Revised Functional Servicing Report

401 – 417 Martha Street
City of Burlington
Project #TPB163165; Client Name: 2413350 Ontario Inc.

Prepared for:

2413350 Ontario Inc.
205 - 3390 South Service Road, Burlington, ON L7N 3J5

1/4/2021

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401 – 417 Martha Street
Project Location
Project #TPB163165; Client Name: 2413350 Ontario Inc.

Prepared for:

2413350 Ontario Inc.
205 - 3390 South Service Road, Burlington, ON L7N 3J5

Prepared by:

Wood Environment & Infrastructure Solutions
a Division of Wood Canada Limited
3450 Harvester Road, Suite 100, Burlington, ON L7N 3W5

1/4/2021

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Issued and Revisions Registry

Date	Description of Issued and/or Revision
April 2018	2nd submission
November 2018	3rd submission
August 2019	4th submission
March 2020	5th submission
January 2021	6th submission

Table of Contents

1.0 Introduction 1
1.1 Existing Site Conditions 1
1.2 Proposed Development 1

2.0 Background Information 2
2.1 Drawings 2
2.2 Topographic Survey 2

3.0 Grading and Drainage 3
3.1 Existing Conditions 3
3.2 Proposed Grading and Drainage 3

4.0 Servicing 4
4.1 Existing Water Servicing 4
4.2 Proposed Water Servicing 4
4.3 Proposed Fire Protection Requirements 4
4.4 Existing Sanitary Sewer Servicing 5
4.5 Proposed Sanitary Sewer Servicing 5
4.6 Existing Storm Sewer Servicing 5
4.7 Proposed Storm Sewer Servicing 5
4.8 Storm Sewer Downstream Analysis 6

5.0 Summary 6

List of Drawings

Figure 1 Existing Conditions Plan
Figure 2 Storm Drainage Area Plan
Figure 3 Functional Site Servicing and Grading Plan
Figure 4 Functional Erosion and Sediment Control Plan
Figure 5 Cross-Sections

List of Appendices

Appendix A Background Information
Appendix B Sanitary Demand & Water Usage
Appendix C Downstream Storm Sewer Analysis

1.0 Introduction

Wood Environment & Infrastructure Solutions, a Division of Wood Canada Limited ("Wood"), has been retained by 2413350 Ontario Inc. (the "Owner") to prepare a Functional Servicing Report in support of a Site Plan Application for the proposed residential condo development at 401-417 Martha Street in the City of Burlington (the "City").

The purpose of this report is to examine and demonstrate the serviceability of this development with respect to wastewater, stormwater, water servicing, site grading and to ensure servicing strategies are consistent with the City of Burlington and Region of Halton requirements.

1.1 Existing Site Conditions

The existing site of approximately 0.32 ha is located at 401-417 Martha Street, in the City of Burlington. The site is bounded by an existing 12-storey Martha Terrace apartment building to the south, Martha Street to the west, Rambo Creek to the east and the Waterfront Trail to the north. The existing site consists of six (6) detached residential houses each with an existing driveway entrance off Martha Street. (Refer to the Existing Conditions Plan).

The legal description is as follows: Part of Lot 92, Registered Plan 99, in the City of Burlington.

The existing houses on-site are proposed to be demolished. The site is located in an area of the City that is serviced by a network of municipal infrastructure including roads, sewers, watermains and other services and utilities.

1.2 Proposed Development

The proposed site is for a residential mid-rise development consisting of an 11-storey residential condo building with 130 residential units. The development will be serviced by four (4) levels of underground parking.

The existing driveway entrances off Martha Street will be removed and replaced with one (1) entrance into the proposed building.

Refer to **Appendix A** for the proposed Site Plan and building statistics prepared by SRM Architects Inc.

2.0 Background Information

2.1 Drawings

- Plan and profile drawing for Martha Street (City of Burlington – Municipal Dwg. No. W-67).
- Plan and profile drawing for Martha Street 12" Watermain Crossing Trans Northern Pipeline – (Regional Dwg. No. B-611).
- Plan and profile drawing for Martha Street, Gore St. to 500' north of Pine Street – (Regional Dwg. No. B-3581).

2.2 Topographic Survey

- Topographic survey prepared by MacKay MacKay & Peters Ltd. dated April 27, 2017.

3.0 Grading and Drainage

3.1 Existing Conditions

The entire site currently consists of six (6) detached residential houses fronting Martha Street. The existing site generally drains easterly towards Rambo Creek. The grading around the existing houses and the rear yards drain away from the houses and towards the existing Rambo Creek. The front yards are generally flat but drainage is directed away from the houses towards the street or side yard areas. There are no known external drainage areas to the site. (Refer to the Existing Conditions Plan).

3.2 Proposed Grading and Drainage

The proposed building at ground level will encompass approximately 59% of the site area. The proposed grades will match current drainage patterns, where feasible. Grades will be matched along property lines to the extent practical. The storm runoff will be collected within the footprint of the building and released in a controlled manner without adversely impacting adjacent properties or features.

Overland flows up to and including 100-year storm design event will be captured within the site for the footprint of the building. Overland flows for events exceeding 100-year storm event will be directed to Martha Street storm sewer system. All overland flows behind the building will be directed to Rambo Creek. (Refer to the Site Servicing and Grading Plan and Storm Drainage Area Plan).

4.0 Servicing

4.1 Existing Water Servicing

According to the reviewed information obtained from City of Burlington, Region of Halton and the Surveyor, there is an existing 300 mm diameter watermain along the west boulevard of Martha Street. The existing houses are currently serviced by domestic water services connected to the existing 300 mm watermain on Martha Street.

The following two (2) existing fire hydrants are in close proximity to the site and will serve the proposed development:

- Existing fire hydrant located near the north-west intersection of Martha Street and Pine Street, at the south end of the subject property. Hydrant is ±20 m from the south property limit; and,
- Existing fire hydrant located in the boulevard on the west side of Martha Street at the north end of the subject property. Hydrant is ±19 m from the property limit.

The hydrant located in the boulevard on the west side of Martha Street is within 45 m of the proposed Siamese connection and will provide the necessary firefighting coverage for the proposed development.

4.2 Proposed Water Servicing

The proposed development will be serviced by a 150 mm diameter fire and a 100 mm diameter domestic water service. According to Halton Region design standards, the 150 mm water service will be split 1.0 m from the property line, and valve and boxes installed on each service at the property line. The proposed water service will be connected to the existing 300 mm diameter watermain on Martha Street via a tapping valve and sleeve.

The two (2) existing fire hydrants located on Martha Street will provide the necessary firefighting coverage for the proposed development.

Water usage is typically based on calculating sanitary discharge flows based on the Ontario Building Code (OBC) guidelines. The estimated water usage has been calculated to be 1.44 L/sec (124.27 m^3/day). This estimated water usage calculation will need to be further refined by the Mechanical Engineer as the project progresses and as fixture units are confirmed. (Refer to **Appendix B** for detailed water usage calculations)

4.3 Proposed Fire Protection Requirements

The Water Supply for Public Fire Protection was calculated based on the guidelines provided by the Fire Underwriter's Survey (FUS), to demonstrate that the existing flows and pressure are adequate to meet the minimum requirement for fire suppression outlined in the FUS.

According to our calculations for the proposed development, a minimum fire suppression flow of approximately 5,000 L/min at a pressure of 140 kPa (20 PSI) will be required.

Hydrant flow testing must take place for verification of pressure and flow required for the proposed development prior to final drawing approval (Refer to **Appendix B** for detailed calculations).

4.4 Existing Sanitary Sewer Servicing

According to the reviewed information obtained from the City of Burlington, Region of Halton and the Surveyor, there is an existing 200 mm diameter sanitary sewer along the centreline of Martha Street that flows southerly to Lakeshore Road. The existing houses are currently serviced by sanitary service laterals connected to the existing 200 mm diameter sanitary sewer on Martha Street.

4.5 Proposed Sanitary Sewer Servicing

Sanitary discharge flow for the proposed development was calculated based on the Ontario Building Code (OBC) guidelines, along with the proposed site plan statistics found in **Appendix A**.

Based on the above criteria, the proposed condo development will contribute approximately 1.39 L/sec (119.90 m^3/day) into the 200 mm diameter sanitary sewer system on Martha Street.

A 200 mm diameter PVC sanitary pipe with a slope of 2.0% is proposed to service this site and will be connected to the existing 200 mm diameter sanitary main via a proposed sanitary manhole.
This connection will be adequate to convey the design flows of 1.39 L/sec.

This estimated sanitary demand calculation will need to be further refined by the Mechanical Engineer as the project progresses and as fixture units are confirmed (Refer to **Appendix B** for detailed sanitary sewer flow calculations).

4.6 Existing Storm Sewer Servicing

According to the reviewed information obtained from the City of Burlington, Region of Halton and the Surveyor, there is an existing 525 mm diameter storm sewer on the east side of Martha Street, and the first storm manhole is located approximately 14 m from the south property limit. The 525 mm storm sewer flows southerly and connects into an 825 mm storm sewer on Lakeshore Road. Based on information provided, the existing houses are not connected to a storm sewer system and storm runoff drains away from the houses into Martha Street and the existing Rambo Creek.

4.7 Proposed Storm Sewer Servicing

Stormwater runoff around the proposed condo development will maintain existing drainage patterns and drain overland into Martha Street and the existing Rambo Creek. Stormwater runoff from the proposed building shall be directed into the proposed 300 mm diameter storm sewer that connects to the proposed storm MH1 on Martha Street. Storm MH1 will ultimately connect to the existing 525 mm diameter storm sewer on Martha Street. (Refer to Site Servicing Plan).

On-site storage and controlled release will be required, with a proposed underground storage tank within the underground parking level P1. A 300 mm diameter storm connection at a slope of 1.0% will be adequate to convey the controlled design flow of 16 L/s from the residential development.

Refer to the **Stormwater Management Report** for details regarding the on-site storage condition and stormwater management for the proposed development.

4.8 Storm Sewer Downstream Analysis

Plan and profile drawings from the City were reviewed to assess the first leg of existing pipe downstream of the proposed site. A storm drainage area plan for the existing storm sewers was created based on this information. The storm flows within the drainage areas were calculated using storm sewer design sheet that consider land use. (Refer to **Appendix C** for drainage area plan and storm design analysis sheets).

The results of the storm sewer analysis show that under the proposed post-development conditions, a peak design flow of 16 L/s will be introduced into the storm sewer system with a total peak flow of 216.35 L/s in the first sewer leg downstream. Downstream analysis indicates that the storm sewer system will be running well under capacity for the first sewer leg downstream, with a peak capacity of 56.2% full.

Therefore, the existing 525mm diameter storm sewer within Martha Street is minimally impacted and will support the proposed development.

5.0 Summary

Based on the assessments outlined within this report, it is concluded that the proposed residential condo development at 401-417 Martha Street meets the design criteria and is serviceable for sanitary sewer, stormwater, water distribution and site grading, in compliance with the City of Burlington Standards.

We trust the above report is sufficient for your purpose. Should you have any questions or concerns please do not hesitate to contact our office.

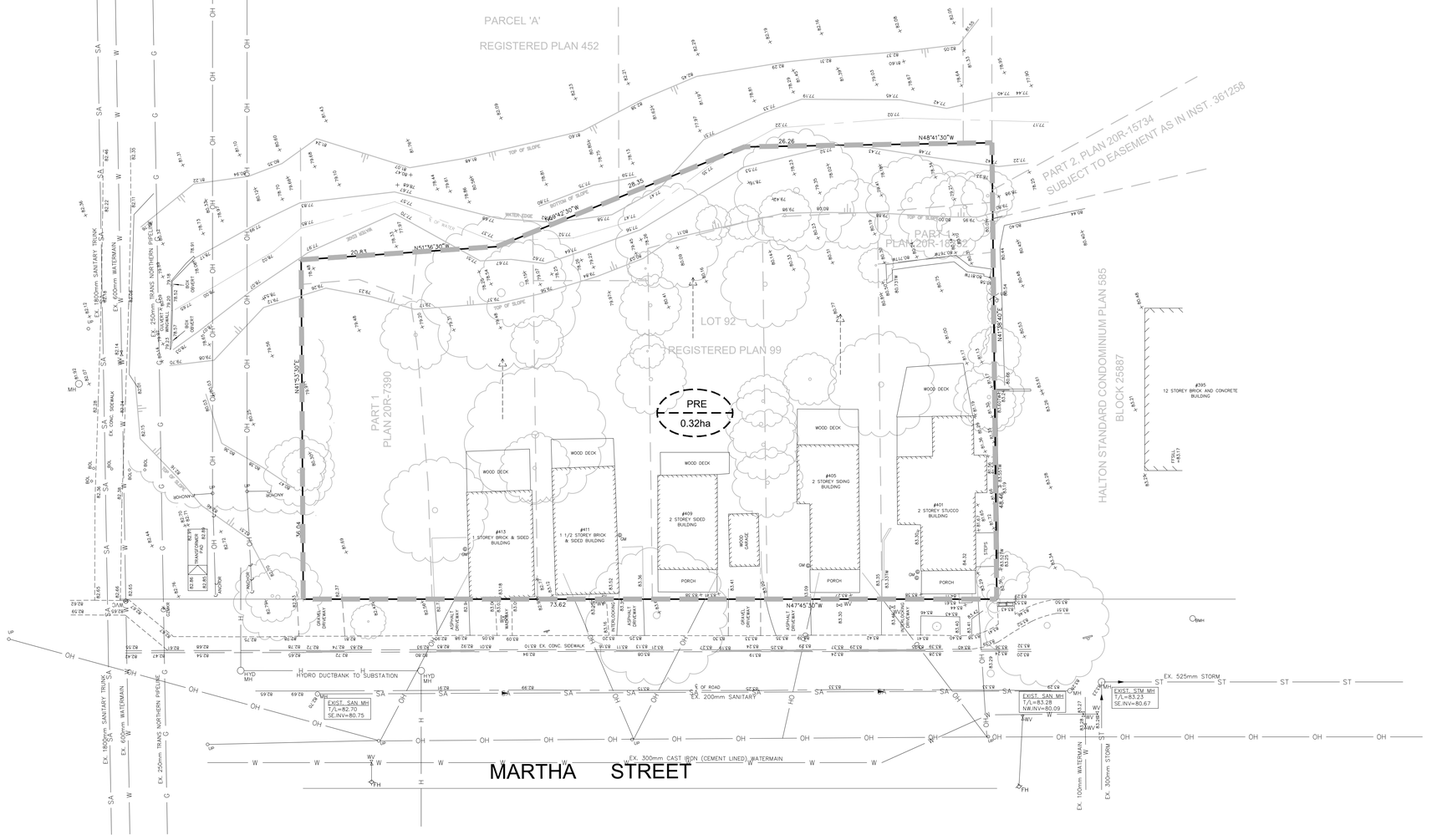
Respectfully submitted,

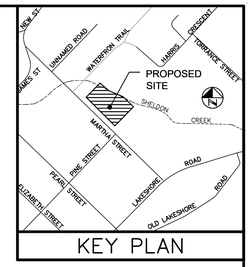
Wood Environment & Infrastructure Solutions,
a Division of Wood Canada Limited

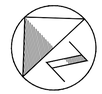
Per: Paul Pagazani, P. Eng.
Project Manager

PP/kf











LEGEND

- EXISTING GROUND ELEVATION — × 100.00
- EXISTING STORM SEWER — ST
- EXISTING SANITARY SEWER — SA
- EXISTING WATERMAIN — W
- EXISTING UNDERGROUND HYDRO — H
- EXISTING OVERHEAD WIRE — OH
- EXISTING MANHOLE — MH
- EXISTING CATCHBASIN/MANHOLE — CB/MH
- EXISTING CATCHBASIN/MANHOLE — CB
- EXISTING DOUBLE CATCHBASIN — DCB
- EXISTING DOUBLE CATCHBASIN — TH
- EXISTING DOUBLE CATCHBASIN — WV
- EXISTING WATER VALVE CHAMBER — WVC
- EXISTING LIGHT STANDARD — LS
- EXISTING PADMOUNT TRANSFORMER
- EXISTING UTILITY POLE — UP
- EXISTING BELL PEDESTAL
- EXISTING CABLE PEDESTAL
- EXISTING CHAIN LINK FENCE — X
- EXISTING GASMAIN — G
- EXISTING OVERLAND FLOW
- EXISTING SUBCATCHMENT BOUNDARY
- SUBCATCHMENT NUMBER — 101
- EXISTING SUBCATCHMENT AREA IN HECTARES — 0.32ha

SURVEY:

TOPOGRAPHIC SURVEY PROVIDED BY MACKAY MACKAY & PETERS LTD. DATED APRIL 27, 2017.

BENCHMARK:

CITY OF BURLINGTON
BENCHMARK No. 198
DESCRIPTION: PLATE ON PUMP HOUSE LOCATED JUST WEST OF RAMBO CREEK, BEING 320m EAST OF BRANT STREET ON LAKESHORE ROAD. PLATE IS FIXED TO THE SOUTH FACE OF BRICK BUILDING, BEING 0.15m EAST OF THE SOUTHWEST CORNER AND 0.30m ABOVE EXISTING CONCRETE SIDEWALK.
ELEVATION = 78.036 METRES (CGVD-1928: 1978 ADJUSTMENT)

NOT ISSUED FOR CONSTRUCTION

SCALE VALID ONLY FOR 24"x36" VERSION

No	Date	Drawn	Appr'd	Revisions
4	JAN 04, 21	ML	PP	RE-ISSUED FOR SITE PLAN APPLICATION
3	NOV 03, 20	ML	PP	RE-ISSUED FOR SITE PLAN APPLICATION
2	MAR 31, 20	ML	PP	RE-ISSUED FOR SITE PLAN APPLICATION
1	NOV 19, 18	ML	PP	ISSUED FOR SITE PLAN APPLICATION

APPROVALS

Design	PP	Checked	MD
Drawn	ML	Checked	PP
Scale	1:250		
Date	NOVEMBER 2018		

LICENSED PROFESSIONAL ENGINEER
P. PAGAZANI
100053989
Jan 04, 2021
PROVINCE OF ONTARIO

401 - 417 MARTHA STREET CITY OF BURLINGTON, ON

2413350 ONTARIO INC.

EXISTING CONDITIONS PLAN

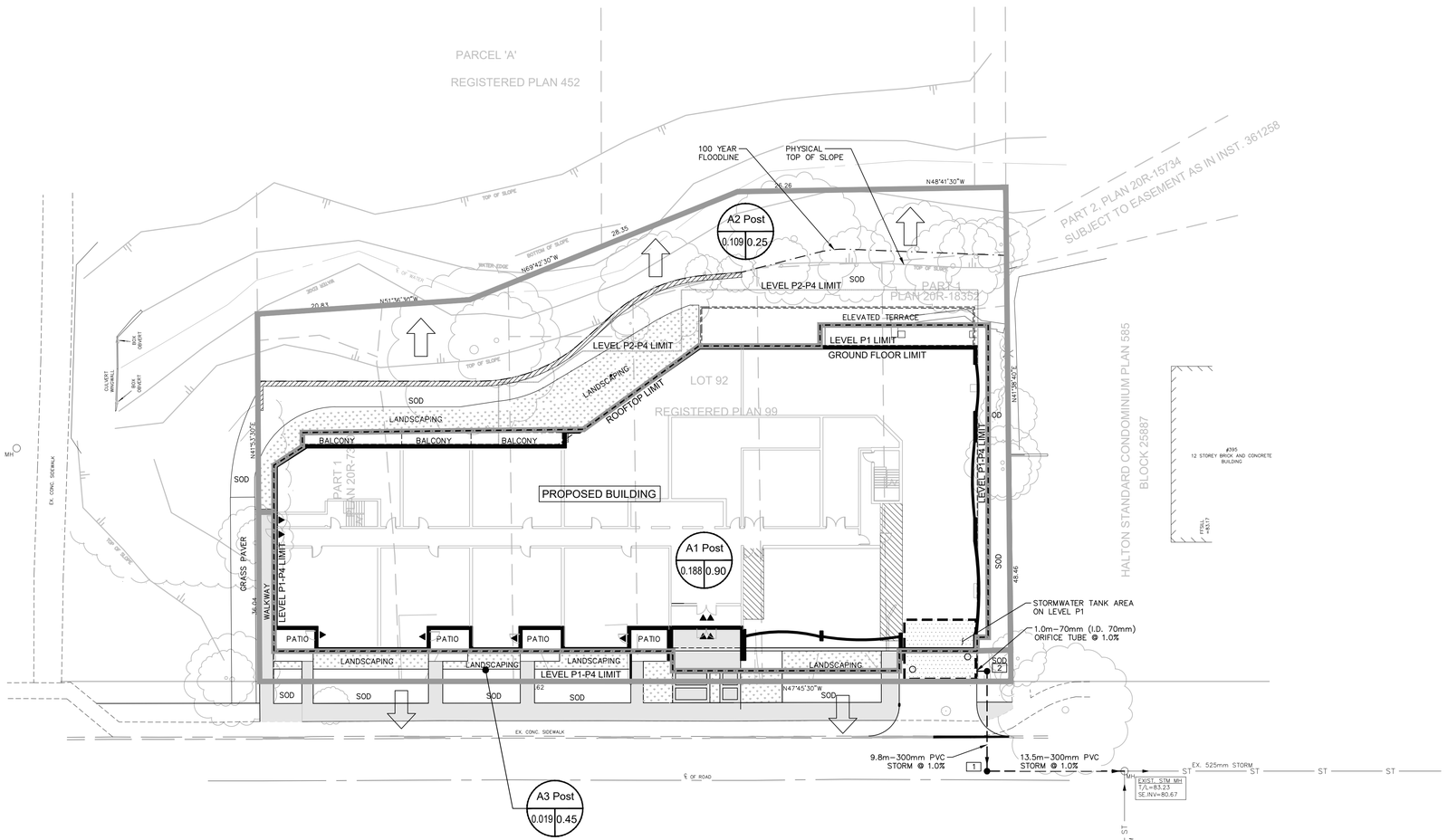
wood.
3450 HARVESTER ROAD, SUITE 100
BURLINGTON, ON. L7N 3W5
TEL: +1 (905) 335-2353

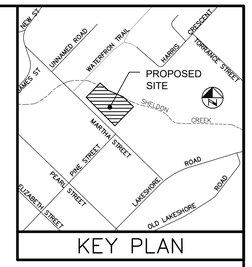
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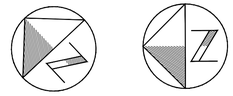
Consultant File No. TPB163165

Drawing No. FIGURE 1

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Last Saved: 2021-01-04
Plotted By: paul.pagazani
Last Saved By: paul.pagazani
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LEGEND

- STORM SEWER
- EXISTING STORM SEWER (ST)
- STORM MANHOLE
- EXISTING STORM MANHOLE (MH)
- EXISTING CATCHBASIN (CB)
- STORM MANHOLE NUMBER (1)
- GROUND FLOOR LAYOUT
- UNDERGROUND P2–P4 LIMIT
- UNDERGROUND P1 LIMIT
- ROOFTOP LIMIT
- STORM DRAINAGE AREA BOUNDARY
- MAJOR OVERLAND FLOW ROUTE
- DRAINAGE AREA IDENTIFIER NUMBER (1)
- AREA (IN HECTARES) (0.48)
- RUNOFF COEFFICIENT (0.72)

SURVEY:

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Scale	1:250		
Date	NOVEMBER 2018		

LICENSED PROFESSIONAL ENGINEER
P. PAGAZANI
100053989
Jan 04, 2021
PROVINCE OF ONTARIO

401 - 417 MARTHA STREET
CITY OF BURLINGTON, ON
2413350 ONTARIO INC.

STORM DRAINAGE AREA PLAN

wood.
3450 HARVESTER ROAD, SUITE 100
BURLINGTON, ON. L7N 3W5
TEL: +1 (905) 335-2353

Scale 1:250
Consultant File No. TPB163165
Drawing No. FIGURE 2

Plotted: 2021-01-04
Last Saved: 2021-01-04
Plotted By: paul.pagazani
Last Saved By: paul.pagazani
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NOTES:

1. ALL SURVEY POINTS AMD EXISTING PIPE INVERT ELEVATIONS SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR.
2. ANY DISCREPANCIES BETWEEN SITE CONDITIONS AND THE DRAWING MUST BE REPORTED TO THE CONSULTANT PRIOR TO COMMENCEMENT OF CONSTRUCTION.
3. CONTRACTOR SHALL VERIFY ALL LOCATIONS OF GASMAINS, WATERMAINS, TV CABLES, HYDRO AND TELEPHONE DUCTS, SANITARY AND STORM SEWERS AND ALL EXISTING PRIVATE SEWER, WATER AND UTILITY SERVICES PRIOR TO START OF CONSTRUCTION.
4. CONTRACTOR SHALL VERIFY DEPTHS OF ALL EXISTING SANITARY AND STORM SEWERS AND WATERMAINS PRIOR TO START OF CONSTRUCTION, AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES.

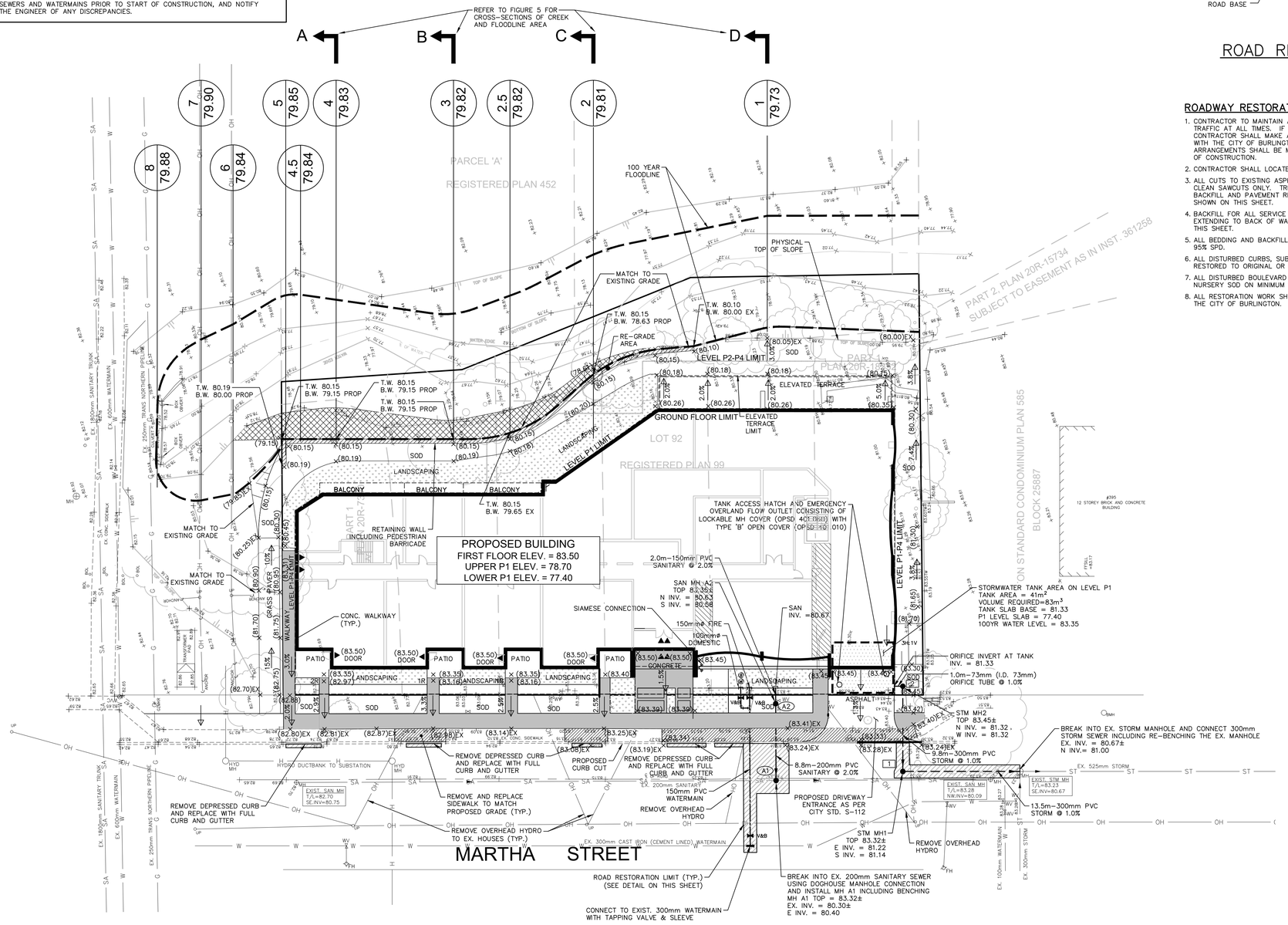
EXISTING WATER SERVICE ABANDONMENT

ALL EXISTING WATER SERVICES TO BE ABANDONED SHALL BE ABANDONED AS FOLLOWS:

1. PAVEMENT RESTORATION, IF NECESSARY, SHALL BE PER NOTES AND DETAIL ON THIS SHEET.
2. MAINSTOP SHALL BE SHUT OFF AT MAIN AND COPPER SERVICE DISCONNECTED AND CRIMPED.
3. CURB STOP BARREL TO BE REMOVED AT STREET LINE AND COPPER SERVICE CRIMPED.

EXISTING SANITARY LATERAL ABANDONMENT

EXISTING SANITARY LATERALS SHALL BE REMOVED TO BACK OF SIDEWALK OR AS SHOWN ON THE DRAWING, AND CAPPED/PLUGGED. THE REMAINING PIPING TO BE ABANDONED BY INSERTION OF A WATER TIGHT PLUG INSIDE THE EXISTING SEWER MAIN. AFTER THE INSERTION OF PLUGS, THE ENTIRE LENGTH OF SEWER FROM MANHOLE TO MANHOLE SHALL BE FLUSHED AND VIDEO RECORDED WITH VIDEO DETAILING OF PLUGS TO DISPLAY WATER TIGHTNESS.





ROAD RESTORATION DETAIL

N.T.S.

KEY PLAN

ROADWAY RESTORATION NOTES

1. CONTRACTOR TO MAINTAIN A MINIMUM OF ONE LANE OF TRAFFIC AT ALL TIMES. IF THIS IS NOT FEASIBLE, THE CONTRACTOR SHALL MAKE ALL NECESSARY ARRANGEMENTS WITH THE CITY OF BURLINGTON FOR ROAD CLOSURES. THESE ARRANGEMENTS SHALL BE MADE FAR IN ADVANCE OF START OF CONSTRUCTION.
2. CONTRACTOR SHALL LOCATE AND PROTECT ALL UTILITIES.
3. ALL CUTS TO EXISTING ASPHALT AND CONCRETE SHALL BE CLEAN SAWCUTS ONLY. TRENCH BEDDING, COVER MATERIAL, BACKFILL AND PAVEMENT RESTORATION SHALL BE PER DETAIL SHOWN ON THIS SHEET.
4. BACKFILL FOR ALL SERVICE TRENCHES WITHIN ROADWAY AND EXTENDING TO BACK OF WALK SHALL BE AS PER DETAIL ON THIS SHEET.
5. ALL BEDDING AND BACKFILL SHALL BE COMPACTED TO MIN. 95% SPD.
6. ALL DISTURBED CURBS, SUBDRAINS, CULVERTS ETC. SHALL BE RESTORED TO ORIGINAL OR BETTER CONDITIONS.
7. ALL DISTURBED BOULEVARD SHALL BE RESTORED WITH No. 1 NURSERY SOD ON MINIMUM 150mm TOPSOIL.
8. ALL RESTORATION WORK SHALL BE TO THE SATISFACTION OF THE CITY OF BURLINGTON.



TRUE NORTH



CONSTRUCTION NORTH

LEGEND

EXISTING GROUND ELEVATION	×100.00
PROPOSED GROUND ELEVATION	×(100.00)
PROPOSED GROUND ELEVATION TO MATCH EXISTING GRADE	×(100.00)EX
DIRECTION OF SHEET FLOW	
STORM SEWER	ST
SANITARY SEWER	SA
WATER SERVICE	W
WATER METER	W
BACKFLOW PREVENTER	B
EXISTING STORM SEWER	ST
EXISTING SANITARY SEWER	SA
EXISTING WATERMAIN	W
EXISTING UNDERGROUND HYDRO	H
EXISTING OVERHEAD WIRE	OH
EXISTING MANHOLE	MH
EXISTING HYDRANT	FH
EXISTING WATER VALVE	WV
EXISTING WATER VALVE CHAMBER	WVC
EXISTING LIGHT STANDARD	LS
EXISTING PADMOUNT TRANSFORMER	
EXISTING UTILITY POLE	UP
EXISTING BELL PEDESTAL	
EXISTING CABLE PEDESTAL	
EXISTING CHAIN LINK FENCE	X
EXISTING GASMAIN	G
MANHOLE	
GROUND FLOOR LAYOUT	
UNDERGROUND P1 OUTLINE	
UNDERGROUND P2-P4 OUTLINE	
100 YEAR FLOODLINE	
CONCRETE WALKWAYS	
LANDSCAPING AREAS	
REINFORCED EARTH EMBANKMENT	
RETAINING WALL	

100-YEAR WSEL — 1 SECTION NO. / 79.73 ELEV.

SURVEY:

TOPOGRAPHIC SURVEY PROVIDED BY MACKAY MACKAY & PETERS LTD. DATED APRIL 27, 2017.

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Scale	1:250		
Date	NOVEMBER 2018		

LICENSED PROFESSIONAL ENGINEER — P. PAGAZANI 100053989 — Jan 04, 2021 — PROVINCE OF ONTARIO

401 - 417 MARTHA STREET CITY OF BURLINGTON, ON

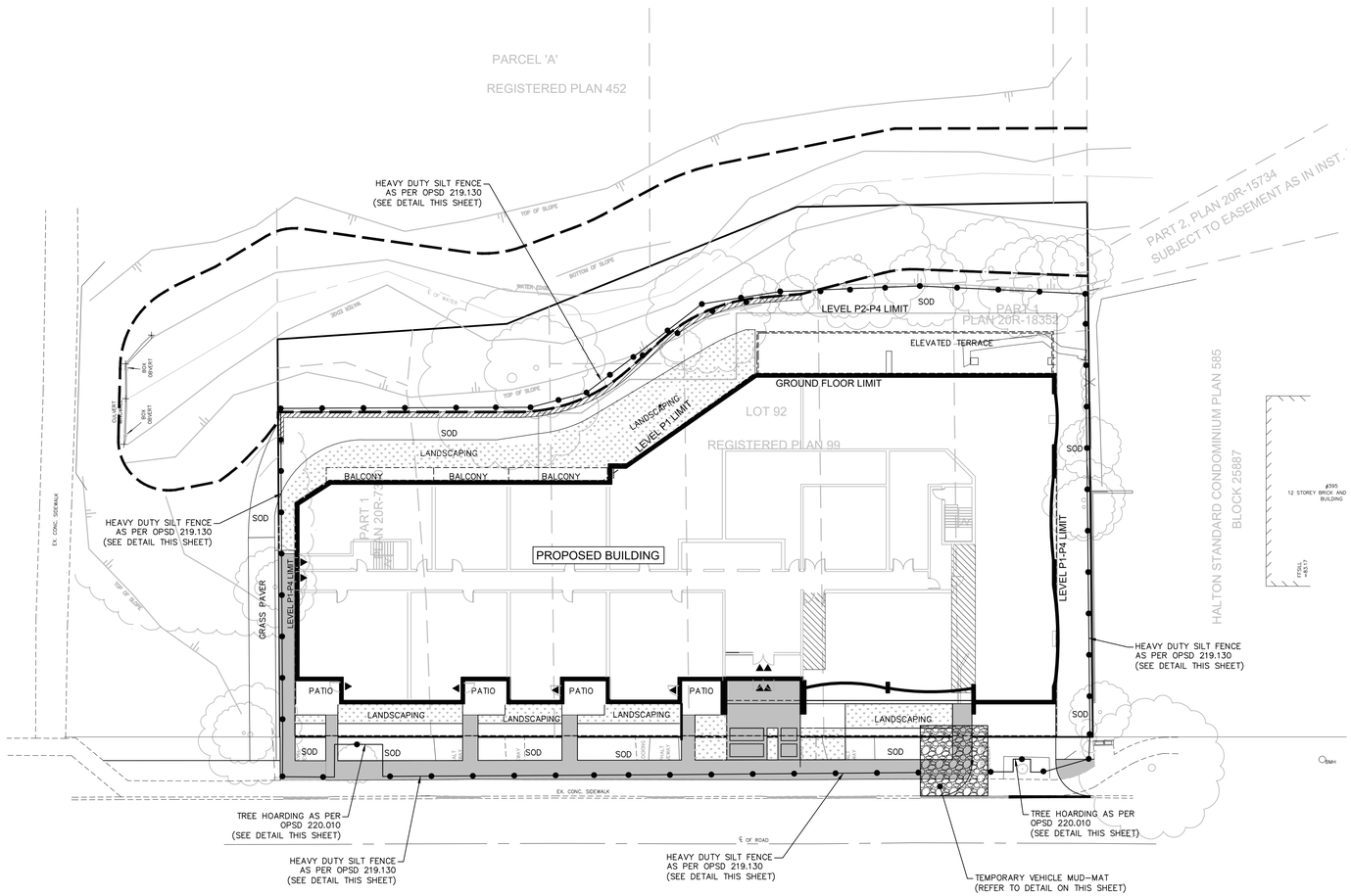
2413350 ONTARIO INC.

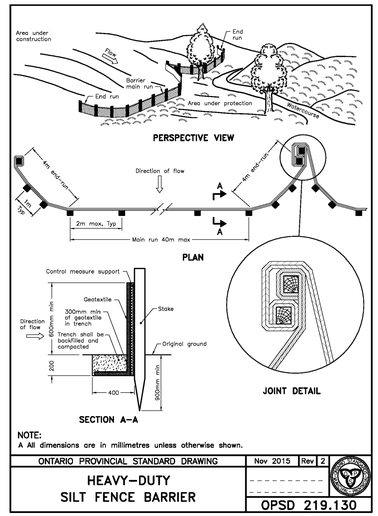
FUNCTIONAL SITE SERVICING AND GRADING PLAN

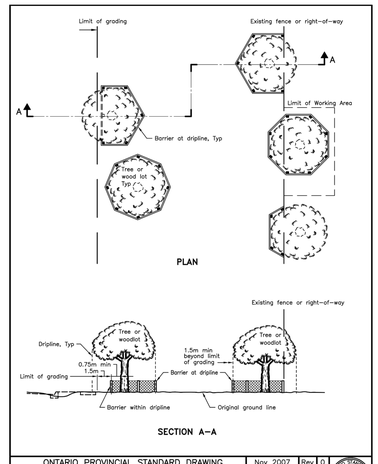
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3450 HARVESTER ROAD, SUITE 100
BURLINGTON, ON. L7N 3W5
TEL: +1 (905) 335-2353

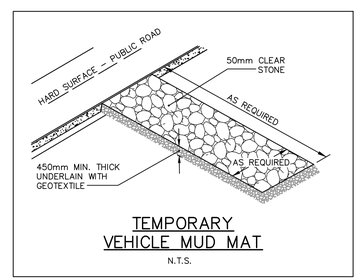
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Consultant File No. TPB163165
Drawing No. FIGURE 3

Plotted: 2021-01-04
Last Saved: 2020-11-18
Plotted By: paul.pagazani
Last Saved By: paul.pagazani
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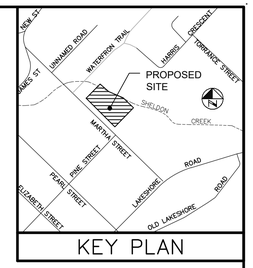


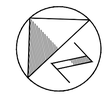




TEMPORARY VEHICLE MUD MAT

N.T.S.





TRUE NORTH



CONSTRUCTION NORTH

EROSION AND SEDIMENT CONTROL

1. ALL SILTATION CONTROL MEASURES INCLUDING SEDIMENT CONTROL FENCES, BASINS AND WORK LIMIT FENCES MUST BE INSTALLED PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
2. SEDIMENT CONTROL FENCES SHALL CONSIST OF FILTER CLOTH (TERRAFENCE FABRIC TERRATRACK 4-15 OR APPROVED EQUIVALENT). REFER TO DETAIL ON THIS SHEET.
3. EROSION OF SOIL SHALL BE PREVENTED. ALL DISTURBED AREAS WITHOUT IMMEDIATE BUILDING ACTIVITY (WITHIN 5 DAYS) SHALL BE SEEDED AND MAINTAINED TO THE SATISFACTION OF THE CITY ENGINEER. PLACEMENT OF VEGETATION SHALL BE IN ACCORDANCE WITH OPSS 804. WHERE REQUIRED, EROSION CONTROL BLANKETS SHALL BE INSTALLED AS PER OPSS 804, AT THE DIRECTION OF THE ENGINEER.
4. ALL SILTATION CONTROL MEASURES SHALL BE CLEANED AND MAINTAINED AFTER EACH RAINFALL OR AS DIRECTED AND TO THE SATISFACTION OF THE CITY ENGINEER.
5. ADDITIONAL SEDIMENT CONTROL LOCATIONS MAY BE REQUIRED AS DETERMINED BY THE CITY ENGINEER.
6. CONSTRUCTION MUD-MAT TO BE INSTALLED AT ENTRANCE INTO SITE. MUD-MAT TO BE MAINTAINED DURING CONSTRUCTION. REFER TO DETAIL ON THIS SHEET.

LEGEND

- SEDIMENT CONTROL FENCE
- GROUND FLOOR LAYOUT
- UNDERGROUND P1 OUTLINE
- UNDERGROUND P2-P4 OUTLINE
- REGIONAL FLOODLINE

SURVEY:

TOPOGRAPHIC SURVEY PROVIDED BY MACKAY MACKAY & PETERS LTD. DATED APRIL 27, 2017.

BENCHMARK:

CITY OF BURLINGTON
BENCHMARK No. 198
DESCRIPTION: PLATE ON PUMP HOUSE LOCATED JUST WEST OF RAMBO CREEK, BEING 320m EAST OF BRANT STREET ON LAKESHORE ROAD. PLATE IS FIXED TO THE SOUTH FACE OF BRICK BUILDING, BEING 0.15m EAST OF THE SOUTHWEST CORNER AND 0.30m ABOVE EXISTING CONCRETE SIDEWALK.
ELEVATION = 78.036 METRES (CGVD-1928: 1978 ADJUSTMENT)

NOT ISSUED FOR CONSTRUCTION

SCALE VALID ONLY FOR 24"x36" VERSION

No	Date	Drawn	Appr'd	Revisions
4	JAN 04, 21	ML	PP	RE-ISSUED FOR SITE PLAN APPLICATION
3	NOV 03, 20	ML	PP	RE-ISSUED FOR SITE PLAN APPLICATION
2	MAR 31, 20	ML	PP	RE-ISSUED FOR SITE PLAN APPLICATION
1	NOV 19, 18	ML	PP	ISSUED FOR SITE PLAN APPLICATION

APPROVALS

Design	PP	Checked	MD
Drawn	ML	Checked	PP
Scale	1:250		
Date	NOVEMBER 2018		

LICENSED PROFESSIONAL ENGINEER
P. PAGAZANI
100053989
Jan 04, 2021
PROVINCE OF ONTARIO

401 - 417 MARTHA STREET
CITY OF BURLINGTON, ON

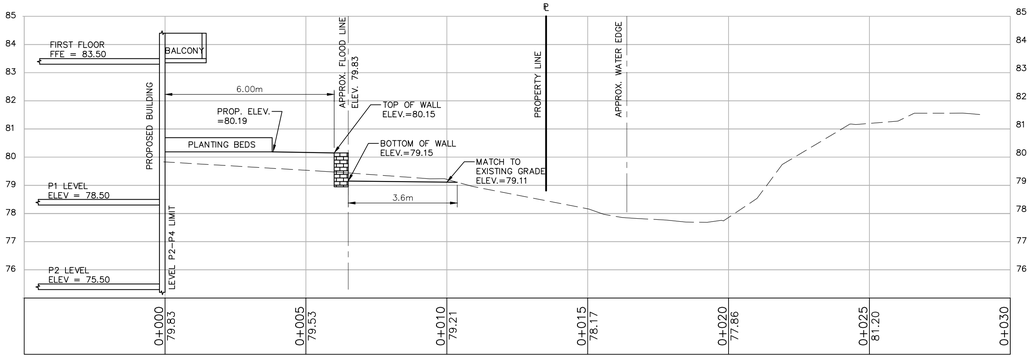
2413350 ONTARIO INC.

FUNCTIONAL EROSION AND SEDIMENT CONTROL PLAN

wood.
3450 HARVESTER ROAD, SUITE 100
BURLINGTON, ON. L7N 3W5
TEL: +1 (905) 335-2353

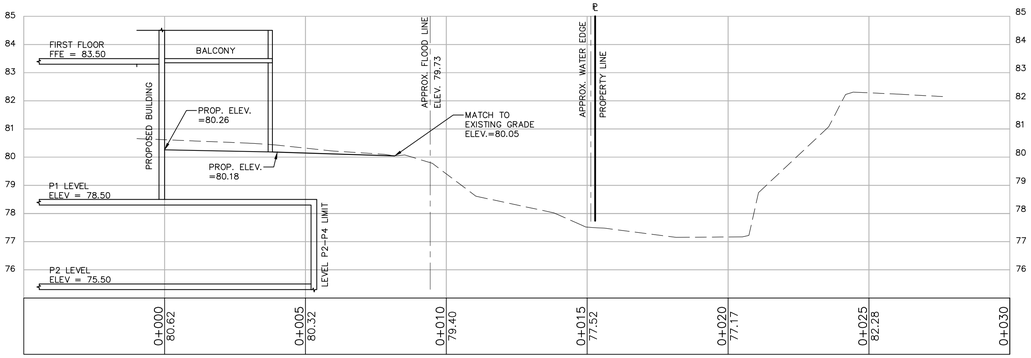
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Consultant File No. TPB163165
Drawing No. FIGURE 4

Plotted: 2021-01-04
Last Saved: 2020-11-18
Plotted By: paul.pagazani
Last Saved By: paul.pagazani
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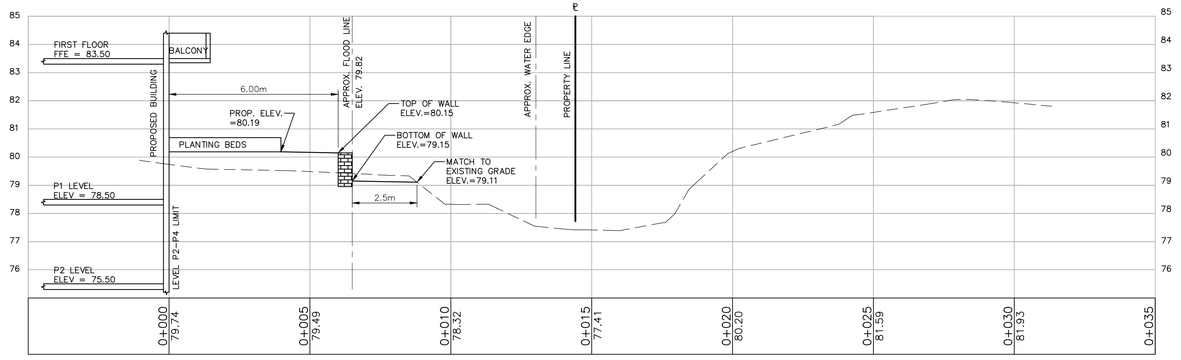
SECTION A–A

H 1:100
V 1:100



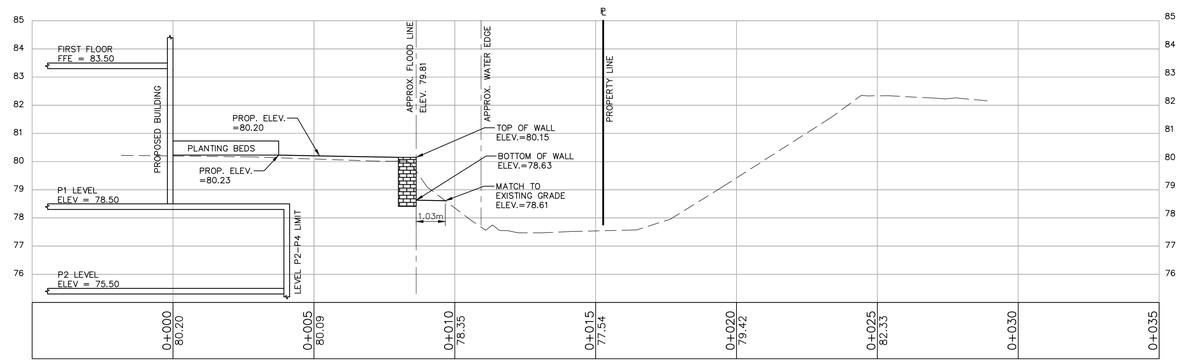
SECTION D–D

H 1:100
V 1:100



SECTION B–B

H 1:100
V 1:100



SECTION C–C

H 1:100
V 1:100

SURVEY:

TOPOGRAPHIC SURVEY PROVIDED BY MACKAY MACKAY & PETERS LTD. DATED APRIL 27, 2017.

BENCHMARK:

CITY OF BURLINGTON
BENCHMARK No. 198
DESCRIPTION: PLATE ON PUMP HOUSE LOCATED JUST WEST OF RAMBO CREEK, BEING 320m EAST OF BRANT STREET ON LAKESHORE ROAD. PLATE IS FIXED TO THE SOUTH FACE OF BRICK BUILDING, BEING 0.15m EAST OF THE SOUTHWEST CORNER AND 0.30m ABOVE EXISTING CONCRETE SIDEWALK.
ELEVATION = 78.036 METRES (CGVD–1928: 1978 ADJUSTMENT)

NOT ISSUED FOR CONSTRUCTION SCALE VALID ONLY FOR 24"x36" VERSION

Plotted: 2020–11–04
Last Saved: 2020–11–02
Plotted By: paul.pagazani
Last Saved By: paul.pagazani
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No	Date	Drawn	Appr'd	Revisions
2	NOV 03, 20	ML	PP	RE–ISSUED FOR SITE PLAN APPLICATION
1	MAR 31, 20	ML	PP	ISSUED FOR SITE PLAN APPLICATION

APPROVALS

Design	PP	Checked	BB
Drawn	ML	Checked	PP
Scale	AS NOTED		
Date	AUGUST 2019		

LICENSED PROFESSIONAL ENGINEER
P. PAGAZANI
100053989
Nov 03, 2020
PROVINCE OF ONTARIO

401 - 417 MARTHA STREET
CITY OF BURLINGTON, ON
2413350 ONTARIO INC.

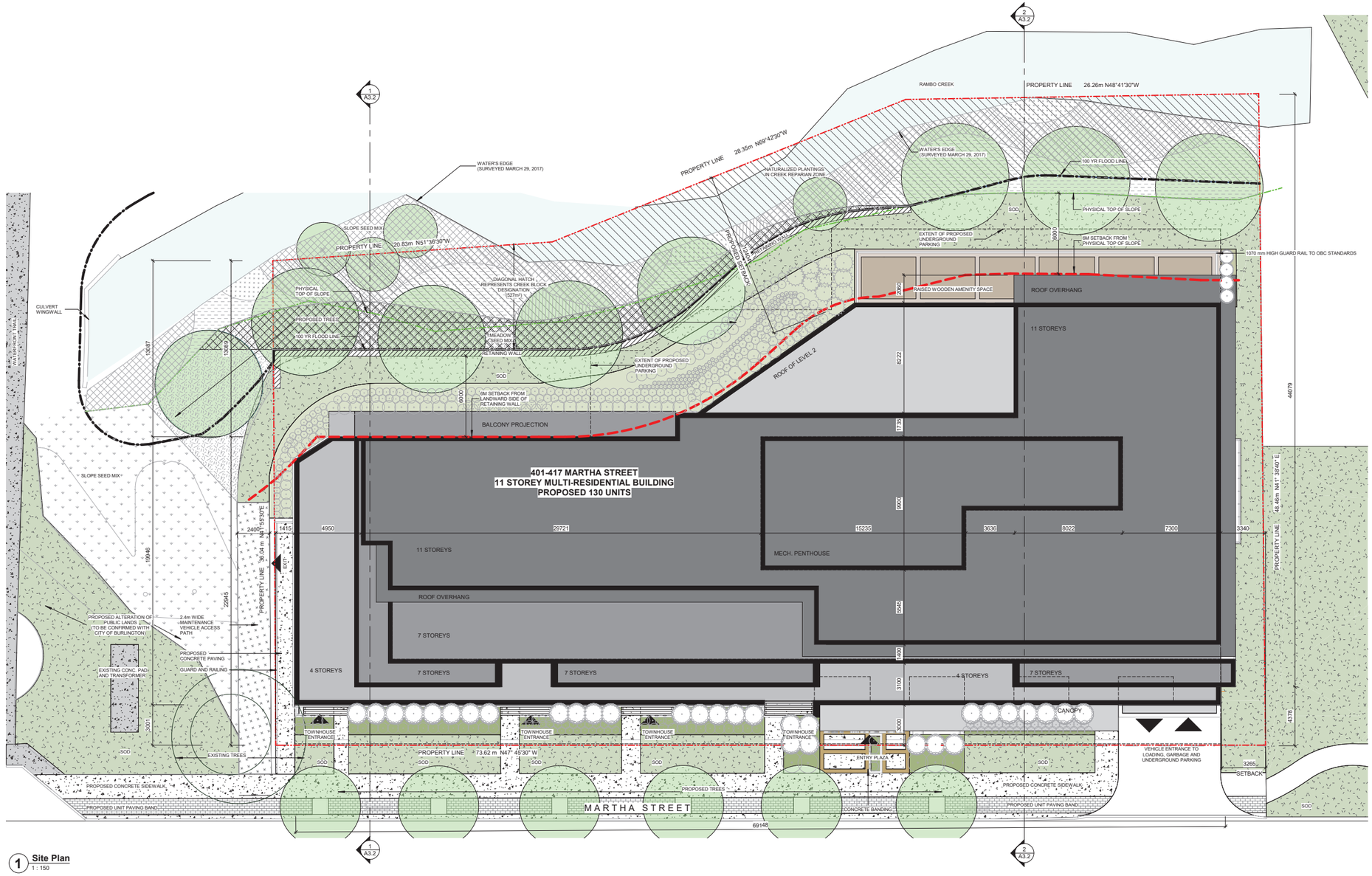
CROSS-SECTIONS

wood.
3450 HARVESTER ROAD, SUITE 100
BURLINGTON, ON. L7N 3W5
TEL: +1 (905) 335-2353

Scale: AS NOTED
Consultant File No.: TPB163165
Drawing No.: FIGURE 5

APPENDIX A
BACKGROUND INFORMATION

Do not scale drawings. Contractors must check and verify all dimensions and report any discrepancies to the Architect before proceeding with the work. All documents remain the property of the Architect. Unauthorized use, modification, and/or reproduction of these documents is prohibited without written permission. The Contract Documents were prepared by The Consultant for the purpose of the Project only and shall not be used otherwise without the Consultant's written consent. The Consultant shall not be responsible for any use of, or reliance upon, these documents by any third party. Any revisions made or actions based on the Contract Documents are the responsibility of the party making them. The Consultant assumes no responsibility for any third party's failure to execute the work in accordance with the Contract Documents.



1 **Site Plan**
1 : 150

FLOOR PLAN EFFICIENCY

DATA	FLOOR AREA	CIRC./SERV.	AMENITY	RESIDENTIAL	EFF.
LEVEL 1	17,528 ft²	9,726 ft²	1,756 ft²	6,046 ft²	34.5%
LEVEL 1 - MEZZ	6,046 ft²			6,046 ft²	
LEVEL 2-4	15,523 ft² (x3)	1,940 ft² (x3)	-	13,583 ft² (x3)	87.5%
LEVEL 5-7	13,085 ft² (x3)	2,167 ft² (x3)	-	10,918 ft² (x3)	83.4%
LEVEL 8-11	10,733 ft² (x4)	2,571 ft² (x4)	-	8,162 ft² (x4)	76.0%
LEVEL P1	20,588 ft²		-		
LEVEL P2- P4	23,349 ft² (x3)		-		
TOTALS	242,965 ft²		1,756 ft²	118,243 ft²	

UNIT DATA

UNIT TYPE	QTY.	AREA RANGE
1 BEDROOM	44 (33.8%)	602 - 770 ft²
1 BEDROOM + DEN	10 (7.7%)	907 - 915 ft²
2 BEDROOM	42 (32.3%)	715 - 1080 ft²
3 BEDROOM	20 (20.8%)	1,033 - 1,149 ft²
2 BEDROOM TOWN HOUSE	1 (0.77%)	1162 ft²
3 BEDROOM TOWN HOUSE	6 (4.62%)	1540 - 2076 ft²
TOTALS	130 (100 %)	492-1153 ft²

PARKING DATA	QTY.
LEVEL P1	29
LEVEL P2- P4	46x3
TOTALS	**167**

BUILDING DATA

DATA	REQUIRED	PROVIDED
TOTAL DENSITY (# of units)	185 UNITS / HECTARE AT 0.32 ha = 59 units max	130 UNITS 0.32 ha = 407 units / ha
BUILDING AREA (m²)		**17,528 S.F (1,628 S.M.)**
BUILDING COVERAGE	1,628 S.M. of 3,162 sm = 51.5% coverage	
GROSS FLOOR AREA (m²)		**152,330 S.F. (14,152 S.M.)**
CONSTRUCTION FLOOR AREA (m²)		**242,965 S.F. (22,572 S.M.)**
NUMBER OF STOREYS	---	11
BUILDING HEIGHT (m)	22m MAX.	+/- 39.7m from Martha St.
COMMERCIAL/RETAIL AREA (m²)		N/A
AMENITY AREA (M²)	5 m² per unit = 5 m² x 130 = 650 m²	163 m² indoor + Terrace and Balconies

VEHICLE PARKING DATA

DATA	REQUIRED	PROVIDED
RESIDENTIAL PARKING	1.00 / UNIT = 130 stalls	134 stalls
BARRIER FREE PARKING (included)	3% OF REQ'D = 4	4 stalls (included in above)
VISITOR PARKING (additional)	0.25 / UNIT = 32.5	33 stalls
TOTAL PARKING	**163**	**167**
LOADING SPACES		1 SPACE
NUMBER OF VEHICLE ENTRANCES		1 ENTRANCE

SITE DATA

401-417 Marta Street, Burlington, Ontario
Part of Lot 92, Registered Plan 99

DATA		REQUIRED	PROVIDED
ZONING		ZONING - H-DRH	Site Specific
LOT AREA (m²)			3,162 m²
CREEK DEDICATION (m²)			527 m²
REVISED LOT AREA (m²)			2,635 m²
SETBACKS	FRONT YARD (meters)	6m (7.5m if street width= 26m)	3.0m
	INTERIOR SIDE YARD (m)	6m	1.4m NORTH
	INTERIOR SIDE YARD (m)	6m	3m SOUTH
	REAR YARD (m)	7.5m	11.96m
U/G SETBACKS	FRONT YARD (meters)	6m (7.5m if street width= 26m)	0m
	INTERIOR SIDE YARD (m)	6m	1.4m NORTH
	INTERIOR SIDE YARD (m)	6m	3m SOUTH
	REAR YARD (m)	7.5m	12.0m

PARKING STRUCTURE DOES NOT CONFORM TO SETBACKS STATED IN THE OLD ZONING APPLICATION - 1990



KEY PLAN
1 : 5000

SITE PLAN LEGEND

(EXISTING) CONCRETE SIDEWALK	
(PROPOSED) PROPOSED CONCRETE PATH	
(PROPOSED) MAINTENANCE VEHICLE PATH	
(PROPOSED) ASPHALT PATH	
(PROPOSED) UNIT PAVING BAND	
PROPOSED UNDERGROUND PARKING LINE	
PROPERTY LINE/ SETBACK FROM HAZARD LINE (CLOSER OF EITHER: 100 YEAR FLOOD PLANE OR PHYSICAL TOP OF SLOPE	
RETAINING WALL	
CREEK BLOCK DESIGNATION	
MEADOW SEED MIX	
LANDSCAPED	
SOD	
WOODEN AMENITY	
EXISTING TREES	
PROPOSED TREES	
CONCRETE BANDING	
EXISTING CREEK	

Project North **True North**

No.	Date	Revision
2	2020-12-18	RE-ISSUED FOR SITE PLAN APPROVAL
1	2020-11-06	ISSUED FOR SITE PLAN APPROVAL

srm ARCHITECTS INC.

Project No 17032
Issue Date
Drawn by PG
Checked by WC
Plot Date / Time 2020-12-15 11:38:44 AM

MARTHA STREET, BURLINGTON

SITE PLAN

ONTARIO ASSOCIATION OF ARCHITECTS
EDWARD THOMAS LICENCE 5572

Drawing Scale As indicated
Status
Drawing No. A1.1 - r2
Revision No.

APPENDIX B
SANITARY DEMAND & WATER USAGE

Wood Environment & Infrastructure Solutions
a Division of Wood Canada Limited
3450 Harvester Road, Suite 100
Burlington, ON L7N 3W5, Canada
T: 905-335-2353
www.woodplc.com

November 03, 2020
Our File: TPB163165

The Regional Municipality of Halton
1151 Bronte Road
Oakville ON L6M 3L1:

RE: Water Usage and Sanitary Discharge Report for 2413350 Ontario Inc., Proposed Residential Condo Development, 401-417 Martha Street, City of Burlington

Dear Sir/Madam,

2413350 Ontario Inc. proposes to construct an 11-storey mid-rise residential development at 401-417 Martha Street, Part of Lot 92, Registered Plan 99, in the City of Burlington.
The site is currently occupied by six (6) detached residential houses.

The site has an area of 0.32 ha, of which 0.12 ha will be landscaped. The property will be developed in one phase.

Table 8.2.1.3.A of the Ontario Building Code has been used to calculate water usage and sanitary discharge for residential occupant loadings. This development does not require water in the process and cooling water will not be required.

Sanitary Discharge

Residential Occupancy – Condominiums:

1.	No. of Condominium Units	= 130	
2.	No. of Bedrooms	= 218	
3.	Persons per Bedroom	= 2	(per OBC 8.2.1.3, subsection 3.1.17)
4.	Population	= 436 people	

From the Ontario Building Code Table 8.2.1.3.A, Residential Occupancy, Dwellings

Condominiums = 275 L / day / per person

- Occupant Load = 275 L/ d / person x 436 people = 119,900 L / day = 119.90 m^3 / day

Total sanitary discharge for the Site = 119.90 m^3 / day = 1.39 L/s

'Wood' is a trading name for John Wood Group PLC and its subsidiaries

Water Usage

Residential Occupancy – Townhouses:

Total water usage for the Site = **119.90 m^3 / day** (see above)

Landscaping for site:

Site landscaping area = 0.12 ha = 1,203 m^2

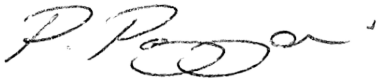
- 25.4 mm / m^2 / week x 1,203 m^2 = 4.37 m^3 / day

Total landscape water usage for the Site = **4.37 m^3 / day**

Therefore, Total Water Usage for the site **= 119.90 m^3 / day + 4.37 m^3 / day**
= 124.27 m^3 / day
= 1.44 L/s

Sincerely,

Wood Environment & Infrastructure Solutions
a Division of Wood Canada Limited



Paul Pagazani, P.Eng.
Senior Engineer

PP/kf

WATER SUPPLY FOR PUBLIC FIRE PROTECTION - 1999

Project Name: 401-417 Martha Street, Burlington
Project Number: TPB163165
Date: November 2020
Prepared by: P. Pagazani

GUIDE FOR DETERMINATION OF REQUIRED FIRE FLOW

$F = 220\ C\ (\ A\ )^{0.5}$ An estimate of the fire flow required for a given area may be determined by this formula.

F = required fire flow in litres per minute

C = coefficient related to the type of construction
= 1.5 for wood frame construction (structure essentially all combustible)
= 1.0 for ordinary construction (brick or other masonry walls, combustible floor and interior)
= 0.8 for non-combustible construction (unprotected metal structural components, masonry or metal wall)
= 0.6 for fire-restive construction (fully protected frame, floors, roof)

A = the total area of the largest floor plus 25% of each of the two immediately adjoining floors in the building being considered

Condo Building:

OUTLINE OF PROCEDURE

A. Determine the type of construction.
= 0.6 fire-restive construction

B. Determine the Floor Area.
For fire-resistive buildings with 1-hour fire rating, the area shall be the total area of the largest floor plus 25% of each of the two immediately adjoining floors:

Floor Area (m^2)	=	1442	m^2
Area above (m^2)	=	1442	m^2
Area below (m^2)	=	1442	m^2
A (m^2)	=	2163	m^2

C. Using the fire flow formula above, determine the required fire flow to the nearest 1,000 litres/minute.
= 6139 L/min Round to 6000 L/min

D. Determine the increase or decrease for occupancy and apply to the value obtained in D above.
Do not round off the answer.
= -15% limited combustible -900 L/min = 5100 L/min

E. Determine the decrease, if any, for automatic sprinkler protection. Do not round off the value.
= 1530 L/min Sprinkler protection (30% reduction as per NFPA 13)

F. Determine the total increase for exposures. Do not round off the values.
= 25% 1,275 L/min increase

	Separation	Charge	Total
South Exposure	20.1 to 30m	10%	25%
East Exposure	over 45m	0%	
West Exposure	20.1 to 30m	10%	
North Exposure	30.1 to 45m	5%	

G. To the answer obtained in D, subtract the value obtained in E and add the value obtained in F.
= 4845 L/min Round to **5000 L/min**

APPENDIX C
DOWNSTREAM
STORM SEWER ANALYSIS

DATE: JUNE/98	REV. 3

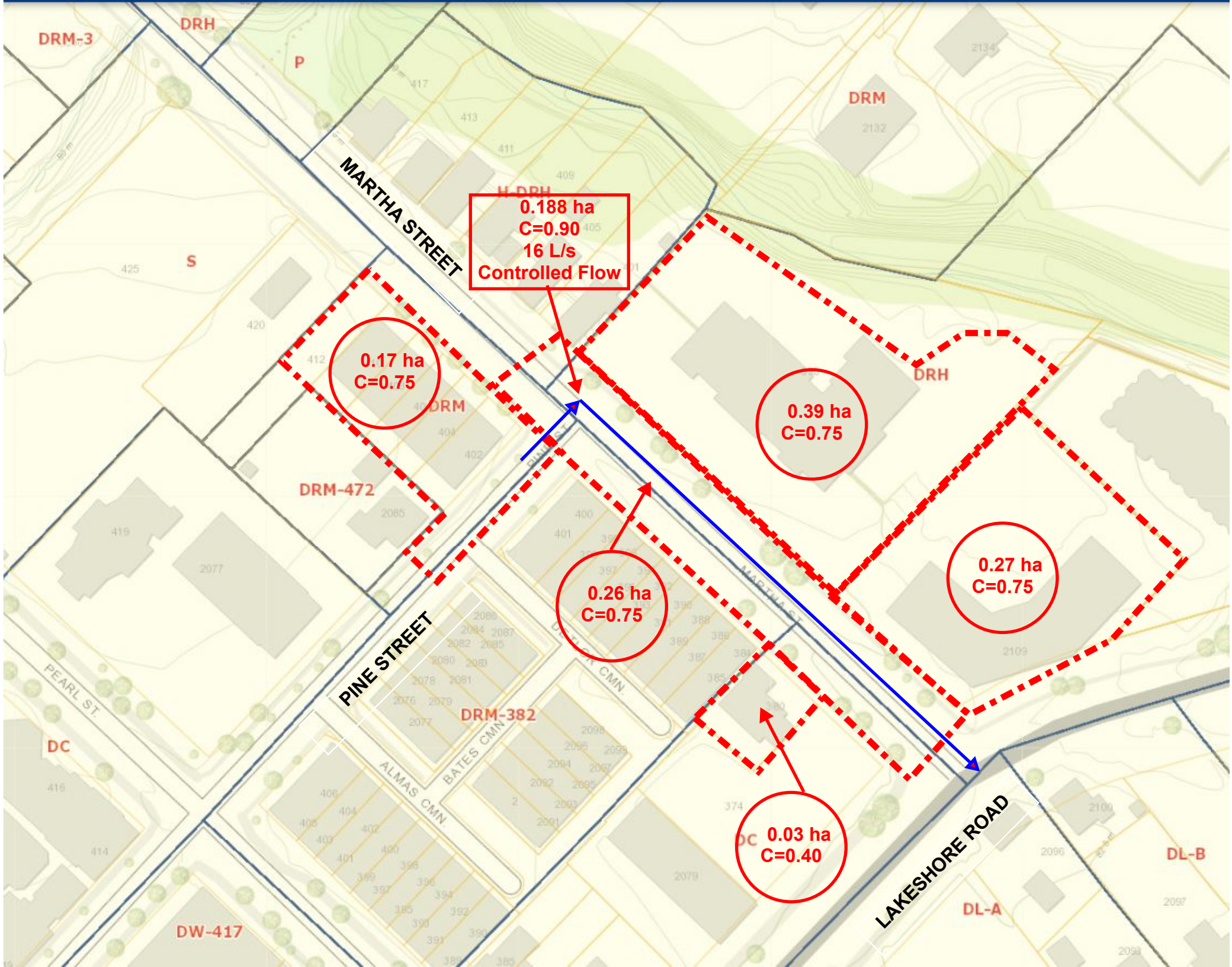
LAND USE	RUNOFF COEFFICIENTS
SINGLE FAMILY RESIDENTIAL (ROOF DRAINAGE DOWNSPOUTS DISCHARGING ONTO PERVIOUS SURFACE)	0.40
SEMI–DETACHED RESIDENTIAL (ROOF DRAINAGE DOWNSPOUTS DISCHARGING ONTO PERVIOUS MATERAIL)	0.45
APARTMENTS, TOWNHOUSES, MAISONETTES	0.75
INSTITUTIONAL (SHOOLS, etc.)	0.75
COMMERCIAL and INDUSTRIAL	0.85
PARKS and OPEN SPACE	0.30

FOR THE DEVELOPMENT OF COMPOSITE RUNOFF COEFFICIENTS
THE FOLLOWING COEFFICIENTS ARE RECOMMENDED:

CHARACTER OF SURFACE	RUNOFF COEFFICIENTS
ASPHALT, CONCRETE and ROOFS	0.90
LAWNS – FLAT SLOPE, 2% and UNDER	0.13 – 0.17
– AVERAGE SLOPE, 2% TO 7%	0.18 – 0.22
– STEEP SLOPE, 7% and OVER	0.25 – 0.35

IN ORDER TO ACCOUNT FOR ANTECEDENT PRECIPITATION CONDITIONS FOR THE LESS FREQUENT, HIGHER INTENSITY STORMS, THE DERIVED RUNOFF COEFFICIENTS SHOULD BE MULTIPLIED BY 1.1, 1.2, AND 1.25 FOR STORM FREQUENCIES OF 25, 50 AND 100 YEARS RESPECTIVELY. THE PRODUCT HOWEVER SHOULD NOT EXCEED 1.0

APPROVED J. Edwardson DIRECTOR OF ENGINEERING DATE: Feb. 17/99	CITY OF BURLINGTON ENGINEERING DEPARTMENT	METRIC SCALE: N.T.S.
	SEWER DESIGN Recommended Runoff Coefficients	DWG. NO. S-3D


DRM-3
DRH
P
DRM
MARTHA STREET
0.188 ha
C=0.90
16 L/s
Controlled Flow
S
0.17 ha
C=0.75
DRM
DRH
0.39 ha
C=0.75
DRM-472
0.27 ha
C=0.75
0.26 ha
C=0.75
PINE STREET
DRM-382
PEARL ST.
DC
ALMAS CMN
BATES CMN
0.03 ha
C=0.40
LAKESHORE ROAD
DL-B
DL-A
DW-417

Wood Environment & Infrastructure Solutions

Project Name: 401-417 Martha Street, Burlington

Project No.: TPB163165

Designed by: P. Pagazani

Date: November 2020

CITY OF BURLINGTON
5-YR STORM SEWER ANALYSIS
EXISTING CONDITIONS

DESIGN INFORMATION

Design Storm Parameters		Pipe Roughness
Tc = 10 mins	A = 697.40	n = 0.013
$i = A / (T_C + 5.0)^C$	C = 0.764	

Location	STRUCTURE		DRAINAGE AREA					RUNOFF			PROPOSED STORM SEWER DESIGN							REMARKS
	From	To	Area (ha)	Total Area (ha)	C	AC	Cumul. AxC	Cumul. T_C (min.)	i (mm/hr)	Q (L/s)	Pipe Dia. (mm)	Pipe Slope (%)	Actual Capacity (full) (L/s)	Velocity (full) (m/s)	Pipe Length (m)	Time of Flow (min.)	% Full	
Pine Street	STUB	EX. MH S	0.170	0.170	0.75	0.128	0.128	10.00	88.09	31.20	300	0.57	73.01	1.03	16.0	0.26	42.7	NO PIPE SURCHARGE
Martha Street	#395 Martha	Main	0.390	0.390	0.75	0.293	0.293	10.00	88.09	71.58								
Martha Street	#2109 Lakeshore	Main	0.270	0.270	0.75	0.203	0.203	10.00	88.09	49.55								
Martha Street	#380 Martha	Main	0.030	0.030	0.40	0.012	0.012	10.00	88.09	2.94								
Martha Street	EX. MH S	EX. MH S3	0.260	1.120	0.75	0.195	0.830	10.26	86.95	200.35	525	0.80	384.66	1.78	114.5	1.07	52.1	NO PIPE SURCHARGE
									Total Existing Storm Flow	200.35								
									Total Existing Storm Flow	200.35								

CITY OF BURLINGTON
5-YR STORM SEWER ANALYSIS
PROPOSED CONDITIONS

Wood Environment & Infrastructure Solutions

Project Name: 401-417 Martha Street, Burlington

Project No.: TPB163165

Designed by: P. Pagazani

Date: November 2020

DESIGN INFORMATION

Design Storm Parameters		Pipe Roughness
Tc = 10 mins	A = 697.40	n = 0.013
$i = A / (T_C + 5.0)^C$	C = 0.764	

Location	STRUCTURE From	STRUCTURE To	DRAINAGE AREA Area (ha)	Total Area (ha)	C	AC	Cumul. AxC	RUNOFF Cumul. T_C (min.)	i (mm/hr)	Q (L/s)	PROPOSED STORM SEWER DESIGN Pipe Dia. (mm)	Pipe Slope (%)	Actual Capacity (full) (L/s)	Velocity (full) (m/s)	Pipe Length (m)	Time of Flow (min.)	% Full	REMARKS
PROP. DEVELOPMENT	MH 1	EX. MH S	0.188	0.188	0.90	0.169	0.169	10.00	88.09	16.00	300	1.00	96.70	1.37	13.5	0.16	16.5	NO PIPE SURCHARGE
Pine Street	STUB	EX. MH S	0.170	0.170	0.75	0.128	0.128	10.00	88.09	31.20	300	0.57	73.01	1.03	16.0	0.26	42.7	NO PIPE SURCHARGE
Martha Street	#395 Martha	Main	0.390	0.390	0.75	0.293	0.293	10.00	88.09	71.58								
Martha Street	#2109 Lakeshore	Main	0.270	0.270	0.75	0.203	0.203	10.00	88.09	49.55								
Martha Street	#380 Martha	Main	0.030	0.030	0.40	0.012	0.012	10.00	88.09	2.94								
Martha Street	EX. MH S	EX. MH S3	0.260	1.308	0.75	0.195	0.830	10.26	86.95	216.35	525	0.80	384.66	1.78	114.5	1.07	56.2	NO PIPE SURCHARGE
							Total Proposed Storm Flow			**216.35**								
							Total Existing Storm Flow			**200.35**								
							Additional Flow			**16.00**								

Allowable controlled peak design flow. (highlighted cell)

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