Site Servicing and Stormwater Management Report 172 Main Street, Ottawa, ON

Client:
2503858 Ontario Inc.
894 Bunchberry Way
Ottawa, ON K1T 0L6

Submitted for:
Site Plan Control

Project Name:
172 Main Street

Project Number:
OTT-00258388-B0

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Date Submitted:
2020-03-24

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2020-03-24
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Date Submitted:
2020-03-24

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1 Introduction

1.1 Overview

EXP Services Inc. (EXP) was retained by 2503858 Ontario Inc. to prepare a Site Plan Site Servicing and Stormwater Management Report for the proposed redevelopment of 172 Main Street in support of a site plan control application.

The 0.034-hectare site is situated on the west side of Main Street as illustrated in **Figure 1-1** below. The site is inside the Greenbelt and situated in Ward 17 (Capital). The description of the subject property is noted below:

- Part of Lot 2, Concession 1, Geographic Township of Gloucester, City of Ottawa, Part 1, Plan 4R-17536, PIN 041260123.

The proposed site development will consist of a 3-storey apartment building with two rear surface parking spaces. The proposed building will consist of ground floor commercial space with the upper 2nd and 3rd floors containing 4 apartment units.

This report will discuss the adequacy of the adjacent municipal watermain, sanitary sewers and storm sewers to provide the required water supply, convey the sewage and stormwater flows that will result from the proposed development. This report provides a design brief for submission, along with the engineering drawings, for City approval.

Figure 1-1 - Site Location

2 Existing Conditions

The existing property is vacant and is used as a gravel parking area. The topography of the subject site falls in a south westerly direction to the rear of the property.

3 Existing Infrastructure

From review of the City of Ottawa's sewer and watermain mapping (Geo Ottawa), as-built drawings and Utility Central Registry (UCC) plans, the following summarizes the infrastructure within the subject property and the infrastructure within the adjacent streets along the frontage of the property:

Within property

- Site is a vacant parking area and it appears there is no underground utilities. From asbuilt drawings there appears to be existing storm and sanitary services provided to the property line.

Main Street

- 406mm PVC watermain.
- 375mm Concrete sanitary sewer.
- 1350mm Concrete storm sewer.
- Gas / Bell / Streetlighting/ Hydro.

As-built drawings for Main Street were obtained from the City of Ottawa and are included in **Appendix F** for reference.

1.3 Pre-Consultation / Permits / Approvals

A pre-consultation meeting was held with the City prior to design commencement. This meeting outlined the submission requirements and provided information to assist with the development proposal. A copy of pre-consultation correspondence is included in **Appendix E**.

The proposed site is located within Rideau Valley Conservation Authority (RVCA) jurisdiction, therefore signoff from the RVCA will be required prior to final approval. The RVCA has been contacted to confirm the stormwater management quality control requirements. A copy of the correspondence with the RVCA is attached in **Appendix E**.

In addition, various design guidelines were referred to in preparing the current report including:

- Bulletin ISDTB-2012-4 (20 June 2012)
  - Technical Bulletin ISDTB-2014-01 (05 February 2014)
  - Technical Bulletin PIEDTB-2016-01 (September 6, 2016)
  - Technical Bulletin ISDTB-2018-01 (21 March 2018)
  - Technical Bulletin ISDTB-2018-04 (27 June 2018)
- Ottawa Design Guidelines – Water Distribution, July 2010 (WDG001), including:
  - Technical Bulletin ISDTB-2014-02 (May 27, 2014)
  - Technical Bulletin ISTB-2018-02 (21 March 2018)

- Stormwater Management Planning and Design Manual, Ontario Ministry of the Environment and Climate Change, March 2003 (SMPDM).
- Design Guidelines for Drinking-Water Systems, Ontario Ministry of the Environment and Climate Change, 2008 (GDWS).
- Fire Underwriters Survey, Water Supply for Public Fire Protection (FUS), 1999.
- Ontario Building Code 2012, Ministry of Municipal Affairs and Housing.

4 Water Servicing

4.1 Existing Water Servicing

The subject site is within the City of Ottawa 1W pressure zone. There are no existing water services within the property.

4.2 Water Servicing Proposal

The proposed development will consist of a 3-storey apartment unit with a ground floor commercial space. Architectural site plans are provided in **Appendix H.** The site will be serviced from the existing 406mm PVC watermain on Main Street.

Water supply for the apartment building will be provided by a single copper water service connecting to the existing watermain. Along with the service, a shutoff valve will be installed at the property line. The proposed servicing plan is provided in drawing C200 of **Appendix H.**

4.3 Water Servicing Design

The water servicing requirements for the proposed development is designed in accordance with the City Design Guidelines (July 2010). The following steps indicate the basic methodology that was used in our analysis:

- Estimated water demands under average day, maximum day and peak hour conditions. As the total population estimate was less than 500, therefore residential peaking factors were based on MECP Table 3-3 used.
- Estimated the required fire flow (RFF) based on the Fire Underwriters Survey (FUS).
- Obtained hydraulic boundary conditions (HGL) from the City, based on the above water demands and required fire flows.
- Boundary condition data and water demands were used to estimate the pressure at the proposed building, and this was compared to the City's design criteria.

Please refer to **Appendix B** for detailed calculations of the total water demands.

A review of the estimated watermain pressures at the building connection, based on the boundary conditions provided, was completed using a single water service servicing to the building. **Table B-4** in **Appendix B** provides data calculations of anticipated pressures at the building connection based on using a single 38mm copper water service.

Based on results, a single 38mm service would result in a pressure of ±56.5psi at the building. A review of pressures on the top floor was also completed and would result in a pressure of ±44.4.2psi to the middle of the third floor.

No pressure reducing measures are required as operating pressures are within 50 psi and 80 psi.

4.4 Water Servicing Design Criteria

The design parameters that were used to establish water and fire flow demands are summarized **Table 4-1**.

Table 4-1 - Summary of Water Supply Design Criteria

Design Parameter	Value	Applies
Population Density – Single-family Home	3.4 persons/unit	
Population Density – Semi-detached Home	2.7 persons/unit	
Population Density – Townhome or Terrace Flat	1.8 persons/unit	
Population Density – Bachelor Apartment	1.4 persons/unit	
Population Density – Bachelor + Den Apartment	1.4 persons/unit	
Population Density – One Bedroom Apartment	1.4 persons/unit	
Population Density – One Bedroom plus Den Apartment	1.4 persons/unit	
Population Density – Two Bedroom Apartment	2.1 persons/unit	✓
Population Density – Two Bedroom plus Den Apartment	2.1 persons/unit	
Average Day Demands – Residential	350 L/person/day	✓
Average Day Demands – Dental Office	275 L/person/day	✓
Average Day Demands – Commercial / Institutional	28,000 L/gross ha/day	
Average Day Demands – Light Industrial / Heavy Industrial	35,000 or 55,000 L/gross ha/day	
Maximum Day Demands – Residential	9.5 x Average Day Demands (MECP)	✓
Maximum Day Demands – Commercial / Institutional	1.5 x Average Day Demands	
Peak Hour Demands – Residential	14.3 x Average Day Demands (MECP)	✓
Peak Hour Demands – Commercial / Institutional	2.7 x Average Day Demands	
Fire Flow Requirements Calculation	FUS	✓
Depth of Cover Required	2.4m	✓
Maximum Allowable Pressure	551.6 kPa (80 psi)	✓
Minimum Allowable Pressure	275.8 kPa (40 psi)	✓
Minimum Allowable Pressure during fire flow conditions	137.9 kPa (20 psi)	✓

4.5 Estimated Water Demands

Table 4-2 below summarizes the anticipated water demands for the proposed development:

Table 4-2 : Water Demand Summary

Water Demand Conditions	Totals (L/sec)
Average Day	0.04
Max Day	0.33
Peak Hour	0.51

4.6 Boundary Conditions

Hydraulic Grade Line (HGL) boundary conditions were obtained from the City for design purposes. A copy of the correspondence received from the City is provided in **Appendix E**.

The following hydraulic grade line (HGL) boundary conditions were provided:

- Minimum HGL = 105.5m
- Max Day + Fire Flow = 108.0m
- Maximum HGL = 115.5m

Based on a ground elevation of approximately 65.0m at the boundary condition location this results in a system water pressure between 56.5 and 71.3 psi.

4.7 Fire Flow Requirements

Water for fire protection will be available utilizing the proposed fire hydrants located along the adjacent roadways: Main Street, Oblate Avenue, and Hazel Street. The required fire flows for the proposed building was calculated based on typical values as established by the Fire Underwriters Survey 1999 (FUS).

The following equation from the Fire Underwriters document "Water Supply for Public Fire Protection", 1991, was used for calculation of the on-site supply rates required to be supplied by the hydrants:

$F = 200 * C * \sqrt{(A)}$

where:

F	=	Required Fire flow in Litres per minute
C	=	Coefficient related to type of Construction
A	=	Total Floor Area in square metres

The proceeding **Table 4-3** summarizes the parameters used for estimating the Required Fire Flows (RFF) based on the Fire Underwriters Survey (FUS) and the latest City of Ottawa Technical Bulletins. The RFFs were estimated in accordance with ISTB-2018-02, and based on floor areas provided by the architect, which are illustrated in **Appendix H.**

The following summarizes the parameters used for the proposed building.

- Type of Construction Wood frame
- Occupancy Combustible
- Sprinkler Protection No Sprinkler

Table 4-3 - Summary of Design Parameters Used in Calculating Required Fire Flows (RFF) Using FUS

Design Parameter	172 Main Street
Coefficient Related to type of Construction., C	1.5
Total Floor Area (m2)	498
Fire Flow prior to reduction (L/min)	7,000
Reduction Due to Occupancy Non-combustible (-25%), Limited Combustible (-15%), Combustible (0%), Free Burning (+15%), Rapid Burning (+25%)	0%
Reduction due to Sprinkler (Max 50%) Sprinkler Conforming to NFPA 13 (-30%), Standard Water Supply (-10%), Fully Supervised Sprinkler (-10%)	0%
Increase due to Exposures	+50%
Can the Total Fire Flow be Capped at 10,000 L/min (167 L/sec) based on "TECHNCAL BULLETIN ISTB-2018-02", (yes/no)	No
Total RFF	**183**

The estimated required fire flow (RFF) based on the FUS methods is 183 L/sec for the proposed apartment building at 172 Main Street.

4.8 Review of Hydrant Spacing

A review of the hydrant spacing was completed to ensure compliance with Appendix I of Technical Bulletin ISTB-2018-02. As per Section 3 of Appendix I all hydrants within 150 metres were reviewed to assess the total possible contribution of flow from these contributing hydrants. For each hydrant the distance to the proposed building was determined to arrive at the contribution of fire flow from each. All hydrants are expected to be of Class AA as per Section 5.1 of Appendix I. For each hydrant the straight-line distance, distance measured along a fire route or roadway, whether its location is accessible, and its contribution to the required fire flow.

Table 4-4 – Required Fire Flows

Building	Required Fire Flow (L/min)	Available Fire Flow Based on Hydrant Spacing as per ISTB-2018-02 (L/min)
172 Main Street	11,000 (or 183 L/sec)	±11,400

The total available contribution of flow from hydrants was estimated at 11,400 L/min, whereas the required fire flows (RFF) for each building are 11,000 L/min. Therefore, the available flows from hydrants exceed each building's fire flow requirements as identified in Appendix I of Technical Bulletin ISTB-2018-02. Additional information on the available flows from hydrants is provided in **Table B-3**.

5 Sewage Servicing

5.1 Existing Sewage Conditions

The site is vacant and was used as a parking space. There is not existing sanitary lateral or infrastructure within the site.

5.2 Proposed Sewage Conditions

It is proposed to provide single sanitary sewer service connection from the proposed apartment building to the existing sanitary sewer on Main Street. The sanitary sewer lateral were sized based on a population flow with an area-based infiltration allowance. 135mm diameter sanitary sewer laterals are proposed with a minimum 2% slope, having a capacity of 16.3 L/sec based on Manning's Equation under full flow conditions. **Table 5-1** below summarizes the design parameters used.

Table 5-1 – Summary of Wastewater Design Criteria / Parameters

Design Parameter	Value	Applies
Population Density – Single-family Home	3.4 persons/unit	
Population Density – Semi-detached Home	2.7 persons/unit	
Population Density – Duplex	2.3 persons/unit	
Population Density – Townhome (row)	2.7 persons/unit	
Population Density – Bachelor Apartment	1.4 persons/unit	
Population Density – Bachelor + Den Apartment	1.4 persons/unit	
Population Density – One Bedroom Apartment	1.4 persons/unit	
Population Density – One Bedroom plus Den Apartment	1.4 persons/unit	
Population Density – Two Bedroom Apartment	2.1 persons/unit	✓
Population Density – Two Bedroom plus Den Apartment	2.1 persons/unit	
Average Daily Residential Sewage Flow	280 L/person/day	✓
Average Daily Dental Office Sewage Flow	275 L/person/day	✓
Average Daily Commercial / Intuitional Flow	28,000 L/gross ha/day	
Average Light / Heavy Industrial Daily Flow	35,000 / 55,000 L/gross ha/day	
Residential Peaking Factor – Harmon Formula (Min = 2.0, Max =4.0, with K=0.8)	$M = 1 + \frac{14}{4 + P^{0.5}} * k$	✓
Commercial Peaking Factor	1.5	
Institutional Peaking Factor	1.5	
Industrial Peaking Factor	As per Table 4-B (SDG002)	
Unit of Peak Extraneous Flow (Dry Weather / Wet Weather)	0.05 or 0.28 L/s/gross ha	
Unit of Peak Extraneous Flow (Total I/I)	0.33 L/s/gross ha	✓

The estimated peak sanitary flow rate from the proposed property is **0.31 L/sec** based on City Design Guidelines. Sewage rates below include a total infiltration allowance of 0.33 L/ha/sec based on the total gross site area, and 120m^2 of commercial space at 5 L/m^2/s.

Table 5-2 – Summary of Anticipated Sewage Rates

Sewage Condition	Sanitary Sewage Flow (L/sec) 172 Main Street
Peak Sewage Flow	0.30
Infiltration Flow (at 0.33 L/ha/sec)	0.01
Peak Wet Weather Sewage Flow	0.31

The minimum sewer capacity of the 450mm diameter connecting sewer run on Main Street (with a slope of 0.30%) has a calculated full flow capacity of 154.2 L/sec. The total estimated peak sewage flow is 0.31 L/s, which is only minor (0.08%) to the total capacity of the existing 450mm sanitary sewer on Main Street.

6 Storm Servicing & Stormwater Management

The proposed site is located within the Rideau Valley Conservation Authority (RVCA) jurisdiction, stormwater works are therefore subject to both the Rideau Valley Conservation Authority (RVCA) and City of Ottawa (COO) approval. The RVCA was contacted to discuss the stormwater management quality control requirements.

Correspondence from the RVCA is provided in **Appendix F**, which clarifies that no onsite quality control is required. Similarly, no quality control was noted in the pre-consultation meeting held with the COO, which is also provided in **Appendix F.**

Also clarified during the pre-consultation meeting, the requirements related to stormwater quantity control are noted as follows:

- *Coefficient (C) of runoff determined as per existing conditions but in no case more than 0.50.*
- *Time of concentration (Tc) = 20 minutes or can be calculated; not be less than 10 minutes*
- *All storm events greater than 5-year, and up to 100-year, event must be detained on site.*
- *Foundation drains are to be independently connected to sewer main unless being pumped with appropriate back up power, sufficient sized pump and back flow prevention.*
- *Roof drains are to be connected downstream of any incorporated ICD within the SWM system.*

6.1 Design Criteria

The proposed stormwater system is designed in conformance with the latest version of the City of Ottawa Design Guidelines (October 2012). Section 5 “Storm and Combined Sewer Design” and Section 8 “Stormwater Management”. A summary of the design criteria that relates to this design report is the proceeding sections below.

6.2 Minor System Design Criteria

- The storm sewer was sized based on the Rational Method and Manning’s Equation under free flow conditions for the 5-year storm using a 10-minute inlet time.
- Since a detailed site plan was available for the site, including building footprints, calculations of the average runoff coefficients for each drainage area was completed.
- Minimum sewer slopes to be based on minimum velocities for storm sewers of 0.80 m/sec.

6.3 Major System Design Criteria

- The major system has been designed to accommodate on-site detention with sufficient capacity to attenuate the 100-year design storm. On-site storage is calculated based on the 100-year design storm using the Modified Rational Method (MRM).
- On site storage is provided and calculated for up to the 100-year design storm.
- Overland flow routes are provided.
- The vertical distance from the spill elevation and the ground elevation at the building is at least 150mm.
- The emergency overflow spill elevation is at least 30 cm below the lowest building opening.

6.4 Runoff Coefficients

Under pre-development conditions the majority of the site is gravel therefore a runoff coefficient of 0.60 was used. Under post-development conditions, the site will consist of hard surfaces with a runoff coefficient of 0.9. The runoff coefficients for pre-development and post-development catchments are provided in **Appendix D**, with a summary provided in **Table 6-1** below.

Table 6-1 – Summary of Runoff Coefficients

Location	Area (hectares)	Pre-Development Runoff Coefficient, C_{AVG}	Post-Development Runoff Coefficient, C_{AVG}
Entire Site	0.0336	0.60	0.90

6.5 Time of Concentration

A minimum time of concentration of 10-minutes was used for both pre-development and post-development subcatchments. under pre-development conditions the Tc was calculated at 6.4 min, however the minimum value of 10 minutes was used for peak flow conditions.

6.6 Pre-Development Conditions

Under pre-development conditions, stormwater runoff from the 0.0336-hectare site drainage to the rear of the lot. Only a single drainage area for the entire site was considered, discharging out the back end of the site.

Table 6-2 – Summary of Pre-Development Flows

Return Period Storm	Total Peak Flows (L/sec)
2-year	7.6
5-year	10.4
100-year	22.4

6.7 Allowable Release Rate

The allowable release rate of 4.9 L/sec from the proposed site was calculated based on a 5-year storm event at a Tc of 10 min. **Table D-3** provides detailed calculations on the allowable peak flow.

6.8 Proposed Stormwater System

Stormwater runoff from the proposed site will drain from a combination of controlled and uncontrolled areas. As a result of the changes onsite the overall post-development runoff coefficient will increase over pre-development conditions. This increase in runoff is the result of changes due to site development (i.e. additional hard surfaces, roof areas and hard landscaping).

A storm drainage plan (C004) is provided in Appendix H. A total two (2) subcatchments (or drainage areas) within the development site are shown on this drawing with average runoff coefficients calculated for each drainage area. The proposed stormwater works consists of the following elements:

- Infiltration area consisting of clear stone with an assumed void ratio of 0.4.

Table 6-3 – Summary of Post-Development Flows

Return Period Storm	Total Uncontrolled Peak Flow (L/sec)	Total Controlled Peak Flows (L/sec)
2-year	6.5	1.9
5-year	8.8	2.6
100-year	16.7	4.9

6.9 Flow Attenuation Storage

As a result of utilizing flow control, stormwater detention is necessary. This will be achieved utilizing using infiltration storage under the parking area. Using the allowable release rates, the Modified Rational Method was used to determine the 2-year, 5-year, and 100-year volumes that will occur for corresponding release rates.

Table **D-7**, provides the volumes necessary to detain the release rates. **Table D-5** summarizes the combined controlled and uncontrolled flows leaving the subject site. A summary of the 100-year flows, 100-year required storage volumes, with the provided volumes in Identified in **Table 6-4** below.

Table 6-4 – Summary of Post-Development Peak Flows and Storage

Area No.	Outlet	Release Rate (L/s)			Storage Required (m^3) (MRM)			Total Storage Provided (m^3)	Control Method
		2-yr	5-yr	100-yr	2-yr	5-yr	100-yr		ICD
S01	Main Street	1.4	1.9	3.6	4.5	6.0	11.2	12.0	TEMPEST LMF TYPE 55

7 Erosion & Sediment Control

During all construction activities, erosion and sedimentation shall be controlled by the following techniques:

- Filter cloth shall be installed between the frame and cover of all adjacent catch basins and catch basin manhole structures.
- Heavy duty silt fencing will be used to control runoff around the construction area. Silt fencing locations are identified on the site grading and erosion control plan.
- A mud mat will be installed at the construction entrance to help avoid mud from being transported to offsite roads.
- Visual inspection shall be completed daily on sediment control barriers and any damage repaired immediately. Care will be taken to prevent damage during construction operations.
- In some cases, barriers may be removed temporarily to accommodate the construction operations. The affected barriers will be reinstated at night when construction is completed.
- Sediment control devices will be cleaned of accumulated silt as required. The deposits will be disposed of as per the requirements of the contract.
- During the course of construction, if the engineer believes that additional prevention methods are required to control erosion and sedimentation, the contractor will install additional silt fences or other methods as required to the satisfaction of the engineer.
- Construction and maintenance requirements for erosion and sediment controls are to comply with Ontario Provincial Standard Specification (OPSS) OPSS 805 and City of Ottawa specifications.

8 Conclusions and Recommendations

This Functional Servicing & Stormwater Report outlines the rationale which will be used to service the proposed development. The following summarizes the servicing requirements for the site:

Water

- A single 38mm copper water service shall connect into each townhome connecting off the Main street.
- The Required Fire Flows (RFFs) were estimated at **11,000 L/min** (183 L/sec). The total available flows for firefighting purposes, based on the contribution from hydrants, was estimated at **11,400 L/min**.
- Based on hydraulic boundary conditions (HGL) provided by the City of Ottawa, a system pressure of **±56.5 psi** under peak hourly demands is anticipated at the proposed building. This exceeds the City's guideline of 20 psi.

Sewage

- Estimated peak sewage flows **0.31 L/sec** are anticipated. A single 135mm diameter sanitary lateral @ min 1% will be used to service the proposed building.

Stormwater

- For the stormwater system, the allowable capture rate from the entire site was calculated based on a runoff coefficient of 0.50, Time of Concentration of 10 minutes for a 5-year storm event. The allowable release rate for the entire site was calculated to be **4.9 L/sec**. Runoff in excess of this will be detained onsite for up to the 100-year storm.
- One minor surface drainage area will flow uncontrolled to the right-of-way. The 100-year peak flows from the area was accounted for (ie. subtracted) from the total runoff rate to establish the allowable rate.
- In order to meet the allowable release rate, a total retention volume of **±11.2 m^3** metres is required based on the Modified Rational Method in which 50% of the release rate was used.
- The volume necessary to detain the 100-year event, is **11.2 m^3**, whereas the total available storage is approximately **12.0 m^3.**

Erosion & Sediment Control

- Erosion and sediment control methods will be used during construction to limit erosion potential.

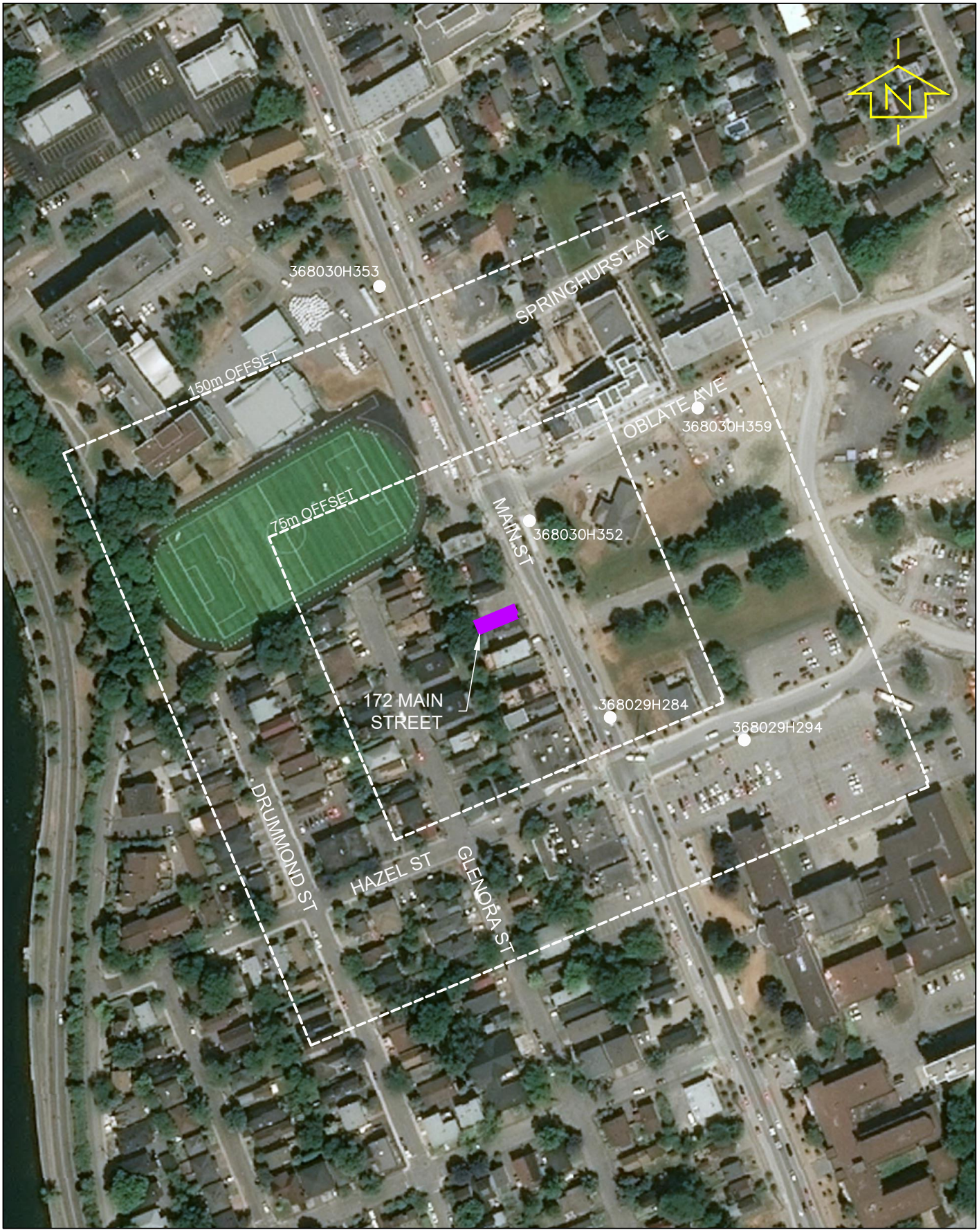
9 Legal Notification

This report was prepared by EXP Services Inc. for the account of 2503858 Ontario Inc.

Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of such third parties. EXP Services Inc. accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this project.

Appendix A - Figures

Figure A-1 – Fire Hydrant Locations



exp Services Inc. 100-2650 Queensview Drive Ottawa, ON K2B 8H6 www.exp.com	DESIGN MZG DRAWN MZG DATE MARCH 2020 FILE NO 258388	172 Main Street 2503858 ONTARIO INC FIRE HYDRANT LOCATIONS	SCALE 1:2500 SKETCH NO FIG A1

Appendix B – Water Servicing Tables

Table B-1 – Water Demand Chart

Table B-2 – Fire Flow Requirements Based on Fire Underwriters Survey (FUS)

Table B-3 – Available Fire Flows Based on Hydrant Spacing

Table B-4 – Estimated Water Pressure at Proposed Building

TABLE B-2
FIRE FLOW REQUIREMENTS BASED ON FIRE UNDERWRITERS SURVEY(FUS) 1999 FOR **172 Main St.**

An estimate of the Fire Flow required for a given fire area may be estimated by:

F = 220 * C * SQRT(A)

where:
F = required fire flow in litres per minute
A = total floor area in m^2 (including all storeys, but excluding basements at least 50% below grade)
C = coefficient related to the type of construction

Task	Options	Multiplier	Input				Value Used	Fire Flow Total (L/min)
Choose Building Frame (C)	Wood Frame	1.5	Wood Frame				1.5	
	Ordinary Construction	1						
	Non-combustible Construction	0.8						
	Fire Resistive Construction	0.6						
Input Building Floor Areas (A)			Area	% Used	Area Used	Comment		
	Floor 3		179	100%	179			
	Floor 2		179	100%	179			
	Floor 1 (Ground)		140	100%	140			
	Basement (At least 50% below grade, not included)							
Fire Flow (F)	F = 220 * C * SQRT(A)							7,364
Fire Flow (F)	Rounded to nearest 1,000							7,000

Reductions/Increases Due to Factors Effecting Burning

Task	Options	Multiplier	Input	Value Used	Fire Flow Change (L/min)	Fire Flow Total (L/min)
Choose Combustibility of Building Contents	Non-combustible	-25%	Combustible	0%	0	7,000
	Limited Combustible	-15%				
	Combustible	0%				
	Free Burning	15%				
	Rapid Burning	25%				
Choose Reduction Due to Sprinkler System	**Adequate** Sprinkler Conforms to NFPA13	-30%	No Sprinkler	0%	0	7,000
	No Sprinkler	0%				
	Standard Water Supply for Fire Department Hose Line and for Sprinkler System	-10%	Not Standard Water Supply or Unavailable	0%	0	7,000
	Not Standard Water Supply or Unavailable	0%				
	Fully Supervised Sprinkler System	-10%	Not Fully Supervised or N/A	0%	0	7,000
	Not Fully Supervised or N/A	0%				

Choose Structure Exposure Distance	Exposures	Separation Dist (m)	Cond	Separation Conditon	Exposed Wall type	Exposed Wall Length: Length (m)	No of Storeys	Lenth-height Factor	Sub-Conditon	Charge (%)	Total Charge (%)	Total Exposure Charge (L/min)	
	Side 1 (west)	5	2	3.1 to 10	Type A	13	2	26	2A	17%	50%	3,500	10,500
	Side 2 (east)	3	1	0 to 3	Type B	9	3	27	1A	21%			
	Front (north)	50	6	> 45.1	Type B	0	0	0	6	0%			
	Back (south)	18.0	3	10.1 to 20	Type A	7	2	30	3A	12%			
Obtain Required Fire Flow	Total Required Fire Flow, Rounded to the Nearest 1,000 L/min =												11,000
	Total Required Fire Flow, L/s =												183

Exposure Charges for Exposing Walls of Wood Frame Construciton (from Table G5)

Type A	Wood-Frame or non-conbustible
Type B	Ordinary or fire-resisitve with unprotected openings
Type C	Ordinary or fire-resisitve with semi-protected openings
Type D	Ordinary or fire-resisitve with blank wall

Conditons for Separation

Separation Dist	Condition
0m to 3m	1
3.1m to 10m	2
10.1m to 20m	3
20.1m to 30m	4
30.1m to 45m	5
> 45.1m	6

TABLE B-3: FIRE FLOW CONTRIBUTIONS BASED ON HYDRANT SPACING

Hydrant #	Location	[1]Distance (m)	[2]Fire Flow Contribution (L/min)	Comment
368030H352	Main Street	53	5700	
368029H284	Main Street	71	5700	
368029H294	Hazel Street	>150	0	
368029H359	Oblate Ave	>150	0	
368029H353	Main Street	>150	0	
Total Fireflow Available in L/min (L/sec) or L/sec			11,400 (190)	
FUS RFF in L/min or L/sec			11,000 (183)	
Meets Requreiment (Yes/No)			Yes	

Notes:

[1]Distance is measured along a road or fire route.

[2]Fire Flow Contribution for Class AA Hydrant from Table 1 of Appendix I, ISTB-2018-02

[3]Straight distance from hydrant ot closest part of building.

TABLE B-4

ESTIMATED WATER PRESSURE AT PROPOSED BUILDING

Description	From	To	Demand (L/sec)	Pipe Length (m)	Pipe Dia (mm)	Dia (m)	Q (m3/sec)	Area (m2)	C	Vel (m/s)	Slope of HGL (m/m)	Head Loss (m)	Elev From (m)	Elev To (m)	*Elev Diff (m)	Pressure From kPa	(psi)	Pressure To kPa	(psi)	Pressure Drop (psi)
Avg Day Conditons																				
Single 25mm watermain	Main	Building	0.08	15 m	38	0.038	0.0001	0.001134	110	0.0705	0.00038	0.0057	64.60	65.00	-0.4	401.2	(58.2)	397.2	(57.6)	0.6
Single 19mm service (1/6th of the demand)	Building	3rd floor	0.01	8 m	19	0.019	0.0000	0.000284	110	0.047	0.0004	0.0032	65.00	73.30	-8.3	397.2	(57.6)	315.8	(45.8)	11.8
Max Day Conditons																				
Single 25mm watermain	Main	Building	0.78	15 m	38	0.038	0.0008	0.001134	110	0.6878	0.02559	0.3838	64.60	65.00	-0.4	499.3	(72.4)	491.6	(71.3)	1.1
Single 19mm service (1/6th of the demand)	Building	3rd floor	0.13	8 m	19	0.019	0.0001	0.000284	110	0.4585	0.02709	0.2167	65.00	73.00	-8.0	491.6	(71.3)	411.0	(59.6)	11.7
Peak Hour Conditons																				
Single 25mm watermain	Main	Building	1.17	15 m	38	0.038	0.0012	0.001134	110	1.0316	0.05421	0.8132	64.60	65.00	-0.4	401.2	(58.2)	389.3	(56.5)	1.7
Single 19mm service (1/6th of the demand)	Building	3rd floor	0.20	8 m	19	0.019	0.0002	0.000284	110	0.6878	0.05741	0.4593	65.00	73.00	-8.0	389.3	(56.5)	306.3	(44.4)	12.0

Water Demand Info

Average Demand =	0.08	L/sec
Max Day Demand =	0.78	L/sec
Peak Hr Deamand =	1.17	L/sec
Fireflow Requriement =	183	L/sec
Max Day Plus FF Demand =	183.8	L/sec

Pipe Lengths

From watermain to building =	15 m
From FF to middle of 3rd floor =	8 m
Hazen Williams C Factor for Friction Loss in Pipe, C=	110

Boundary Conditon

	Min HGL	Max HGL	Peak Hr	Max Day + Fireflow	
HGL (m)	105.5	115.5	105.5	108.0	(From City of Ottawa)
Approx Ground Elev (m) =	64.6	64.6	64.6	64.6	
Approx Bldg FF Elev (m) =	65.00	65.00	65.00	65.00	
Pressure (m) =	40.9	50.9	40.9	43.4	
Pressure (Pa) =	401,229	499,329	401,229	425,754	
Pressure (psi) =	58.2	72.4	58.2	61.8	

TABLE B1: Water Demand Chart

Location: 172 Main Street
Project No: OTT-00258388
Designed by: M. Ghadban
Checked By: B. Thomas
Date Revised: March 2020

Water Consumption
Residential = **350** L/cap/day
Commercial (Dental)= **275** L/cap/day

Population Densities

Single Family	3.4	person/unit
Semi-Detahced	2.7	person/unit
Duplex	2.3	person/unit
Townhome (Row)	2.7	person/unit
Bachelor Apartment	1.4	person/unit
1 Bedroom Apartment	1.4	person/unit
2 Bedroom Apartment	2.1	person/unit
3 Bedroom Apartment	3.1	person/unit
4 Bedroom Apartment	4.1	person/unit
Avg. Apartment	1.8	person/unit

Proposed Buildings	No. of Residential Units										(1) Total Persons (pop)	Residential Demands in (L/sec)					Commercial						Total Demands (L/sec)		
	Singles/Semis/Towns				Apartments								Peaking Factors (x Avg Day)						Peaking Factors (x Avg Day)						
	Single Family	Semi-Detached	Duplex	Townhome	Studio	1 Bedroom	2 Bedroom	3 Bedroom	4 Bedroom	Avg Apt.		Avg. Day Demand (L/day)	Max Day	Peak Hour	Max Day Demand (L/day)	Peak Hour Demand (L/day)	Total Persons (pop)	Avg Demand (L/day)	Max Day	Peak Hour	Max Day Demand (L/day)	Peak Hour Demand (L/day)	Avg Day (L/s)	Max Day (L/s)	Max Hour (L/s)
172 Main St. Floor 1											15.0	4,125	9.50	14.30	39,188	58,988							0.048	0.454	0.683
172 Main St. Floor 2							2				4.2	1,470	9.50	14.30	13,965	21,021							0.017	0.162	0.243
172 Main St. Floor 3							2				4.2	1,470	9.50	14.30	13,965	21,021							0.017	0.162	0.243
Total =							4				23.4	7,065	9.50	14.30	67,118	101,030							0.08	0.78	1.17

PEAKING FACTORS FROM MOECC TABLE 3-3 (Peaking Factors for Water Systems Servicing Fewer Than 500 persons)

Dwelling Units Serviced	Equiv Pop	Night Min Factor	Maximum Day Factor	Peak Hour Factor
10	30	0.10	9.50	14.30
50	150	0.10	4.90	7.40
100	300	0.20	3.60	5.40
150	450	0.30	3.00	4.50
167	500	0.40	2.90	4.30

Comments:
1. Ground floor space to be used as a Dental Office. A total population of 15 was assumed.

Appendix C – Sanitary Servicing Tables

Table C-1 – Sanitary Sewer Design Sheet

Table C-1: SANITARY SEWER CALCULATION SHEET

LOCATION				RESEDENTIAL AREAS AND POPULAITONS												COMMERCIAL			INDUSTRIAL			INSTITUTIONAL		INFILTRATION				SEWER DATA						
					NUMBER OF UNITS							(1) POPULATION				AREA (m²)			AREA (ha)					AREA (ha)										
Street	U/S MH	D/S MH	Desc	Area (ha)	Singles	Studio	Semi	1-Bed Apt.	2-Bed Apt.	3-Bed Apt.	4-Bed Apt.	INDIV	ACCU	Peak Factor	Peak Flow (L/sec)	INDIV	ACCU	Peak Flow (L/sec)	INDIV	ACCU	Peak Factor (per	AREA (Ha)	ACCU AREA (Ha)	INDIV	ACCU	INFILT FLOW (L/s)	TOTAL FLOW (L/s)	Nom Dia (mm)	Actual Dia (mm)	Slope (%)	Length (m)	Capacity (L/sec)	Q/Q_{CAP} (%)	Full Velocity (m/s)
172 Main Street	Site	450mm Main										15	15	4.00	0.19												0.19							
				0.0336					4			8.4	23.4	4.00	0.30									0.0336	0.0336	0.011	0.31	135	139.7	3.16	82.5	22.4	1%	2.16
				0.034					**4**			**23**												**0.034**										

Residential Avg. Daily Flow, q (L/p/day) =	280	Commercial Peak Factor =	1.5	(when area >20%)	Peak Population Flow, (L/sec) =	P*q*M/86.4	Unti Type / Persons/Unit
Commercial (Dental), q (L/p/day) =	275		1.0	(when area <20%)	Peak Extraneous Flow, (L/sec) =	I*Ac	Singles 3.4
					Residential Peaking Factor, M =	1 + (14/(4+P^0.5)) * K	Studio 1.4
Institutianal Avg. Daily Flow (L/s/ha) =	28,000	Institutional Peak Factor =	1.5	(when area >20%)	A_c = Cumulative Area (hectares)		Semi 2.7
or L/gross ha/sec =	0.324		1.0	(when area <20%)	P = Population (thousands)		1-bed Apt. Unit 1.4
Light Industrial Flow (L/gross ha/day) =	35,000						2-bed Apt. Unit 2.1
or L/gross ha/sec =	0.40509	Residential Correction Factor, K =	0.80		Sewer Capacity, Qcap (L/sec) =	$1/N\ S^{1/2}\ R^{2/3}\ A_c$	3-bed Apt. Unit 3.1
Light Industrial Flow (L/gross ha/day) =	55,000	Manning N =	0.013		(Manning's Equation)		4-bed Apt. Unit 4.1
or L/gross ha/sec =	0.637	Peak extraneous flow, I (L/s/ha) =	0.33	(Total I/I)			

Comments:
1. Ground floor space to be used as a Dental Office. A total population of 15 was assumed.

Designed:	Project:
M. Ghadban, P.Eng.	172 Main Street
Checked:	Location:
J. Fitzpatrick, P.Eng.	Ottawa, Ontario
File Reference:	Page No:
258388 Sanitary Design Sheet, March 2020.xlsx	**1 of 1**

Appendix D – Stormwater Servicing Tables

Table D-1 – Estimation of Catchment Time of Concentration (Pre-Development Conditions)

Table D-2 – Estimation of Pre-Development Peak Flows

Table D-3 – Estimation of Allowable Peak Flows (Based On 5-Year Storm With C=0.50)

Table D-4 – Average Runoff Coefficients for Post-Development

Table D-5 – Summary of Post-Development Peak Flows (Uncontrolled and Controlled)

Table D-6 – Summary of Post Development Storage

Table D-7 – Storage Volumes for 2-year, 5-year and 100-Year Storms (Full Site)

Table D-8 – 5-Year Storm Sewer Calculation Sheet

TABLE D-1: ESTIMATION OF CATCHMENT TIME OF CONCENTRATION (PRE-DEVELOPMENT CONDITIONS)

Catchment No.	Area (ha)	High Elev (m)	Low Elev (m)	Flow Path Length (m)	Indiv Slope	Avg. C	Time of Conc. Tc (min)	Description
Full Site	0.0336	64.7	64.1	27.0	2.2%	0.60	4.64	See Note 1
Totals	0.0336							

Notes

1) For Catchments with Runoff Coefficient less than C=0.40, Time of Concentration Based on Federal Aviation Formula (Airport Method), from MTO Drainage Manual Equation 8.16, where: $T_C = 3.26*(1.1-C)*L^{0.5}/S_W^{0.33}$

2) For Catchments with Runoff Coefficient greater than C=0.40, Time of Concentration Based on Bransby Williams Equation, from MTO Drainage Manual Equation 8.15, where: $T_C = 0.057*L/(S_W^{0.2}*A^{0.1})$

TABLE D-2: ESTIMATION OF PEAK FLOWS (PRE-DEVELOPMENT CONDITIONS) USING CALCULATED TIME OF CONCENTRATION

Catchment No.	Area (ha)	Outlet Location	Time of Conc, Tc (min)	Storm = 2 yr			Storm = 5 yr			Storm = 100 yr		
				I_2 (mm/hr)	Cavg	Q_{2PRE} (L/sec)	I_5 (mm/hr)	Cavg	Q_{5PRE} (L/sec)	I_{100} (mm/hr)	Cavg	Q_{100PRE} (L/sec)
Full Site	0.0336		4.64	106.33	0.60	6.0	145.01	0.60	8.1	249.37	0.75	17.5
Totals	0.0336					6.0			8.1			17.5

Notes

1) Intensity, $I = 732.951/(Tc+6.199)^{0.810}$ (2-year, City of 0ttawa)

2) Intensity, $I = 998.071/(Tc+6.035)^{0.814}$ (5-year, City of 0ttawa)

3) Intensity, $I = 1735.688/(Tc+6.014)^{0.820}$ (100-year, City of Ottawa)

4) Cavg for 100-year is increased by 25% to a maximum of 1.0

TABLE D-3: ESTIMATION OF ALLOWABLE PEAK FLOWS (Based on 5-year STORM WITH C=0.50)

Catchment No.	Area (ha)	Outlet Location	Time of Conc, Tc (min)	Storm = 2 yr			Storm = 5 yr		
				I_2 (mm/hr)	Cavg	Q_{ALLOW} (L/sec)	I_5 (mm/hr)	Cavg	Q_{ALLOW} (L/sec)
Full Site	0.0336		10.00	76.81	0.50	3.6	104.29	0.50	**4.9**

Notes

1) Allowable Capture Rates are based on meeting pre-development peak flows for all storms up to 100-year event. Allowable runoff based on Cavg or C = 0.50 (maximum)

2) Time of Concentration (Tc) is based on the standard 10 minutes as per City Guidelines.

TABLE D-4: AVERAGE RUNOFF COEFFICIENTS (Post-Development)

Runoff Coeffients $C_{ASPH/CONC}$ = 0.90 C_{ROOF} = 0.90 C_{GRASS} = 0.20

Area No.	Asphalt & Conc Areas (m^2)	A * C_{ASPH}	Roof Areas (m^2)	A * C_{ROOF}	Grassed Areas (m^2)	A * C_{GRASS}	Sum AC	Total Area (m^2)	C_{AVG} (see note)	Comment
S01								310	0.9	Surface /Roof
S02								26	0.9	Surface Areas
Totals								336	0.90	

Notes

1) Cavg derived with area-weighting command in PCSWMM

TABLE D-5: SUMMARY OF POST-DEVELOPMENT PEAK FLOWS (Uncontrolled and Controlled)

Area No	Area (ha)	Time of Conc, Tc (min)	Storm = 2 yr				Storm = 5 yr				Storm = 100 yr				Comments
			C_{AVG}	I_2 (mm/hr)	Q (L/sec)	Q_{CAP} (L/sec)	C_{AVG}	I_5 (mm/hr)	Q (L/sec)	Q_{CAP} (L/sec)	C_{AVG}	I_{100} (mm/hr)	Q (L/sec)	Q_{CAP} (L/sec)	
S01	0.0310	10	0.90	76.81	6.0	**(1.4)**	0.90	104.19	8.1	**(1.9)**	1.00	178.56	15.4	**(3.6)**	
S02	0.0026	10	0.90	76.81	0.5	0.5	0.90	104.19	0.7	0.7	1.00	178.56	1.3	1.3	
Total =	0.0336					**(1.9)**				**(2.6)**				**(4.9)**	

Notes

2-yr Storm Intensity, I = 732.951/(Tc+6.199)^0.810 (City of Ottawa)

5-yr Storm Intensity, I = 998.071/(Tc+6.035)^0.814 (City of Ottawa)

100-yr Storm Intensity, I = 1735.688/(Tc+6.014)&^0.820 (City of Ottawa)

Time of Concentration (min), Tc = ***10***

For Flows under column Qcap which are shown in brackets ***(0.0)*** *, denotes flows that are controlled*

TABLE D-6: SUMMARY OF POST DEVELOPMENT STORAGE REQUIREMENTS

Area No.	Area (ha)	Release Rate (L/s)			[1] Storage Required (m^3)			Storage Provided (m^3)					Control Method
		2-yr	5-yr	100-yr	2-yr	5-yr	100-yr	Roof	Surface Ponding	UG Filtration	UG CB/MHs	Total	
S01	0.0310	1.4	1.9	3.6	4.5	6.0	11.2		0.2	11.4	0.4	12.0	IPEX LMF-55
S02	0.0026	0.5	0.7	1.3									

Notes

1) Storage Requried Based on the Modified Rational Method (MRM) for the relase rates noted.

Table D-7 - Storage Volumes for 2-year, 5-Year and 100-Year Storms

Area No: S01
C_{AVG} = 0.90
C_{AVG} = 1.00 (100-yr, Max 1.0)
Time Interval = 5.00 (mins)
Drainage Area = 0.0310 (hectares)

Duration (min)	Release Rate = 0.7 (L/sec) Return Period = 2 (years) IDF Parameters, A = 732.951, B = 0.810 (I = A/(T_c+C) , C = 6.199					Release Rate = 0.9 (L/sec) Return Period = 5 (years) IDF Parameters, A = 998.071, 0.814 (I = A/(T_c+C) , C = 6.053					Release Rate = 1.8 (L/sec) Return Period = 100 (years) IDF Parameters, A = 1735.688, 0.820 (I = A/(T_c+C) , C = 6.014				
	Rainfall Intensity, I (mm/hr)	Peak Flow (L/sec)	Release Rate (L/sec)	Storage Rate (L/sec)	Storage (m^3)	Rainfall Intensity, I (mm/hr)	Peak Flow (L/sec)	Release Rate (L/sec)	Storage Rate (L/sec)	Storage (m^3)	Rainfall Intensity, I (mm/hr)	Peak Flow (L/sec)	Release Rate (L/sec)	Storage Rate (L/sec)	Storage (m^3)
0	167.2	13.0	0.69	12.3	0.00	230.5	17.9	0.940	16.9	0.00	398.6	34.4	1.790	32.6	0.00
5	103.6	8.0	0.69	7.3	2.20	141.2	11.0	0.940	10.0	3.00	242.7	20.9	1.790	19.1	5.74
10	76.8	6.0	0.69	5.3	3.16	104.2	8.1	0.940	7.1	4.28	178.6	15.4	1.790	13.6	8.16
15	61.8	4.8	0.69	4.1	3.69	83.6	6.5	0.940	5.5	4.99	142.9	12.3	1.790	10.5	9.47
20	52.0	4.0	0.69	3.3	4.01	70.3	5.4	0.940	4.5	5.41	120.0	10.3	1.790	8.5	10.26
25	45.2	3.5	0.69	2.8	4.22	60.9	4.7	0.940	3.8	5.67	103.8	8.9	1.790	7.2	10.74
30	40.0	3.1	0.69	2.4	4.34	53.9	4.2	0.940	3.2	5.84	91.9	7.9	1.790	6.1	11.03
35	36.1	2.8	0.69	2.1	4.42	48.5	3.8	0.940	2.8	5.93	82.6	7.1	1.790	5.3	11.19
40	32.9	2.5	0.69	1.9	4.45	44.2	3.4	0.940	2.5	5.97	75.1	6.5	1.790	4.7	11.25
45	30.2	2.3	0.69	1.7	4.46	40.6	3.2	0.940	2.2	5.97	69.1	6.0	1.790	4.2	11.23
50	28.0	2.2	0.69	1.5	4.45	37.7	2.9	0.940	2.0	5.94	64.0	5.5	1.790	3.7	11.16
55	26.2	2.0	0.69	1.3	4.41	35.1	2.7	0.940	1.8	5.89	59.6	5.1	1.790	3.3	11.05
60	24.6	1.9	0.69	1.2	4.36	32.9	2.6	0.940	1.6	5.81	55.9	4.8	1.790	3.0	10.90
65	23.2	1.8	0.69	1.1	4.30	31.0	2.4	0.940	1.5	5.72	52.6	4.5	1.790	2.7	10.71
70	21.9	1.7	0.69	1.0	4.23	29.4	2.3	0.940	1.3	5.62	49.8	4.3	1.790	2.5	10.50
75	20.8	1.6	0.69	0.9	4.15	27.9	2.2	0.940	1.2	5.50	47.3	4.1	1.790	2.3	10.27
80	19.8	1.5	0.69	0.8	4.06	26.6	2.1	0.940	1.1	5.38	45.0	3.9	1.790	2.1	10.02
85	18.9	1.5	0.69	0.8	3.96	25.4	2.0	0.940	1.0	5.24	43.0	3.7	1.790	1.9	9.75
90	18.1	1.4	0.69	0.7	3.86	24.3	1.9	0.940	0.9	5.10	41.1	3.5	1.790	1.8	9.47
95	17.4	1.4	0.69	0.7	3.75	23.3	1.8	0.940	0.9	4.95	39.4	3.4	1.790	1.6	9.17
100	16.7	1.3	0.69	0.6	3.64	22.4	1.7	0.940	0.8	4.79	37.9	3.3	1.790	1.5	8.86
Max =					**4.46**					**5.97**					**11.25**

Notes

1) Peak flow is equal to the product of 2.78 x C x I x A
2) Rainfall Intensity, I = A/(Tc+C)^B
3) Release Rate = Min (Release Rate, Peak Flow)
4) Storage Rate = Peak Flow - Release Rate
5) Storage = Duration x Storage Rate
6) Maximium Storage = Max Storage Over Duration
7) Parameters a,b,c are for City of Ottawa

TABLE D-8: 2-YEAR STORM SEWER CALCULATION SHEET

Return Period Storm =	**2-year**	(2-year, 5-year, 100-year)
Default Inlet Time=	10	(minutes)
Manning Coefficient =	0.013	(dimensionless)

From Node	To Node	Street	AREA INFO				FLOW (UNRESTRICTED)							SEWER DATA										
			Area No.	Area (ha)	∑ Area (ha)	Average R	Indiv. 2.78*A*R	Accum. 2.78*A*R	Tc (mins)	I (mm/h)	Indiv. Flow	Return Period	Q (L/s)	Dia (mm) Actual	Dia (mm) Nominal	Type	Slope (%)	Length (m)	Capacity, Q_{CAP} (L/sec)	Velocity (m/s) Vf	Velocity (m/s) Va	Time in Pipe, Tt (min)	Hydraulic Ratios Q/Q_{CAP}	Hydraulic Ratios Va/Vf
CB1	1350mm Storm	Main Street	S01	0.0310	0.0310	0.90	0.078	0.078	10.00	76.81	6.0	2-year	6.0	201.2	200	PVC	2.00	35.60	47.10	1.48	0.84	0.71	0.13	0.57
TOTALS =				**0.03**			**0.078**																	

Definitions:
Q = 2.78*AIR, where
Q = Peak Flow in Litres per second (L/s)
A = Watershed Area (hectares)
I = Rainfall Intensity (mm/h)
R = Runoff Coefficients (dimensionless)

Ottawa Rainfall Intensity Values from Sewer Design Guidelines, SDG002

	a	b	c
2-year	732.951	6.199	0.810
5-year	998.071	6.053	0.814
100-year	1735.688	6.014	0.820

Designed:	Project:	
M.Ghadban, P.Eng.	172 Main Street	
Checked:	Location:	
J. Fitzpatrick, P.Eng.	172 Main Street	
Dwg Reference:	File Ref:	Sheet No:
C100 - Site Servicing Plan	**258388 Stormwater - Sewer Design Sheets, March 2020.xlsx**	1 of 1

Appendix E – Consultation / Correspondence

Pre-Consultation Meeting Minutes

Email on Water System Boundary Conditions

Email Received from RVCA on Stormwater Management Requirements

172 Main – Infrastructure Notes

Available Infrastructure:

Sanitary: 375mm Conc (Install 1965)
Storm: 1350mm Conc (Install 1965)
Water: 406mm PVC (Install 2015)

Water Boundary Conditions:

Will be provided at request of consultant. Requests must include the location of the service and the expected loads required by the proposed development. Please provide the following and submit Fire Flow Calculation Sheet per FUS method with the request:

- Location of service
- Type of development and amount of required fire flow (per FUS method – include FUS calculation sheet with request)
- Average Daily Demand (l/s)
- Maximum Hourly Demand (l/s)
- Maximum Daily Demand (l/s)
- Water Supply Redundancy – Fire Flow:
  Applicant to ensure that a second service with an inline valve chamber be provided where the average daily demand exceeds 50 m^3 / day (0.5787 l/s per day)

Water services larger than 19 mm require a Water Data Card. Please complete card and submit.

Stormwater Management:

- Coefficient (C) of runoff determined **as per existing conditions** but in no case more than 0.5
- TC = 20 minutes or can be calculated; not be less than 10 minutes
- Any storm events greater than 5 year, up to 100 year, and including 100 year storm event must be detained on site.
- Foundation drains are to be independently connected to sewermain unless being pumped with appropriate back up power, sufficient sized pump and back flow prevention.
- Roof drains are to be connected downstream of any incorporated ICD within the SWM system.

Stormwater management criteria (Quality Control)

Include a section in the SWM report concerning quality control requirements. It is the consultant's responsibility to check with the relevant Conservation Authority for quality control issues and include this information in the SWM report.

Noise Study:

Traffic Noise Study is required – property fronts Main St (arterial Rd); include rooftop amenity and any outdoor living areas (including balconies) if applicable.
Stationary Noise – consultant to speak to this in their report as per City NCG and NPC 300 Guidelines.

Phase I and Phase II ESA:

- Phase I ESA is required; Phase II ESA may be required depending on the results of the Phase I ESA. Phase I ESA must include an EcoLog ERIS Report.
- Phase I ESA and Phase II ESAs must conform to clause 4.8.4 of the Official Plan that requires that development applications conform to Ontario Regulation 153/04.

Required Studies

- Servicing/Stormwater Management Report
- Geotechnical Study
- Phase I ESA
- Phase II ESA (depends on outcome of Phase I)
- Noise Study (Traffic)

Required Plans

- Site Servicing Plan
- Grade Control and Drainage Plan
- Erosion and Sediment Control Plan (Can be combined with grading plan)

Relevant information

1. The Servicing Study Guidelines for Development Applications are available at the following address: https://ottawa.ca/en/city-hall/planning-and-development/information-developers/development-application-review-process/development-application-submission/guide-preparing-studies-and-plans#servicing-study-guidelines-development-applications
2. Servicing and site works shall be in accordance with the following documents:
   - ⇨ Ottawa Sewer Design Guidelines (October 2012)
   - ⇨ Ottawa Design Guidelines – Water Distribution (2010)
   - ⇨ Geotechnical Investigation and Reporting Guidelines for Development Applications in the City of Ottawa (2007)
   - ⇨ City of Ottawa Slope Stability Guidelines for Development Applications (revised 2012)
   - ⇨ City of Ottawa Environmental Noise Control Guidelines (January, 2016)
   - ⇨ City of Ottawa Park and Pathway Development Manual (2012)
   - ⇨ City of Ottawa Accessibility Design Standards (2012)
   - ⇨ Ottawa Standard Tender Documents (latest version)
   - ⇨ Ontario Provincial Standards for Roads & Public Works (2013)
3. Record drawings and utility plans are also available for purchase from the City (Contact the City's Information Centre by email at InformationCentre@ottawa.ca or by phone at (613) 580-2424 x.44455).
4. Any proposed work in utility easements requires written consent of easement owner.

Moe Ghadban

From: Valic, Jessica <jessica.valic@ottawa.ca>
Sent: Tuesday, March 3, 2020 8:55 AM
To: Moe Ghadban
Cc: Bruce Thomas; Jason Fitzpatrick
Subject: RE: 172 Main Street - Request for Boundary Conditions
Attachments: 172 Main March 2020.pdf

Good Morning Moe,

Here are the boundary conditions for 172 Main:

The following are boundary conditions, HGL, for hydraulic analysis at 172 Main (zone 1W) assumed to be connected to the 406mm on Main St (see attached PDF for location).

Minimum HGL = 105.5m

Maximum HGL = 115.5m

MaxDay + FireFlow (183 L/s) = 108.0m

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

Disclaimer: The boundary condition information is based on current operation of the city water distribution system. The computer model simulation is based on the best information available at the time. The operation of the water distribution system can change on a regular basis, resulting in a variation in boundary conditions. The physical properties of 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.

Please do not hesitate to contact me with any questions/concerns.

Regards,

Jessica Valic, E.I.T.
Engineering Intern
Planning, Infrastructure and Economic Development Department - Services de la planification, de l'infrastructure et du développement économique
Development Review - Central
City of Ottawa | Ville d'Ottawa
110 Laurier Avenue West Ottawa, ON | 110, avenue. Laurier Ouest. Ottawa (Ontario) K1P 1J1
613.580.2424 ext./poste 15672
jessica.valic@ottawa.ca

From: Moe Ghadban <Moe.Ghadban@exp.com>
Sent: February 28, 2020 11:57 AM
To: Valic, Jessica <jessica.valic@ottawa.ca>

Moe Ghadban

From: Eric Lalande <eric.lalande@rvca.ca>
Sent: Wednesday, March 4, 2020 12:33 PM
To: Moe Ghadban
Cc: Bruce Thomas; Jason Fitzpatrick
Subject: Re: RVCA - Quality requirements for proposed development - 172 Main Street

Hi Moe,

The RVCA will not require quality control measures for the proposed development. Any opportunities to maximize best management practices are encouraged where possible.

Thank you,

Eric Lalande, MCIP, RPP
Planner, RVCA
613-692-3571 x 1137

Get Outlook for Android

From: Moe Ghadban <Moe.Ghadban@exp.com>
Sent: Wednesday, March 4, 2020 12:25:52 PM
To: Eric Lalande <eric.lalande@rvca.ca>
Cc: Bruce Thomas <bruce.thomas@exp.com>; Jason Fitzpatrick <jason.fitzpatrick@exp.com>
Subject: RE: RVCA - Quality requirements for proposed development - 172 Main Street

Hi Eric,

Please see the attached site plan. Thank you.

Regards,

Moe Ghadban, P.Eng
EXP | Engineering Designer
t : +1.613.688.1899 | m : +1.613.808.4089 | e : moe.ghadban@exp.com

exp.com | legal disclaimer
keep it green, read from the screen

From: Eric Lalande <eric.lalande@rvca.ca>
Sent: Wednesday, March 4, 2020 12:15 PM
To: Moe Ghadban <Moe.Ghadban@exp.com>
Subject: Re: RVCA - Quality requirements for proposed development - 172 Main Street

Do you have a site plan available for review,

Thanks,

Eric

Get Outlook for Android

From: Moe Ghadban <Moe.Ghadban@exp.com>
Sent: Wednesday, March 4, 2020 12:12:11 PM
To: Eric Lalande <eric.lalande@rvca.ca>
Cc: Bruce Thomas <bruce.thomas@exp.com>; Jason Fitzpatrick <jason.fitzpatrick@exp.com>
Subject: RVCA - Quality requirements for proposed development - 172 Main Street

Hi Eric,

We are preparing a site servicing and stormwater report for site plan application which consists of a 3-storey apartment unit at 172 Main Street. The first floor will be used as a commercial space, whereas the second and third floor shall be residential (4-2 bedroom units total).

As required by the City, as noted in the pre-consultation meeting, we are emailing the Conservation Authority to provide the water quality requirements for the proposed development.

I'm not sure if it's you who'd review this project, however if you pass this email on to someone else within the RVCA group please CC me on the email. Thank you.

Thank you for your review and input.

Regards,

Moe Ghadban, P.Eng
EXP | Engineering Designer
t : +1.613.688.1899 | m : +1.613.808.4089 | e : moe.ghadban@exp.com
2650 Queensview Drive
Suite 100
Ottawa, ON K2B 8H6
CANADA

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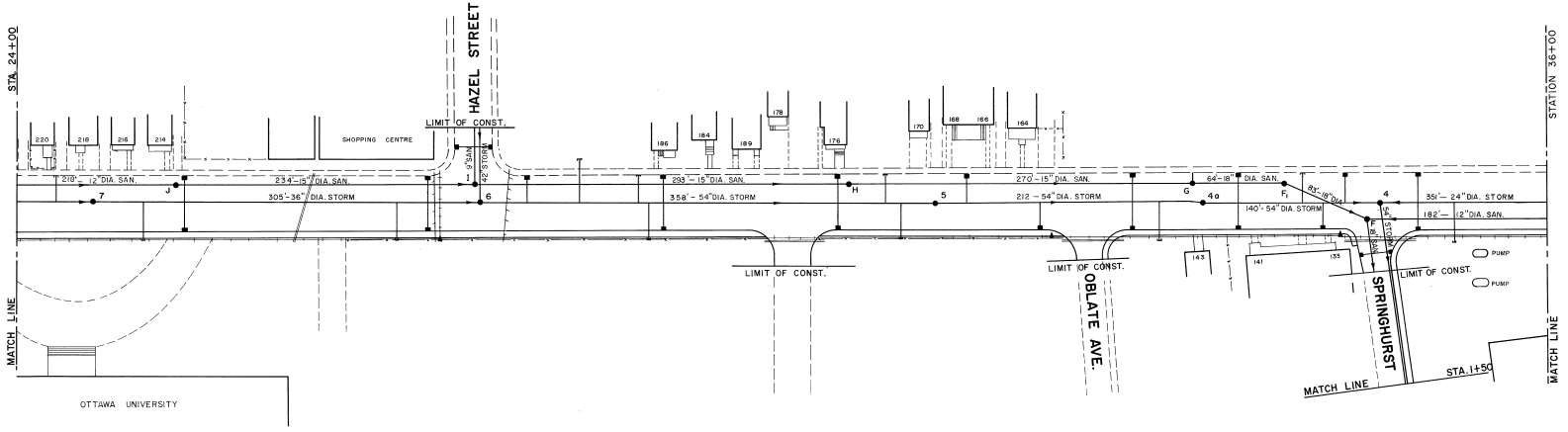
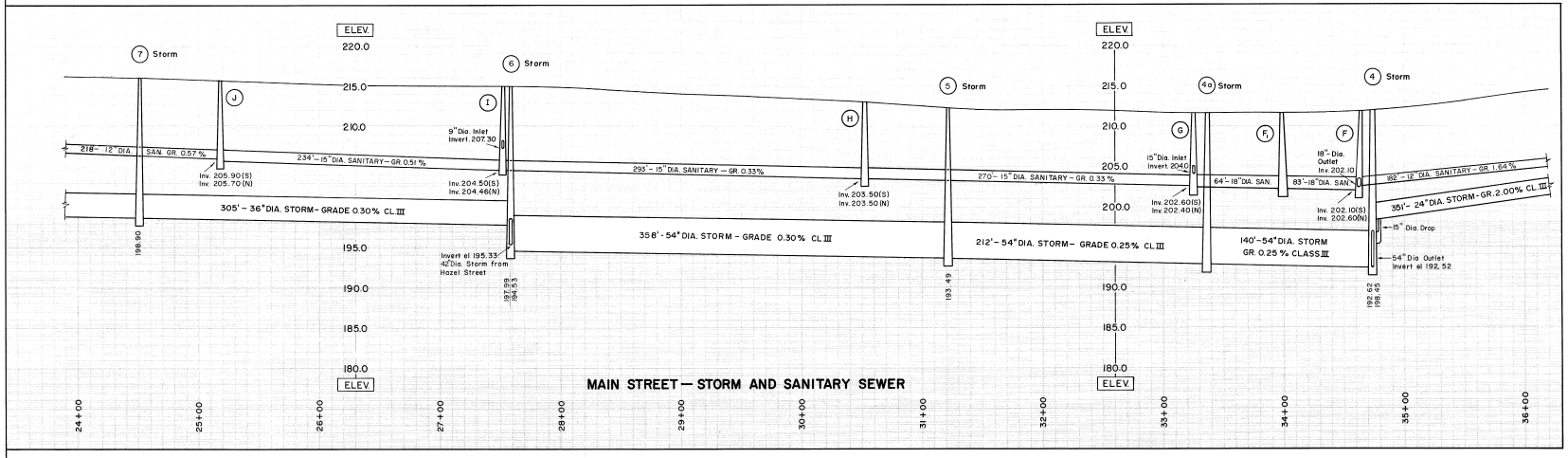
Appendix F – Background Information

City of Ottawa Vault Drawings (Plan and Profiles) 5 pages

Tempest-Technical-Manual (page 5 only)



MAIN STREET



AS BUILT

DATE — JUNE 1967

NO.	DATE	REVISIONS	DRAWN	APP'D

CITY OF OTTAWA
DEPARTMENT OF PLANNING AND WORKS
DESIGN AND SPECIAL PROJECTS BRANCH

MAIN STREET RECONSTRUCTION
DEGAULLE BOULEVARD TO HAWTHORNE AVENUE

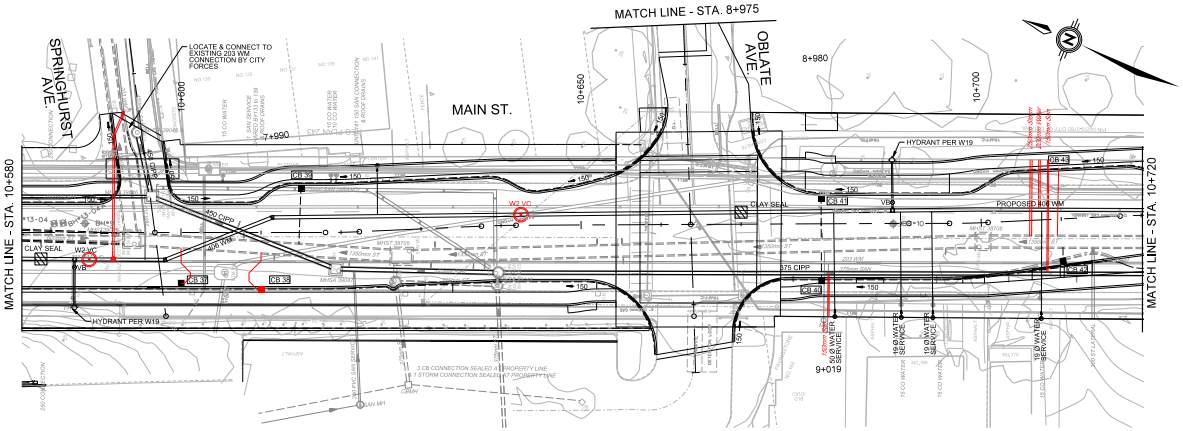
PLAN AND PROFILE
STATION 24+00 TO STATION 36+00

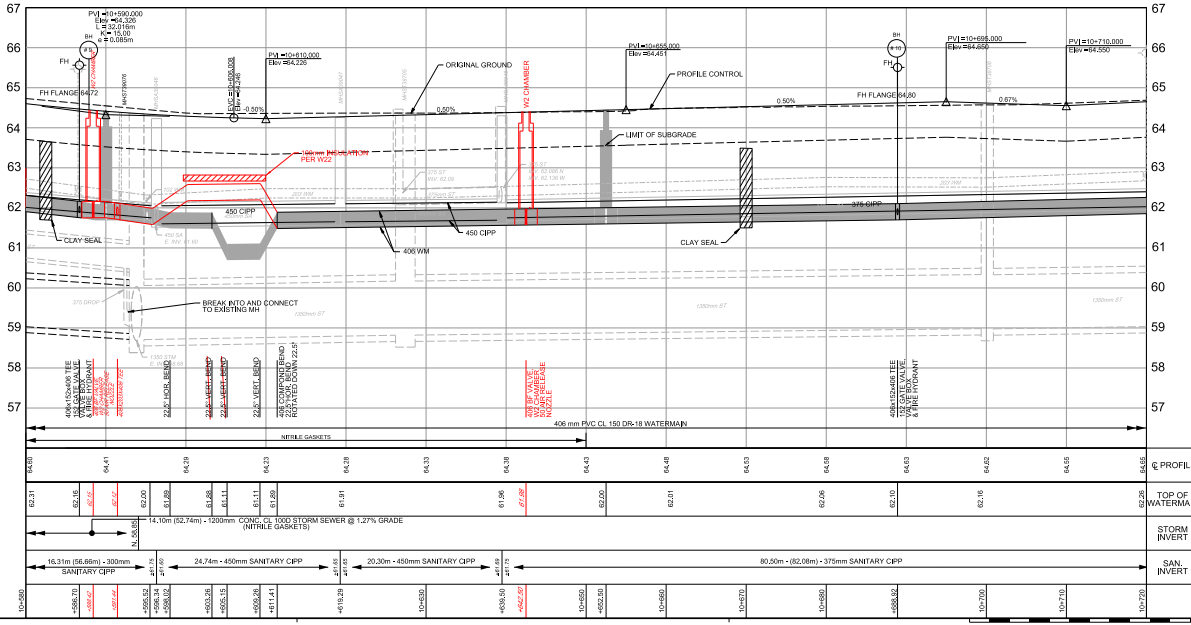
LAUGHLIN, WYLLIE & UFNAL
CONSULTING ENGINEERS
TORONTO OTTAWA
A.J. Watts P.Eng.

CITY OF OTTAWA
ENGINEER I/C DESIGN BRANCH
F.E. Ayers P.Eng.
DIRECTOR OF PLANNING AND WORKS

DESIGN R.K.T. & J.V.F.	DATE JUNE '65	SCALES HORIZONTAL 1" = 40' VERTICAL 1" = 8'
DRAWN H.H. P.C.	DRG. 232 — 3	CONTRACT NO. 65 - 49
CHECKED		

DR 353 - 18





MAIN STREET RECONSTRUCTION

ECHO DRIVE TO GEORGE MCILRAITH BRIDGE

GRADING & DRAINAGE 5
MAIN STREET
STA. 10+580 TO STA. 10+720

W.R. Newell, P.Eng., General Manager
J. Vallee, P.Eng., Project Manager

PARSONS

Ottawa

Contract No.: ISD12-5110
Dwg. No.: 032
Sheet 32 of
Asset No.:
Asset Group:

Des.: MMR
Chk'd.: MK
Dwn.: MMR
Chk'd.: MK
Utility Circ. No.:
Index No.: 16681
Const. Inspector:

Scale: HORIZONTAL 0m 2.5 5 10; VERTICAL 0m 1 2

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

REVISIONS

No.	Description	By	Date (dd/mm/yy)
1	ISSUED FOR CONSTRUCTION	MK	23/04/2015
2	AS-BUILT	MK	27/07/2018

NOTE:

ALL NUMERICAL VALUES THAT ARE NOT STROKED OUT AND REPLACED INITIALED ON AS-BUILT DRAWINGS ARE CONSIDERED TO BE DESIGN VALUES ONLY AND NOT MEASURED IN THE FIELD.

SANITARY MAINTENANCE HOLE DATA

NO.	STATION	OFFSET	COVER	STRUCTURE	ELEVATION TIFRAME	ELEVATION LOWINV.
MH5A36947	10+596.03	4.21 LT	SLF	EXIST.	64.25	EXIST.
MH5A36947	10+615.62	4.78 LT	SLF	EXIST.	64.23	EXIST.
MH5A36948	10+636.16	5.00 RT	SLF	EXIST.	64.31	EXIST.

- OFFSETS ARE FROM CONTROL LINE TO CENTRE OF STRUCTURE
- SLF DENOTES SELF LEVELING FRAME

STORM MAINTENANCE HOLE DATA

NO.	STATION	OFFSET	COVER	STRUCTURE	ELEVATION TIFRAME	ELEVATION LOWINV.
STMH36705	10+594.17	1.43 RT	S24, VSLF	EXIST.	64.34	EXIST.
STMH36705A	10+606.20	6.74 RT	S24, VSLF	EXIST.	64.29	EXIST.
STMH36705	10+626.41	2.71 RT	S24, VSLF	EXIST.	64.29	EXIST.
STMH36706B	10+639.22	7.40 RT	S24, VSDS	EXIST.	64.46	EXIST.
STMH36705	10+699.22	3.01 RT	S24, VSLF	EXIST.	64.46	EXIST.

- OFFSETS ARE FROM CONTROL LINE TO CENTRE OF STRUCTURE
- SLF DENOTES SELF LEVEL FRAME

CATCH BASIN DATA

NO.	STATION	OFFSET	COVER	STRUCTURE	ELEVATION TIFRAME	ELEVATION LOWINV.
CB 37	10+600.00	6.75 RT	S19	705.010 B	64.22	62.84
CB 38	10+610.00	6.75 RT	S19	705.010 B	64.16	62.79
CB 39	10+615.00	5.00 LT	S19	705.010 B	64.13	62.75
CB 40	10+660.00	6.70 RT	S25/S23	705.010 B	64.23	63.10
CB 41	10+680.00	3.55 LT	S19	705.010 B	64.47	63.29
CB 42	10+700.07	5.69 RT	S19	705.010 B	64.28	63.02
CB 43	10+710.00	6.00 LT	S19	705.010 B	64.43	63.05

OFFSETS ARE FROM CONTROL LINE TO FACE OF CURB FOR ALL CATCH BASINS

CATCH BASIN CONNECTION

LOCATION	DIA. (mm)	TYPE	LENGTH (m)	INVERT ELEVATIONS UPSTR.	INVERT ELEVATIONS DOWNSTR.
CB 37 - MAIN	200	PVC SDR35	~~4.46~~ 7.7	62.84	59.85
CB 38 - MAIN	200	PVC SDR35	~~4.47~~ 8.0	62.78	59.80
CB 39 - MAIN	200	PVC SDR35	7.67	62.75	59.80
CB 40 - MAIN	200	PVC SDR35	4.40	63.15	60.89
CB 41 - MAIN	200	PVC SDR35	5.83	63.29	60.89
CB 42 - MAIN	200	PVC SDR35	2.20	63.02	60.78
CB 43 - MAIN	200	PVC SDR35	8.25	63.05	60.18

TABLE OF WATERMAIN FITTINGS

STATION	OFFSET	FITTING	TOP OF WATERMAIN ELEVATION
10+586.70	3.35 RT	406x152x406 TEE	62.16
10+588.23	9.35 RT	HYDRANT, VALVE & VB	62.16
~~10+590.07~~ 10+590.23	3.37 RT	406 BF VALVE, W2 VC	~~62.07~~ 62.10
~~10+590.07~~ 10+590.23	3.42 RT	406x203x406 TEE	~~62.07~~ 62.12
10+596.02	3.42 RT	406 22.5° HOR. BEND	61.89
10+605.28	3.42 RT	406 22.5° VERT. BEND	61.88
10+605.15	0.60 RT	406 22.5° VERT. BEND	~~61.11~~ 62.01
10+606.26	1.03 LT	406 22.5° VERT. BEND	~~61.11~~ 62.10
10+611.41	1.86 LT	406 COMP. BEND	~~61.20~~ 61.97
~~10+612.37~~ 10+612.52	1.39 LT	406 BF VALVE, W2 VC	~~61.07~~ 61.90
10+616.32	1.62 LT	406x152x406 TEE	~~61.17~~ 62.08
10+616.32	7.91 LT	HYDRANT, VALVE & VB	61.89

THRUST BLOCKS AND RESTRAINT JOINTS SHALL BE IN ACCORDANCE WITH W25.3, W25.4, W25.5, W25.6

TILE FRAME: 190mm x 594mm City of Ottawa 2008
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Plot Date: 7/13/2018 6:23:22 AM
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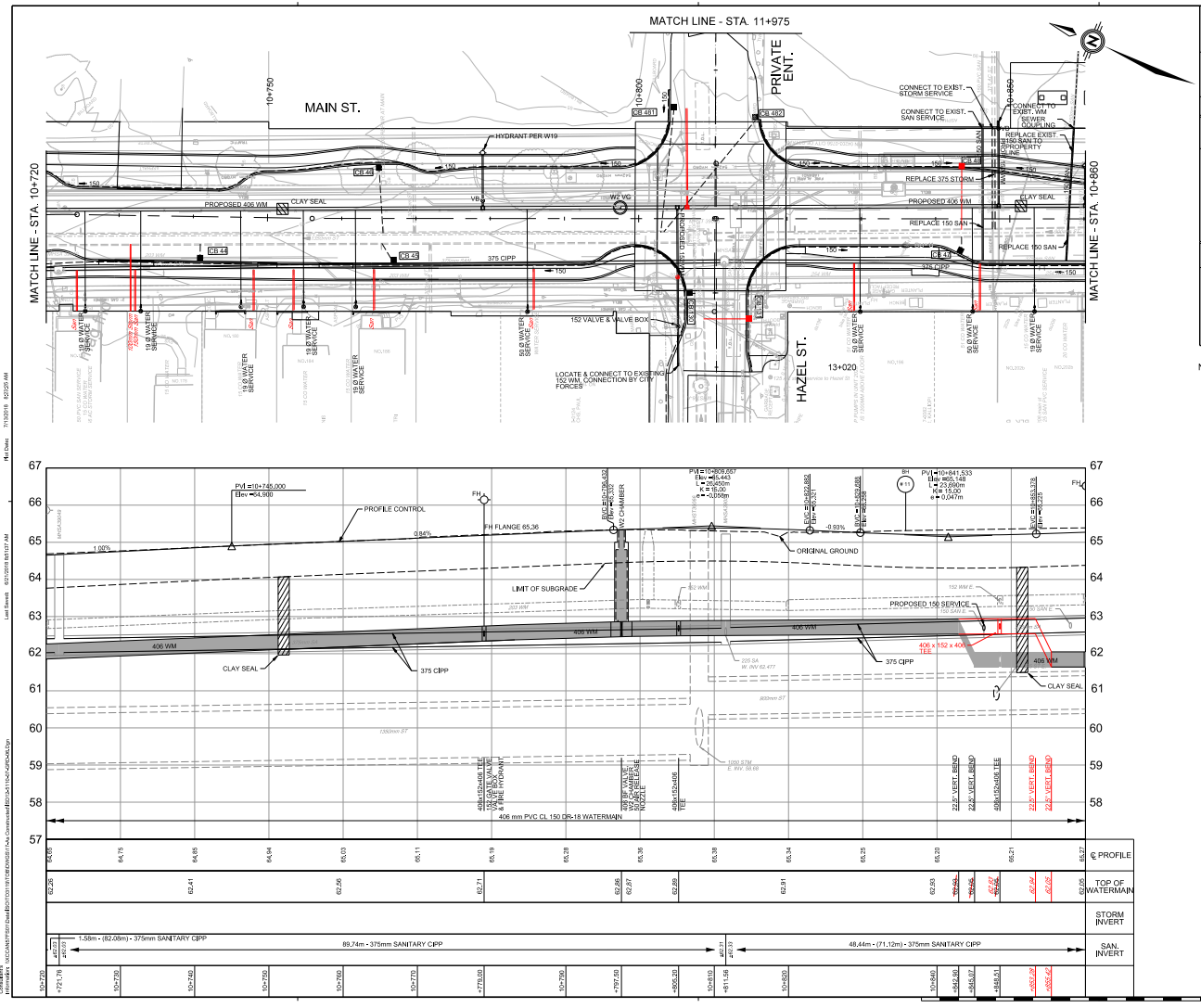


MAIN STREET RECONSTRUCTION
ECHO DRIVE TO GEORGE MCILRAITH BRIDGE

GRADING & DRAINAGE 6
MAIN STREET
STA. 10+720 TO STA. 10+860

W.R. Newell, P.Eng., General Manager
J. Vallee, P.Eng., Project Manager

PARSONS

Ottawa

Contract No. ISD12-5110
Dwg. No. 033
Sheet 33 of

Asset No.
Asset Group

Des. MMR | Chk'd. MK
Dwn. MMR | Chk'd. MK
Utility Circ. No. | Index No. 16681
Const. Inspector

Scale: HORIZONTAL 0m 2.5 5 10; VERTICAL 0m 1 2

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

REVISIONS

No.	Description	By	Date (dd/mm/yy)
1	ISSUED FOR CONSTRUCTION	MK	23/04/2015
2	AS-BUILT	MK	27/07/2018

NOTE:

ALL NUMERICAL VALUES THAT ARE NOT STROKED OUT AND REPLACED IN ITALICS ON AS-BUILT DRAWINGS ARE CONSIDERED TO BE DEISGN VALUES ONLY AND NOT MEASURED IN THE FIELD.

SANITARY MAINTENANCE HOLE DATA

NO.	STATION	OFFSET	COVER	STRUCTURE	ELEVATION TOP/FRAME	ELEVATION LOW/INV.
MHSA3649	10+721,77	1,71 RT	S24/S25	*EXIST.*	64,72	EXIST.
MHSA3650	10+811,52	0,00 RT	SLF/S24	*EXIST.*	65,28	EXIST.

- OFFSETS ARE FROM CONTROL LINE TO CENTRE OF STRUCTURE
- SLF DENOTES SELF LEVELING FRAME

STORM MAINTENANCE HOLE DATA

NO.	STATION	OFFSET	COVER	STRUCTURE	ELEVATION TOP/RIM	ELEVATION LOW/INV.
MHST3366	10+808,24	1,88 RT	S24,VSLF	*EXIST.*	65,35	*EXIST.*

- OFFSETS ARE FROM CONTROL LINE TO CENTRE OF STRUCTURE
- SLF DENOTES SELF LEVELING FRAME

CATCH BASIN DATA

NO.	STATION	OFFSET	COVER	STRUCTURE	ELEVATION TOP/FRAME	ELEVATION LOW/INV.
CB 44	10+741,00	6,00 RT	S19	705,010 B	64,76	63,38
CB 45	10+767,00	6,00 RT	S19	705,010 B	65,21	63,63
CB 46	10+785,00	7,27 LT	S19	705,010 B	64,96	63,58
CB 47	10+843,18	4,83 RT	S19	705,010 B	65,09	63,71
CB 48	10+843,00	6,88 LT	S19	705,010 B	65,12	63,74
CB 481	10+804,26	15,92 LT	S19	705,010 B	65,21	63,83
CB 482	10+816,12	15,73 LT	S19	705,010 B	65,21	63,83

OFFSETS ARE FROM CONTROL LINE TO FACE OF CURB FOR ALL CATCH BASINS

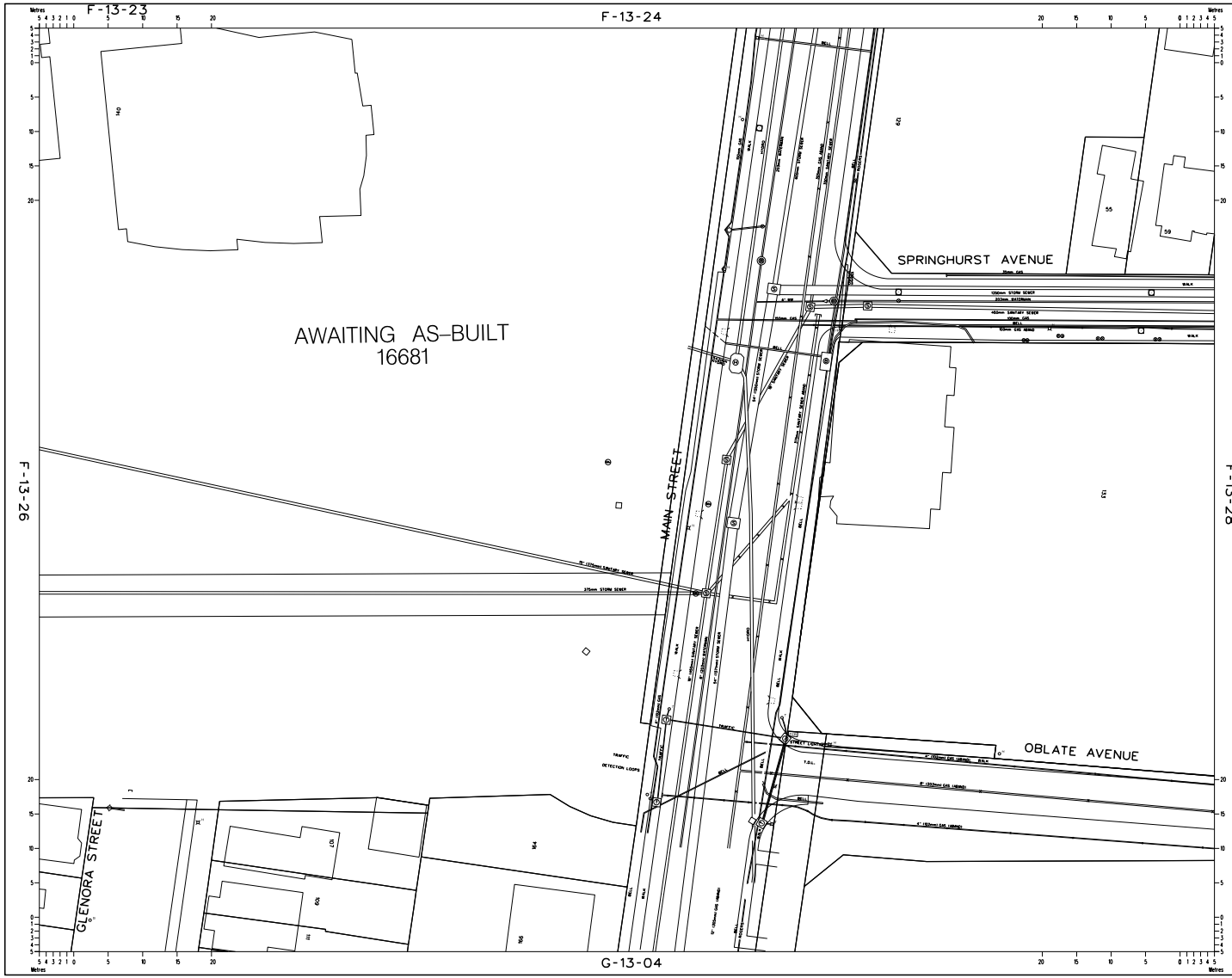
CATCH BASIN CONNECTION

LOCATION	DIA. (mm)	TYPE	LENGTH (m)	INVERT ELEVATIONS UPSTR.	INVERT ELEVATIONS DOWNSTR.
CB 44 - EX. MAIN	200	PVC SDR35	2,60	63,38	60,25
CB 45 - EX. MAIN	200	PVC SDR35	3,30	63,63	60,32
CB 46 - EX. MAIN	200	PVC SDR35	8,53	63,58	60,32
CB 47 - EX. MAIN	200	PVC SDR35	2,22	63,71	61,15
CB 48 - EX. MAIN	200	PVC SDR35	8,20	63,74	61,15
CB 481 - EX. MAIN	200	PVC SDR35	17,6	63,83	61,15
CB 482 - EX. MAIN	200	PVC SDR35	~~24,7~~ *23,01*	63,84	61,15

TABLE OF WATERMAIN FITTINGS

STATION	OFFSET	FITTING	TOP OF WATERMAIN ELEVATION
10+775,00	1,40 LT	406x152x406 TEE	62,71
10+775,00	8,01 LT	HYDRANT, VALVE & VB	62,86
10+797,50	1,48 LT	406 BF VALVE, W2 VC	62,86
10+805,20	1,52 LT	406x152x406 TEE	62,89
~~10+805,20~~ *10+805,20*	1,70 LT	406 22,5° VERT. BEND	~~62,87~~ *62,94*
~~10+805,20~~ *10+805,20*	1,70 LT	406 22,5° VERT. BEND	~~62,87~~ *62,94*
10+848,51	1,72 LT	406x152x406 TEE	62,26

THRUST BLOCKS AND RESTRAINT JOINTS SHALL BE IN ACCORDANCE WITH W23.3, W25.4, W25.5, W25.6



REVISIONS / RÉVISIONS	DATE	BY
BELL RELEASE (AUG 2009) BELL DUCT INSTALLED ON MAIN ST.	FEB. 2009	KJ
BELL RELEASE (APRIL 21, 2010) BELL DUCTS ON MAIN ST.	APRIL 2010	KJ
BELL RELEASE (OCT. 12TH) BELL LINE ADJUSTMENTS ON SPRINGHURST	FEB 2012	KJ
RETRAIN FROM VOIDED UTILITY PLAN F-13-27	FEB 2012	KJ
MAIN - SPRINGHURST (NOV. 20TH, 2012) ISSUED FOR CONSTRUCTION COPY WATERMAIN APPLIED TO SPRINGHURST	MAR. 2013	LDV
RMDS-2 - SPRINGHURST ST (NOV 20TH) APPLIED CAD REVISION	JULY 2018	EL
RMDS-4 - MAIN ST AND SPRINGHURST AVE VERIFIED GAS	JULY 2018	EL
CITY, ALL EXTERNAL AGENCIES DIGITIZED FROM CITY/UTILITY DATA RECEIVED	JULY 2018	EL

LEGEND

- Water Valve, Valve Chamber, Fire Hydrant
- Sewer Manhole, Catch Basin Manhole
- Catch Basin / Drainage, Wing Wall, Head Wall
- Pole, Pole w/Light, Decorative, Lawn Light
- Power Supply, Panel, Pedestal, Transformer, Tower, Regulator
- Amp, Hand Hole, Vault, Gas Valve
- OC Transpo: Bus Shelter/No Power, Energized, Isolated
- Streetscape: Planter Box, Grate Square, Eng, Soil
- Traffic: Connect Box / Disconnect Box, SL Disconnect
- R.L Hand Hole, R.L. Camera
- Scada: Handhold, Monitoring Panel
- Reducer
- Pipe, Duct, Conduit, Lateral
- Culvert
- Abandoned
- Capped
- Buried Cable
- Property Line
- Install Year (2015)

TELECOM GLOSSARY

A	Allstream	P	Primus
AT	Aliant	PGF	Canadian PGF Fibre
B	Bell	R	Rogers
BH	Birch Hill	S	Sprint
F	Fibre Nor	SL	Street Lighting
G	Gloucity	T	Traffic
GT	Group Telecom	TO	Telecom Ottawa
H	Hydro Ottawa	TU	Telus
H1	Hydro One	V	Videotron
L / L3	Level 3	Z	Zayo

GLOSSARY - OTHER

DD	Dept. of Defence	PED	Pedestal (owner unknown)
MH	Manhole (owner unknown)	PW	Public Works
OOC	OC Transpo	UP	Utility Pole (owner unknown)
SCD	Scada		

CAUTION/ATTENTION

Although utility locations are established using the best available information, they cannot be guaranteed.
Property lines were compiled from plans and documents recorded in the Land Registry System and are for indexing purposes only.

Bien que l'emplacement des services publics soient établis en utilisant la meilleure information disponible, ils ne peuvent pas être garantis.
Des lignes de propriété ont été compilées en utilisant des plans et des documents enregistrés dans le système de cadastre et sont pour l'indexation seulement.

Ottawa

Right of Way, Heritage, and Urban Design Services / Gestionnaire, Services des emprises, du patrimoine, et du design urbain
Planning, Infrastructure and Economic Development Department / Direction générale de la planification, de l'infrastructure et du développement économique
100 Constellation Crescent, 6th Floor East / 6ième Étage Est, Ottawa, ON K2G 6J8

OTTAWA UTILITY COORDINATING COMMITTEE
CENTRAL REGISTRY

COMITÉ DE COORDINATION DES SERVICES PUBLICS D'OTTAWA
ENREGISTREMENT CENTRAL

PRODUCED BY: GIS DATA MANAGEMENT BRANCH
INFORMATION CENTRE UNIT

SCALE: 1:250

SHEET NUMBER
F-13-27

REVISIONS / RÉVISIONS	DATE	BY
RO/SO/RS-ROGERS (SEP 2014) CONDUIT ADDED TO HAZEL STREET	AUG 2014	JM
HYDRO/BELL/ENBRIDGE/ROGERS/CITY SEWER/WATER/TRAFFIC SL COMPILED/DIGITIZED FROM UTILITY/CITY DATA	AUG 2014	JM
RO/HO/SO - ROGERS - MAN - OCT 2019 NO VISIBLE HANDHOLE ON MAIN	JUL 2019	JC
CGX/BS37 - ENBRIDGE - MAN - APR 2019 APPLIED 150MM GAS MAIN ACROSS MAIN	JUL 2019	JC
CGX/N/BS37 - ENBRIDGE - MAN - JUL 2019 APPLIED 150MM GAS MAIN ACROSS MAIN	JUL 2019	JC
CGX/BS/B37 - ENBRIDGE - MAN - APR 2019 APPLIED 150MM GAS MAIN ACROSS MAIN	JUL 2019	JC
9869 - BMH - JUL 2019 PS/P33-25 APPLIED ON MAIN	JUL 2019	JC
10208 - BMH - SEP 2019 APPLIED UTILITIES ON MAIN PH2&3PLANCUP01.PDF	JUL 2019	JC
10208 - BMH - JUN 2019 APPLIED TRAFFIC ON MAIN	JUL 2019	JC

LEGEND

- Water Valve, Valve Chamber, Fire Hydrant
- Sewer Manhole, Catch Basin Manhole
- Catch Basin / Drainage, Wing Wall, Head Wall
- Pole, Pole w/light, Decorative, Lawn Light
- Power Supply, Panel, Pedestal, Transformer, Tower, Regulator
- Amp, Hand Hole, Vault, Gas Valve
- OC Transpo: Bus Shelter/No Power, Energized, Isolated
- Streetscape: Planter Box, Grate Square, Eng, Bell
- Traffic: Connect Box / Disconnect Box, SL Disconnect
- R.L Hand Hole, R.L. Camera
- Scadic Hand Hole, Monitoring Panel
- Reducer
- Pipe, Duct, Conduit, Lateral
- Culvert
- Abandoned
- Capped
- Buried Cable
- Property Line
- Install Year (2015)

TELECOM GLOSSARY

A	Allstream	P	Primus
AT	Aliant	PJP	Canadian PJP Fibre
B	Bell	R	Rogers
BH	Birch Hill	S	Sprint
F	Fibre Nap	SL	Street Lighting
G	Gloucity	T	Traffic
GT	Group Telecom	TO	Telecom Ottawa
H	Hydro Ottawa	TU	Telus
H1	Hydro One	V	Videotron
L / L3	Level 3	Z	Zayo

GLOSSARY - OTHER

DD	Dept. of Defence	PED	Pedestal (owner unknown)
MH	Manhole (owner unknown)	PW	Public Works
OOC	OC Transpo	UP	Utility Pole (owner unknown)
SCD	Scadia		

CAUTION/ATTENTION

Although utility locations are established using the best available information, they cannot be guaranteed.
Property lines were compiled from plans and documents recorded in the Land Registry System and are for indexing purposes only.

Bien que l'emplacement des services publics soient établis en utilisant la meilleure information disponible, ils ne peuvent pas être garantis.
Des lignes de propriété ont été compilées en utilisant des plans et des documents enregistrés dans le système de cadastre et sont pour l'indexation seulement.

Ottawa

Right of Way, Heritage, and Urban Design Services / Gestionnaire, Services des emprises, du patrimoine, et du design urbain
(Planning, Infrastructure and Economic Development Department)
Direction generale de la planification, de l'infrastructure et du developpement economique
100 Constitution Civic, 5th Floor East / Aime Etage Est, Ottawa, ON K2G 0J8

OTTAWA UTILITY COORDINATING COMMITTEE
CENTRAL REGISTRY
COMITE DE COORDINATION DES SERVICES PUBLICS D'OTTAWA
ENREGISTREMENT CENTRAL

PRODUCED BY: GIS DATA MANAGEMENT BRANCH
INFORMATION CENTRE UNIT

SCALE: 1:250

SHEET NUMBER
G-13-04

Chart 1: LMF 14 Preset Flow Curves

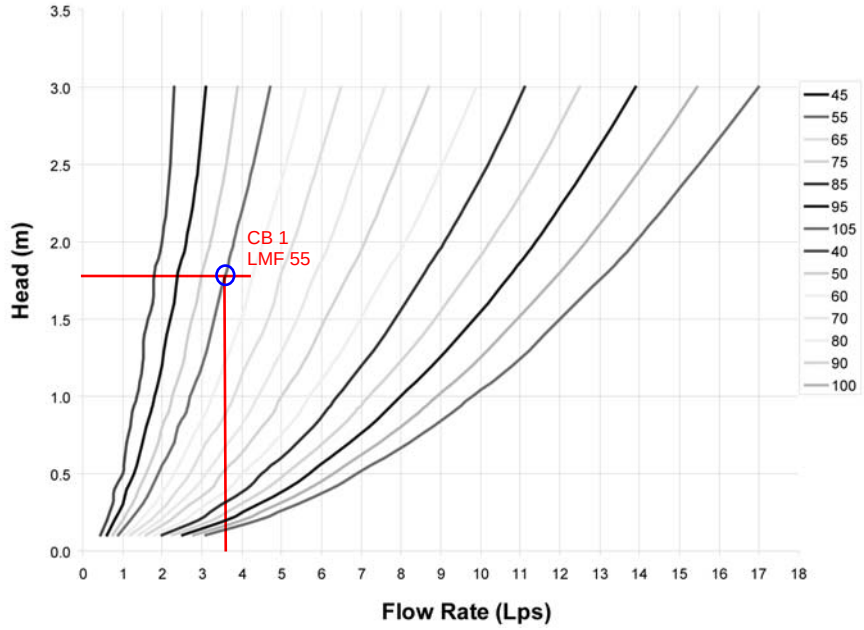
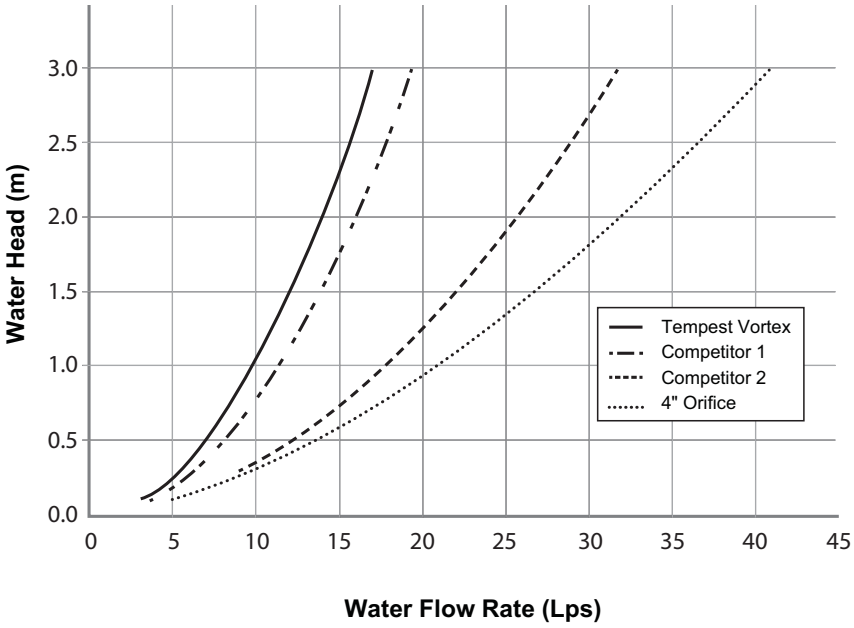


Chart 2: LMF Flow vs. ICD Alternatives



NOTE: Do not use or test the products in this manual with compressed air or other gases including air-over-water-boosters

Appendix G – Checklist

GENERAL CONTENT		RESPONSE
☐	Executive Summary (for larger reports only).	Not included
☒	Date and revision number of the report.	Date of report provided
☒	Location map and plan showing municipal address, boundary, and layout of proposed development.	Page 1
☒	Development statistics, land use, density, adherence to zoning and official plan, and reference to applicable subwatershed and watershed plans that provide context to which individual developments must adhere.	Section 2 of report
☒	Summary of Pre-consultation Meetings with City and other approval agencies.	In Appendix E
☐	Reference and confirm conformance to higher level studies and reports (Master Servicing Studies, Environmental Assessments, Community Design Plans), or in the case where it is not in conformance, the proponent must provide justification and develop a defendable design criteria.	No Master Servicing Studies.
☒	Statement of objectives and servicing criteria.	Section 1 of report
☒	Identification of existing and proposed infrastructure available in the immediate area.	Section 2 & 3 of report
☐	Identification of Environmentally Significant Areas, watercourses and Municipal Drains potentially impacted by the proposed development (Reference can be made to the Natural Heritage Studies, if available).	Not applicable
☐	Concept level master grading plan to confirm existing and proposed grades in the development. This is required to confirm the feasibility of proposed stormwater management and drainage, soil removal and fill constraints, and potential impacts to neighbouring properties. This is also required to confirm that the proposed grading will not impede existing major system flow paths.	Not applicable
☐	Identification of potential impacts of proposed piped services on private services (such as wells and septic fields on adjacent lands) and mitigation required to address potential impacts.	Not applicable
☐	Proposed phasing of the development, if applicable.	Not applicable
☐	Reference to geotechnical studies and recommendations concerning servicing.	Not applicable
☒	All preliminary and formal site plan submissions should have the following information: Metric scale North arrow (including construction North) Key plan name and contact information of applicant and property owner Property limits including bearings and dimensions Existing and proposed structures and parking areas Easements, road widening and rights-of-way Adjacent street names	Functional Report, Civil and Architectural Plans provided all this information.
DEVELOPMENT SERVICING REPORT: WATER		**RESPONSE**
☐	Confirm consistency with Master Servicing Study, if available Availability of public infrastructure to service proposed development Identification of system constraints	Not applicable
☒	Identify boundary conditions	Section 4.6
☒	Confirmation of adequate domestic supply and pressure	Section 4.3
☒	Confirmation of adequate fire flow protection and confirmation that fire flow is calculated as per the Fire Underwriter's Survey. Output should show available fire flow at locations throughout the development.	Section 4.7
☒	Provide a check of high pressures. If pressure is found to be high, an assessment is required to confirm the application of pressure reducing valves.	Section 4.6 & Table B-4 Appendix B
☐	Definition of phasing constraints. Hydraulic modeling is required to confirm servicing for all defined phases of the project including the ultimate design	Not applicable
☒	Address reliability requirements such as appropriate location of shut-off valves Check on the necessity of a pressure zone boundary modification.	Section 4.3
☒	Reference to water supply analysis to show that major infrastructure is capable of delivering sufficient water for the proposed land use. This includes data that shows that the expected demands under average day, peak hour and fire flow conditions provide water within the required pressure range	Section 4.5 & Table B-1 Appendix B
☒	Description of the proposed water distribution network, including locations of proposed connections to the existing system, provisions for necessary looping, and appurtenances (valves, pressure reducing valves, valve chambers, and fire hydrants) including special metering provisions.	Section 4.2

☐	Description of off-site required feeder mains, booster pumping stations, and other water infrastructure that will be ultimately required to service proposed development, including financing, interim facilities, and timing of implementation.	Not applicable
☒	Confirmation that water demands are calculated based on the City of Ottawa Design Guidelines.	Table B-1 Appendix B
☐	Provision of a model schematic showing the boundary conditions locations, streets, parcels, and building locations for reference.	Not applicable
DEVELOPMENT SERVICING REPORT: WASTEWATER		**RESPONSE**
☒	Summary of proposed design criteria (Note: Wet-weather flow criteria should not deviate from the City of Ottawa Sewer Design Guidelines. Monitored flow data from relatively new infrastructure cannot be used to justify capacity requirements for proposed infrastructure).	Section 5.1
☐	Confirm consistency with Master Servicing Study and/or justifications for deviations.	Not applicable
☒	Consideration of local conditions that may contribute to extraneous flows that are higher than the recommended flows in the guidelines. This includes groundwater and soil conditions, and age and condition of sewers.	Section 5.2
☒	Description of existing sanitary sewer available for discharge of wastewater from proposed development.	Section 5.2
☐	Verify available capacity in downstream sanitary sewer and/or identification of upgrades necessary to service the proposed development. (Reference can be made to previously completed Master Servicing Study if applicable)	Not applicable
☒	Calculations related to dry-weather and wet-weather flow rates from the development in standard MOE sanitary sewer design table (Appendix 'C') format.	Table C-1 in Appendix C
☒	Description of proposed sewer network including sewers, pumping stations, and forcemains.	Section 5.2
☐	Discussion of previously identified environmental constraints and impact on servicing (environmental constraints are related to limitations imposed on the development in order to preserve the physical condition of watercourses, vegetation, soil cover, as well as protecting against water quantity and quality).	Not applicable
☐	Pumping stations: impacts of proposed development on existing pumping stations or requirements for new pumping station to service development.	Not applicable
☐	Forcemain capacity in terms of operational redundancy, surge pressure and maximum flow velocity.	Not applicable
☐	Identification and implementation of the emergency overflow from sanitary pumping stations in relation to the hydraulic grade line to protect against basement flooding.	Not applicable
☐	Special considerations such as contamination, corrosive environment etc.	Not applicable
DEVELOPMENT SERVICING REPORT: STORMWATER CHECKLIST		**RESPONSE**
☒	Description of drainage outlets and downstream constraints including legality of outlets (i.e. municipal drain, right-of-way, watercourse, or private property)	Section 6
☐	Analysis of available capacity in existing public infrastructure.	Not applicable
☐	A drawing showing the subject lands, its surroundings, the receiving watercourse, existing drainage patterns, and proposed drainage pattern.	Site is too small to be considered
☐	Water quantity control objective (e.g. controlling post-development peak flows to pre-development level for storm events ranging from the 2 or 5 year event (dependent on the receiving sewer design) to 100 year return period); if other objectives are being applied, a rationale must be included with reference to hydrologic analyses of the potentially affected subwatersheds, taking into account long-term cumulative effects.	Not Applicable
☐	Water Quality control objective (basic, normal or enhanced level of protection based on the sensitivities of the receiving watercourse) and storage requirements.	Not Applicable
☒	Description of the stormwater management concept with facility locations and descriptions with references and supporting information.	Section 6.2 & 6.3
☐	Set-back from private sewage disposal systems. Watercourse and hazard lands setbacks.	Not Applicable
☒	Record of pre-consultation with the Ontario Ministry of Environment and the Conservation Authority that has jurisdiction on the affected watershed.	Appendix E
☐	Confirm consistency with sub-watershed and Master Servicing Study, if applicable study exists.	Not Applicable
☒	Storage requirements (complete with calculations) and conveyance capacity for minor events (1:5 year return period) and major events (1:100 year return period).	Section 6.9 & Table D6-D7 of Appendix D

☐	Identification of watercourses within the proposed development and how watercourses will be protected, or, if necessary, altered by the proposed development with applicable approvals.	Not Applicable
☒	Calculate pre and post development peak flow rates including a description of existing site conditions and proposed impervious areas and drainage catchments in comparison to existing conditions.	Section 6.6, 6.8 & Table D2 & D5 of Appendix D
☐	Any proposed diversion of drainage catchment areas from one outlet to another.	Not Applicable
☒	Proposed minor and major systems including locations and sizes of stormwater trunk sewers, and stormwater management facilities.	Section 6.8
☐	If quantity control is not proposed, demonstration that downstream system has adequate capacity for the post-development flows up to and including the 100-year return period storm event.	Not Applicable
☐	Identification of potential impacts to receiving watercourses Identification of municipal drains and related approval requirements.	Not Applicable
☒	Descriptions of how the conveyance and storage capacity will be achieved for the development.	Section 6.9
☒	100-year flood levels and major flow routing to protect proposed development from flooding for establishing minimum building elevations (MBE) and overall grading.	Site Grading and Erosion and Sediment Plan
☐	Inclusion of hydraulic analysis including hydraulic grade line elevations.	Not Applicable
☒	Description of approach to erosion and sediment control during construction for the protection of receiving watercourse or drainage corridors.	Section 7
☐	Identification of floodplains – proponent to obtain relevant floodplain information from the appropriate Conservation Authority. The proponent may be required to delineate floodplain elevations to the satisfaction of the Conservation Authority if such information is not available or if information does not match current conditions.	Not Applicable – No requirements from Conservation Authority
☐	Identification of fill constraints related to floodplain and geotechnical investigation.	See geotechnical report
☒	The Servicing Study shall provide a list of applicable permits and regulatory approvals necessary for the proposed development as well as the relevant issues affecting each approval. The approval and permitting shall include but not be limited to the following:	Appendix E
☐	Conservation Authority as the designated approval agency for modification of floodplain, potential impact on fish habitat, proposed works in or adjacent to a watercourse, cut/fill permits and Approval under Lakes and Rivers Improvement Act. The Conservation Authority is not the approval authority for the Lakes and Rivers Improvement Act. Where there are Conservation Authority regulations in place, approval under the Lakes and Rivers Improvement Act is not required, except in cases of dams as defined in theAct.	Not Applicable
☐	Application for Certificate of Approval (CofA) under the Ontario Water Resources Act.	Not Applicable
☐	Changes to Municipal Drains.	Not Applicable
☐	Other permits (National Capital Commission, Parks Canada, Public Works and Government Services Canada, Ministry of Transportation etc.)	Not Applicable
CONCLUSION CHECKLIST		**RESPONSE**
☒	Clearly stated conclusions and recommendations	In Section 8
☒	Comments received from review agencies including the City of Ottawa and information on how the comments were addressed. Final sign-off from the responsible reviewing agency.	Appendix E
☒	All draft and final reports shall be signed and stamped by a professional Engineer registered in Ontario	Signed and stamped

Appendix H – Drawings

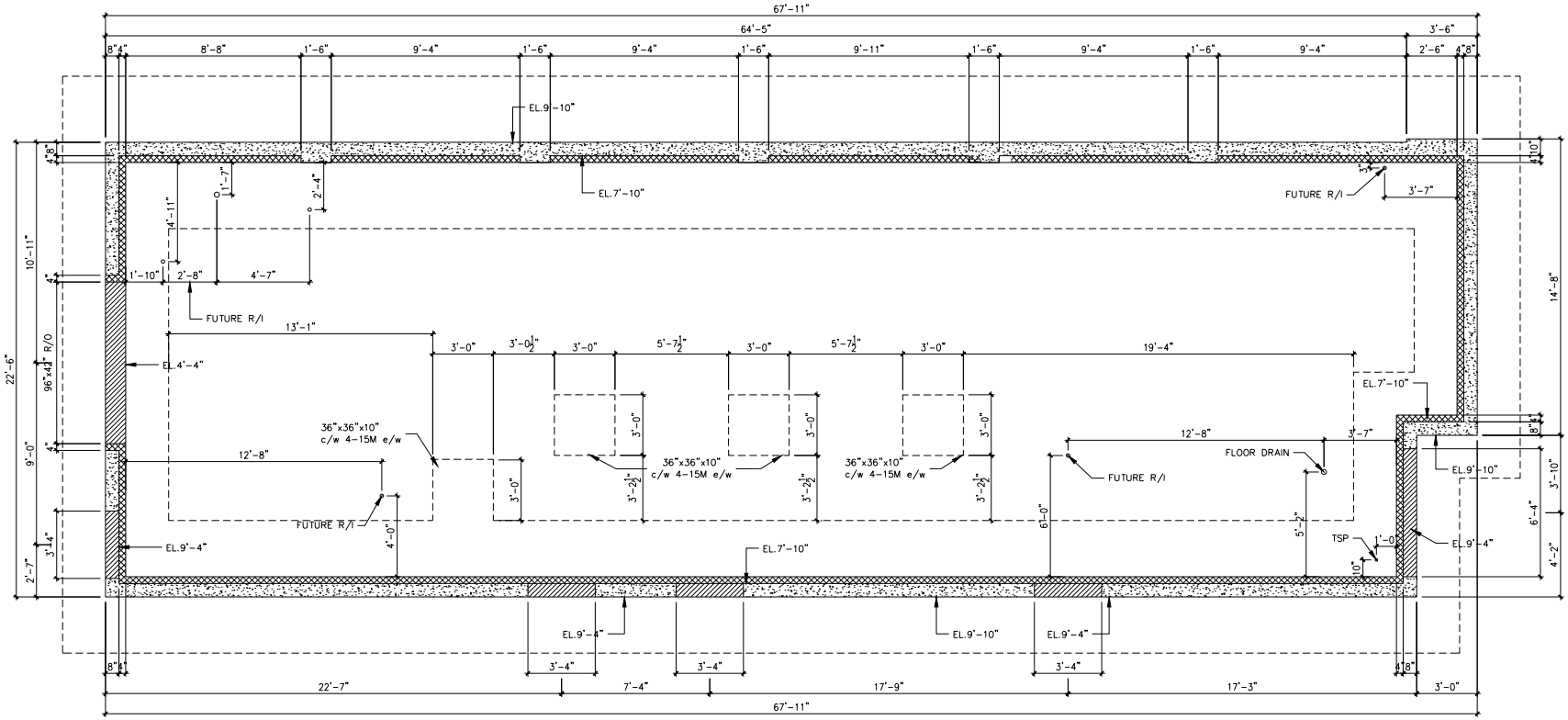
Architectural plans (Total 14 pages)

Notes and Legend, C001 (Included separately)

Site Servicing Plan, C002 (Included separately)

Site Grading and Erosion and Sediment Plan, C003 (Included separately)

Storm Drainage Plan, C004 (Included separately)



POROPOSED - FOUNDATION PLAN

SCALE: 1/4" = 1'-0"

NOTES:
- ALL CONCRETE TO HAVE A MINIMUM COMPRESSIVE STRENGHT OF 5000 P.S.I. (35MPa) AT 28 DAYS;

- CONCRETE FOOTINGS MUST BE PLACED ON UNDISTERBED OR COMPACTED SOIL TO AN ELEVATION BELOW FROST PENETRATION (5'-0", SEE LOCAL AUTHORITIES);

- FOUNDATION WALL SHALL NOT BE BACKFILLED UNTIL CONCRETE HAS REACHED ITS SPECIFIED 28 DAYS STRENGTH AND STRUCTURAL FLOOR FRAMING (INCLUDING PLYWOOD SUBFLOOR) REQUIRED TO STABILIZE THE WALLS ARE AND FULLY NAILED AND ANCHORED;

- FOOTINGS DIMENSIONS ARE BASED ON A SOIL BEARING CAPACITY OF 75KPa, SEE GEOTECHNICAL REPORT

ROOF AND FLOOR LAYOUT NOTES:

- ROOF AND FLOOR LAYOUT IS A SCHEMATIC LAYOUT TO ASSIST THE TRUSS MANUFACTURER. PROVIDE THE TRUSS MANUFACTURER'S ROOF AND FLOOR LAYOUT FOR BUILDING PERMIT APPLICATION AND FOR THE ON-SITE FRAMING. THE DRAFTING SERVICE OFFICE NEEDS TO BE AWARE OF ANY ALTERNATIVES OR CHANGES REGARDING THE ROOF AND FLOOR'S SCHEMATIC LAYOUT BEFORE THE CONSTRUCTION BEGINS, PROVIDE SUPPORT UNDER GIRDER TRUSS & SOLID BLOCKING DOWN TO FOUNDATION.

NOTES:
- FINISH FLOORING IN BATHROOMS, KITCHENS, LAUNDRY ROOM, GENERAL STORAGE AREAS AND ENTRANCES SHALL BE WATER RESISTANT;

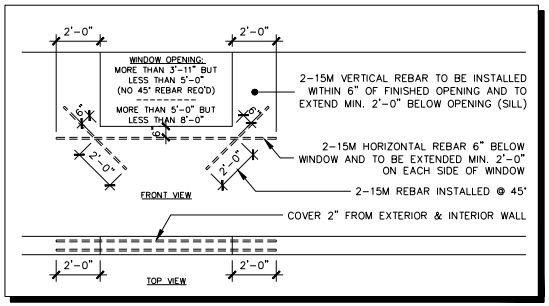
- INSTALL STUD REINFORCEMENT TO PERMIT THE FUTURE INSTALLATION OF GRAB BAR IN MAIN BATHROOM AS PER 9.5.2.3. OF O.B.C. 2012

BASEMENT NOTE:

- IF A ROOM IS ADDED IN THE BASEMENT, THE ROOM MUST CONFORM WITH 9.7.1.3.:

1) EXCEPT WHERE A DOOR ON THE SAME FLOOR LEVEL AS THE BEDROOM PROVIDES DIRECT ACCESS TO THE EXTERIOR, EVERY FLOOR LEVEL CONTAINING A BEDROOM IN A SUITE SHALL BE PROVIDED WITH AT LEAST 1 OUTISE WINDOW THAT:

A) IS OPENABLE FROM THE INSIDE WITHOUT THE USE OF TOOLS; AND
B) PROVIDES AN INDIVIDUAL, UNOBSTRUCTED OPEN PORTION HAVING A MINIMUM AREA OF 0.38m2 (3.8 SQ.FT.) WITH NO DIMENSIONS LESS THAN 380mm (15IN)



BASEMENT WALL FOOTING DIMENSIONS:

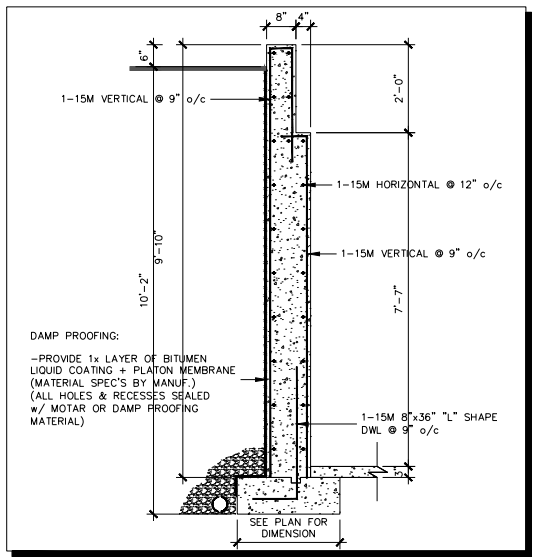
- ALL WALLS ARE 12" c/w:

* NORTH WALL FOOTING:
- 2300mmx300mm c/w 5-15M CONT'S REBAR + 1-15M @ 10" o/c TRANS. REBAR

* SOUTH WALL FOOTING:
- 2000mmx300mm c/w 4-15M CONT'S REBAR + 1-15M @ 10" o/c TRANS. REBAR

* EAST AND WEST WALL FOOTING:
- 1600mmx300mm c/w 3-15M CONT'S REBAR + 1-15M @ 12" o/c TRANS. REBAR

** ALL EXTERIOR FOOTINGS ARE TO BE c/w ** 1-15M 8"x36" "L" SHAPE DWL @ 9" o/c



WALL REBAR DETAIL (9'-10" HIGH)

SCALE: 1/2" = 1'-0"

ABSOLUTE ARCHITECTURE + DESIGN
WWW.ABSOLUTEARCH.CA

ALL CONTRACTORS SHALL PERFORM THEIR WORK WHETHER DESCRIBED OR NOT, ACCORDING TO THE APPLICABLE BUILDING CODE REQUIREMENTS AND MUNICIPAL REGULATIONS.

THE GENERAL CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND REPORT ERRORS AND OMISSIONS TO THE DESIGN CONSULTANT.

NO DIMENSION SHOULD BE SCALED ON DRAWINGS.

THE GENERAL CONSTRACTOR OR SUB-CONTRACTORES WILL BE HELD RESPONSIBLE FOR ALL WORK DONE ON THE CONSTRUCTION SITE. IN NO EVENT WILL THE DESIGN CONSULTANT BE HELD RESPONSIBLE BEFORE, DURING AND AFTER THE PROJECT.

POST TABLE:

P1 = HD 3.0 REDJACK POST BY USP
P2 = 2-2x6 OR STRUCTURAL 6" MET. STUD
P3 = 3-2x6 OR STRUCTURAL 6" MET. STUD
P4 = 4-2x6 OR STRUCTURAL 6" MET. STUD
P5 = 5-2x6 or 5-2x4

* POST ARE ALL JACK c/w STUD (EX. P2 = 2 JACK + 1 STUD)
* IF NO POST ARE MENTIONNED ON PLANS, PROVIDE MIN. A "P2"

LINTEL TABLE:

L1 = 2-2x10 + P2 ON BOTH SIDES
L2 = 3-2x10 + P3 ON BOTH SIDES
L3 = 2-1.75x9.5 LVL + P3 ON BOTH SIDES
* LINTEL TO BE, SAME SIZE, STRUCTURAL STEEL WHEN F.R.R. REQ'D
* IF LINTEL IS EXPOSED TO THE EXTERIOR, PROVIDE PRESSURE TREATED LUMBER

= SMOKE ALARMS AS PER SECTION 9.10.19. OF THE ONTARIO BUILDING CODE:
- SHALL HAVE A VISUAL SIGNALLING DEVICE;
- ARE REQUIRED IN EACH SLEEPING ROOM AND HALLWAY;
- ARE REQUIRED ON EACH STOREY, INCLUDING BASEMENT;
- ARE REQUIRED TO BE PROVIDED WITH BATTERY AS AN ALTERNATIVE POWER SUPPLY CAPABLE OF PROVIDING POWER FOR AT LEAST 7 DAYS IN NORMAL CONDITION, FOLLOWED BY, 4 MINUTES OF ALARM; AND
- CARBON MONOXIDE ALARM ARE ASLO REQUIRED ADJACENT TO EACH SLEEPING AREA.

= PROVIDE MECHANICAL EXHAUST TO OUTSIDE

ÉCHELLE/SCALE
AS INDICATED

DATE
2020.01.29
ISSUED FOR COORDINATION

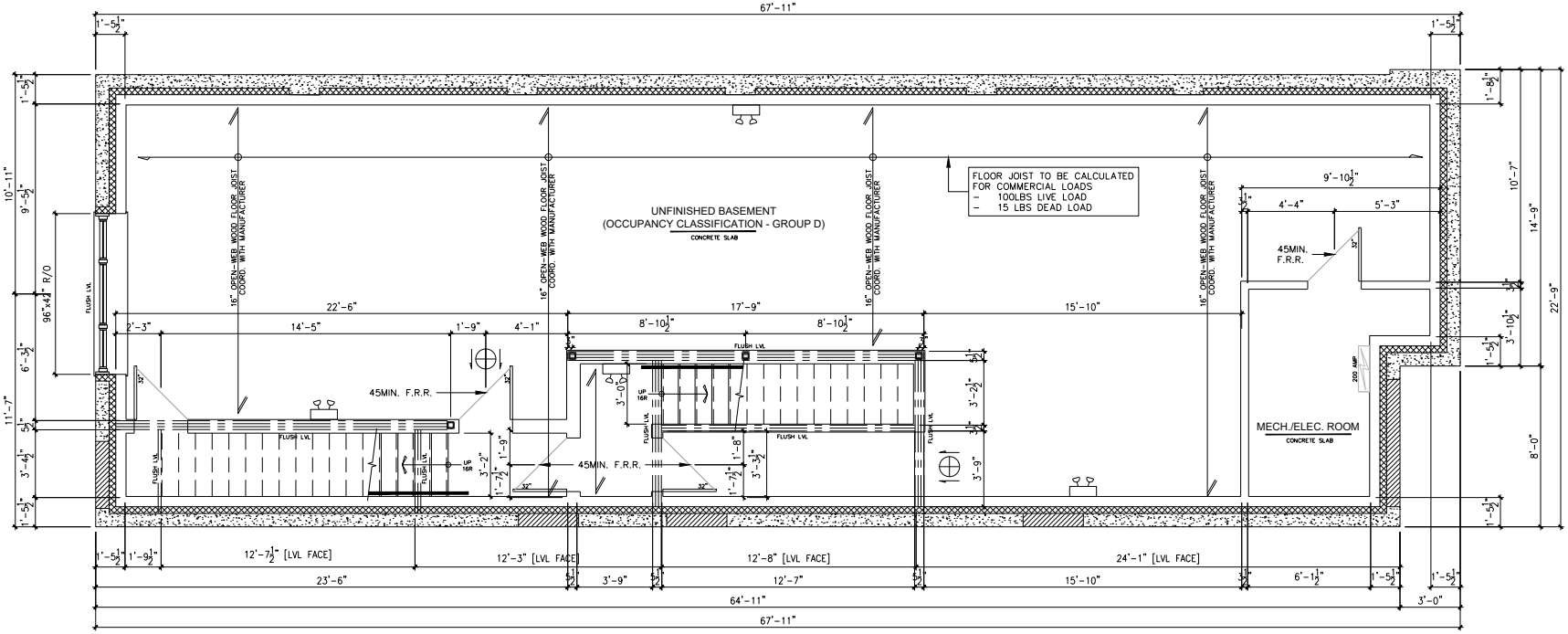
PROJET/PROJECT
19A019-REV01

ABSOLUTE ARCHITECTURE + DESIGN
PERS. BCIN #44555
FIRM. BCIN #45254

DESSIN/DRAWING
FOUNDATION PLAN

PROJET/PROJECT
172 MAIN ST. DEVELOPMENT

CLIENT
ROBBIE GHARIB
TONY EL HAIBI



POROPOSED - BASEMENT LAYOUT

SCALE: 1/4" = 1'-0"

CODES AND STANDARDS:

- AT THE TIME OF PREPARATION, THIS PLAN WA DRAWN IN ACCORDANCE WITH THE CURRENT EDITION OF THE ONTARIO BUILDING CODE. IT IS THE RESPONSIBILITY OF THE OWNER/BUILDER TO INSURE THAT CHANGES TO THE CODE ARE COMPLIED WITH AND ALL AMENDEMENTS ARE INCORPORATED IN THE CONSTRUCTION;
- ALL WORK SHALL CONFORM TO BYLAWS, ORDINANCES AND REGULATIONS;
- PRIOR TO PROCEEDING WITH CONSTRUCTION, THE BUILDER MUST VERIFY ALL INFORMATIONS, DIMENSIONS, AND SPECIFICATIONS ON THESE PLANS. WRITTEN DIMENSIONS ALWAYS TAKE PRECEDENCE OVER SCALE MEASUREMENTS;
- ALL WORKMANSHIP IS TO BE OF STANDARD EQUAL IN ALL RESPECTS TO GOOD PRACTICE;
- ANY VARIANCES FROM THE DRAWINGS AND SPECIFICATIONS OR FROM CONDITIONS ENCOUNTERED AT THE JOB SITE, SHALL BE RESOLVED BY OWNER/BUILDER AND SUCH SOLUTIONS SHALL BE THEIR SOLE RESPONSIBILITY. CHANGES SHALL BE SUBMITTED TO MUNICIPALITY FOR APPROVAL PRIOR FOR THE CHANGES TO BE MADE;
- CONSTRUCTION LOADS ON THE STRUCTURE CAUSED BY INTERIM STORAGE OF MATERIALS SHALL NOT ALLOW TO EXCEED THE DESIGN LOADINGS;
- THE BUILDER IS TO PROVIDE ALL NECESSARY TEMPORARY SUPPORT FOR WALLS AND FLOORS PRIOR TO THE COMPLETION OF VERTICAL AND LATERAL LOAD SYSTEMS;
- THE OWNER/BUILDER SHALL BE RESPONSIBLE FOR THE CORRECT SITTING OF THE HOUSE ON THE PROPERTY;
- THE OWNER/BUILDER TO SUPPLY ALL MISSING DIMENSIONS ON SITE PLAN, ALSO ELEVATIONS OF LOT, LEGAL DESCRIPTION, NORTH DIRECTION AND MAIN STREETS;
- THE OWNER/BUILDER TO BE RESPONSIBLE FOR CONDITIONS SUCH AS SOIL BEARING CAPACITY, DEPTH OF FROST PENETRATION, WATER TABLE OR BURIED STRUCTURES, LOCATION OF SERVICES, ETC...

CARPENTRY:

- FRAMING LUMBER SHALL BE NUMBER TWO(2) OR BETTER UNLESS OTHERWISE SPECIFIED ON THE PLANS;
- JOISTS ARE TO BE DOUBLED UNDER PARALLEL PARTITIONS;
- JOISTS SHALL BE PLACE TO ACCOMMODATE HEATING AND PLUMBING, ETC...;
- OWNER/BUILDER TO OBTAIN SHOP DRAWINGS FROM MANUFACTURER OF ROOF TRUSSES;
- FLOOR AND ROOF JOIST SPANS OF MORE THAN 7'-0" SHALL BE BRIDGED AT MIDSPAN OR AT 7'-0" o.c. MAXIMUM UNLESS SHEATING OR STRAPPED BOTH SIDES WITH WOOD;
- BRIDGING SHALL BE 2x2 DIAGONAL TYPE WHEREVER POSSIBLE;
- PLATES ARE TO BE ABCHORED TO CONCRETE WITH 1/2" DIA. ANCHOR BOLTS @ 6'-0" MAX.
- FLUSH FRAMED WOOD MEMBERS SHALL BE ANCHORED WITH JOIST HANGERS UNLESS OTHERWISE SPECIFIED.

ROOFING:

- ALL ROOFING SHALL BE APPLIED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS AND CONFORM TO THE ONTARIO BUILDING CODE.

SHEET METAL:

- ALL REQUIRED FLASHINGS TO BE 28GAUGE GALVANIZED METAL UNLESS OTHERWISE SPECIFIED.

PLUMBING:

- PROVIDE AND INSTALL PLUMBING AND FIXTURES AS INDICATED ON PLANS ACCORDING TO THE LOCAL PLUMBING CODES AND CONFORMING TO 9.31., PART 9 AND PART 7 OF THE ONTARIO BUILDING CODE.

FIRE RATING NOTES:

1. DUCTS THAT CONNECT 2 FIRE COMPARTMENTS OR PENETRATE AN ASSEMBLY REQUIRED TO BE A FIRE SEPARATION WITH A FIRE RESISTANCE RATING SHALL BE EQUIPPED WITH A FIRE DAMPER;
2. PIPING, TUBING, DUCTS, CHIMNEYS, WIRING, CONDUIT, ELECTRICAL OUTLET BOXES AND OTHER SIMILAR SERVICE EQUIPMENT THAT PENETRATE A REQUIRED FIRE SEPARATION SHALL BE TIGHTLY FITTED OR FIRE STOPPED TO MAINTAIN THE INTEGRITY OF THE SEPARATION;
3. WHERE FIRE STOPS ARE PIERCED BY PIPES, DUCTS OR OTHER ELEMENTS, THE EFFECTIVENESS OF THE FIRE STOPS SHALL BE MAINTAINED AROUND SUCH ELEMENTS

** EVERY FIRE DOOR AND WINDOW SHALL BE INSTALLED IN CONFORMANCE WITH CHAPTERS 2 TO 14 OF NFPA 80 «FIRE DOORS AND WINDOWS» AND WHERE REQUIRED TO HAVE A FIRE-PROTECTION RATING. IT SHALL HAVE LABELS OR CLASSIFICATION MARKS TO IDENTIFY THE TESTING LABORATORY.

INSULATION /VENTILATION:

- MINIMUM INSULATION REQUIREMENTS: REFER TO THE ENERGY EFFICIENCY DESIGN SUMMARY (EEDS FORM);
- CEILING INSULATION MAY BE LOOSE FILL TYPE OR BATT TYPE FOR WALLS;
- WALLS AND CEILINGS BETWEEN RESIDENCE AND ATTACHED GARAGE SHALL BE INSULATED;
- ALL ROOF SPACES SHALL BE VENTILATED WITH SOFFIT, ROOF VENTS OR EQUALLY DISTRIBUTED AT THE TOP OF ROOF SPACE AND SOFFITS AS SHOWN ON ELEVATION DRAWINGS;
- ALL VENTILATION OF ROOF SPACES SHALL CONFORM TO THE ONTARIO BUILDING CODE (MIN. 1/300).

MISCELLANEOUS:

- CAULK OVER AND AROUND ALL EXTERIOR OPENING USING NON-HARDENING CAULKING COMPOUND;
- FLASH CHANGES OF MATERIALS ON EXTERIOR WALLS;
- FLASH OVER ALL EXTERIOR OPENINGS;
- ALL SIDING TO BE A MINIMUM OF 8" (200mm) ABOVE FINISHES GRADE;
- ALL BALCONY RAILINGS TO BE 3'-6" (1070mm) IN HEIGHT MAX. SPACING BETWEEN VERTICAL MEMBERS IS 4" MIN. (100mm) AND TO COMPLY WITH SECTION 9.8 OF THE ONTARIO BUILDING CODE AND SB-7 OF THE ONTARIO BUILDING CODE SUPPLEMENT;
- FLOOR FINISHES, BATHROOM VANITIES, BACKSPLASH AND KITCHEN CABINETS TO MEET SPECIFICATIONS OF OWNER/BUILDER;
- COAT AND CLOTHES CLOSET SHALL HAVE AT LEAST ONE ROD + SHELF. LINEN CLOSET SHALL HAVE ADJUSTABLE SHELVES WHEREVER POSSIBLE. BROOM CLOSET SHALL HAVE ONE SHELF;
- CERAMIC AND PLASTIC TILE INSTALLED ON WALLS AROUND BATHTUBS OR SHOWERS SHALL BE APPLIED OVER MOISTURE RESISTANT BACKING.

GLASS / WINDOWS:

- ALL WINDOWS SIZES ARE SPECIFIED ON PLANS AS ROUGH DIMENSIONS;
- GLASS SIDING PATIO DOORS ARE TO BE OF TEMPERED GLASS TO CONFORM TO 9.6.5.5., 9.7.1.7., 9.7.2.1. AND 9.7.6. OF THE ONTARIO BUILDING CODE.

ABOVE GRADE MASONRY:

- ALL ABOVE GRADE MASONRY IS TO CONFORM TO SECTION 9.20 OF THE ONTARIO BUILDING CODE;
- AT BRICK VENEER COUNTERFLASHING SHALL BE INSTALL UP TO 8" (200mm) BEHIND THE BUILDING FELT AND BELOW THE BOTTOM COURSE WITH VERTICAL JOINTS RAKED CLEAN;
- PROVIDE WEEPHOLES AT MAX 31"o/c;
- BRICK VENEER TIE SPACING TO BE AT MAXIMUM HORIZONTAL SPACING OF 16" (400mm) AND A MAXIMUM VERTICAL SPACING OF 24" (600mm) OR A MAXIMUM HORIZONTAL SPACING OF 24" (600mm) AND A MAXIMUM VERTICAL SPACING OF 20" (500mm) TO COINCIDE WITH WALL STUD SPACING;
- BRICK TIES TO CONFORM TO TABLE 9.20.9.5. OF THE ONTARIO BUILDING CODE.

NOTE:

- DRAIN WATER HEAT RECOVERY UNIT SHALL BE INSTALLED ACCORDING TO THE ONTARIO BUILDING CODE 2012, SB-12 3.1.1.12. DRAIN WATER HEAT RECOVERY AND THE EFFICIENCY SHALL NOT BE LESS THAN 42%.

STAIRS AND RAILINGS:

- RISERS AND TREADS TO BE UNIFORM:

RISE: MIN 125mm (4 7/8") - MAX 180mm (7 1/16")
RUN: MIN 280mm (11") - MAX (NO LIMIT)
TREAD: MIN 280mm (11") - MAX (NO LIMIT)
WIDTH: MIN 900mm (2'-11 7/16")
HEIGHT OVER STAIRS: MIN 2050mm (6'-8 11/16")
LANDING: MIN 900mm (2'-11 7/16") OR WIDTH OF STAIRS

- HANDRAILS: MIN 860mm (34") - MAX 915mm (38"); AND
- EXTEND HORIZONTALLY 300mm (SEE 9.8.7.3(2))

- GUARDS SHALL BE PROVIDED WHEN THERE IS A DIFFERENCE IN ELEVATION MORE THAN 1'-11 5/8" (600mm) BETWEEN THE WALKING SURFACE AND THE ADJACENT SURFACE;

- EXTERIOR GUARDS (BALCONY/DECK RAILINGS) TO BE 3'-6" (1070mm) IN HEIGHT WHERE DECK HEIGHT IS HIGHER THAN 5'-11" AND 3'-0" (915mm) IN HEIGHT WHERE DECK HEIGHT IS BETWEEN 2'-0" AND 5'-11";

- TO COMPLY w/ 9.8.9.6 (1) TO (5) FOR FINISH FOR TREADS, LANDING AND RAMPS.

- INTERIOR GUARDS SHALL NOT BE LESS THAN 900mm (2'-11") IN HEIGHT;

- MAXIMIM SPACING BETWEEN VERTICAL MEMBERS IS 4" (100mm) MIN. AND TO COMPLY WITH SECTION 9.8 OF THE ONTARIO BUILDING CODE AND SB-7 OF THE ONTARIO BUILDING CODE SUPPLEMENT.

NOTES:
- FINISH FLOORING IN BATHROOMS, KITCHENS, LAUNDRY ROOM, GENERAL STORAGE AREAS AND ENTRANCES SHALL BE WATER RESISTANT;

- INSTALL STUD REINFORCEMENT TO PERMIT THE FUTURE INSTALLATION OF GRAB BAR IN MAIN BATHROOM AS PER 9.5.2.3. OF O.B.C. 2012

ROOF AND FLOOR LAYOUT NOTES:

- ROOF AND FLOOR LAYOUT IS A SCHEMATIC LAYOUT TO ASSIST THE TRUSS MANUFACTURER. PROVIDE THE TRUSS MANUFACTURER'S ROOF AND FLOOR LAYOUT FOR BUILDING PERMIT APPLICATION AND FOR THE ON-SITE FRAMING. THE DRAFTING SERVICE OFFICE NEEDS TO BE AWARE OF ANY ALTERNATIVES OR CHANGES REGARDING THE ROOF AND FLOOR'S SCHEMATIC LAYOUT BEFORE THE CONSTRUCTION BEGINS, PROVIDE SUPPORT UNDER GIRDER TRUSS & SOLID BLOCKING DOWN TO FOUNDATION.

NOTE:
WINDOW SIZE AND R/O ARE TO BE VALIDATED WITH CLIENT AND MANUF.

NOTE:
COORD. FLOOR JOIST, LINTEL, ROOF TRUSS AND POSTS WITH MANUFACTURER AND P.ENG. IN OTHER CASE.

NOTE:
COORD. LOCATION OF ALL VENTING UNITS, EXTERIOR LIGHTING, ETC. WITH CLIENT AND MANUFACTURERS.

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(EX. P2 = 2 JACK + 1 STUD)
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LINTEL TABLE:

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L2 = 3-2x10 + P3 ON BOTH SIDES
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* IF LINTEL IS EXPOSED TO THE EXTERIOR, PROVIDE PRESSURE TREATED LUMBER

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- CARBON MONOXIDE ALARM ARE ASLO REQUIRED ADJACENT TO EACH SLEEPING AREA.

= PROVIDE MECHANICAL EXHAUST TO OUTSIDE

NOTE:
ALL ELECTRICAL WORK SHALL COMPLY w/ O.B.C. 2012 SECTION 9.34 AND LOCAL CODES AND AUTHORITIES. COORD. ALL LAYOUTS WITH CLIENT AND PROPER SUB-TRADES.

ÉCHELLE/SCALE
AS INDICATED

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PROJET/PROJECT
19A019-REV01

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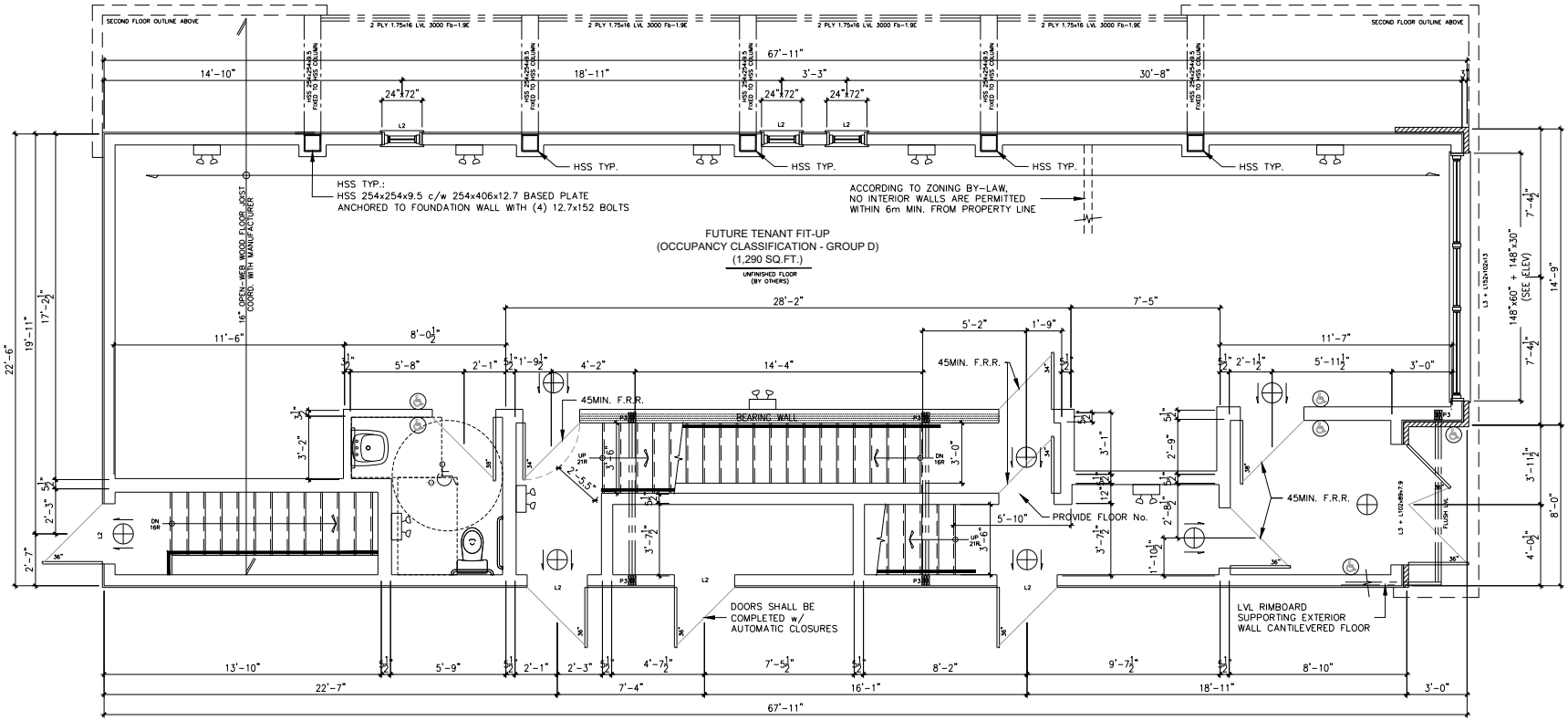
PERS. BCIN #44555
FIRM. BCIN #45254

DESSIN/DRAWING
BASEMENT LAYOUT

PROJET/PROJECT
172 MAIN ST. DEVELOPMENT

CLIENT
ROBBIE GHARIB
TONY EL HAIBI



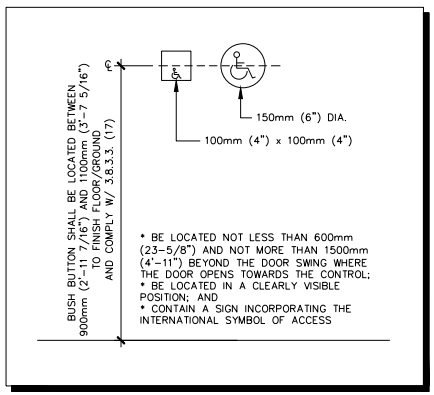
PROPOSED - GROUND FLOOR LAYOUT

SCALE: 1/4" = 1'-0"

ACCORDING TO THE O.B.C. T.3.1.17 FOR OCCUPANT LOAD DETERMINATION FOR A GROUP D - BUSINESS AND PERSONAL SERVICES USE AND WITH THE NUMBER OF WASHROOM PROPOSED FOR THE SPACE, A SIGN SHALL BE POSTED IN A CONSPICUOUS LOCATION, SHOWING A MAXIMUM OCCUPANT LOAD OF 10 PERSONS UNTIL SPACE IS RENTED (BASEMENT AND MAIN FLOOR)

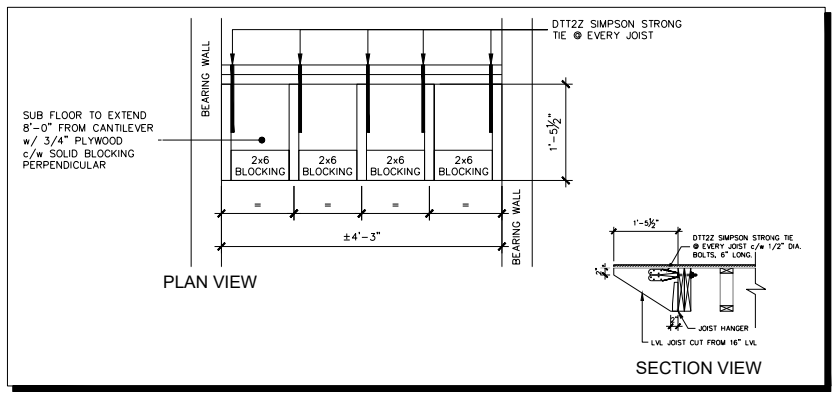
OCCUPANCY CALCULATION

SCALE: N.T.S.



DETAIL - PUSH BUTTON

SCALE: 3/4" = 1'-0"



FLOOR STRUCTURE DETAIL - CANTILEVER

SCALE: 3/16" = 1'-0"

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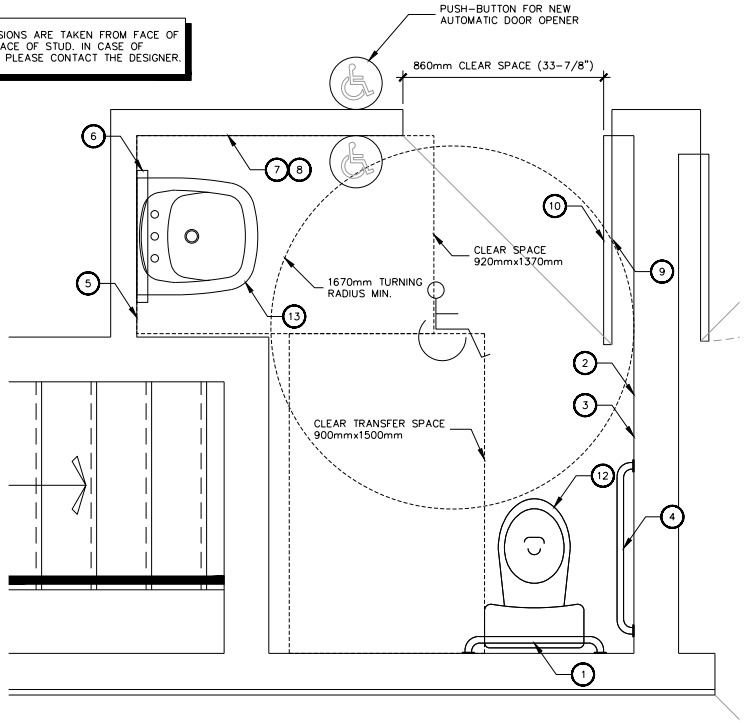
172 MAIN ST.
DEVELOPMENT

CLIENT
ROBBIE GHARIB
TONY EL HAIBI

A-103a of A-111

PROVIDE AN EMERGENCY CALL SYSTEM THAT CONSISTS OF AUDIBLE AND VISUAL DEVICES INSIDE AND OUTSIDE OF THE WASHROOM THAT ARE ACTIVATED BY A CONTROL DEVICE INSIDE THE WASHROOM AND AN EMERGENCY SIGN THAT CONTAIN THE WORDS : IN THE EVENT OF AN EMERGENCY PUSH EMERGENCY BUTTON AND AUDIBLE AND VISUAL SIGNAL WILL ACTIVATE IN LETTERS AT LEAST 25MM HIGH WITH A 5MM STROKE.

ALL DIMENSIONS ARE TAKEN FROM FACE OF STUD TO FACE OF STUD. IN CASE OF OMISSIONS, PLEASE CONTACT THE DESIGNER.



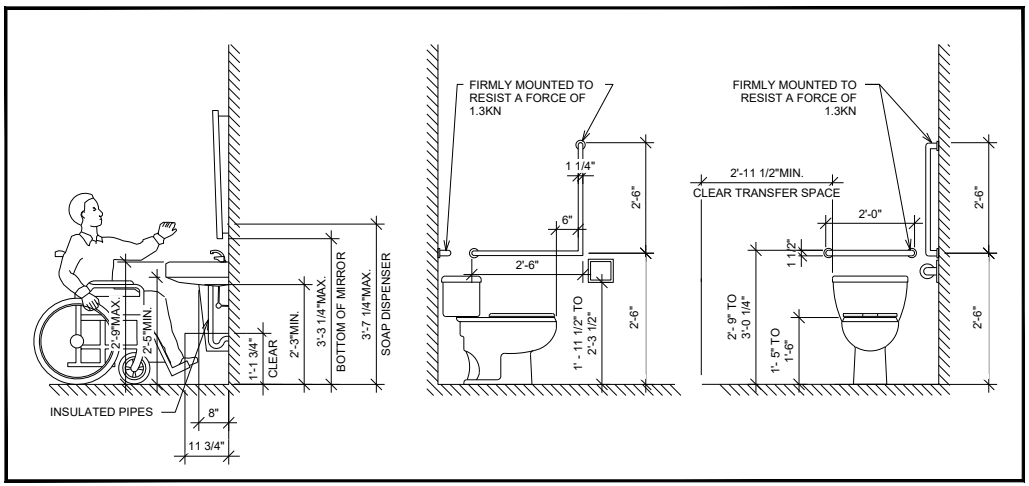
BARRIER-FREE WASHROOM

SCALE: 3/4" = 1'-0"

WASHROOM EQUIPMENT LIST		
ITEM	DESCRIPTION	REFERENCE
1	GRAB BAR	DISTRIBUTOR: FROST PRODUCTS LTD. ITEM CODE: 1001 24"
2	NAPKIN DISPOSAL	DISTRIBUTOR: FROST PRODUCTS LTD. ITEM CODE: 633-2
3	TOILET PAPER DISPENSER	DISTRIBUTEUR: FROST PRODUCTS LTD. ITEM CODE: 158S
4	L-SHAPED GRAB BAR	DISTRIBUTOR: FROST PRODUCTS LTD. ITEM CODE: 1003 30"X 30"
5	SOAP DISPENSER	DISTRIBUTOR: FROST PRODUCTS LTD. ITEM CODE: 708-A
6	ANGLE MIRROR	DISTRIBUTOR: FROST PRODUCTS LTD. ITEM CODE: 941-FT
7	RECESSED TOWEL DISPENSER AND REFUSE	DISTRIBUTOR : FROST PRODUCTS LTD. ITEM CODE 400-A
8	RECESSED SHELF 16 1/2" x 6 1/2"@ MAX 39" FROM FLOOR	ASI WATROUS, MODEL 0412
9	COAT HOOK @ 48" FROM FLOOR ON WALL	DISTRIBUTOR : FROST PRODUCTS LTD. ITEM CODE 1138-S
10	PICTOGRAM	DISTRIBUTOR : FROST PRODUCTS LTD. ITEM CODE 966, 960 AND 961
11	FURR WALL, BACKING & INSULATION AS REQ.	TREATED LUMBER FOR MOLD GROWTH PREVENTION
12	BARRIER FREE W/C	AS PER CLIENT SELECTION
13	BARRIER FREE SINK	AS PER CLIENT SELECTION c/w PIPE COVER
14	SPACE OF 810mm x 1830 mm FOR FUTURE ADULT SIZED CHANGE TABLE	NO EQUIPMENT REQUIRED AT THIS TIME.

* NOTE : PROVIDE PLYWOOD BACKER BOARD @ WALL FOR REINFORCEMENT ADJACENT AND BEHIND TOILET, SHOWER, FUTURE ADULT SIZE CHANGE TABLE FOR GRAB BAR INSTALLATION - TO BE OF TREATED LUMBER FOR MOLD GROWTH PREVENTION : TYPE BLUWOOD OR EQUIVALENT

* NOTE : BARRIER FREE WASHROOM TO COMPLY WITH SECTION 3.8.3.12. UNIVERSAL TOILET ROOMS FROM THE ONTARIO BUILDING CODE 2012, LATEST REVISIONS (INCLUDING THE EMERGENCY PUSH BUTTON WITH SIGNAGE)



BARRIER FREE DETAILS

SCALE: NTS

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CLIENT
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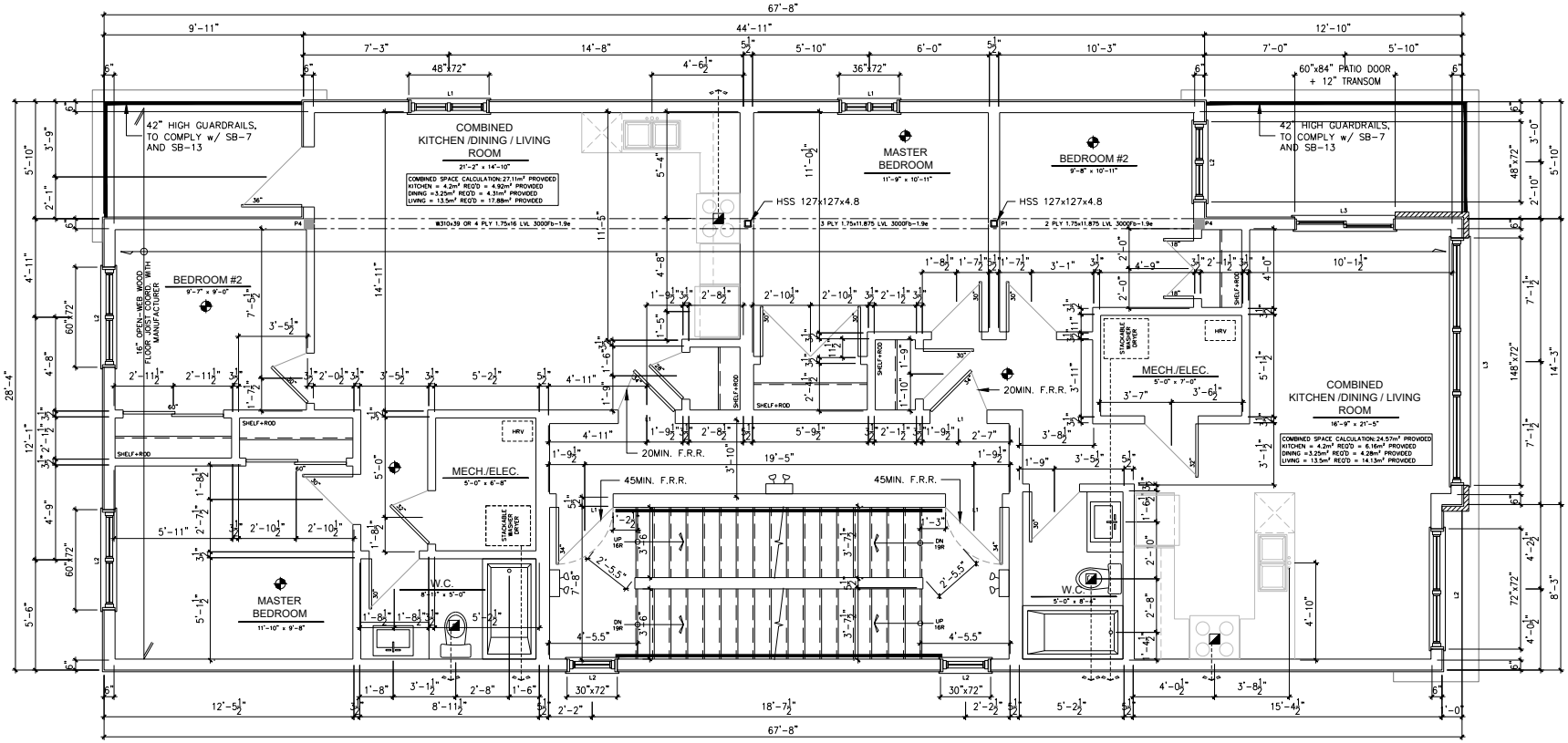
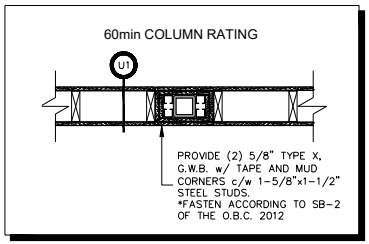


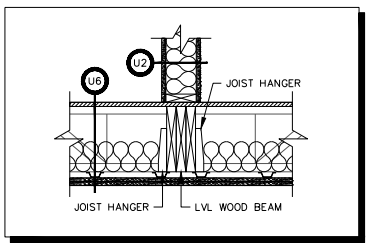
PROPOSED - SECOND FLOOR LAYOUT

SCALE: 1/4" = 1'-0"



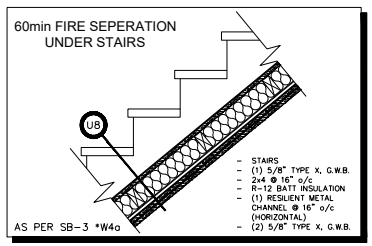
COLUMN DETAIL - 60min FRR

SCALE: 3/4" = 1'-0"



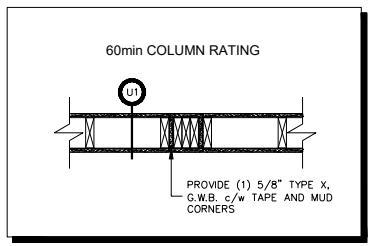
DETAIL - FLUSH BEAM

SCALE: 3/4" = 1'-0"



STAIR DETAIL - 60min FRR

SCALE: 3/4" = 1'-0"



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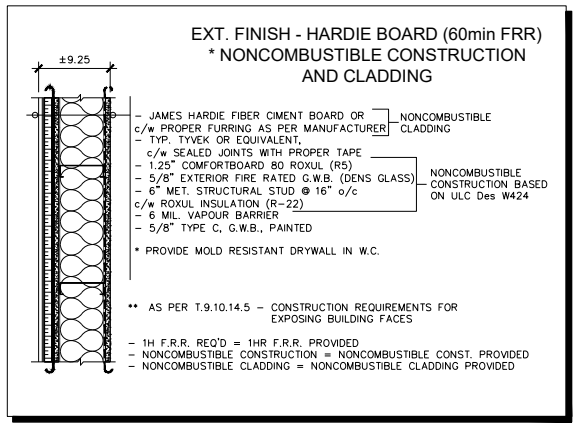

EXTERIOR WALL NONCOMBUSTIBLE CONSTRUCTION

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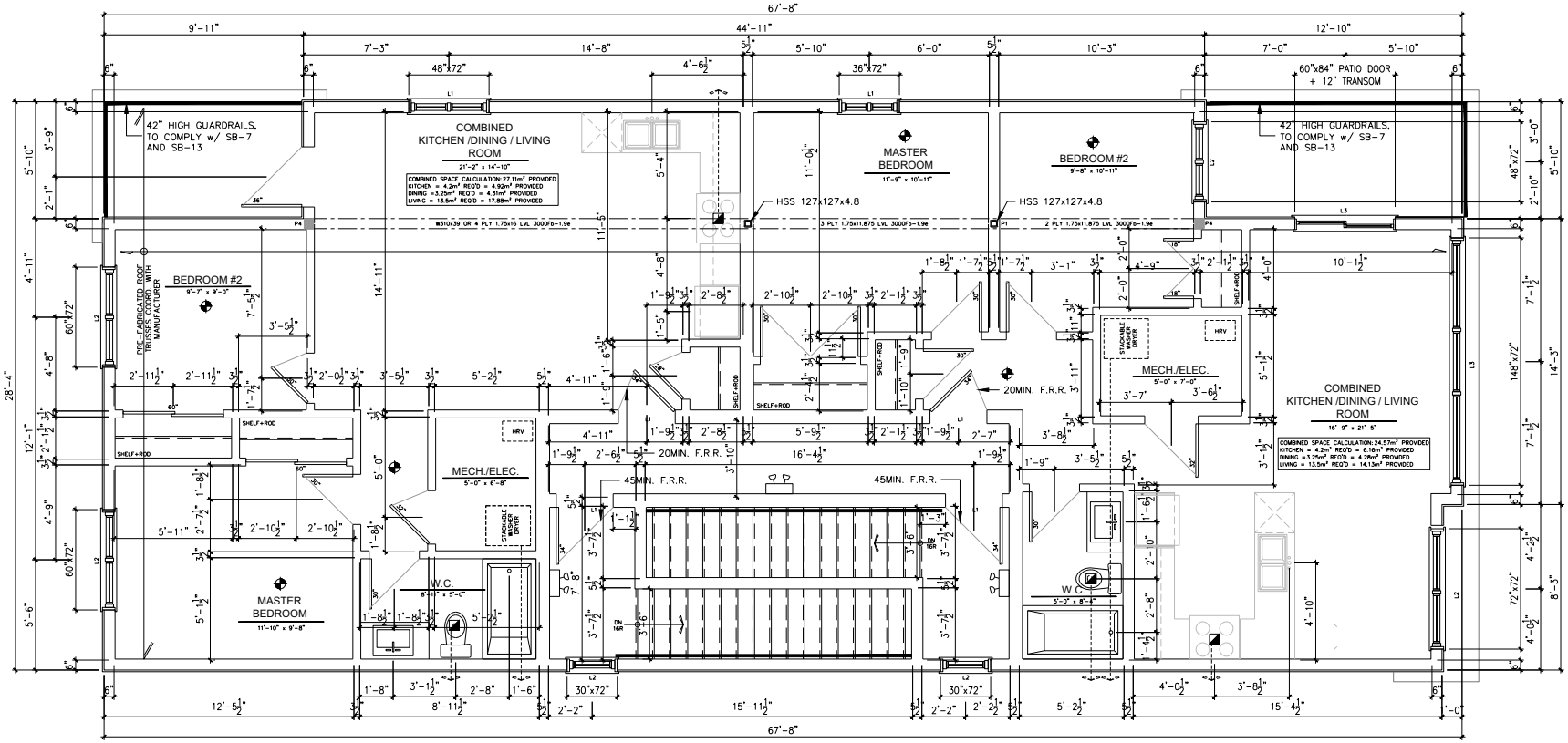


PROPOSED - THIRD FLOOR LAYOUT

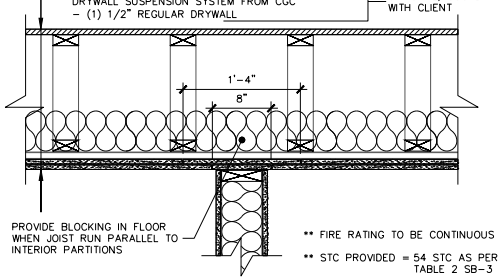
SCALE: 1/4" = 1'-0"

FIRE SEPARATION FLOOR (60min FRR) - SB-3 = F28c

- FLOOR COVERING
- 3/4" TONGUE & GROOVE O.S.B. ASPENITE
- OPEN JOISTS @ 16" o/c (16" HIGH)
- MIN. 6" OF ABSORPTIVE MATERIAL IN CAVITY (R20)
- (1) RESILIENT METAL CHANNEL @ 16" o/c
- (2) 5/8" TYPE X, G.W.B..

- 2x6 CEILING JOIST @ 16" o/c (DROPPED 1'-0") OR DRYWALL SUSPENSION SYSTEM FROM CGC
- (1) 1/2" REGULAR DRYWALL

OPTIONAL, COORD. WITH CLIENT



PROVIDE BLOCKING IN FLOOR WHEN JOIST RUN PARALLEL TO INTERIOR PARTITIONS

** FIRE RATING TO BE CONTINUOUS

** STC PROVIDED = 54 STC AS PER TABLE 2 SB-3

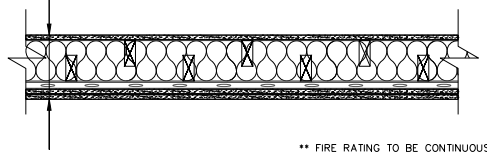
FLOOR SEPARATION - BETWEEN UNITS

SCALE: 1" = 1'-0"

FIRE SEPARATION - INTERIOR WALL (60min FRR)

- (2) 5/8" TYPE X, G.W.B.
- TWO ROWS OF 2x4 @ 16" o/c STAGGERED ON COMMON 2x6 PLATE
- ABSORPTIVE MATERIAL IN BOTH CAVITY (R12)
- (1) RESILIENT METAL CHANNEL @ 16" o/c (HORIZONTAL)
- (1) 5/8" TYPE X, G.W.B.

60 MIN. AS PER SB-3 W11a COMPOSITION



** FIRE RATING TO BE CONTINUOUS

** STC PROVIDED = 56 STC AS PER SB-3 W11a COMPOSITION

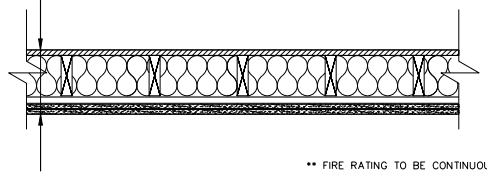
FIRE SEPARATION - INTERIOR WALL BETWEEN UNITS, PUBLIC CORRIDORS AND STAIRS/EXITS

SCALE: 1" = 1'-0"

FIRE SEPARATION FLOOR (60min FRR)

- FLOOR COVERING
- 3/4" TONGUE & GROOVE O.S.B. ASPENITE
- 2x8 JOISTS @ 12" o/c c/w BLOCKING AT MIDSPAN.
- MIN. 6" OF ABSORPTIVE MATERIAL IN CAVITY (R20)
- (1) RESILIENT METAL CHANNEL @ 16" o/c
- (2) 5/8" TYPE X, G.W.B. - 80 MIN. AS PER SB2 T.2.3.4.A.

60 MIN. AS PER SB-3 F9c COMPOSITION



** FIRE RATING TO BE CONTINUOUS

** STC PROVIDED = 52 STC AS PER SB-3 F9c COMPOSITION

FLOOR SEPARATION - LANDINGS

SCALE: 1" = 1'-0"

ABSOLUTE ARCHITECTURE + DESIGN

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= PROVIDE MECHANICAL EXHAUST TO OUTSIDE

ÉCHELLE/SCALE
AS INDICATED

DATE
2020.01.29

ISSUED FOR COORDINATION

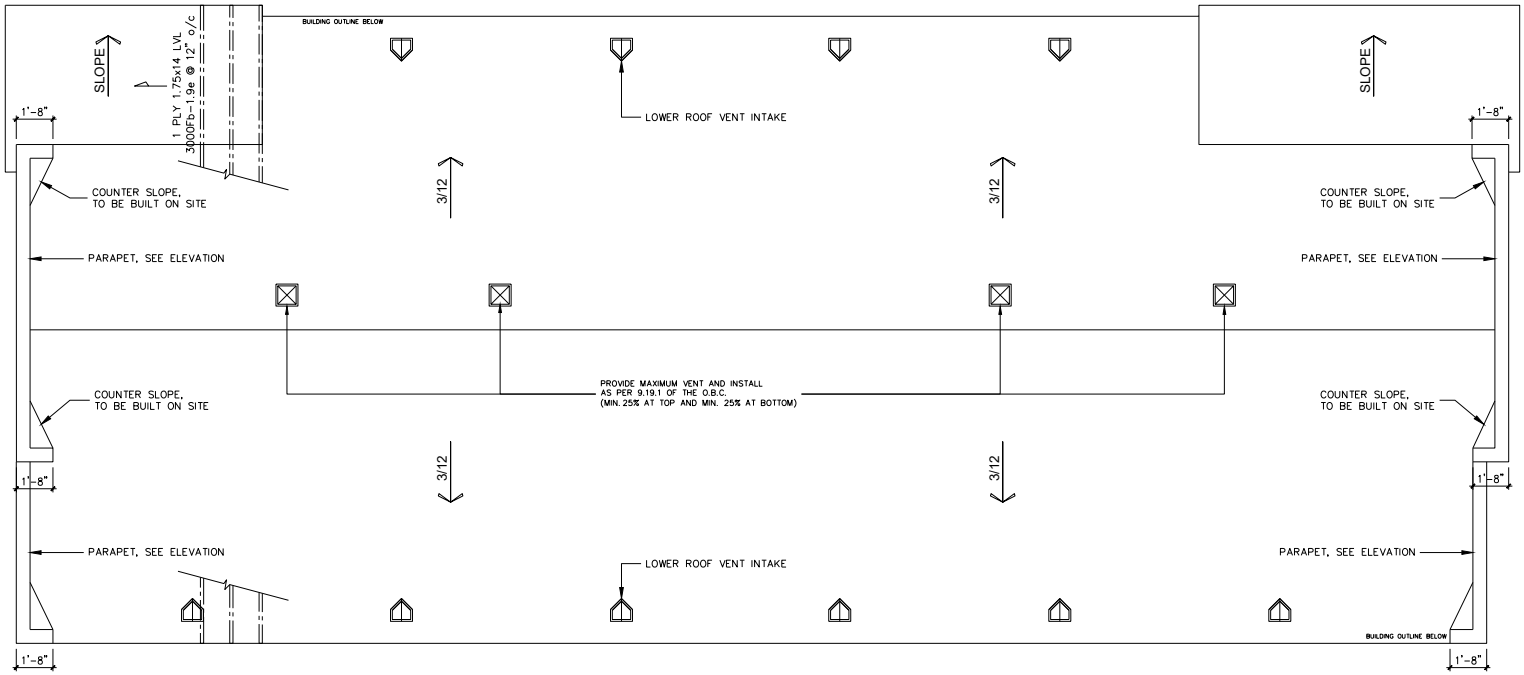
PROJET/PROJECT
19A019-REV01

ABSOLUTE ARCHITECTURE + DESIGN
PERS. BCIN #44555
FIRM. BCIN #45254

DESSIN/DRAWING
THIRD FLOOR LAYOUT

PROJET/PROJECT
172 MAIN ST. DEVELOPMENT

CLIENT
ROBBIE GHARIB
TONY EL HAIBI



PROPOSED - ROOF LAYOUT

SCALE: 1/4" = 1'-0"

ROOF AND FLOOR LAYOUT NOTES:

– ROOF AND FLOOR LAYOUT IS A SCHEMATIC LAYOUT TO ASSIST THE TRUSS MANUFACTURER. PROVIDE THE TRUSS MANUFACTURER'S ROOF AND FLOOR LAYOUT FOR BUILDING PERMIT APPLICATION AND FOR THE ON-SITE FRAMING. THE DRAFTING SERVICE OFFICE NEEDS TO BE AWARE OF ANY ALTERNATIVES OR CHANGES REGARDING THE ROOF AND FLOOR'S SCHEMATIC LAYOUT BEFORE THE CONSTRUCTION BEGINS, PROVIDE SUPPORT UNDER GIRDER TRUSS & SOLID BLOCKING DOWN TO FOUNDATION.

NOTE:
PROVIDE MINIMIM 2 ROWS OF "ICE AND WATER SHIELD MEMBRANE" AT ALL ROOF PERIMETER AND AT ALL ROOF VALLEY'S. ALL VALLEY'S TO BE COMPLETED WITH FLAT STOCK SHEET METAL.

NOTE:
COORD. FLOOR JOIST, LINTEL, ROOF TRUSS AND POSTS WITH MANUFACTURER AND P.ENG. IN OTHER CASE.

NOTE:
COORD. LOCATION OF ALL VENTING UNITS, EXTERIOR LIGHTING, ETC. WITH CLIENT AND MANUFACTURERS.

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DESSIN/DRAWING
ROOF LAYOUT

PROJET/PROJECT
172 MAIN ST. DEVELOPMENT

CLIENT
ROBBIE GHARIB
TONY EL HAIBI

NOTE:
BASE FOOTINGS TO BE PLACED BELOW FROST LINE ON NATIVE UNDISTURBED SOIL HAVING A MINIMUM BEARING CAPACITY OF 75KPa, COORD. ON SITE.

WHERE FROST LINE DEPTH IS NOT POSSIBLE ON SITE, PROVIDE MIN. 2" RIGID INSULATION ON FOUNDATION WALL DOWN VERTICALY MIN. 2'-0" AND HORIZONTALY MIN. 3'-0" ON GRADE, COORD. ON SITE.

NOTE:
COORD. ALL MAN DOORS AND WINDOWS WITH CLIENT. REFER TO CHOSEN OPTIONS FOR PROPER ROUGH OPENING WIDTHS

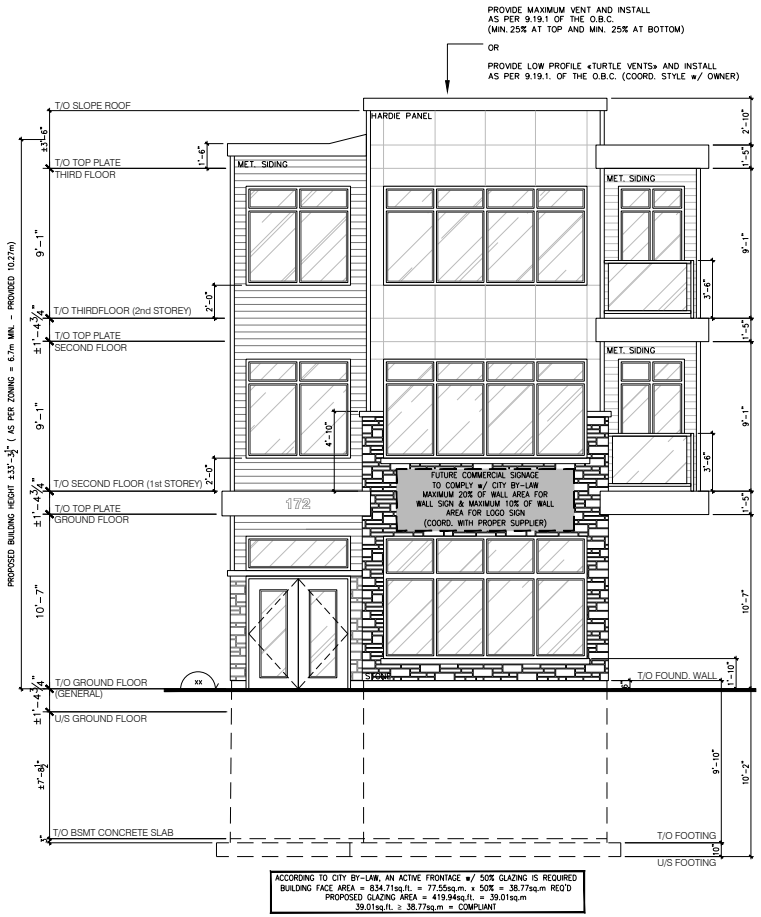
NOTE:
COORD. LOCATION OF ALL VENTING UNITS, EXTERIOR LIGHTING, ETC. WITH CLIENT AND MANUFACTURERS.

NOTE:
GLAZING INSTALLED OVER STAIRS, RAMPS AND LANDING THAT EXTENDS TO LESS THAN 1070mm ABOVE THE SURFACE OF THE TREADS, RAMP OR LANDING; AND

GLAZING INSTALLED IN PUBLIC AREAS THAT EXTENDS TO LESS THAN 1000mm FROM THE FLOOR AND IS LOCATED ABOVE THE SECOND STOREY IN BUILDINGS OF RESIDENTIAL OCCUPANCY SHALL BE:

– NON-OPENABLE AND DESIGNED TO WITHSTAND A 0.75kN/m OR A CONCENTRATED LOAD OF 1.0kN APPLIED AT ANY POINT (A.4.1.5.14)

NOTE:
THE EXISTING FOOTINGS OF THE PROPERTY LOCATED AT 176 MAIN ST., OTTAWA, WILL NOT BE UNDERPINNED BY THE PROPOSED CONSTRUCTION. IN CASE OF OMISSION, PLEASE CONTACT THE ENGINEER ON THE PROJECT.



ACCORDING TO CITY BY-LAW, AN ACTIVE FRONTAGE w/ 50% GLAZING IS REQUIRED
BUILDING FACE AREA = 834.71sq.ft. = 77.55sq.m. x 50% = 38.77sq.m REQ'D
PROPOSED GLAZING AREA = 419.94sq.ft. = 39.01sq.m
39.01sq.ft. ≥ 38.77sq.m = COMPLIANT

PROPOSED - FRONT ELEVATION (MAIN ST.)

SCALE: 3/16" = 1'-0"

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DESSIN/DRAWING
ELEVATION

PROJET/PROJECT
172 MAIN ST. DEVELOPMENT

CLIENT
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TONY EL HAIBI

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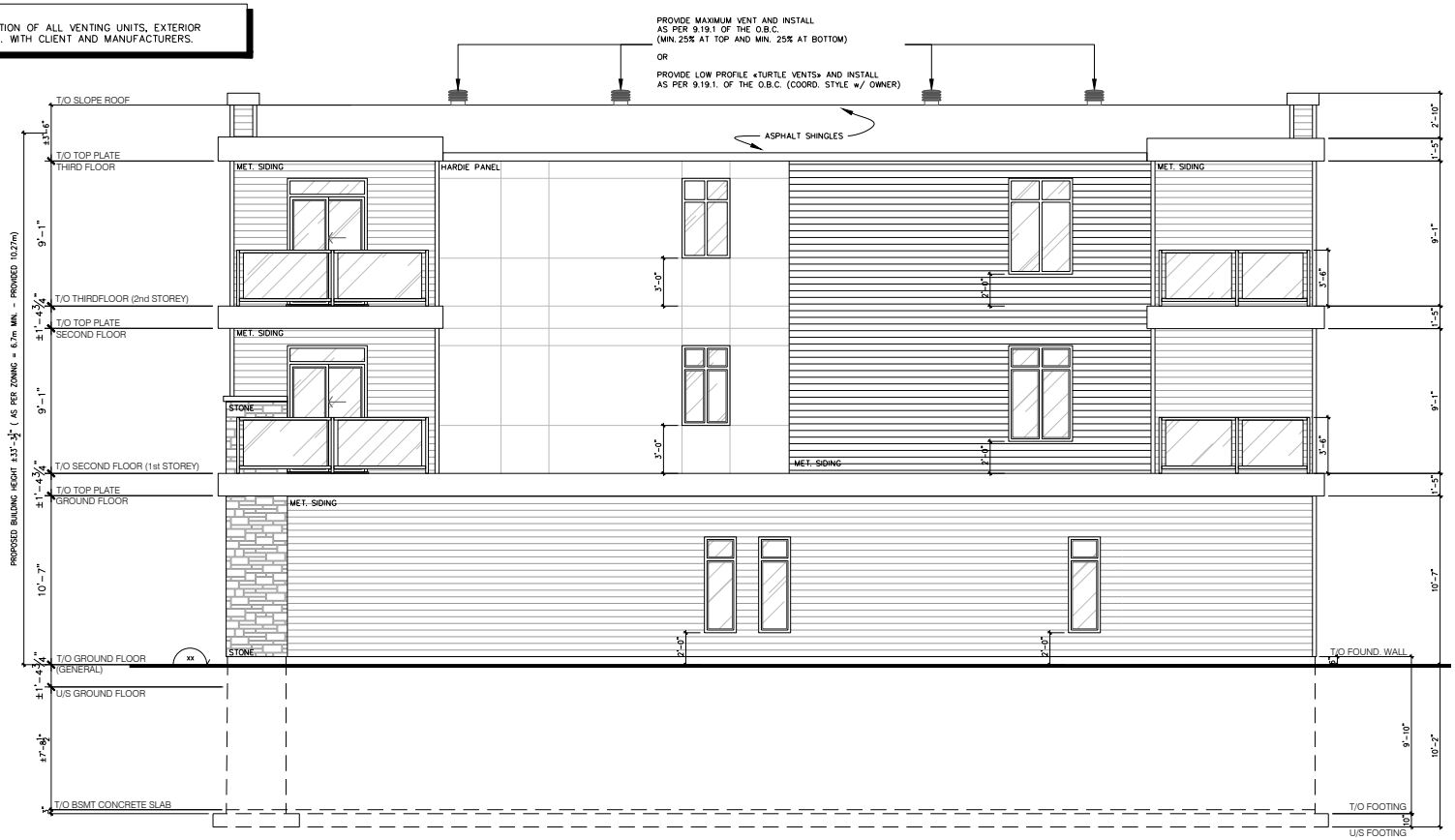

PROPOSED - RIGHT ELEVATION

SCALE: 3/16" = 1'-0"

AREA 1:
LIMITING DISTANCE = 3.05m
TOTAL AREA OF EXPOSED BUILDING FACE = 66.65sq.m
MAXIMUM AGGREGATE AREA OF UNPROTECTED OPENINGS = 16.75% = 11.16sq.m
PROVIDED AGGREGATE AREA OF UNPROTECTED OPENINGS = (3)24"x72" = 3.34sq.m = OK

AREA 2a:
LIMITING DISTANCE = 3.05m
TOTAL AREA OF EXPOSED BUILDING FACE = 12.51sq.m
MAXIMUM AGGREGATE AREA OF UNPROTECTED OPENINGS = 47.74% = 5.97sq.m
PROVIDED AGGREGATE AREA OF UNPROTECTED OPENINGS = (1)60"x96" = 3.72sq.m = OK

AREA 2b:
LIMITING DISTANCE = 1.245m
TOTAL AREA OF EXPOSED BUILDING FACE = 22.32sq.m
MAXIMUM AGGREGATE AREA OF UNPROTECTED OPENINGS = 8.23% = 1.84sq.m
PROVIDED AGGREGATE AREA OF UNPROTECTED OPENINGS = (1)36"x60" = 1.39sq.m = OK

AREA 3:
LIMITING DISTANCE = 1.245m
TOTAL AREA OF EXPOSED BUILDING FACE = 31.38sq.m
MAXIMUM AGGREGATE AREA OF UNPROTECTED OPENINGS = 7.28% = 2.28sq.m
PROVIDED AGGREGATE AREA OF UNPROTECTED OPENINGS = (1)48"x72" = 2.23sq.m = OK

AREA 4a:
LIMITING DISTANCE = 3.05m
TOTAL AREA OF EXPOSED BUILDING FACE = 12.51sq.m
MAXIMUM AGGREGATE AREA OF UNPROTECTED OPENINGS = 47.74% = 5.97sq.m
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AREA 5:
LIMITING DISTANCE = 1.245m
TOTAL AREA OF EXPOSED BUILDING FACE = 31.38sq.m
MAXIMUM AGGREGATE AREA OF UNPROTECTED OPENINGS = 7.28% = 2.28sq.m
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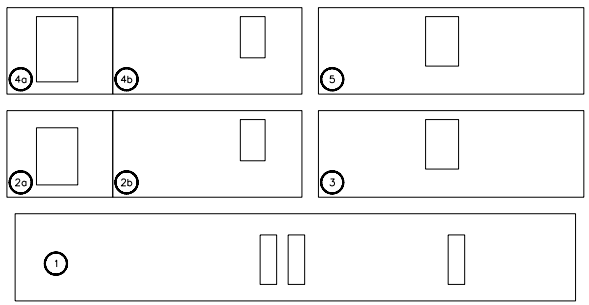

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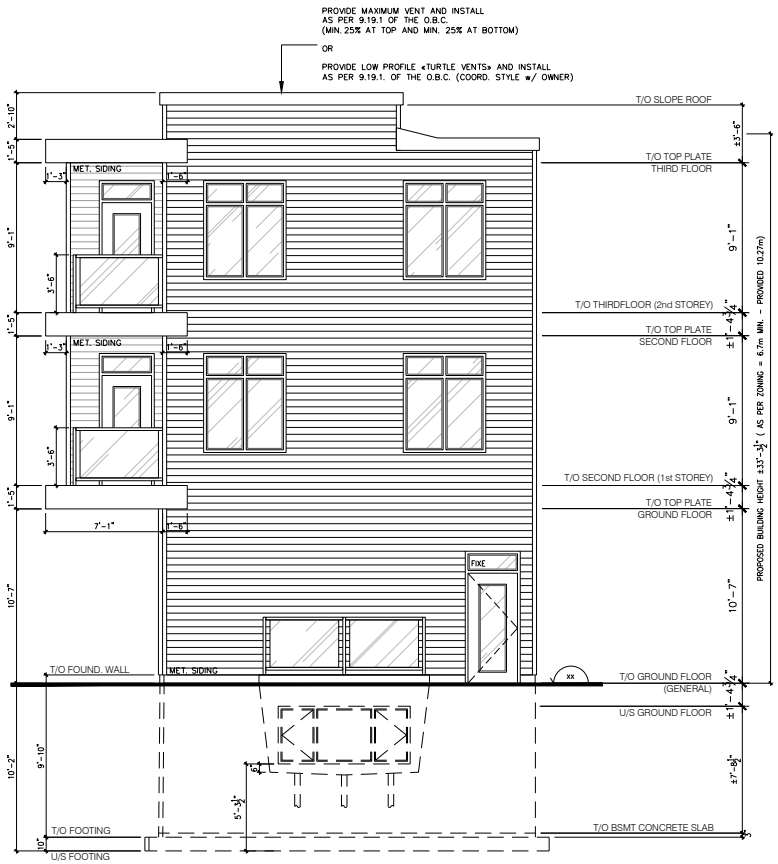

PROPOSED - REAR ELEVATION

SCALE: 3/16" = 1'-0"

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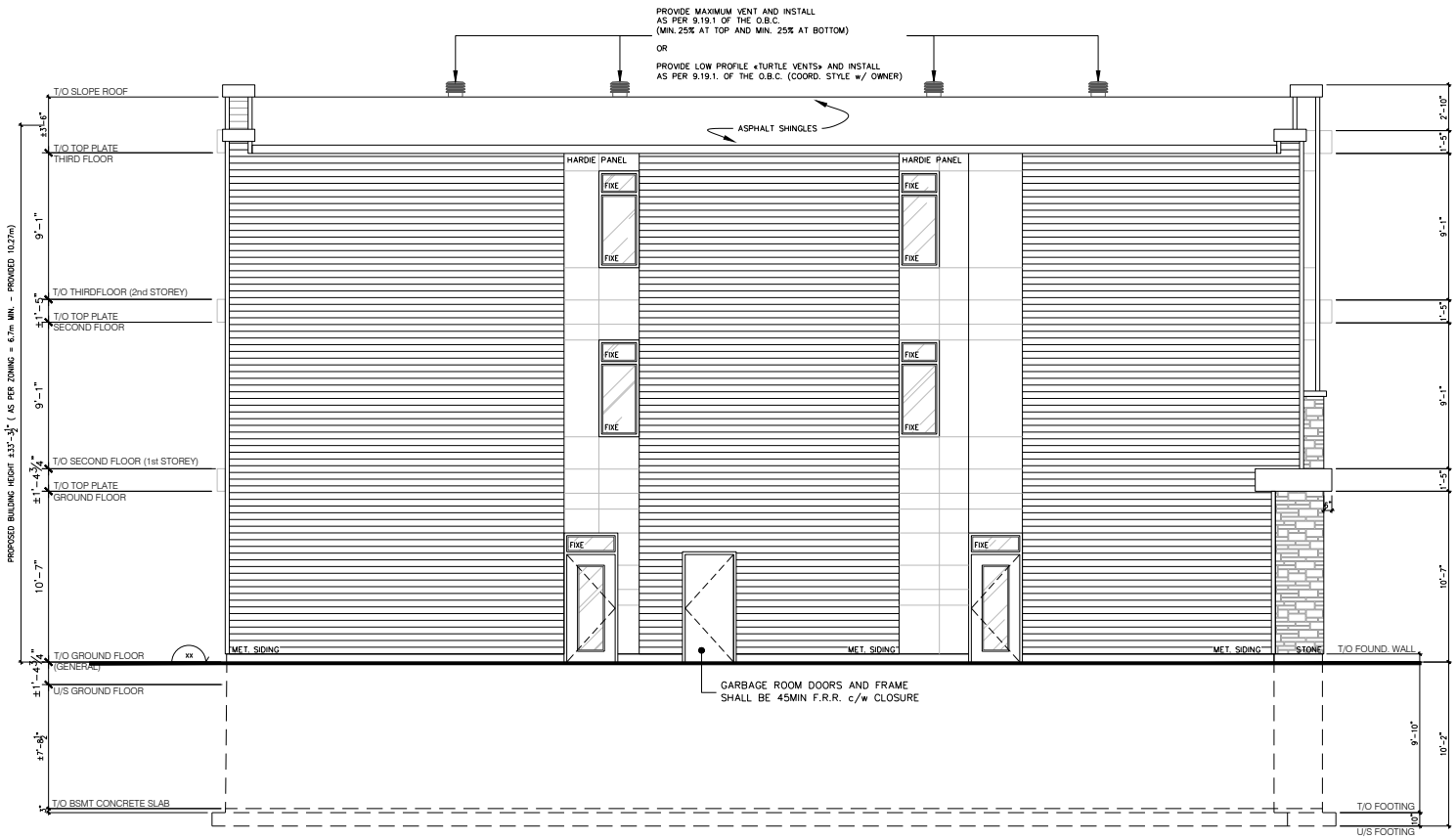

U.P.O. CALCULATION = 2,145 SQ.FT. WALL AREA (ENTIRE BUILDING FACE)
PERMITTED OPENING IN BUILDING FACE = T.9.10.14.4 = 7% @ 1.2M = 150.15 SQ.FT.
PROPOSED OPENING IN BUILDING FACE = 113.32 SQ.FT. < 158.14 SQ.FT = PERMITTED

PROPOSED - LEFT ELEVATION

SCALE: 3/16" = 1'-0"

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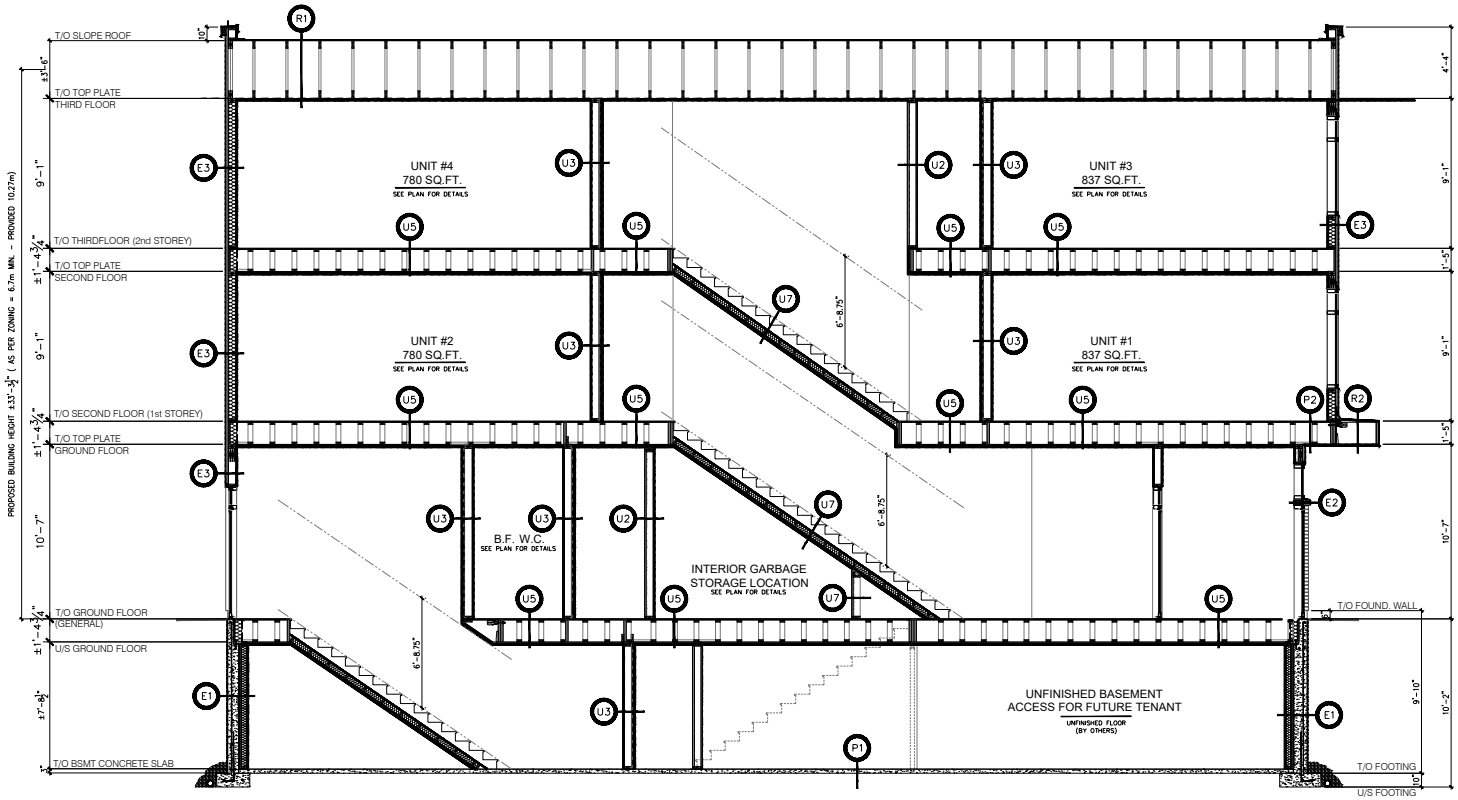

PROPOSED - BUILDING SECTION

SCALE: 3/16" = 1'-0"

R1 ROOF

- ASPHALT SINGLES (30 YEARS) c/w EAVE PROTECTION
- #15 ASPHALT SATURATED FELT
- 1/2" T&G ROOF SHEETING c/w "H" CLIPS
- PRE-FAB. ROOF TRUSSES, INSTALLED AT 24"o/c
- BLOWN INSULATION (R-60)
- 6 MIL. VAPOUR BARRIER
- 1x4" WOOD FURRING @ 16" o/c (COORD. NEED WITH MANUF.)
- 5/8" PAINTED TYPE X, DRYWALL

R2 DECK / FLAT ROOF

- 5/4 DECK BOARD OR SIMILAR FINISH SUPPORTED ON CUT P.T. 2X6 @ 12" o/c (TO CREATE A FLAT ON TOP OF SLOPE ROOF)
- THERMOFUSIBLE MEMBRANE SYSTEM FROM SOPREMA OR EQUIVALENT (REFER TO MANUF. SPEC'S)
- 3/4" T&G SHEETING (PLYWOOD)
- OPEN-WEB WOOD JOIST 16" HIGH @ 16" o/c NAILED AND GLUED c/w MID-SPAN BRIDGING
  * LIVE LOAD 40 * DEAD LOAD 15
- 5/8" EXTERIOR FIRE RATED G.W.B. (DENS GLASS)
- TYP. TYVEK OR EQUIVALENT, c/w SEALED JOINTS WITH PROPER TAPE
- UN-VENTED ALUMINUM SOFFIT

E1 EXTERIOR FOUNDATION WALL

- PARGING (SAND FINISH) ABOVE GRADE
- DRAINAGE LAYER, TYP. DELTA-MS OR EQUIVALENT
- 2 COATS OF DAMPROOFING BELOW GRADE
- 8" OR 10" POURED CONCRETE FOUNDATION WALL
- 2" RIGID INSULATION (R-10)
- 2x4 @ 24" o/c c/w BATT INSULATION (R-12)
- 5/8" PAINTED, TYPE X, DRYWALL

* PROVIDE MOLD RESISTANT DRYWALL IN W.C.

E2 EXTERIOR FINISH - STONE

- STONE/BRICK, COORD. COLOR WITH CLIENT
- 1" AIR SPACE c/w WEEPHOLES @ 2'-7" o/c MAX.
- TYP. TYVEK OR EQUIVALENT, c/w SEALED JOINTS WITH PROPER TAPE
- 7/16" EXTERIOR SHEETING (ASPENITE)
- 2x6 @ 16" o/c c/w BATT INSULATION (R-22)
- 6 MIL. VAPOUR BARRIER
- 5/8" PAINTED, TYPE X, DRYWALL

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E3 EXTERIOR FINISH - HARDIE PANEL AND/OR MET. SIDING

- EXTERIOR HARDIE PANEL AND/OR GENTEK DISTINCTION - SPECIALTY SIDING (COORD. w/ OWNER) c/w PROPER FURRING AS PER MANUFACTURER
- TYP. TYVEK OR EQUIVALENT, c/w SEALED JOINTS WITH PROPER TAPE
- 7/16" EXTERIOR SHEETING (ASPENITE)
- 2x6 @ 16" o/c c/w BATT INSULATION (R-22)
- 6 MIL. VAPOUR BARRIER
- 5/8" PAINTED, TYPE X, DRYWALL

* PROVIDE MOLD RESISTANT DRYWALL IN W.C.

U1 INTERIOR WALL - 2x4 (ULC W301)

- 5/8" PAINTED TYPE X, DRYWALL
- 2x4 @ 16" o/c c/w SOUND INSULATION (COORD. THE NEED WITH CLIENT)
- 5/8" PAINTED TYPE X, DRYWALL

* PROVIDE MOLD RESISTANT DRYWALL IN W.C.

U2 INTERIOR WALL - 2x6 (ULC W301)

- 5/8" PAINTED TYPE X, DRYWALL
- 2x6 @ 16" o/c c/w SOUND INSULATION (COORD. THE NEED WITH CLIENT)
- 5/8" PAINTED TYPE X, DRYWALL

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U3 INTERIOR WALL - FIRE SEPARATION

SEE DETAIL ON DRAWING A-105

U4 EXTERIOR WALL - FIRE RATED

SEE DETAIL ON DRAWING A-104

U5 INTERIOR FLOOR - GENERAL

SEE DETAIL ON DRAWING A-105

U6 INTERIOR FLOOR - LANDING

SEE DETAIL ON DRAWING A-105

U7 INTERIOR - STAIRS

SEE DETAIL ON DRAWING A-104

i1 INTERIOR WALL - 2x4

- 1/2" PAINTED REGULAR DRYWALL
- 2x4 @ 16" o/c c/w SOUND INSULATION (COORD. THE NEED WITH CLIENT)
- 1/2" PAINTED REGULAR DRYWALL

* PROVIDE MOLD RESISTANT DRYWALL IN W.C.

i2 INTERIOR WALL - 2x6

- 1/2" PAINTED REGULAR DRYWALL
- 2x6 @ 16" o/c c/w SOUND INSULATION (COORD. THE NEED WITH CLIENT)
- 1/2" PAINTED REGULAR DRYWALL

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P1 BASEMENT FLOOR SLAB

- 3" CONCRETE FLOOR SLAB AND 6 MIL. V-B.
- 2" (R10) RIGID INSULATION
- 10" OF 7/8" MINUS MATERIAL
- UNDISTURBED SOIL OR COMPACTED SOIL TO 95% PROCTOR

* SOIL TO BE 75kPa, PROVIDE SOIL TEST REPORT

P2 FLOOR - SUITE / EXTERIOR

- 5/8" UNDERLAY FOR CERAMIC
- 3/4" FLOOR SHEETING (APSENITE)
- 6 MIL. VAPOUR BARRIER
- OPEN-WEB WOOD JOIST 16" HIGH @ 16" o/c NAILED AND GLUED c/w MID-SPAN BRIDGING
  * LIVE LOAD 40 * DEAD LOAD 15
- BATT INSULATION (R40)
- 5/8" EXTERIOR FIRE RATED G.W.B. (DENS GLASS)
- TYP. TYVEK OR EQUIVALENT, c/w SEALED JOINTS WITH PROPER TAPE
- UN-VENTED ALUMINUM SOFFIT

S1 SILL PLATE

- 2x4 SILL PLATE c/w SILL GASKET
- 1/2" DIA. ANCHOR BOLTS @ 72" o/c MAX.

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A-111b of A-111

PROPERTY INFORMATION:

172 MAIN ST., OTTAWA, ONTARIO
PIN: 041260123
LEGAL DESCRIPTION:
PLAN 102 PT LOT 2 BLK A MAIN; W RP 4R17536 PART 2

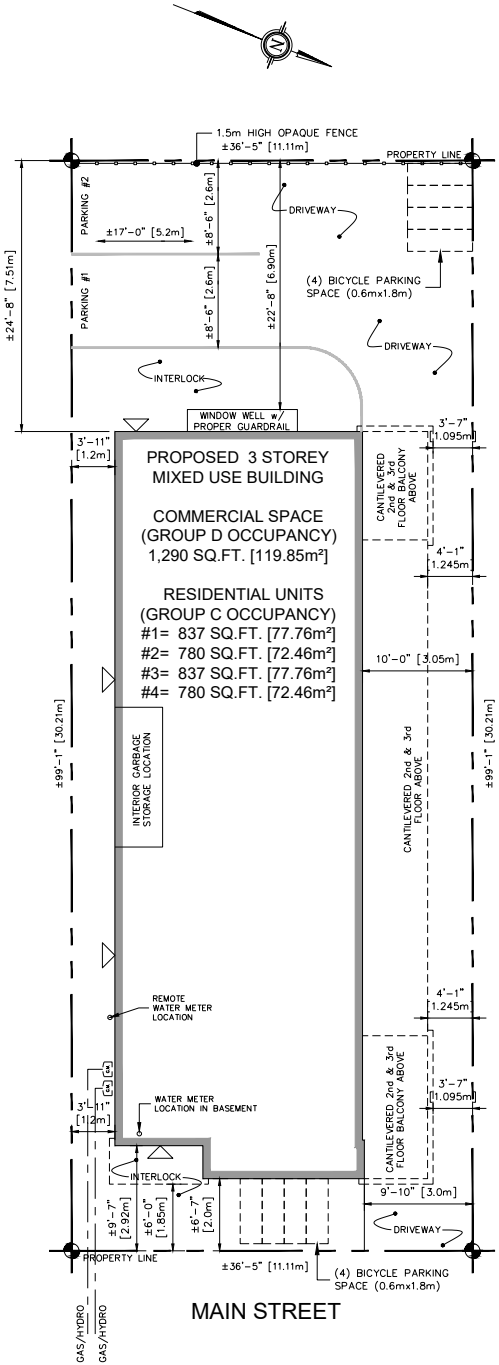
STATISTICS TABLE:

- SITE ZONING = TM
- LOT AREA = 335.63m² [±3,612.73ft²]
- LOT DEPTH = 30.21m [±99'-1"ft]
- LOT WIDTH = 11.11m [±36'-5"ft]
- EXISTING USE = VACANT PROPERTY
- EXISTING TOTAL GFA = N/A
- EXISTING LOT COVERAGE = N/A

PROPOSED DEVELOPMENT:

PROPOSED USE = MIXED USE BUILDING INCLUDING:
– COMMERCIAL SPACE (GROUP D);
– (4) RESIDENTIAL UNIT.

- MAIN FLOOR GFA = 119.85m² [1,290ft²]
- SECOND FLOOR UNIT #1 GFA = 77.76m² [837ft²]
- SECOND FLOOR UNIT #2 GFA = 72.46m² [780ft²]
- THIRD FLOOR UNIT #3 GFA = 77.76m² [837ft²]
- THIRD FLOOR UNIT #4 GFA = 72.46m² [780ft²]
- TOTAL BUILDING GFA = 420.29m² [4,524ft²]
- BUILDING HEIGHT:
  - PROPOSED = 10.15m @ MIDROOF [33'-3.5"]
  - PERMITTED = 6.7m MINIMUM >25M [21'-11.75" > 82']
  - AVERAGE GRADE = TO BE VALIDATED
- FRONT YARD SETBACK:
  - PROPOSED = 2.0m [±6'-6.75"]
  - REQUIRED = 2.0m MINIMUM [±6'-6.75"]
- REAR YARD SETBACK:
  - PROPOSED = 7.51m [24'-8"]
  - REQUIRED = 7.5m [24'-7.25"]
- SIDE YARD SETBACK (WEST):
  - PROPOSED = 3.00m [±9'-10"] (FIRST FLOOR)
  - PROPOSED = 1.245m [4'-1"] (SECOND & THIRD FLOOR)
  - REQUIRED = 1.20m [3'-11.25"]
- SIDE YARD SETBACK (EAST):
  - PROPOSED = 1.20m [±3'-11.25"]
  - REQUIRED = 1.20m [3'-11.25"]
- PERMITTED PROJECTIONS INTO REQUIRED YARDS:
  - FRONT YARD:
    – ENTRANCE CANOPY = 0.15m [0'-6"]
    – 2nd & 3rd FLOOR BALCONY REVEAL = 0.15m [0'-6"]
  - SIDE YARD (EAST):
    – ENTRANCE CANOPY = 0.15m [0'-6"]
  - REAR YARD:
    – ENTRANCE CANOPY = 0.15m [0'-6"]
    – BASEMENT WINDOW WELL = 0.61m [2'-0"]
  - SIDE YARD (WEST):
    – 2nd & 3rd FLOOR BALCONY REVEAL = 0.15m [0'-6"]
- PROPOSED LOT COVERAGE = 140.847m² = 41.96%
- PROPOSED VEGETATION COVERAGE:(TOTAL = 18.30%)
  - SOD/GRASS = N/A
  - SOFT LANDSCAPE (INTERLOCK) = 61.43m² = 18.30%
- VEHICLE PARKING SPACE:
  - PROPOSED = (2) 2.6m x 5.2m
  - REQUIRED = N/A
- BICYCLE PARKING SPACE:
  - PROPOSED = (8) 0.6m x 1.8m
    [4xFRONT YARD + 4xREAR YARD]
  - REQUIRED = 0.5/UNIT = 2 MIN. REQUIRED



PROPOSED SITE PLAN

SCALE: 1/8" = 1'-0"

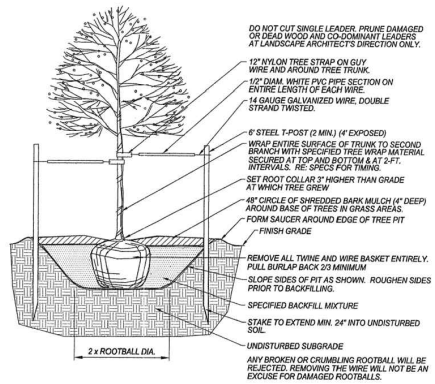
LANDSCAPE NOTES:

1. PLANT MATERIAL SHALL BE OF BEST GRADE AND SHALL COMPLY WITH THE METRIC GUIDE SPECIFICATIONS FOR NURSERY STOCK PUBLISHED BY THE CANADIAN NURSERY TRADE ASSOCIATION.
2. PLANT SUBSTITUTIONS SHALL NOT BE PERMITTED UNLESS APPROVED BY DEVELOPER.
3. CONTRACTOR SHALL WARRANTY ALL PLANT MATERIALS FOR A PERIOD OF ONE (1) FULL YEAR FROM THE DATE OF FINAL ACCEPTANCE.
4. OBTAIN APPROVAL OF PLANTING LOCATIONS PRIOR TO DIGGING.
5. ALL PLANTING BEDS SHALL BE MULCHED.
6. TOPSOIL FOR PLANTING SHALL BE SANDY, LOAMY TEXTURE, ADD ADEQUATE AMOUNT OF BONEMEAL TO ASSIST GROWTH.
7. SOD AREAS TO RECEIVE 100MM TOPSOIL. SOD SHALL BE NO.1 GRADE CONFORMING TO THE CANADIAN SOD GROWERS SPECIFICATIONS.
8. REINSTATE ALL AREAS DAMAGED OR DISTURBED BEYOND THE LIMIT OF WORK.

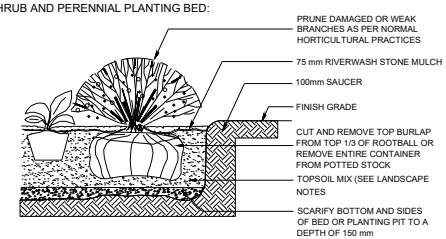
TREE CONSERVATION NOTES (PERTAINING TO TREES LOCATED ON PROPERTY OR ON ADJACENT PROPERTIES:

1. DO NOT PLACE ANY MATERIAL OR EQUIPMENT WITHIN THE CRITICAL ROOT ZONE (CRZ) OF THE TREES.
2. DO NOT ATTACH ANY SIGN, NOTICE OR POSTERS TO ANY TREE.
3. DO NOT RAISE OR LOWER THE EXISTING GRADE WITHIN THE CRZ WITHOUT APPROVAL.
4. TUNNEL OR BORE WHEN DIGGING WITHIN THE CRZ OF A TREE.
5. DO NOT DAMAGE THE ROOT SYSTEM, TRUNK OR BRANCHES OF ANY TREE.
6. ENSURE THAT EXHAUST FUMES FROM ALL EQUIPMENT ARE NOT DIRECTED TOWARDS ANY TREE'S CANOPY.

TREE PLANTING AND PROTECTION:



SHRUB AND PERENNIAL PLANTING BED:



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