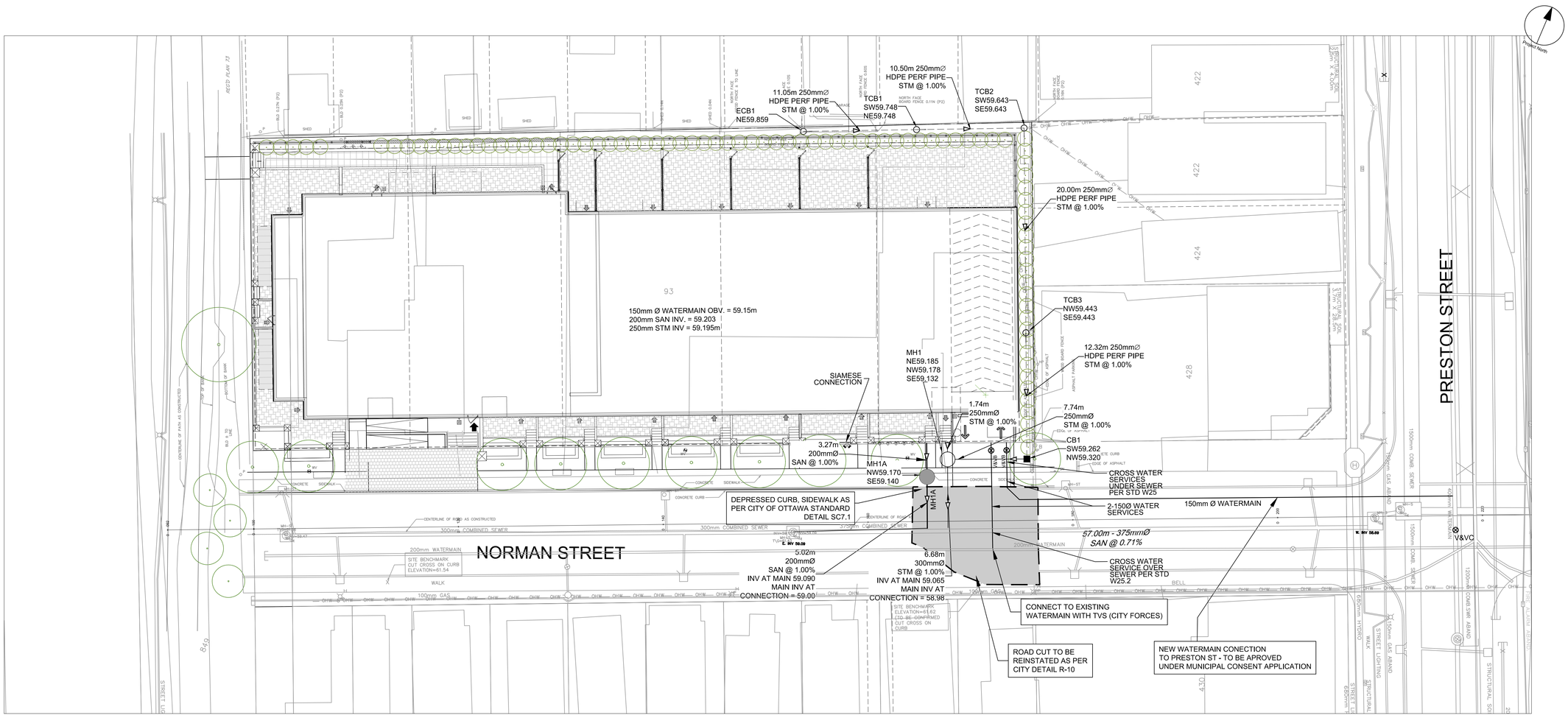
SHEET NUMBER	ISSUE
C-500	1

CITY FILE No. D07-XX-XX-XXXX

CITY PLAN No. xxxxx

File Location: J:\132469_93_Norman\7.0_Production\7.03_Design\04_Civil\Sheets\C-500 STORM DRAINAGE AREA PLAN.dwg Last Saved: March 4, 2021, by James.Battison Plotted: Monday, March 8, 2021 7:10:56 AM by James Battison

APPENDIX D



LEGEND

PROPERTY LINE	EXISTING TRAFFIC SIGN
FUTURE WIDENING	EXISTING CATCH BASIN
F.F.= 80.50 FINISHED FLOOR ELEVATION	PROPOSED AREA DRAIN
DC PROPOSED DEPRESSED CURB	EXISTING COMBINED MANHOLE
WATER METER (SEE MECH. DRWG. FOR EXACT LOCATION)	EXISTING COMBINED SEWER
REMOTE WATER METER (SEE MECH. DRWG. FOR EXACT LOCATION)	PROPOSED STORM SEWER
SIAMESE CONNECTIONS (SEE MECH. DRWG. FOR EXACT LOCATION)	EXISTING WATERMAIN
PROPOSED GAS SERVICE	PROPOSED SANITARY SEWER
EXISTING UNDERGROUND HYDRO	PROPOSED WATERMAIN
EXISTING OVERHEAD HYDRO	PROPOSED VALVE AND VALVE BOX
EXISTING HYDRO MANHOLE	PROPOSED VALVE AND VALVE CHAMBER
EXISTING HYDRO AND LIGHT POLE	EXISTING FIRE HYDRANT
EXISTING GAS MAIN	EXISTING SIGN
EXISTING BELL	EXISTING WATER VALVE
EXISTING BELL MANHOLE	EXISTING WATER SERVICE STANDPOST
EXISTING TRAFFIC MANHOLE	EXISTING VALVE BOX
EXISTING TRAFFIC LIGHT	PROPOSED LIMITS OF UNDERGROUND PARKING
PROPOSED RETAINING WALL	

NOTES:

1. ALL WORKS TO BE COMPLETED AS PER CURRENT CITY OF OTTAWA STANDARDS AND ONTARIO PROVINCIAL STANDARDS AND SPECIFICATIONS.

2. SEWER LATERALS TO BE PVC DR 35.

3. WATER SERVICES TO BE PVC. DR 18 CL150. MINIMUM COVER OF 2.4m FOR WATER SERVICE IS REQUIRED, USE THERMAL INSULATION AS PER CITY STANDARDS WHEN COVER IS LESS THAN 2.4m.

4. ALL SERVICE LATERAL AND SURFACE RESTORATION WORK IN ACCORDANCE WITH CURRENT CITY OF OTTAWA STANDARDS AND SPECIFICATIONS.

5. FULL PORT BACKWATER VALVE IS REQUIRED ON BOTH THE SANITARY AND STORM SERVICE CONNECTIONS.

6. WATER SERVICE CHLORINATION AND TESTING TO BE COMPLETED BY CITY FORCES.

7. PROPOSED BUILDING INFORMATION TAKEN FROM RLA ARCHITECTS DRAWINGS.

8. AN EROSION AND SEDIMENTATION CONTROL PLAN WILL BE IMPLEMENTED ON THIS SITE. AS A MINIMUM THAT PLAN WILL INCLUDE A LIGHT DUTY SILT FENCE BARRIER TO OPSD STANDARD 219.110 SURROUNDING THE SITE WHERE PRACTICAL AND SILT SACKS FITTED UNDER EXISTING STREET CATCH BASINS.

9. ALL SHOWN UTILITIES ARE APPROXIMATE AND ARE TO BE FIELD VERIFIED BY CONTRACTOR, ANY DISCREPANCIES ARE TO BE REPORTED TO IBI GROUP PRIOR TO CONTRACTOR MOBILIZING TO SITE.

10. CONTRACTOR RESPONSIBLE TO SUPPORT EXISTING UTILITIES THAT MAY BE AFFECTED DURING CONSTRUCTION

11. EXISTING CURBS AND SIDEWALKS ARE TO BE REMOVED AND REPLACED AS NOTED ON THE DRAWINGS.

12. THE CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES, TO PROVIDE FOR PROTECTION OF THE AREA DRAINAGE SYSTEM AND THE RECEIVING WATER COURSE, DURING CONSTRUCTION ACTIVITIES. THIS INCLUDES LIMITING THE AMOUNT OF EXPOSED SOIL, USING FILTER CLOTH UNDER THE GRATES OF CATCHBASINS AND MANHOLES AND INSTALLING SILT FENCES AND EFFECTIVE SEDIMENT TRAPS. THE CONTRACTOR ACKNOWLEDGES THAT FAILURE TO IMPLEMENT APPROPRIATE EROSION AND SEDIMENT CONTROL MEASURES MAY BE SUBJECT TO PENALTIES IMPOSED BY ANY APPLICABLE REGULATORY AGENCIES.

13. FOR GEOTECHNICAL INFORMATION SEE REPORT PG2760-1 BY PATERSON GROUP

15. CLAY SEAL TO BE INSTALLED IN SERVICE TRENCHES BETWEEN CONNECTION POINT AND CAP.

CLIENT
TAMARACK HOMES

3187 ALBION ROAD SOUTH

ISSUES

No.	DESCRIPTION	DATE
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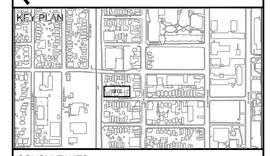
NOT FOR CONSTRUCTION

KEY PLAN



CONSULTANTS

Project Coordinator
Tamarack Homes
Architect:
RLA Architecture
Landscape:
Lashley + Associates
Surveyor:
Stantec Geomatics Ltd.
Geotech:
Paterson Group

1:200 0 2 6 10m

SEAL

LICENSED PROFESSIONAL ENGINEER
T. R. BRULE
2021/03/05
PROVINCE OF ONTARIO

IBI GROUP
Suite 400 – 333 Preston Street
Ottawa ON K1S 5N4 Canada
tel 613 225 1311 / 613 241 3300 fax 613 225 9868
ibigroup.com

PROJECT
93 NORMAN STREET

PROJECT NO:
132469

DRAWN BY:	CHECKED BY:
D.D.	J.B.
PROJECT MGR:	APPROVED BY:
T.R.B.	T.R.B.

SHEET TITLE
GENERAL PLAN OF SERVICES

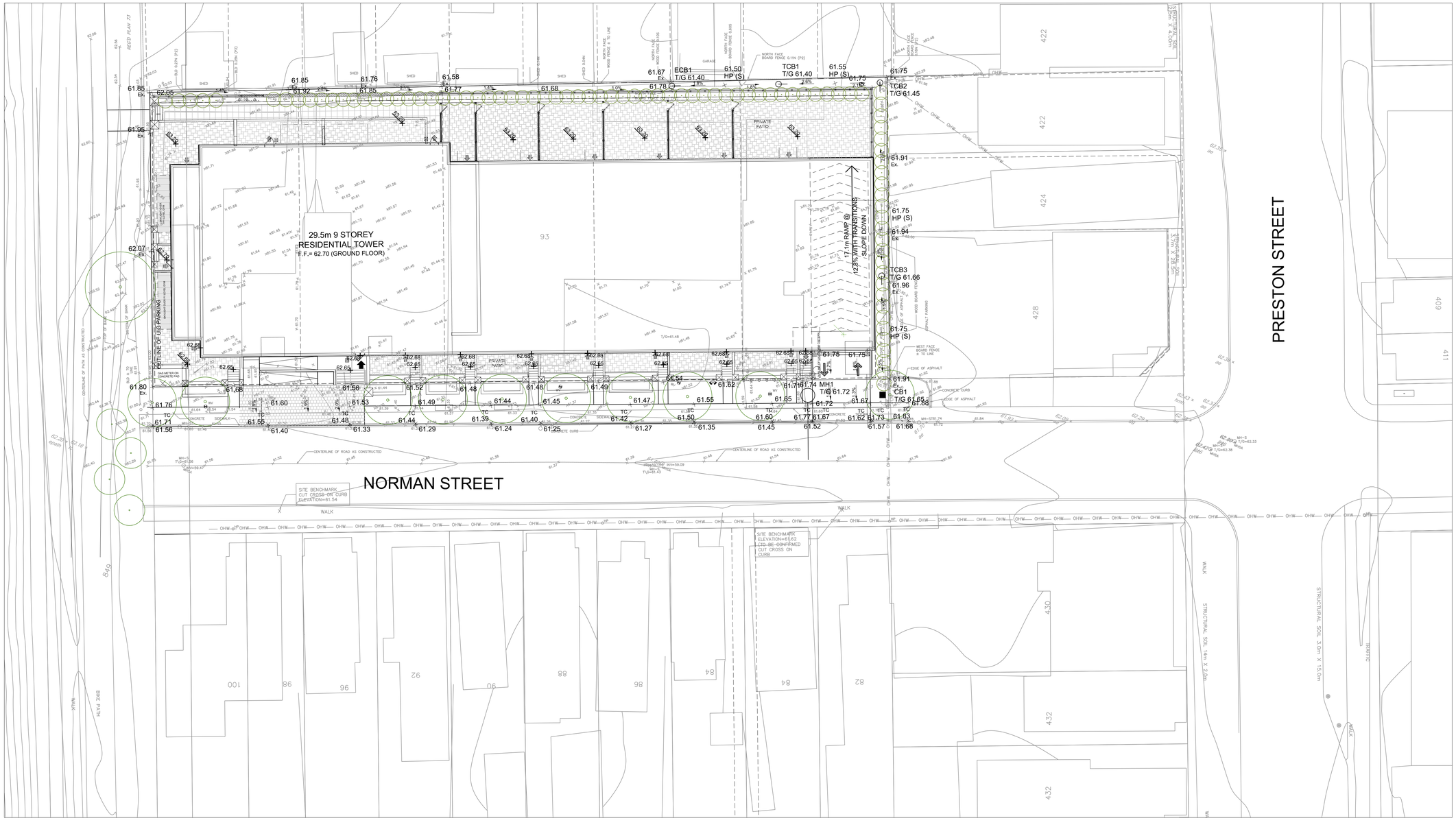
SHEET NUMBER	ISSUE
C-001	1

SCALE CHECK

CITY PLAN No. xxxxx

CITY FILE No. D07-XX-XX-XXXX

File Location: J:\132469_93_Norman\7.0_Production\7.03_Design\04_Civil\Sheets\C-001 GENERAL PLAN OF SERVICES.dwg Last Saved: March 4, 2021 by James.Battison Plotted: Monday, March 8, 2021 7:16:45 AM by James Battison



Project North

CLIENT

TAMARACK HOMES

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RLA Architecture
Landscape:
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Surveyor:
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PROJECT

93 NORMAN STREET

PROJECT NO: 132469

DRAWN BY:	CHECKED BY:
D.D.	J.B.
PROJECT MGR:	APPROVED BY:
T.R.B.	T.R.B.

SHEET TITLE

GRADING PLAN

SHEET NUMBER	ISSUE
C-200	1

SCALE CHECK

CITY FILE No. D07-XX-XX-XXXX

CITY PLAN No. xxxxx

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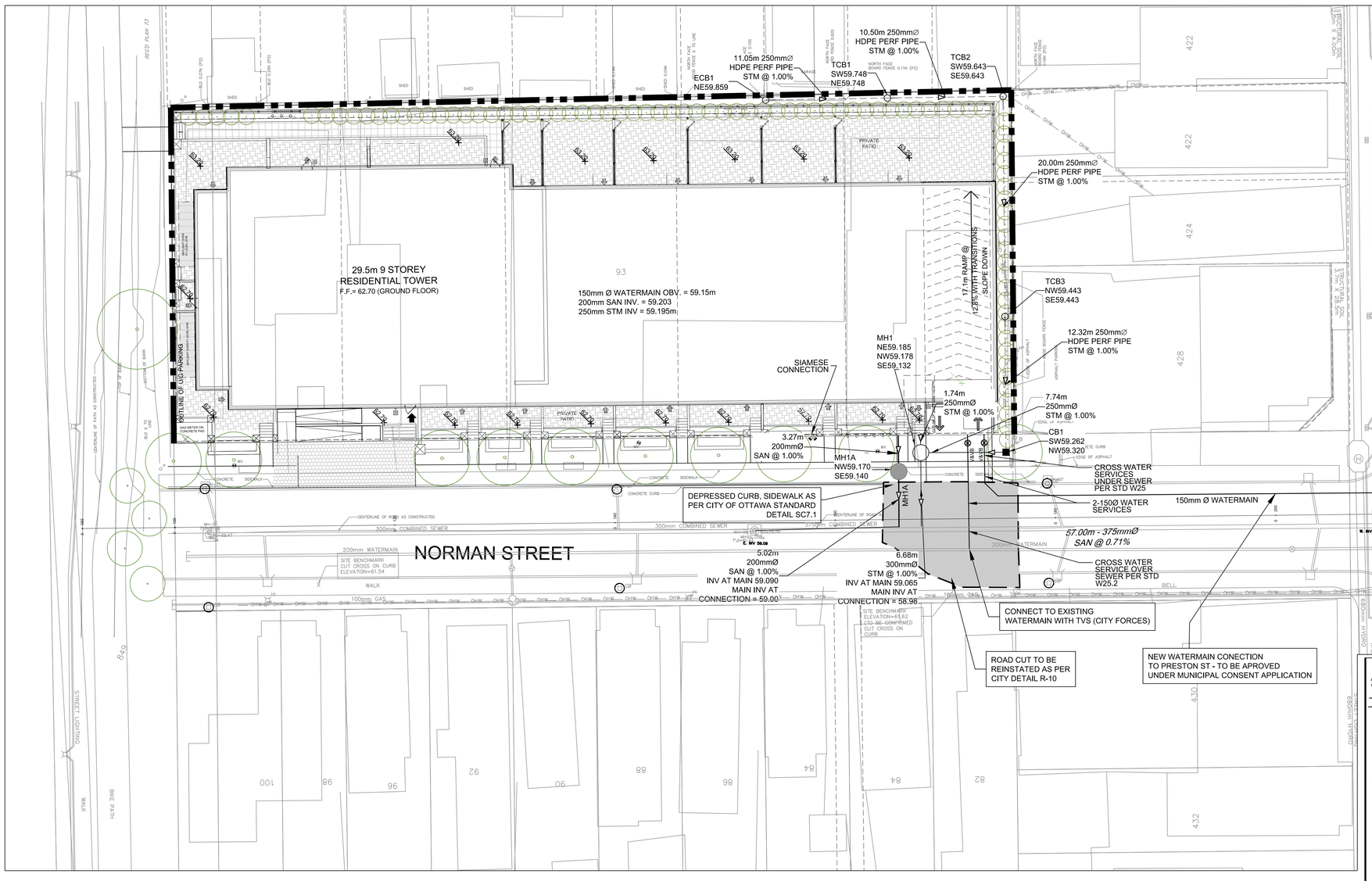

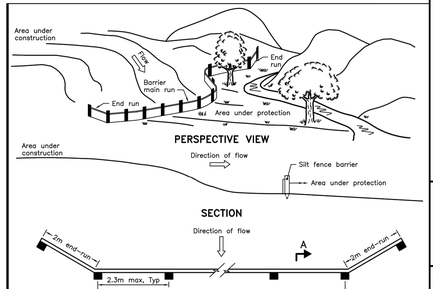

NOTE:
A All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING | Nov 2006 | Rev 1

LIGHT–DUTY
SILT FENCE BARRIER

OPSD 219.110

NOTES:

1. SILT FENCE TO BE ERECTED PRIOR TO EARTH WORKS BEING COMMENCED. SILT FENCE TO BE MAINTAINED UNTIL VEGETATION IS ESTABLISHED AND CONSTRUCTION COMPLETE.
2. SILT SACK TO BE PLACED AND MAINTAINED UNDER COVER OF ALL CATCHBASINS. GEOTEXTILE SILT SACK IN STREET CBs TO REMAIN UNTIL ALL CURBS ARE CONSTRUCTED. GEOTEXTILE FABRIC IN RYCBs TO REMAIN UNTIL VEGETATION IS ESTABLISHED. ALL CATCHBASINS TO BE REGULARLY INSPECTED AND CLEANED, AS NECESSARY, UNTIL SOD AND CURBS ARE CONSTRUCTED.
3. CONTRACTOR TO PROVIDE DETAILS ON LOCATION(S) AND DESIGN OF DEWATERING TRAP(S) PRIOR TO COMMENCING WORK. CONTRACTOR ALSO RESPONSIBLE FOR MAINTAINING TRAP(S) AND ADJUSTING SIZE(S) IF DEEMED REQUIRED BY THE ENGINEER DURING CONSTRUCTION.

LEGEND

- LIGHT DUTY SILT FENCE AS PER OPSD-219.110
- SNOW FENCE
- STRAW BALE CHECK DAM AS PER OPSD-219.180
- ROCK CHECK DAM AS PER OPSD-219.210
- SILT SACK PLACED UNDER EXISTING CB COVER
- TEMPORARY MUD MAT 0.15m THICK 50mm CLEAR STONE ON NON-WOVEN FILTER CLOTH

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93 NORMAN STREET

PROJECT NO: 132469
DRAWN BY: D.D. | CHECKED BY: J.B.
PROJECT MGR: T.R.B. | APPROVED BY: T.R.B.

SHEET TITLE
EROSION AND SEDIMENTATION CONTROL PLAN

SHEET NUMBER C-900 | ISSUE 1

CITY FILE No. D07-XX-XX-XXXX

CITY PLAN No. xxxxx

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