



IBI GROUP

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April 12, 2023

Reference No.: ARCADIS IBI GROUP #137680

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**Attention: Naglaa Ahmed, P.Eng.
Engineer**

**Re: Response to City Comments
Zoning By-law Amendment No. 22 202864 STE 11 OZ
Site Plan Control Application No.: 22 202863 STE 11 SA
Your Memorandum Dated: November 28, 2022 and January 17, 2023
Applicant: 17 Elm GP Inc.
Location: 15-17 Elm Street Ward: 11**

Dear Ms. Ahmed:

IBI GROUP PROFESSIONAL SERVICES (CANADA) INC. (ARCADIS IBI GROUP) is in receipt of the City's engineering submission comments dated **November 28, 2022** and **January 17, 2023** for the above-noted project, and provide the following responses. For ease of reference, the City comments have been reiterated in *italics*, with ARCADIS IBI GROUP responses in **bold** below.

PART I: ZONING BY-LAW AMENDMENT

3. Engineering & Construction Services

- 3.1. *Revise the Functional Servicing and Stormwater Management Report to address the comments provided on the attached marked-up, appended to the memorandum as Attachment 1.*

The Functional Servicing and Stormwater Management Report has been updated to address all mark-up comments provided within Attachment 1.

- 3.2. *Revise the Civil Plans to address the comments provided on the attached marked-up, appended to the memorandum as Attachment 2.*

The Engineering Drawings have been updated to address all mark-up comments provided as part of Attachment 2.

- 3.3. *Provide a completed Foundation Drainage Summary Form, appended to this memorandum as Attachment 2.*

The completed Foundation Drainage Summary Form is included in Appendix B.

- 3.4 *Complete the Servicing Report Groundwater Summary form December 2017 appended to the memorandum as Attachment 3 &4.*

The completed Servicing Report Groundwater Summary Form is included in Appendix B.

- 3.5 *Revise the Hydrological Review Summary Form to address the comments provided on the attached marked-up, appended to the memorandum as Attachment 5.*

An updated Hydrogeological report is being completed and will be submitted with the subsequent submissions along with an updated Hydrological Review Summary Form.

- 3.6 *Revise the Civil Plans to address the comments provided on the attached marked-up, appended to the memorandum as Attachment 6.*

The Civil Plans have been updated to address the comments provided.

- 3.7 *Submit an Exemption Application to the satisfaction of the General Manager of Toronto Water than Long-term Discharge of Foundation Drainage is required.*

No long-term discharge of foundation drainage is proposed. All infiltrated stormwater can be reused on site.

- 3.8 *Provide signed and stamped Architectural plan to accompany the Functional Servicing and Stormwater Management Report as per Attachment 7.*

The most recent set of architectural plans have been included in Appendix A.

PART II: SITE PLAN CONTROL APPLICATION

4. Engineering & Construction Services

- 4.1 *Revise the Functional Servicing and Stormwater Management Report to address the comments provided on the attached marked-up, appended to the memorandum as Attachment 1.*

The Functional Servicing and Stormwater Management Report has been updated to address all mark-up comments provided within Attachment 1.

- 4.2 *Revise the Civil Plans to address the comments provided on the attached marked-up, appended to the memorandum as Attachment 2.*

The Engineering Drawings have been updated to address all mark-up comments provided as part of Attachment 2.

- 4.5 *Provide an itemized cost estimate for all items to be installed / constructed / planted within the Jarvis Street right-of-way, and George Street right-of-way. The estimate shall show a breakdown of the unit cost and their corresponding quantities of each item included in the streetscaping works within the City right-of-way, including but not limited to; asphalt restoration, new concrete curb, concrete sidewalk, and tactile surface indicator.*

An itemized cost estimate will be provided once the City has endorsed the location of the proposed watermain upgrade location.

- 4.6 *Provide written confirmation from the structural/building engineer designing the building that the floor slabs and sidewalls of the stormwater management tank will be designed to take most critical loading including the full weight of the maximum volume of stormwater management tanks. This letter must be stamped and signed by a licensed Professional Engineer.*

A written confirmation letter from the structural engineer has been provided in Appendix C.

We trust that this letter provides you with the additional information which you required at this time. Should you have any questions or comments, please do not hesitate to contact our office.

Yours sincerely,

IBI GROUP PROFESSIONAL SERVICES (CANADA) INC.



Cassidy Goetz, P.Eng.
Project Engineer
Land Engineering

CG/sm



Final Report
Functional Servicing and Stormwater Management Report (FSR/SWM)

17 Elm Street, City of Toronto



Prepared for Fora Developments
by IBI Group
IBI Group Project #137680
August 25, 2022

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AUTHORIZED FOR ISSUE BY:

IBI GROUP



Jason Jenkins, P.Eng., P.E.
 Associate Manager
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- Appendix A** Background Information
- Appendix B** Groundwater
- Appendix C** Stormwater Analysis
- Appendix D** Sanitary Analysis
- Appendix E** Water Analysis

List of Drawings

SG-01	Site Grading Plan
SS-01	Site Servicing Plan
EC-01	Erosion and Sediment Control Plan
DD-01	Details and Notes

1 Introduction

1.1 Background

IBI Group Professional Services (Canada) Inc. (IBI Group) has been retained by For a Developments (the “Owner”) to prepare a Functional Servicing Report to support the Zoning By-Law Amendment (ZBA) and a Site Plan Application (SPA) for a proposed mixed-use development located at 15-17 Elm Street (the “Subject Site”), in the City of Toronto (the “City”). The purpose of this report is to develop a municipal site servicing strategy (stormwater, sanitary discharge, and water supply), and to identify any potential constraints within the existing municipal infrastructure.

More specifically, the report will present the following:

- Calculate allowable and proposed runoff rates for the development;
- Evaluate suitable methods for attenuation and treatment of stormwater runoff;
- Develop on-site control measures and examine theoretical performance to satisfy the City’s Wet Weather Flow Management Guidelines (WWFMG);
- Evaluate groundwater quantity and quality parameters from the hydrogeological report and develop a strategy to manage groundwater under both short- and long-term conditions to comply with the City of Toronto’s Discharge By-Law criteria;
- Develop a Stormwater Management (SWM) plan that complies with the City’s Wet Weather Flow Management Guidelines (WWFMG);
- Identify sanitary servicing opportunities and constraints and evaluate the capacity of the receiving municipal sewer; and,
- Identify water servicing opportunities and constraints, calculate the proposed domestic water and firefighting supply needs; and evaluate the capacity of the municipal infrastructure.

The following documents have been obtained from various sources:

- City of Toronto plan and profile drawings for Elm Street;
- City of Toronto Digital Map Owners Group (DMOG) mapping;
- Topographic Survey prepared by Barich Grenkie Surveyors Ltd., dated May 2022; and,
- Architectural plans and site statistics prepared by Partisans Architects.

1.2 Existing Site Description

Located in the City of Toronto at 15 and 17 Elm Street, the 793 m² (0.08 ha) subject site is bounded by a small laneway to the east and south, Elm Street to the north, and commercial buildings to the west. Please see **Figure 1** following the report for an aerial view of the site.

The site currently hosts an existing commercial building and an asphalt parking surface. The site is relatively flat with ground surface elevations ranging from 93.88 m to 94.20 m and is self-contained with no external drainage areas to consider.

The subject site is located within Basement Flooding Study Area (BFA) #42 which is currently in progress, therefore, the Environmental Assessment documentation and Infoworks model were not available at the time of this report.

1.3 Site Proposal

The proposed development includes the construction of a 32-storey mixed-use building. The existing buildings will be removed within the subject site. Two underground levels are also proposed which will contain parking, storage, and the utility rooms. Sample architectural drawings can be found in **Appendix A** for reference.

1.4 Service Connections

The City of Toronto requires individual service connections for each built form. As only one building is proposed, a single set of connections will be provided.

Furthermore, the Ontario Building Code (OBC) requires two fire service connections separated by an isolation value for any building above 84 m in height. As the proposed building will exceed this limit, two fire service connections is required. Specific site servicing details will be further discussed in subsequent sections.

2 Terms of Reference and Methodology

2.1 Terms of Reference

The terms of reference used for the scope of this report have been based on the City of Toronto Design Criteria for Sewers and Watermains, dated January 2021, and the City of Toronto Wet Weather Flow Management Guidelines, dated November 2006. The City's Sewer Capacity Assessment Guidelines (July 2021) were referenced to assess the capacity of the existing sanitary sewers.

2.2 Methodology: Stormwater Management

As the proposed development has a total site area less than 5.0 ha (Table 7, Section 2, WWFMG), the following SWM criteria shall apply:

Quantity Control

The allowable release rate to the municipal storm sewer system from the development site during a 2- year design storm event must not exceed the peak runoff rate from the site under pre-development conditions during the same storm event, or existing capacity of the receiving storm sewer, whichever is less.

A maximum runoff coefficient of 0.50 shall be used in calculating the pre-development peak runoff. An overland flow route (major system) shall be provided within the developed site to direct runoff in excess of the 100-year storm to an approved overland flow outlet.

Quality Control

Long-term average removal of 80% of the total suspended solids (TSS) on an annual loading basis must be achieved. TSS removal efficiency is to be based on 100% of the runoff leaving the site from all storm events that occurs in an average year.

Water Balance

As the proposed development aims to qualify for Tier 1 of the Toronto Green Standard (TGS), controls should be in place. The runoff resulting from a 5 mm rainfall event must be retained on-site for rainwater re-use, infiltration, and evapotranspiration.

2.3 Methodology: Sanitary Discharge

Pre- and post-development peak sewer flows will be calculated based on the following City design criteria:

Table 2.1 Sanitary Design Parameters

DESIGN FLOWS		POPULATION DENSITIES	
Residential Flow	240 L/c/day	1 Bedroom Units 2 Bedroom Units 3 Bedroom Units Retail Space Office Space	1.4 people / unit 2.1 people / unit 3.1 people / unit 1.1 people/100m ² 3.3 people/100m ²
ICI Flow	250 L/c/day		
Infiltration Allowance	0.26 L/s/ha		
Peaking Factor	Harmon Equation		
SANITARY SERVICE CONNECTION SIZING			
Population Flow	450 L/c/day		
Infiltration Allowance	0.26 L/s/ha		
Peaking Factor	Harmon Equation		

Based on the calculated peak flows, the adequacy of the existing infrastructure to support the proposed development will be discussed.

2.4 Methodology: Water Supply

The domestic water usage will be calculated based on the following City of Toronto and Ontario Building Code design criteria:

Table 2.2 Water Design Parameters

AVERAGE DAILY DEMAND		PEAKING FACTORS		
		LAND USE	PEAK HOUR	MAX DAY
Single Family	310 L/c/day	Residential	2.25	1.50
Multi-Unit	190 L/c/day	Commercial	1.20	1.10

Pressure and flow testing to determine the adequacy of the existing watermain to support the development with fire suppression in accordance with the Fire Underwriters Survey (FUS) Guidelines will be discussed in the subsequent sections.

28053L/day /
86400s/day =
0.32L/s

Submit Exemption application satisfy all requirements based on the City Foundation Drainage Policy

Values presented in Table 3.1 match values presented in HydroG report.

3 Groundwater Discharge

3.1 Groundwater Quality

A hydrogeological assessment was carried out by Groundwater Environmental Management Services (GEMS), dated August 2022 to assess existing groundwater conditions. Per the hydrogeological assessment, observed levels of total manganese, TSS and total phosphorus exceed the City's threshold for discharge to storm sewer. These observed levels do not exceed the City's threshold for discharge to the sanitary or combined sewer. It is therefore recommended that all dewatering activities be discharged to the 900 mm combined sewer system without pre-treatment. Please see **Appendix B** for an excerpt copy of the hydrogeological assessment.

3.2 Short-Term Groundwater Discharge

The anticipated short-term groundwater discharge has been estimated by GEMS to be 28.1 m³/day (0.32 L/s). At the time of this report, a dewatering plan was not made available. It is therefore assumed that groundwater pumping will operate for 4 hours per day.

As the pre-development flow to the combined sewer exceeds the storm pumping rate, it can be stated that there is sufficient capacity to support the dewatering. This is further discussed in the subsequent sections. **Table 3.1** summarizes the recommendations for groundwater discharge during construction. It should be noted that a Permit to Take Water (PTTW) application must be submitted to the Ministry of the Environment, Conservation and Parks (MCEP) if dewatering rates exceed 50 m³/day.

Check with hydrogeological report and revise

Table 3.1 Short-Term Groundwater Discharge Summary

BUILDING	AVERAGE DISCHARGE	AVERAGE DISCHARGE	HOURS OF PUMPING	PEAK DISCHARGE	CONNECTION OUTLET	TREATMENT REQUIRED
17 Elm Street	28.1 m ³ /day	0.32 L/s	4 Hours	1.95 L/s	Combined	None

0.32L/s x 4hr/24hr = 1.95L/s

3.3 Long-Term Discharge Condition

Per the City's Foundation Drainage Policy, groundwater infiltration will be discharged to the municipal system under post-development conditions. Per the hydrogeological assessment, it is anticipated that the proposed foundation will not significantly affect the groundwater table.

As infiltrated groundwater is considered clean, it will be collected and discharged to the municipal system which will direct the water to the treatment tank located on P1. The average infiltrated stormwater flow rate has been provided by GEMS as 4.3 m³/day. At the time of preparation of this report, no mechanical confirmation letter was available. It was therefore conservatively assumed that the pump would operate for 1 hour per day.

Check with hydrogeological report and revise

Provide letter from mechanical engineer to support this

The additional flow has been accounted for in the Allowable Release Rate and Storage Volume calculations. Detailed calculations can be found in **Appendix C** for reference.

Table 3.2 Long-Term Stormwater Infiltration Summary

BUILDING	DAILY DISCHARGE	AVERAGE DISCHARGE	HOURS OF PUMPING	PEAK DISCHARGE	CONNECTION OUTLET	TREATMENT REQUIRED
17 Elm Street	4.3 m ³ /day	0.05 L/s	1 Hour	1.19 L/s	SCSO	None

Values presented in Table 3.2 match values presented in HydroG report.

4275L/day /
86400s/day
= 0.05L/s

An on-site flow investigation was conducted and is included in Appendix A

Confirm with dye test the pre-development storm condition

4 Stormwater Management

4.1 Pre-Development Conditions

Local storm infrastructure consists of a 1200 mm storm and combined sewer overflow sewer within Elm Street, which conveys flows east and a 900 mm combined sewer within Elm Street which conveys flows east.

The site currently hosts an existing building and a surface asphalt parking lot resulting in a pre-development runoff coefficient greater than 0.50. As per WWFM Guidelines, the allowable release rate will be calculated using a pre-development runoff coefficient of 0.50.

4.2 Grading

Under pre-development conditions, no external drainage enters the site and all drainage within the site is conveyed to the adjacent rights-of-way.

The proposed grades will match current drainage patterns wherever feasible. Grades will be maintained along property lines to the extent practical. Emergency overland flow route in excess of a 100-year storm event will continue to be directed to the adjacent rights-of-way matching pre-development conditions.

4.3 Allowable Release Rate

Using the City's IDF data for a 2-year storm event and a time of concentration of 10 minutes, the allowable release rate for the site is calculated as follows:

$$Q_{\text{Allowable}} = \frac{(A \times R) * I_2}{360} = \frac{(0.0793 \text{ ha} \times 0.50) \times 88.2 \text{ mm / hr}}{360} \times \left(\frac{1000 \text{ L}}{\text{m}^3} \right) = 9.7 \text{ L/s}$$

As shown above, the release rate from the subject site shall be limited to a maximum of **9.7 L/s**. The associated pre-development drainage area plan is shown on **Figure DAP-1** which can be found in **Appendix C** for reference.

4.4 Quantity Control

The post-development release rate for the subject site shall be limited to the 2-year target flow which has been calculated to be **9.7 L/s**. To attenuate flows, the subject site will require a stormwater management tank and an orifice control. Setting the 100-year storage depth at 0.62 m and utilizing a 75 mm orifice plate, the orifice discharge is calculated as follows:

$$Q_{\text{Orifice}} = (0.63) * \frac{\pi * (0.073)^2}{4} * \sqrt{2 * 9.81 * (0.62 - 0.075/2)} * \frac{1000 \text{ L}}{1 \text{ m}^3} = \mathbf{9.4 \text{ L/s}}$$

The following a summary of the stormwater management parameters pertaining to quantity control:

Table 4.1 Quantity Control Summary

ORIFICE DIA. (mm)	ORIFICE TYPE	COEFF. OF DISCHARGE (k)	DEPTH (m)	HEAD (m)	ORIFICE DISCHARGE (L/s)	UNCONTROL. FLOW (L/S)	ALLOWABLE SITE DISCHARGE (L/s)
75	Plate	0.63	0.62	0.59	9.4	0.0	9.7

The total site discharge is calculated to be less than the allowable release rate. By providing on-site storage and an orifice control, the City's objectives for quantity control have been met. Please see detailed calculations which can be found in **Appendix C**.

It should be noted that regular inspection and maintenance of any storage element and orifice control should be conducted on a regular basis to ensure that the system is functioning as designed.

4.5 Quality Control

As previously mentioned, 80% TSS removal is required in order to meet the City's WWFMG's. Based on the proposed site conditions and surface treatment, the following table summarizes the inferred TSS removal rate of the site:

Table 4.2 TSS Performance

SURFACE TYPE	AREA (m ²)	EFFECTIVE TSS REMOVAL	OVERALL TSS REMOVAL
Conv. Roof	650	80	65.6
Extensive Green Roof	0	80	0.0
Intensive Green Roof	90	80	9.1
Landscape	0	80	0.0
Pavers	0	80	0.0
Impervious (Clean)	53	80	5.3
TOTAL	793		80.0

As the drive aisle is covered by upper floors, there are no "dirty" areas within the site. As such, the City requirements for quality control (i.e. minimum 80% TSS removal) have been satisfied.

4.6 Water Balance

As required by the City's TGS Tier 1, a rainfall depth of 5 mm must be retained over the entire area of development, and the landscape plan should include one of the alternatives allowed by the Tier 1 TGS. The water balance volume required to be detained is calculated as follows:

$$\text{Vol.}_{5\text{ mm}} = 793 \text{ m}^2 * 5 \text{ mm} * \left(\frac{1 \text{ m}}{1000 \text{ mm}}\right) = 4.0 \text{ m}^3$$

To achieve the required volume, a combination of initial abstraction, and water re-use will be incorporated. Based on initial abstraction values for each surface type, the total abstraction is calculated as follows:

Table 4.3 Initial Abstraction

AREA	AREA (m ²)	INITIAL ABSTRACTION	TOTAL (m ³)
Conv. Roof	650	1	0.7
Extensive Green Roof	0	5	0.0
Intensive Green Roof	90	7	0.6
Landscape	0	5	0.0
Pavers	0	5	0.0
Impervious	53	1	0.1
TOTAL	793		1.3

As shown above, 1.3 m³ is retained on-site through initial abstraction. It has been identified that 1.1m³ of stormwater can be reused in 72 hours for irrigation purposes. The balance of 1.6 m³ will be retained through water re-use methods such as additional landscape irrigation and / or toilet flushing the details of which will be provided with a subsequent submission.

An adequate sump within the stormwater management tank will be provided within the P1 level to retain the total water re-use volume. Please see **Appendix C** for the detailed design sheet and detailed **Drawing SS-01**.

4.7 Storm Service Connection

It is proposed that a new 200 mm storm service at a 2.0% slope be installed from a new control manhole at the property line to the existing 1200 mm SCSO sewer within Elm Street. The following table illustrates the peak flow and corresponding capacity of the service:

Table 4.4 Storm Service Performance

FROM	TO	PIPE SIZE (mm)	PIPE SLOPE	PEAK FLOW (L/s)	CAPACITY (L/s)	PERCENT OF FULL FLOW
Cntrl.MH	Storm Sewer	200	2.0 %	9.5	46.4	20 %

As shown above, the proposed storm service and existing storm service connection can easily convey the controlled discharge while operating at 20% (or less) of full flow capacity. Please refer to the detailed design calculations which can be found in **Appendix C**, and the design **Drawing SS-01**.

4.8 Emergency Overflow

It is recommended that rooftop scuppers be installed to ensure emergency overflow from roof areas should rooftop drains become plugged. All areas at grade level have been designed with positive drainage (away from the building). The stormwater management tank shall be designed with a catchbasin lid (open grate) to allow storm flows to spill to the adjacent municipal right-of-way in an emergency situation. Maximum ponding within the development site shall not exceed City requirements of 0.30 m.

4.9 Erosion and Sediment Control

It is recommended that a sediment control fence per T-219.130-1 be installed along the perimeter of the site as required during demolition activities. All existing and proposed catch basins within close proximity of the subject site shall be protected with a geotextile fabric. A mud mat shall be installed as required to minimize distribution of mud into the public realm.

Included in
Appendix B

Complete
hydrological
review summary
form attached

Complete
foundation
drainage
summary form
attached

5 Sanitary Design

Included in
Appendix B

5.1 Existing Site Flows

Per the City's record information, local sewer infrastructure consists of a 900 mm combined sewer flowing east on Elm Street. As such, MECP F-5-5 will be applied to the site.

Existing Sanitary Flows

The existing site hosts a retail/commercial building and an asphalt parking surface. The resulting pre-development population is 9. The existing peak sanitary flow is calculated as follows:

$$Q_{\text{Pre-Dev.}} = \left(\frac{250 \text{ L/c}\cdot\text{d} \cdot 9 \text{ pers}}{86400 \text{ s / day}} \right) + (0.26 \text{ L/s}\cdot\text{ha} \cdot 0.0793 \text{ ha}) = \mathbf{0.05 \text{ L/s}}$$

Existing Stormwater Flows

The existing site conveys stormwater to the combined sewer on Elm Street with no controls in place. Per Section 4, the existing stormwater flow to the combined sewer is **9.7 L/s** under a 2-year rainfall event.

5.2 Proposed Site Flows

The proposed sanitary servicing connection is proposed to connect to the 900 mm combined sewer on Elm Street while the proposed storm servicing connection is proposed to connect to the 1200 mm SCSO sewer on Elm Street.

Proposed Sanitary Flows

The anticipated sanitary discharge flows for the proposed site were calculated based on the site statistics provided by Partisans along with the design criteria outlined in **Section 2.3**. The proposed site statistics can be found in **Appendix B**. The population calculations are shown in **Table 5.1**.

Table 5.1 Proposed Development Site Populations

	UNITS	DENSITY	POPULATION
1 Bedroom	100	1.4 pp/unit	140
2 Bedroom	51	2.1 pp/unit	107
3 Bedroom	23	3.1 pp/unit	71
Commercial	212	1.1 pp/100m ²	2
TOTAL PROPOSED POPULATION			321

The corresponding post-development sanitary sewer flow is calculated as follows:

$$Q_{\text{Post-Dev.}} = \left(\frac{240 \text{ L/c}\cdot\text{d} \cdot 319 \text{ pers} \cdot 4.1}{86400 \text{ s / day}} \right) + \left(\frac{250 \text{ L/c}\cdot\text{d} \cdot 2 \text{ pers}}{86400 \text{ s / day}} \right) + (0.26 \text{ L/s}\cdot\text{ha} \cdot 0.08 \text{ ha}) = \mathbf{3.6 \text{ L/s}}$$

Proposed Stormwater Flows

The proposed site will convey stormwater to the SCSO sewer on Elm Street with controls in place.

Sanitary Service Connection

It is proposed that a new sanitary service at a 2.0% slope be installed from the new control manhole to the existing 900 mm combined sewer on Elm Street. Using the design flow of 450 L/cd, the corresponding post-development sanitary sewer flow is calculated as follows:

$$Q_{\text{Post-Dev.}} = \left(\frac{450 \text{ L/c-d} \cdot 321 \text{ pers} \cdot 4.1}{86400 \text{ s/day}} \right) + (0.26 \text{ L/s} \cdot \text{ha} \cdot 0.08 \text{ ha}) = \mathbf{6.8 \text{ L/s}}$$

The following table summarizes the peak flow and corresponding capacity of each service:

Table 5.1 Sanitary Service Performance

FROM	TO	PIPE SIZE (mm)	PIPE SLOPE	PEAK FLOW (L/s)	CAPACITY (L/s)	PERCENT OF FULL FLOW
Cntrl.MH	Combined Sewer	200	2.0 %	6.8	48.4	14 %

As shown above, the sanitary service has ample capacity to convey the post-development peak sanitary flow while operating at 14% of full flow capacity. Please see the detailed design sheet which can be found in **Appendix D** and **Drawing SS-01**.

5.3 Summary of Sanitary Drainage System

As per MECP F-5-5, the proposed development must demonstrate that it will not contribute to an increase in combined sewer overflow volume to the natural system under wet weather conditions. **Table 5.3** below, summarizes the flows from the development site to the combined sewer on Elm Street between existing and proposed conditions.

Confirm with dye test where the storm is discharging.

Table 5.3 Total Flow to Combined Sewer

Condition	Sanitary Flow (L/s)	Storm Flow (L/s)	Groundwater Flow (L/s)	Total (L/s)
Existing	0.05	9.7	0	10.2
Proposed	3.6	0.0	0	3.6
	+3.5	-9.7	0	-6.6

As the proposed development represents an overall decrease the flows to the combined sewer under 2-year rainfall conditions, it can be stated that the existing sewer has the capacity to support the development. It can also be stated, due to the net decrease in flow to the combined sewer, that the site is compliant with MECP F-5-5.

An on-site flow investigation was conducted and is included in Appendix A

6 Water Supply System

6.1 Existing Water Infrastructure

Per the City’s record information, local water infrastructure consists of a 150 mm watermain within Elm Street. Hydrant flow testing was performed at existing fire hydrants along Elm Street in order to confirm the available water supply’s flow-pressure response curve. These tests were performed on July 20, 2022 and were conducted in accordance with NFPA 291. The results are summarized as follows:

Table 6.1 Hydrant Response Curve

ELM STREET			
FLOW (gpm)	FLOW (L/s)	PRESSURE (psi)	PRESSURE (kPa)
0	0	61	421
375	23.7	36	248
0	0	32	221

As shown above, static pressure within the system is expected to be approximately 61 psi. A copy of the hydrant flow test can be found in **Appendix E** for reference.

Under existing conditions, the municipal water supply network cannot support the proposed development under fire flow conditions. Therefore, it is proposed that the existing 150mm watermain within Elm Street (installed 1876) be replaced with a 300mm watermain between Yonge Street and Bay Street.

Further discussions with the City will be conducted in order to determine a preferable solution.

6.2 Domestic Water Supply Demands

Using the criteria set in **Section 2.4** and the site statistics provided by the architect, the Average Day Demand (ADD), Peak Hour Demand (PHD), and Max Day Demand (MDD) have been calculated, and are summarized as follows:

Table 6.2 Domestic Water Demands

BUILDING	POPULATION	ADD (L/s)	PHD (L/s)	MDD (L/s)
1 Bedroom	140	0.3	0.8	0.4
2 Bedroom	107	0.2	0.6	0.3
3 Bedroom	71	0.2	0.4	0.2
Retail	2	0.0	0.0	0.0
TOTAL	321	0.7	1.8	0.9

The domestic supply line for the building will be designed based on PHD while maintaining a minimum available pressure of 40 psi (275 kPa) at the face of the building. Please see **Appendix E** for the detailed calculations.

6.3 Fire Supply Demands

The recommended fire flow demand for the subject site has been calculated using the de the Water Supply for Public Fire Protection Manual, 1999 by the Fire Underwriters Survey

As the building will be constructed using fire resistive materials, the effective floor area is ta area plus 25 % of the two adjacent floors.

- Effective Floor Area = Largest Floor Area + 25% (two adjoining floors)
- Effective Floor Area = 1,134 m² + 25% (1,134 m² + 788 m²)
- Effective Floor Area = 1,615 m²

Fire resistive construction letter included in Appendix E

Provide letter from architectural engineer to support

The corresponding floor area and FUS factors will be applied as follows

Table 6.3 Fire Underwriters Survey Factors

CONSTRUCTION COEFFICIENT	BUILDING OCCUPANCY	SPRINKLER ADJUSTMENT	PROXIMITY FACTOR
0.6 (resistive)	- 15 % (limited)	- 30 %	+ 75 %

Using the effective floor area for each building and the appropriate FUS factors, the required fire flow for each building is calculated as follows:

Table 6.4 Fire Demand Calculations

FIRE FLOW (F) CALCULATION	APPLYING FUS FACTORS	ADJUSTED FIRE FLOW	TOTAL DEMAND (TD)
$F = 220 \cdot 0.6 \sqrt{\text{Area}}$	$F_1 = F \cdot 0.85 = 4,250 \text{ L/min}$	Fire Flow = $F_1 - F_2 + F_3$	TD = FF + MDD
$F = 220 \cdot 0.6 \sqrt{1,615 \text{ m}^2}$	$F_2 = F_1 \cdot 0.30 = 1,275 \text{ L/min}$	FF = 6,000 L/min (rnd'd)	TD = 100.0 L/s + 0.9L/s
F = 5,000 L/min (rnd'd)	$F_3 = F_1 \cdot 0.75 = 3,188 \text{ L/min}$	FF = 100.0 L/s	TD = 100.9 L/s

The fire supply line for the building will be designed based on Total Demand (Fire Flow + MDD) while maintaining a minimum available pressure of 20 psi (140 kPa) at the face of the building. Please see **Appendix E** for the detailed calculations.

6.4 Water Service Connection

To service the proposed development, a new 200 mm fire service shall be connected to the proposed 300 mm watermain within Elm Street with a tapping sleeve and valve. A separate 150 mm domestic service will tee off from the fire line within the municipal right-of-way. A new valve and box shall be installed at the property line for each incoming service, and all required water meters, backflow preventers, and double check valves shall be located inside a mechanical room within the proposed P1 level.

As previously mentioned, the OBC requires two fire services separated by an isolation valve to be installed for any building above 84 m. As the proposed building exceeds this threshold a secondary 200 mm fire line will be required and shall be connected to the proposed 300 mm watermain within Elm Street.

The National Fire Protection Association (NFPA) considers any building over 23 m in height to be classified as a high-rise building and thus requires a remotely located secondary siamese connection for each zone. Accordingly, a second siamese connection will be provided.

6.5 Hydrant Coverage

Existing municipal hydrants are located on the south side of Elm Street and provide the required 45 m of coverage for all proposed siamese connections to satisfy OBC requirements. Please see **Drawing SS-01** for the location of all existing and proposed water infrastructure.

7 Conclusions and Recommendations

Storm Sewer and Stormwater Management

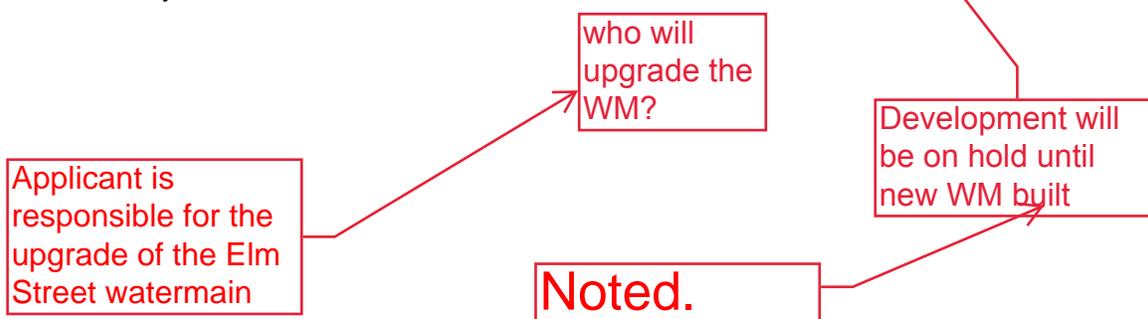
The objectives of the City's WWFMG's can be met by implementing on-site measures. Storm flows shall be attenuated on-site and released to the municipal storm sewer at an appropriate discharge rate thus meeting the City's target for quantity control. As there is no exposed drive aisle area to be considered "dirty", the site will meet the City's target for quality control. Through initial abstraction and water reuse, the site will meet the City's target for Tier 1 water balance. Details pertaining to water re-use applications will be finalized at a later stage.

Sanitary Sewers

Through the implementation of the City's WWFMG's, there is an overall reduction in flows conveyed to the receiving combined sewer within Elm Street, thus the site complies with MECP procedure F-5-5. Furthermore, as the site represent an overall improvement to the receiving municipal sewer network, it can therefore be deemed an appropriate conclusion that the proposed development can proceed without upgrades to the municipal infrastructure.

Water Supply

The existing 150 mm watermain within Elm Street does not have sufficient pressure to support the proposed fire demands. It is therefore recommended that the 150 mm watermain be upsized to a 300 mm watermain between Yonge Street and Bay Street.





CLIENT FORA DEVELOPMENTS 2440 DUNDAS STREET WEST, Unit 200, TORONTO, ON M6P 1W9	PROJECT NAME 17 ELM STREET		 IBI GROUP Unit 300 – 8133 Warden Avenue Markham ON L6G 1B3 Canada tel 905 763 2322 fax 905 763 9983 ibigroup.com		
	SCALE: NTS	DATE: 2022-08-19	FIGURE NAME AERIAL PLAN	FIGURE NO. FIG.1	REVISION 1
	PROJECT ENG: JMJ	DRAWN BY: CG			
	CHECKED BY:	APPROVED BY:			
	PROJECT NO: 137680				

File Location: J:\137680_ForaDevelopment\7_0_Production\7_03_Design\04_Civil\Sheets\Figures\Figure 1 - Aerial Plan.dwg Last Saved: August 17, 2022 by cassidy.goez Plotted: Wednesday, August 17, 2022 2:38:54 PM by Cassidy Goez
 SCALE CHECK 10mm

Appendix A

Background Information

Sample Architectural Drawings (Partisans)

Plan and Profile Drawings (City of Toronto)

DMOG Mapping (City of Toronto)

Existing Building Plans

Topographic Survey (KRCMAR)

PARTISANS

Partisana Architects
950 Dupont St, Toronto, ON M6H 1Z2
647 846 9428 www.partisans.com

15 & 17 Elm Street

Toronto, Ontario

for:



Fora Developments
220 - 2440 Dundas St. W, Toronto, ON, M6P 1W9
416 536 3600 www.foradevelopments.com



ARCHITECTURAL LIST	
A0000	Cover Sheet / Project Info / Consultants / Code Marks
A0001	Project Statistics
A0002	Schedule Area
A0003	SCA & CPA
A0011	Site Plan
A001	Level P0
A002	Level P1
A1000	Ground Floor Plan
A1002	Level 2
A1003	Typical Podium Floor (Level 3-7)
A1004	Typical Podium Floor (Level 8-9)
A1005	Podium Terrace (Level 10)
A1006	Typical Tower Floor (Level 11-20)
A1007	Attic (Level 21)
A1008	Typical Tower Floor (Level 22-30)
A1009	Mechanical Floor (Level 31)
A1010	Roof Level 32
A1011	Roof Plan
A2000	Building Elevations
A2010	Building Elevations
A2020	Exterior Building Elevations
A3000	Building Sections
A4000	Project Details
A4001	Project Details



PLANNING CONSULTANT	CIVIL ENGINEER	LANDSCAPE ARCHITECT	MECHANICAL & ELECTRICAL ENGINEER	STRUCTURAL ENGINEER	TRAFFIC CONSULTANT	ARCHITECT
GOLDBERG GROUP 2098 Avenue Road Toronto, Ontario, M5M 4A8	IBI GROUP 8133 Warden Ave, Unit 300 Markham ON L6G 1B3	STUDIO TLA 20 Champlain Blvd., Suite 102 Toronto, ON, M3H 2Z1	MCW CONSULTANTS LTD. 207 Queen's Quay W, Suite 615 Toronto, ON, M5J 1A7	JABLONSKY AST & PARTNERS 3 Concorde Gate #400 North York, ON, M3C 3N7	BA CONSULTING GROUP LTD. 45 St. Clair Ave. W., Suite 300 Toronto, ON, M4V 1K9	PARTISANS 950 Dupont St Toronto, Ontario M6H 1Z2

Client	
Owner	
Designer	
Contractor	
Consultants	

NO.	DESCRIPTION	DATE
1	Issued for RFA	June 23, 2022

NOT FOR CONSTRUCTION

PARTISANS
Architects

Project Number: 2202

Scale: 1:1

Author	
Checker	
Approver	

Client: Fora Developments

Project: 15-17 ELM STREET

Project Address:
17 Elm Street
Toronto, Ontario
M5G 1H1

Drawing Title:
Cover Sheet / Project Info /
Consultants / Code Marks

Sheet Number	88	Project Number	A0000
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1.1 SITE INFORMATION	
NET GROSS BUILDING FOOTPRINT AREA, JANET AREA, AND PRIVATE ROAD	723 sqm
PROPOSED TOTAL GFA	14,287 sqm
PROPOSED AREA OF PRIVATE ROAD	96 sqm
PROPOSED P&G GARAGE	18,52
PROPOSED RESIDENTIAL GFA	14,587 sqm
PROPOSED NUMBER OF UNITS	174
NET AREA	82,360
BUILDING HEIGHT	89 m

1.1 RESIDENTIAL GFA		1.2 NON-RESIDENTIAL GFA		1.3 TOTAL GFA PER 425-1981	
SF	SM	SF	SM	SF	SM
131,832	14,007	2,153	202	133,782	14,209

1.1 UNIT COUNT TOTALS					
UNIT TYPE	TOTAL AREA (SM)	TOTAL AREA (SF)	TOTAL UNIT COUNT	% OF TOTAL UNIT	REQUIREMENT
1-BED	80.0	8,302	3	1%	3%
2-B	209.0	21,767	20	11%	20%
3-B	227.0	23,723	15	8%	15%
4-B	112.0	11,628	8	4%	8%
TOTAL	1128.0	11,720	46	100%	46%

NOTES
 *As per Section 559.2(2.1), Gross Floor Area is reduced by: Parking, Loading & Bicycle spaces below-ground, Storage rooms, Washrooms, Elec. Utility, Mech and Ventilation rooms in the Basement, required Shower & Change facilities, required indoor Amenity spaces, Elevator shafts, Garbage shafts, Mech, Firehouse and Exit stairwells.

2.1 PARKING SUMMARY PROVIDED		
LEVEL	RES	TOTAL
P1	0	0
P2	22	22

2.2 BICYCLE PARKING				
LEVEL	SHORT TERM	REQUIRED (0.1 spaces/unit)	LONG TERM	REQUIRED (0.3 spaces/unit)
LEVEL 1	34	0	0	0
LEVEL 2	28	60	0	157
LEVEL PH	0	0	0	0
TOTAL	34	60	0	157

3.0 LOADING SUMMARY		
TYPE G	COUNT	REQUIRED
GARAGE & STAGING	55	60

25SM for the first 50 units, plus

4.0 RESIDENTIAL AMENITY INDOOR			
LEVEL	SM	SF	Required (SM)
LEVEL 21	348	3,746	25M / Unit
TOTAL	348	3,746	348

*Required to provide 2sm indo
 *Required indoor amenity deck

4.2 AMENITY OUTDOOR			
LEVEL	SM	SF	Required
GROUND	74	797	25M / Unit
LEVEL 21	141	1,516	
ROOFTOP	33	347	348
TOTAL	348	3,660	348

*Required to provide 2sm out
 *green roof can only be 25% o

TOTAL GFA PER FLOOR		
FLOOR	BYLAW GFA 569-2013	TOTAL BUILDING GFA
	ft2	m2
P2	0	0
P1	0	0
1	1636	152
2	3197	297
3	5920	550
4	6049	562
5	6135	570
6	6469	601
7	6480	602
8	6797	632
9	6797	632
10	5776	537
11	5726	532
12	5490	510
13	5560	517
14	5560	517
15	5726	532
16	5694	529
17	5490	510
18	5560	517
19	5560	517
20	5560	517
21	334	31
22	4446	413
23	4446	413
24	4446	413
25	4446	413
26	4446	413
27	4446	413
28	4446	413
29	4446	413
30	4446	413
31 - MPH	0	0
32 - MPH	0	0
TOTALS	151525.9	14077.1

TOTAL UNIT COUNT PER FLOOR					
	<50 Studio	51-65 1 Bedroom	66-85 2 Bedroom	>85 3 Bedroom	TOTAL PER FLOOR
% required (total required!)	10%	85%	15%	10%	
P2	17	113	26	17	
P1	0	0	0	0	
1	0	0	0	0	
2	0	0	3	0	3
3	1	4	0	2	7
4	1	4	0	2	7
5	1	4	0	2	7
6	1	4	0	2	7
7	1	4	0	2	7
8	0	2	3	2	7
9	0	2	3	2	7
10	0	4	3	0	7 terrace
11	0	4	3	0	7
12	0	4	3	0	7
13	0	4	3	0	7
14	0	4	3	0	7
15	0	4	3	0	7
16	0	4	3	0	7
17	0	4	3	0	7
18	0	4	3	0	7
19	0	4	3	0	7
20	0	4	3	0	7
21	0	0	0	0	0 terrace
22	0	3	1	1	5
23	0	3	1	1	5
24	0	3	1	1	5
25	0	3	1	1	5
26	0	3	1	1	5
27	0	3	1	1	5
28	0	3	1	1	5
29	0	3	1	1	5
30	0	3	1	1	5
31 - MPH	0	0	0	0	0
32 - MPH	0	0	0	0	0
TOTALS	5	95	51	23	174

15% of units to be accessible

1	14	8	3
3%	55%	29%	13%

*By-law GFA includes area of residential suites, office, and retail, mechanical areas above grade (excluding penthouse), space allocated for storage lockers above grade

DATE	
OWNER	
DESIGNER	
CONTRACTOR	
REVISIONS	

REVISIONS Date
 11 Issued for RFA June 28, 2022

RESIDENTIAL UNIT BREAKDOWN			
	UNIT NAME	UNIT TYPE	UNIT AREA SM
Level 2	Op	B1	75
		C2	63
		C3	75
			213.0
Level 3	STUDIO	A1	43
	IB	B1	63
		B2	60
		B3	65
		B4	64
	IB	D1	92
		479.0	
Level 4	STUDIO	A1	44
	IB	B1	63
		B2	60
		B3	65
		B4	65
	IB	D1	92
		484.0	
Level 5	STUDIO	A1	44
	Op	B1	97
		B2	62
		B3	62
		B4	71
	IB	D1	92
		493.0	
Level 6	STUDIO	A1	50
	IB	B1	68
		B2	69
		B3	61
		B4	71
	IB	D1	97
		624.0	
Level 7	STUDIO	A1	55
	IB	B1	69
		B2	75
		B3	64
		B4	65
	IB	D1	99
		542.0	
Level 8	IB	B1	63
		B2	70
	IB	C1	72
		C2	72
		C3	84
	IB	D1	90
		556.0	
Level 9	IB	B1	63
		B2	70
	IB	C1	72
		C2	72
		C3	84
	IB	D1	90
		556.0	
Level 10 (Podium w Terrace)	IB	B1	49
		B2	54
	IB	C1	0
		C2	79
		C3	63
	IB	D1	53
		379.0	

Level 11	IB	B1	43
		B2	51
		B3	65
		B4	59
	IB	C1	74
		446.0	
Level 12	IB	B1	43
		B2	51
		B3	65
		B4	59
	IB	C1	74
		446.0	
Level 13	IB	B1	43
		B2	51
		B3	65
		B4	59
	IB	C1	74
		446.0	
Level 14	IB	B1	43
		B2	51
		B3	65
		B4	59
	IB	C1	74
		446.0	
Level 15	IB	B1	43
		B2	51
		B3	65
		B4	59
	IB	C1	74
		446.0	
Level 16	IB	B1	43
		B2	51
		B3	65
		B4	59
	IB	C1	74
		446.0	
Level 17	IB	B1	43
		B2	51
		B3	65
		B4	59
	IB	C1	74
		446.0	
Level 18	IB	B1	43
		B2	51
		B3	65
		B4	59
	IB	C1	74
		446.0	
Level 19	IB	B1	43
		B2	51
		B3	65
		B4	59
	IB	C1	74
		446.0	
Level 20	IB	B1	43
		B2	51
		B3	65
		B4	59
	IB	C1	74
		446.0	

Level 21 (Amenity)	STUDIO		
	IB		
	IB		
	IB		
			0.0
Level 22	IB	B1	60
		B2	52
	IB	B3	60
	IB	D1	75
			342.0
Level 23	IB	B1	60
		B2	52
	IB	B3	60
	IB	D1	75
			342.0
Level 24	IB	B1	60
		B2	52
	IB	B3	60
	IB	D1	75
			342.0
Level 25	IB	B1	60
		B2	52
	IB	B3	60
	IB	D1	75
			342.0
Level 26	IB	B1	60
		B2	52
	IB	B3	60
	IB	D1	75
			342.0
Level 27	IB	B1	60
		B2	52
	IB	B3	60
	IB	D1	75
			342.0
Level 28	IB	B1	60
		B2	52
	IB	B3	60
	IB	D1	75
			342.0
Level 29	IB	B1	60
		B2	52
	IB	B3	60
	IB	D1	75
			342.0
Level 30	IB	B1	60
		B2	52
	IB	B3	60
	IB	D1	75
			342.0

TOTALS **11,786**

1 Saleable Area
 A0002 1:1

NOT FOR CONSTRUCTION

PARTISANS

Author	
Checker	
Approver	

Client
Fora Developments

Project
15-17 ELM STREET

Project Address
 15-17 Elm Street
 Toronto, Ontario
 M5G 1H1

Drawing Title
 Saleable Area

88 A0002

NOT FOR CONSTRUCTION

PARTISANS

Project: _____
 Author: _____
 Checker: _____
 Approver: _____

Client: **Fora Developments**
 Project: **15-17 ELM STREET**

Project Address:
15 Elm Street
 Toronto, Ontario
 M5G 1H1

Drawing Title:
GCA & GFA

Sheet No: **88**
 Drawing No: **A0003**

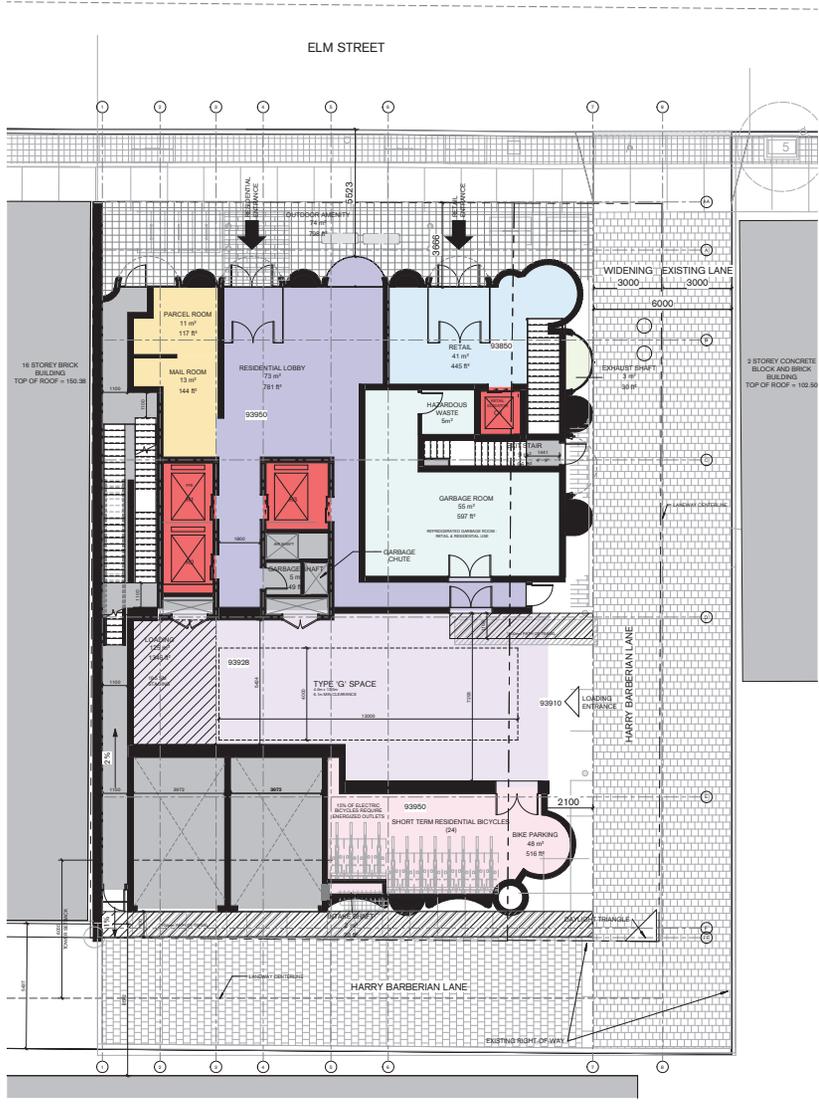
TOTAL GCA PER FLOOR				
FLOOR	TOTAL BUILDING GFA			
	SF	SM	Balconies	Interior Area
Below Grade				
P2	8481	785		
P1	8481	785		
total	16963	1570		
Above Grade				
1	6648	525	0	525
2	5006	465	21	444
3	6507	605	33	572
4	6567	610	39	571
5	6566	619	39	580
6	7000	650	39	611
7	7778	676	22	654
8	7420	689	38	652
9	7397	697	38	650
10	7422	690	116	574
11	6334	588	48	540
12	6226	578	26	552
13	6198	576	33	543
14	6200	576	33	544
15	6270	582	48	534
16	6326	588	45	543
17	6218	576	29	552
18	6201	576	33	544
19	6180	575	33	543
20	6181	574	33	542
21	6260	582	0	582
22	5004	465	39	426
23	5004	465	39	426
24	5004	465	39	426
25	4522	457	39	418
26	4844	459	39	420
27	5004	465	39	426
28	5004	465	39	426
29	5004	465	39	426
30	4503	423	39	384
31	4520	420	0	
32	4162	387	0	
total	188642.3	17325.3	1090.1	15828.7
TOTAL GCA	SF	SM		
	205904.3	18161.2		

*amenity flr

MENTIAL GFA PER BYLAW 569-2013				RESIDENTIAL GFA PER BYLAW 569-2013								BYLAW GFA 569-2013	
BOH, CIRCULATION		TOTAL NON-RESIDENTIAL		LOBBY, CIRCULATION, BOH		BALCONIES		SUITE AREA		TOTAL RESIDENTIAL		TOTAL BUILDING GFA	
ft2	m2	ft2	m2	ft2	m2	ft2	m2	ft2	m2	ft2	m2	ft2	m2
0	0	0	0	108	10	0	0	0	0	108	10	108	10
0	0	1711	159	0	0	0	0	0	0	0	0	1711	159
0	0	441	41	1636	152	0	0	0	0	1636	152	2077	193
0	0	0	0	441	41	226	21	2530	235	3197	297	3197	297
0	0	0	0	409	38	355	33	5156	479	5920	550	5920	550
0	0	0	0	420	39	420	39	5210	484	6049	562	6049	562
0	0	0	0	409	38	420	39	5307	493	6135	570	6135	570
0	0	0	0	409	38	420	39	5640	524	6469	601	6469	601
0	0	0	0	409	38	237	22	5834	542	6480	602	6480	602
0	0	0	0	409	38	404	38	5985	556	6797	632	6797	632
0	0	0	0	409	38	404	38	5985	556	6797	632	6797	632
0	0	0	0	452	42	1244	116	4080	379	5776	537	5776	537
0	0	0	0	409	38	517	48	4801	446	5726	532	5726	532
0	0	0	0	409	38	280	26	4801	446	5490	510	5490	510
0	0	0	0	409	38	350	33	4801	446	5560	517	5550	517
0	0	0	0	409	38	350	33	4801	446	5560	517	5550	517
0	0	0	0	409	38	517	48	4801	446	5726	532	5726	532
0	0	0	0	409	38	484	45	4801	446	5694	529	5694	529
0	0	0	0	409	38	280	26	4801	446	5490	510	5490	510
0	0	0	0	409	38	350	33	4801	446	5560	517	5550	517
0	0	0	0	409	38	350	33	4801	446	5560	517	5550	517
0	0	0	0	334	31	0	0	0	0	334	31	334	31
0	0	0	0	344	32	420	39	3681	342	4446	413	4446	413
0	0	0	0	344	32	420	39	3681	342	4446	413	4446	413
0	0	0	0	344	32	420	39	3681	342	4446	413	4446	413
0	0	0	0	344	32	420	39	3681	342	4446	413	4446	413
0	0	0	0	344	32	420	39	3681	342	4446	413	4446	413
0	0	0	0	344	32	420	39	3681	342	4446	413	4446	413
0	0	0	0	344	32	420	39	3681	342	4446	413	4446	413
0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.0	0.0	2152.8	200.0	13035.2	1211.0	11733.8	1090.1	126864.5	11786.0	151633.5	14087.1	153786.3	14287.1

*By-law GFA includes
 area of residential suites,
 office, and retail,
 mechanical areas above
 grade (excluding
 penthouse), space
 allocated for storage
 lockers above grade

NOTES:
 ANY ROOFTOP AND FACADE ILLUMINATION WILL BE DIRECTED
 DOWNWARD AND TURNED OFF BETWEEN 11PM-6AM
 - LIGHTING AND PHOTOMETRIC LAYOUTS PROVIDED BY MCW



DATE:	10/22/2023
PROJECT:	15-17 ELM STREET
CLIENT:	FORA DEVELOPMENTS
DESIGNER:	PARTISANS
DATE:	10/22/2023



TYPE	QUANTITY	PERCENTAGE
STANDARD	10	100%
TOTAL	10	100%

PARKING NOTES:
 1. PARKING IS AN UNPAVED SURFACE
 2. BICYCLE PARKING SPACES SHALL BE LOCATED CONSECUTIVELY
 3. BICYCLE PARKING SPACES SHALL BE 5'00" WIDE
 4. BICYCLE PARKING SPACES SHALL BE 2'00" DEEP
 5. ALL BICYCLE PARKING SPACES SHALL BE EQUIPPED WITH BUMPERS



SITE LEGEND:
 PROPOSED LANE
 EXISTING LANE
 LOADING ENTRANCE

NOT FOR CONSTRUCTION

PARTISANS

Author	As Indicated
Checker	As Indicated
Approver	As Indicated

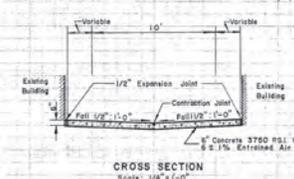
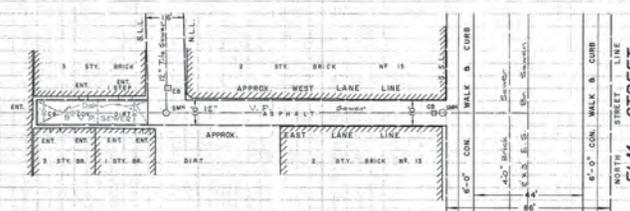
Client: **Fora Developments**

Project: **15-17 ELM STREET**

Project Address:
 17 Elm Street
 Toronto, Ontario
 M5G 1H1

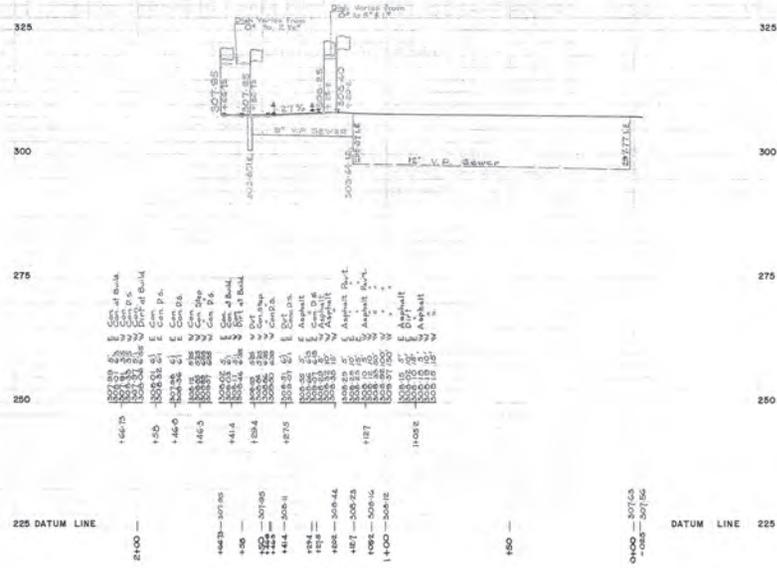
Drawing Title:
 Ground Floor Plan

LANE 200 FEET WEST OF YONGE STREET



NOTE:
 Color Brn. Connection tabs of
 6" Extra Strength Pipe and
 1/2" Thick Pipe with Mechanical
 Coupling at Center of Section.
 See Plan No. 200-501-501
 See Plans to R.C. 1120 for C.S. Details

NOTE:
 See Plan RE. 1150 for Pw'l Details



NOTE:
 CLASS OF PAVEMENT TO BE CONCRETE
 SEE L.L. 2172 FOR SURVEY & LEVELS

LEGEND:
 EXISTING ELEVATIONS SHOWN THUS: 0.00 5' N. ASPHALT
 PROPOSED DASH LINE ELEVATIONS SHOWN THUS: 0.00

LEGEND:
 CON. APPROACH
 HEADLAND
 DOOR SILL
 WINDOW SILL
 AREA BE
 BOTTOM STEP

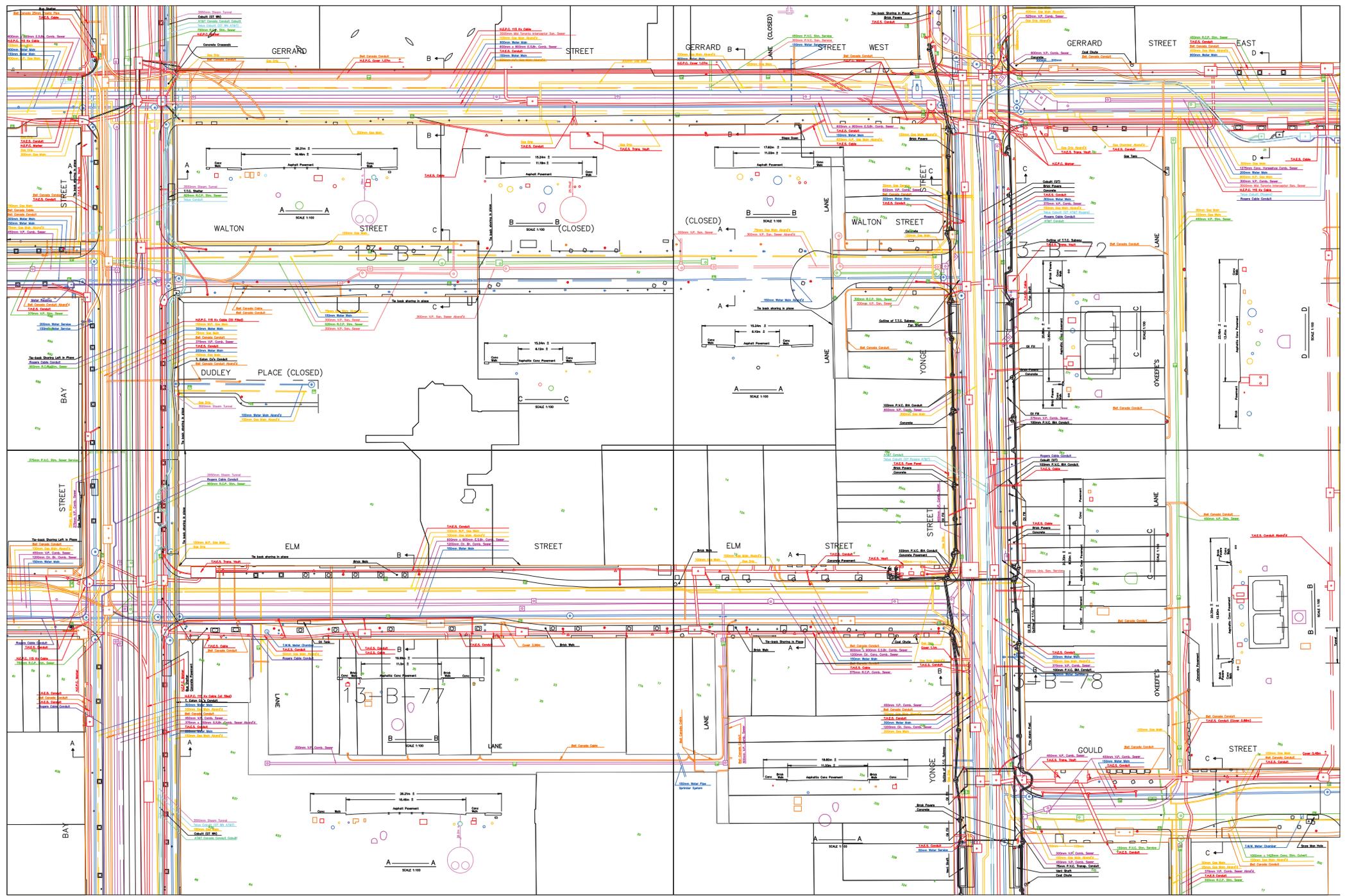
GEOODETIC DATUM
 B.M. NR 767 ELEV. 313.21
 B.M. NR 764 ELEV. 306.45

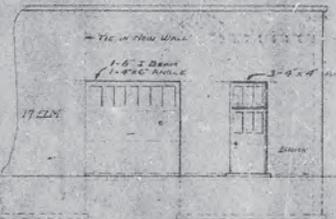
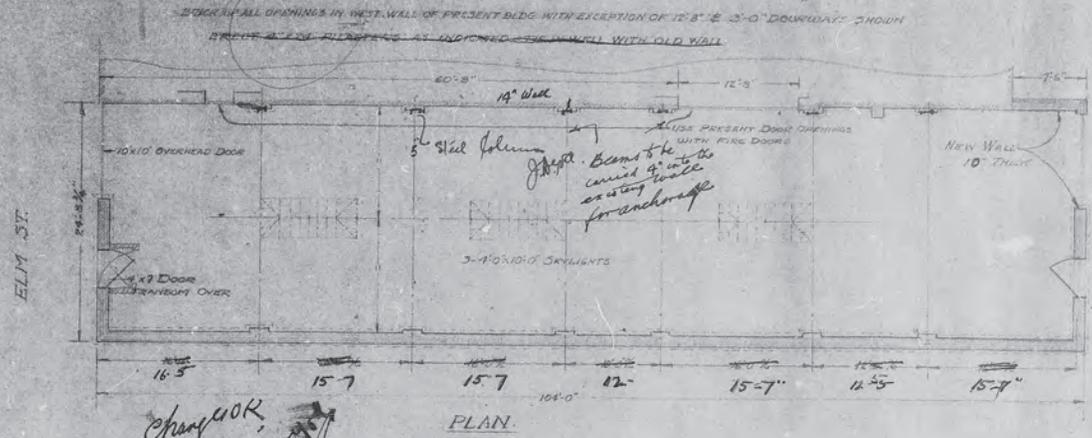
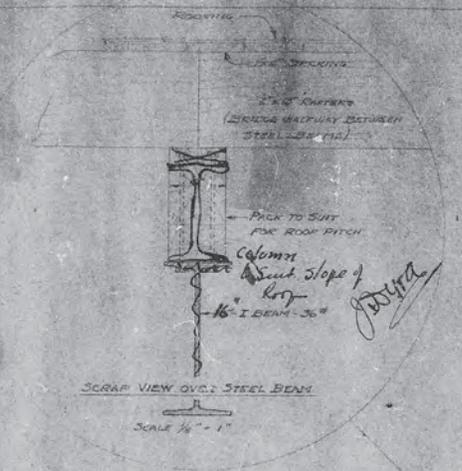
CITY OF TORONTO DEPARTMENT OF PUBLIC WORKS	
LANE 200 FEET WEST OF YONGE STREET FROM LANE 104 FEET SOUTH OF ELM STREET TO 45 FEET SOUTH	
DRAWING NO. L-2113	SCALE 1" = 20'-0"
DESIGNED BY: <i>[Signature]</i>	REVISION BY: <i>[Signature]</i>
CHECKED BY: <i>[Signature]</i>	DATE: 11/14/2011
APPROVED BY: <i>[Signature]</i>	DESIGNED BY: R. YOUNG
DATE: AUGUST, 1963	

LANE 500 FEET WEST OF YONGE STREET

LANE 500 FEET WEST OF YONGE STREET

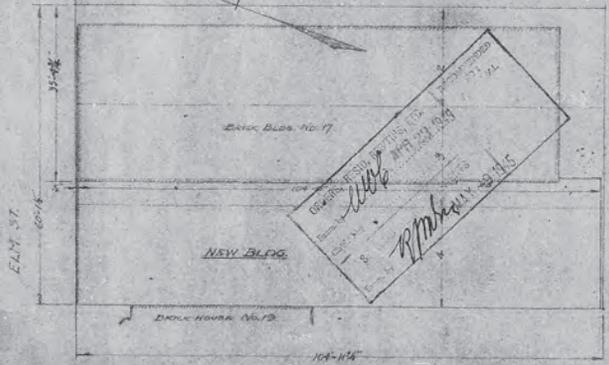
FROM LANE 104 FEET SOUTH OF ELM STREET TO 45 FEET SOUTH





FRONT ELEVATION
(REAR ELEVATION SIMILAR)

SIDE ELEVATION



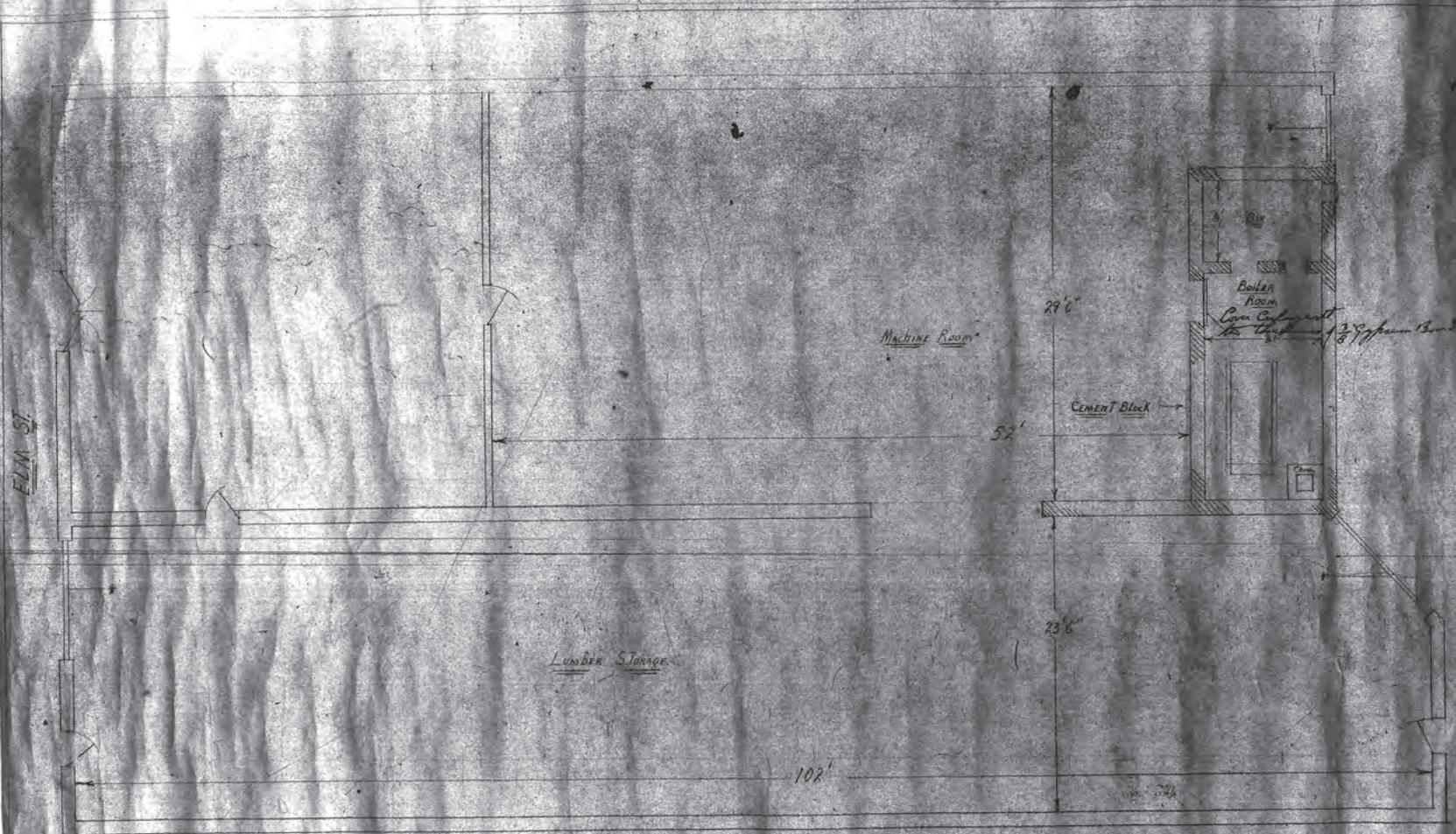
BLOCK PLAN

OWNERS, RESIDENTS, LOCAL C. APPROVED
 Examined by *WJM* APR 23 1945
 City of Toronto R 23
 S. JTS
 R. M. B. M.
 MAY - 9 1945

APPROVED
 MAY - 2 1945
[Signature]
 For Chief Inspector of Factories

PROPOSED STORAGE WAREHOUSE
 FOR
 SPANNER PRODUCTS LIMITED
 16 ELM ST. - TORONTO
 NO. 17 ELM ST. W.
 SCALE 1/8" = 1'-0" HUGH A. DODDS ARCH. MAR 26/45
 176 GLENDOROUGH RD. L.V. 2364

POOR ORIGINAL



PLAN
 SPANNER PRODUCTS 10 ELM ST
 PLAN OF PLANT NO. 3 17 ELM ST.

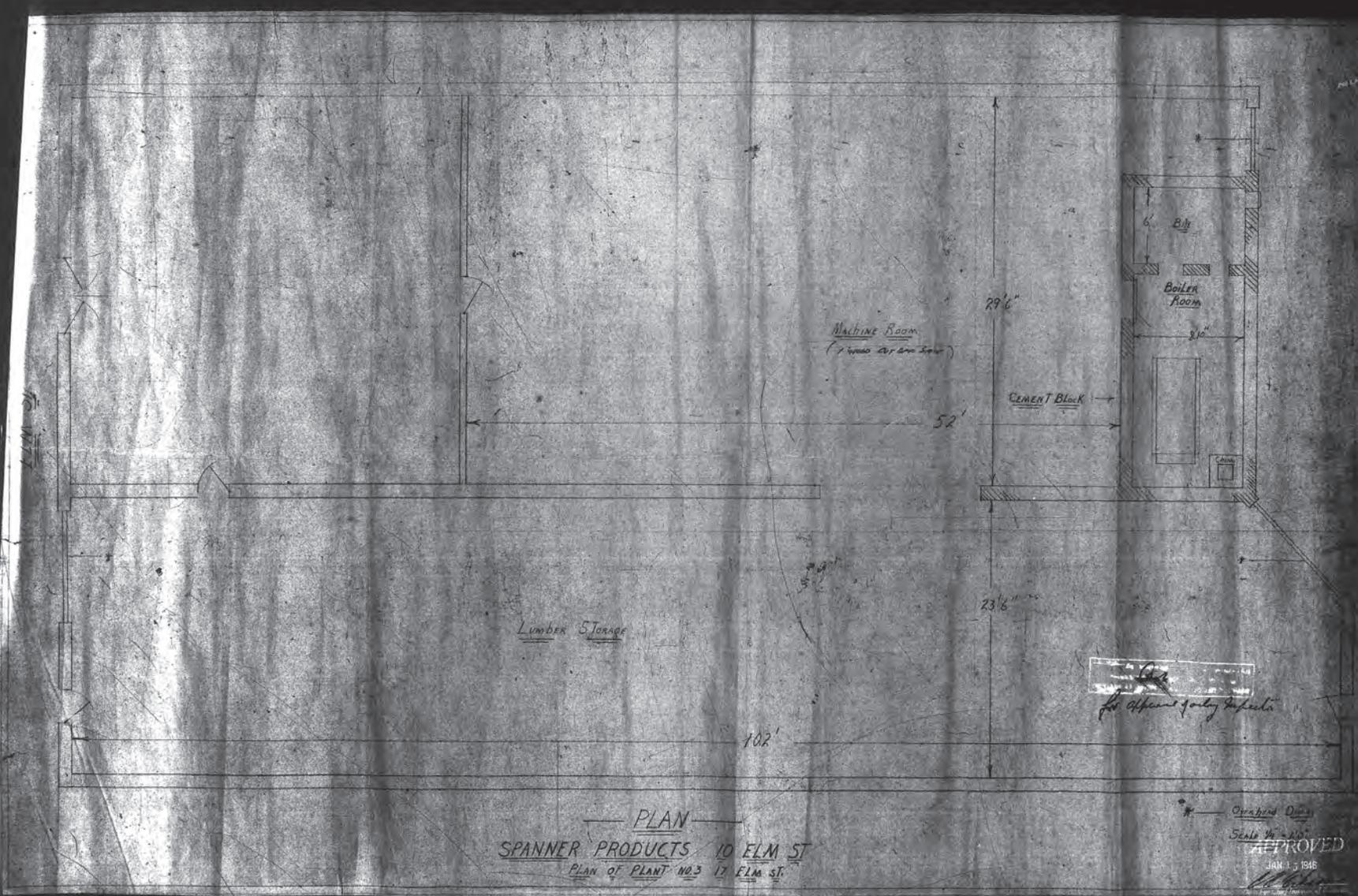
Original Drawing
 Scale 1/4" = 1'-0"

R.
 W.H.M.
 1923
 C. J. J.

R.M. Spanner

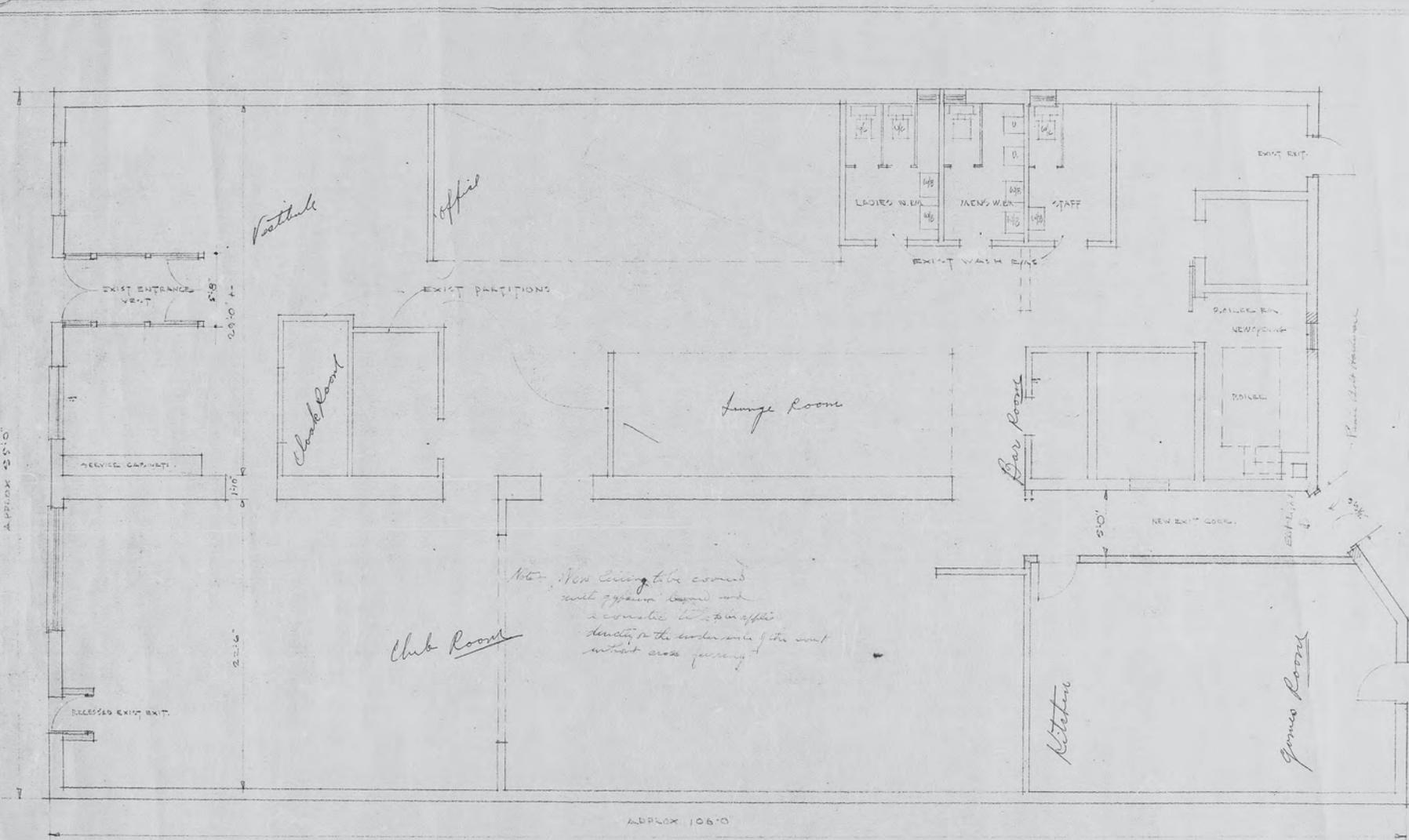
POOR ORIGINAL

POOR ORIGINAL



PLAN
SPANNER PRODUCTS 10 ELM ST
PLAN OF PLANT NO. 3 17 ELM ST.

Checked Over
Scale 1/4" = 1'-0"
APPROVED
JAN 13 1948
W. J. ...



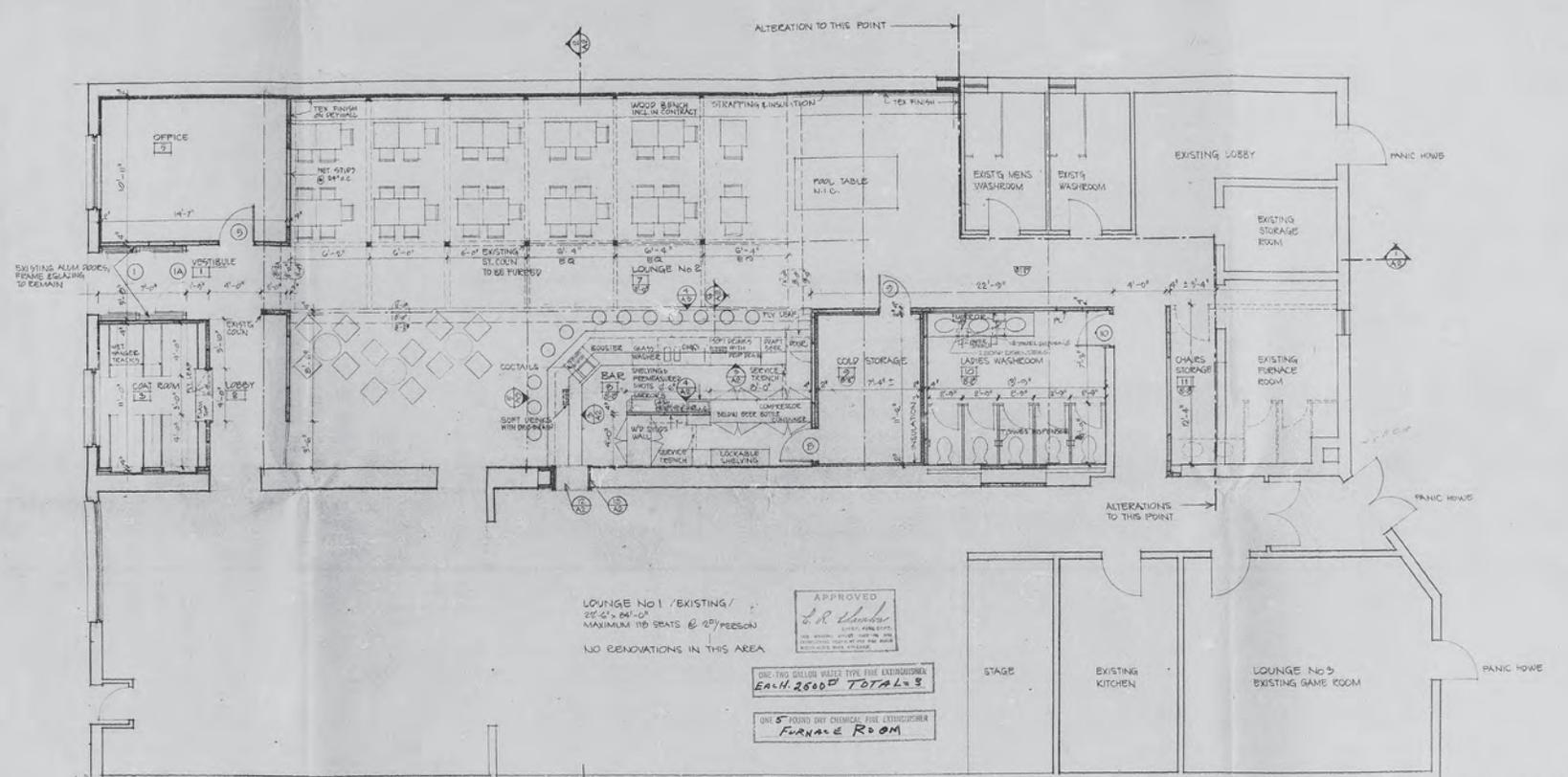
Note: New living table covered with glass top and a console to sit on either side of the table with a cross joining.

PROPOSED FLOOR PLAN
SCALE 1/4" = 1'-0"

PLAN SHOWING EXIST'G WASH ROOMS, EXITS & PROPOSED NEW EXITS TO BUILDING 17-17A ELVA STREET TORONTO
OZITA P.L.C.
SHT #1
MAY 9, 1954

841.69 - 100 12^{DL} / revision

20' x 15' ROOF KEG BEAM



LOUNGE NO 1 / EXISTING /
22' 2" x 64' 0"
MAXIMUM 110 SEATS @ 25' / PERSON
NO RENOVATIONS IN THIS AREA

APPROVED
L.R. [Signature]
L.R. [Signature]
L.R. [Signature]

ONE TWO GALLON WATER TYPE FIRE EXTINGUISHER
EACH 2000' TOTAL = 9

ONE 5 POUND DRY CHEMICAL FIRE EXTINGUISHER
FURNACE ROOM

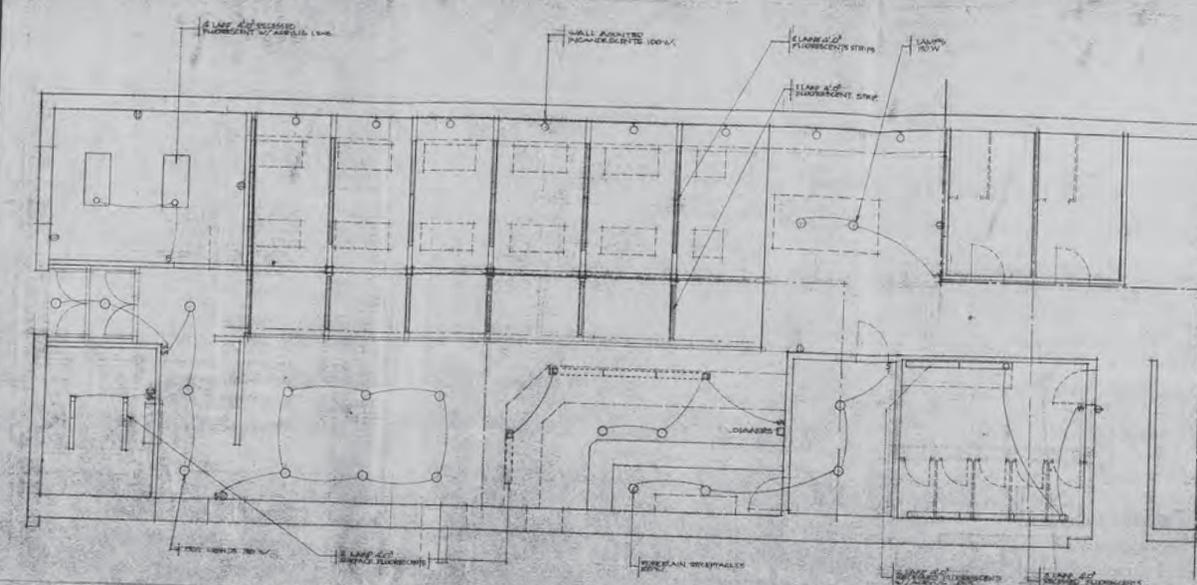
CITY OF TORONTO
DEPARTMENT OF BUILDINGS
APPROVED
EXAMINED BY: [Signature]
DATE: NOV-5 1973

DESIGNED BY: [Signature]
CHECKED BY: [Signature]
EXAMINED BY: [Signature]
DATE: [Signature]
RECOMMENDED FOR APPROVAL: [Signature]

00 373

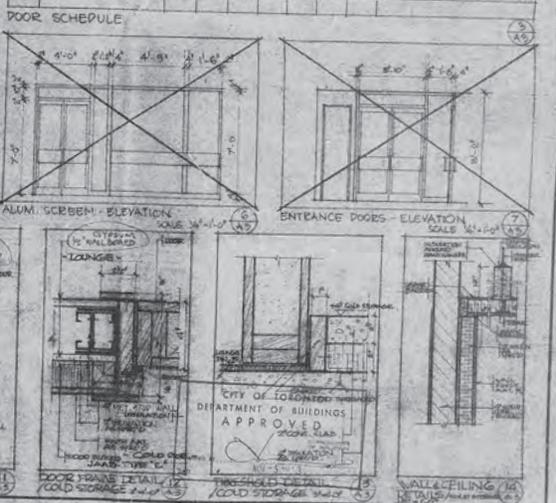
REVISIONS NO. DATE BY REVISIONS NO. DATE BY		CONTRACTOR SHALL CHECK ALL DIMENSIONS ON THE WORK AND REPORT ANY DISCREPANCY TO THE ARCHITECT BEFORE PROCEEDING. ALL DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF THE ARCHITECT AND MUST BE RETURNED AT THE COMPLETION OF THE WORK. THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION UNTIL SIGNED BY THE ARCHITECT.	HOWARD D. VANDEWATER ARCHITECT TORONTO		DATE: JULY 75 PROJECT: FRATERNAL ORDER OF EAGLES DRAWN: S. URBAN CHECKED: G.P. SCALES: 1/4" = 1'-0"	SHEET TITLE: FLOOR PLAN	FILE NO.: 7504 SHEET NO.: A 1
---	--	---	---	--	---	-------------------------	----------------------------------

CHANGE LOCATION OF EN 101 VESTIBULE
DRAIN 2' UPST. UP TO GARAGE. NO. PANIC ROOM
DOOR TO EN 101 GARAGE. CHANGE ALL
SPARK WALLS TO MET. STUD BRICK. SAE'S
S.A.E. USE. REVISED - SEE PREL. PLATE.
FRONT EXTERIOR DEMONSTRATION.



ROOM No.	NAME	FLOOR MATERIAL	BASE MATERIAL	WALLS MATERIAL	CEILING MATERIAL	NOTES
1	VESTIBULE	V.A.S.T.	P.V.C.	BRICK	TEX. FIN.	
2	LOBBY	CARPET	CARPET	TRK. FIN.	TEX. FIN.	
3	COAT ROOM			PAINT	PAINT	
4	OFFICE No. 1			TRK. FIN.	TEX. FIN.	
5	OFFICE			TRK. FIN.	TEX. FIN.	
6	POOL ROOM			TRK. FIN.	TEX. FIN.	
7	LOUNGE No. 2			TRK. FIN.	TEX. FIN.	
8	BAR	V.A.S.T.	P.V.C.	PAINT	TEX. FIN.	
9	COLD STORAGE	PREPAB.		PREPAB.	PREPAB.	
10	LADIES WASHROOM	V.A.S.T.	P.V.C.	PAINT	PAINT	
11	CHAIR STORAGE			PAINT	PAINT	

ROOM No.	SIZE	THICK	TYPE	MATERIAL	FRAME	FIRE	NOTES
1	2 x 2'-6" x 7'-0"	1 1/2"	ALUM.	ALUM.			EXISTING
1A	2 x 2'-6"						EXISTING
2	2'-0"						
3	2'-0"						
4	2'-0"						
5	2'-0"						
6	2'-0"						
7	2'-0"						
8	2'-0"						INSULATED DOOR, SEE DET. (A.3A)
9	2'-0"						INSULATED DOOR, SEE DET. (A.3A)
10	2'-6"	1 1/2"	"A"	"B"	"B"		



CONTRACTOR SHALL CHECK ALL DIMENSIONS ON THE DRAWING AND REPORT ANY DISCREPANCY TO THE ARCHITECT BEFORE PROCEEDING.
 ALL DIMENSIONS AND SPECIFICATIONS ARE THE PROPERTY OF THE ARCHITECT AND MUST BE OBSERVED TO THE COMPLETION OF THE WORK.
 THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION OF ANY OTHER WORK WITHOUT THE WRITTEN CONSENT OF THE ARCHITECT.

HOWARD D. VANDEWATER
 ARCHITECT TORONTO

DATE: _____ PROJECT: **FRATERNAL ORDER OF EAGLES**
 DRAWN BY: _____ MAPLE LEAF AERIE No 8311 17 ELM STREET TORONTO ONTARIO
 CHECKED BY: _____
 SCALE: AS NOTED SHEET TITLE: REFLECTED CEILING, ELEVATIONS DETAILS
 FILE NO. 7824 SHEET NO. A 3

PLAN OF SURVEY SHOWING TOPOGRAPHICAL INFORMATION OF

LOTS 1, 2, 3 AND 4

PLAN D-36

CITY OF TORONTO

SCALE 1:150



KRCMAR SURVEYORS LTD. 2022

METRIC: DISTANCES AND COORDINATES SHOWN HEREON ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048

BEARING

BEARINGS SHOWN HEREON ARE GRID DERIVED FROM GPS OBSERVATIONS OF OBSERVED REFERENCE POINTS 'A' AND 'B' USING THE LEICA SMARTNET RTK NETWORK AND ARE REFERRED TO THE 3° M TM COORDINATE SYSTEM, ZONE 10, CENTRAL MERIDIAN 7930' WEST LONGITUDE (3° MODIFIED TRANSVERSE MERCATOR PROJECTION, NAD 83 (CSRS)(2010)). DISTANCES SHOWN HEREON ARE GROUND DISTANCES AND CAN BE CONVERTED TO GRID DISTANCES BY MULTIPLYING BY A COMBINED SCALE FACTOR OF 0.999886.

INTEGRATION DATA

3° M TM ZONE 10 COORDINATES
NAD 83 (CSRS)(2010) (CENTRAL MERIDIAN 7930' WEST LONGITUDE)
THE X,Y COORDINATES LISTED BELOW ARE TO BE USED ACCURATELY AND COMPLY WITH SECTION 14(1) OF ONTARIO REGULATION 219/10 FILED UNDER THE SURVEYORS ACT.

OBSERVED REFERENCE POINTS		
MONUMENT ID.	NORTHING	EASTING
(A) CC	4 835 310.81	314 238.59
(B) CC	4 835 425.12	314 312.98
REFERENCE POINTS		
POINT	NORTHING	EASTING
1	4 835 297.52	314 298.80
2	4 835 304.64	314 283.48
3	4 835 286.88	314 289.00
4	4 835 273.91	314 292.71

COORDINATE VALUES SHOWN ARE FOR GEODETIC INFORMATION SYSTEM INTERPOLATION ONLY. COORDINATES CHANGE AS MONUMENTS ARE USED TO RE-ESTABLISH CORNERS OF BOUNDARIES SHOWN ON THIS PLAN.

ELEVATION

ELEVATIONS SHOWN HEREON ARE GEODETIC AND ARE RELATED TO CITY OF TORONTO BENCH MARK NO. C787 HAVING AN ELEVATION OF 95.467 METRES.

LEGEND

- DENOTES SURVEY MONUMENT FOUND
 - DENOTES SURVEY MONUMENT PLANTED
 - ▣ DENOTES STANDARD IRON BAR
 - ▢ DENOTES SHORT STANDARD IRON BAR
 - ▧ DENOTES IRON BAR
 - CP DENOTES CONCRETE PIN
 - CC DENOTES C/IT CROSS
 - (M) DENOTES MEASURED
 - (S) DENOTES SET
 - (U) DENOTES ORIGIN UNKNOWN
 - (W) DENOTES WITNESS
 - (BA) DENOTES PLAN BA-1773
 - (P) DENOTES PLAN D-36
 - (P2) DENOTES PLAN 63R-2964
 - (P3) DENOTES BUILDING LOCATION SURVEY BY TOM CZERNIANSKI SURVEYING LTD., O.L.S. DATED MAY 23, 1985
 - (P7) DENOTES PLAN OF SURVEY SHOWING TOPOGRAPHICAL INFORMATION BY KRCMAR SURVEYORS LTD., O.L.S., DATED MARCH 02, 2022
 - (FN) DENOTES FIELD NOTES BY CITY OF TORONTO DATED AUGUST 4, 1982. (NOTE INDEX 38-28)
 - (1370) DENOTES KRCMAR SURVEYORS LTD., O.L.S.
 - (MM) DENOTES MARSHALL, MACKLIN & MONAGHAN, O.L.S.
 - (PROJ) DENOTES PROJECTION OF BEARING
 - (T) DENOTES TOP OF CURB
 - (B) DENOTES BOTTOM OF CURB
 - DENOTES EXISTING GRADE ELEVATION
 - A/C DENOTES AIR CONDITIONER
 - DENOTES CATCH BASIN
 - DENOTES DECIDUOUS TREE WITH TRUNK DIAMETER
 - DENOTES FIRE HYDRANT
 - DENOTES GAS METER
 - DENOTES HYDRO HAND WELL
 - DENOTES HYDRO MANHOLE
 - DENOTES LAMP POST (PRIVATE)
 - DENOTES MANHOLE
 - DENOTES PARKING METER
 - DENOTES SIGN
 - DENOTES WATER VALVE
 - DENOTES INTERLOCKING BRICK
 - DENOTES TIE TO CONCRETE BLOCK
 - DENOTES LAMP ON WALL
 - DENOTES CAMERA ON WALL
 - DENOTES OVERHEAD WIRE
- ALL BUILDING TIES TAKEN TO BRICK UNLESS NOTED OTHERWISE.

SURVEY REPORT

- THE RE-ESTABLISHMENT OF THE SUBJECT PROPERTY BOUNDARIES IS BASED ON INFORMATION CONTAINED IN THE RELEVANT TITLE DOCUMENTS, REGISTERED PLANS AND ON THE EVIDENCE OF PRIOR SURVEYS FOUND DURING THE COURSE OF PREPARING THE SUBJECT SURVEY.
- THE TYPE AND LOCATION OF THE EXISTING BUILDINGS AND OTHER IMPROVEMENTS, FENCES, ETC., ON OR NEAR THE SUBJECT PROPERTY ARE AS SHOWN ON THE SURVEY PLAN.
- COMPLIANCE WITH MUNICIPAL ZONING REQUIREMENTS IS NOT CERTIFIED BY THIS REPORT.
- LAND COMPRISES ALL OF PINs 21103-0087(LT) AND 21103-0086(LT).

TOTAL SITE AREA = 792.7m²

SURVEYOR'S CERTIFICATE

I CERTIFY THAT:

- THIS SURVEY AND PLAN ARE CORRECT AND IN ACCORDANCE WITH THE SURVEYORS ACT, THE SURVEYORS ACT AND THE REGULATIONS MADE UNDER THEM.
- THE SURVEY WAS COMPLETED ON THE 19th DAY OF MAY, 2022.

DATE: MAY 25, 2022

S.N. RAMSAMOOJ
ONTARIO LAND SURVEYOR

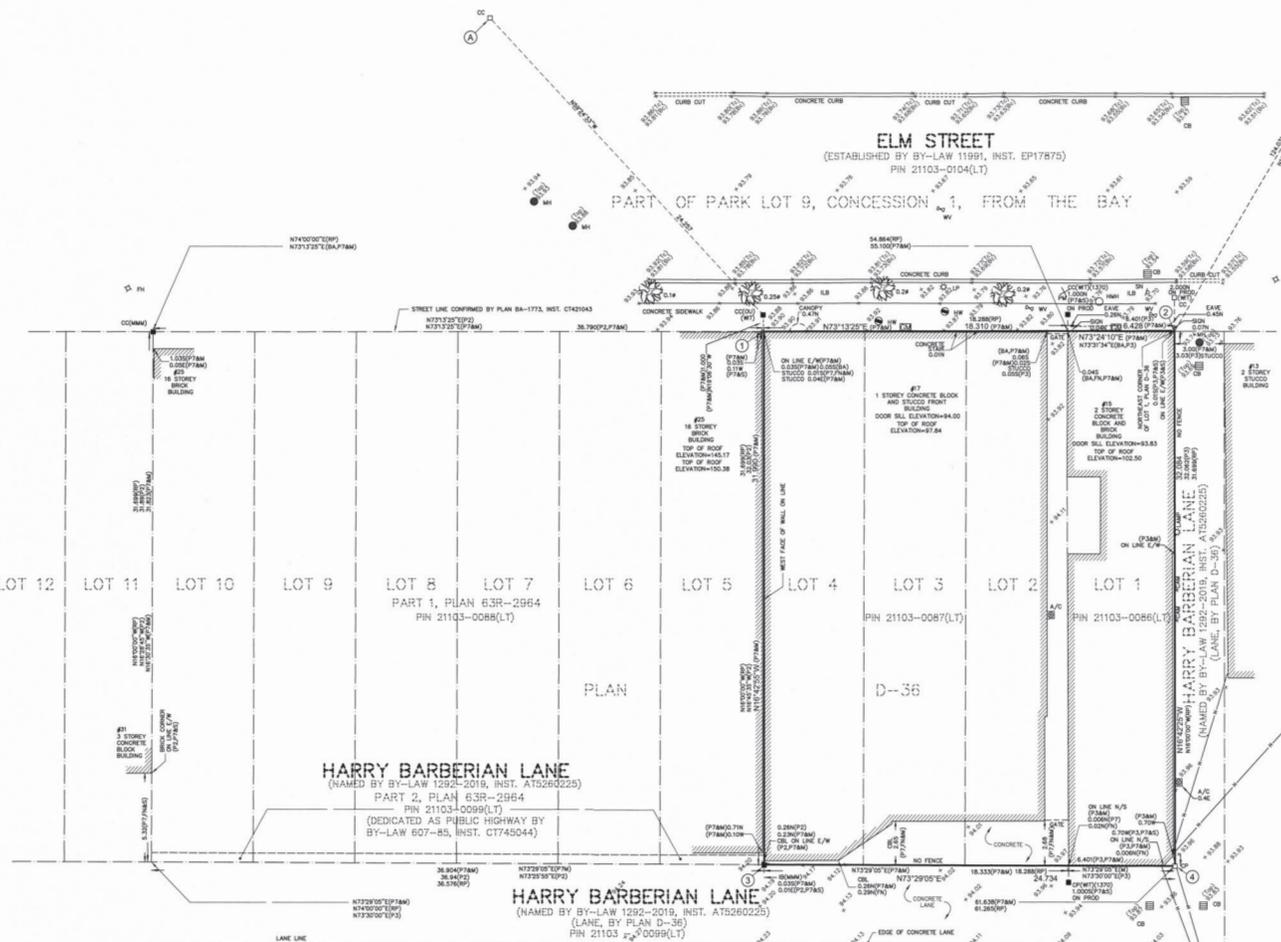
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Unauthorized reproduction, distribution, alteration or use, in whole or in part, is strictly prohibited.

ASSOCIATION OF ONTARIO LAND SURVEYORS PLAN SUBMISSION FORM V-26190			
FIELD:	D.L./M:	DRAWN:	SD./P:
CHKD:	S.A.R.:	CHECKED:	S.A.R.:
JOB NO.:	22-014		
ENGR NAME:	22-0148102	PLT/INT:	10-32-25/May/2022
WORK ORDER NO.:	36419		
1137 Centre Street, Thornhill, ON L4J 3M6 905.738.0053 F 905.738.9221 www.krcmar.ca			
PLAN AVAILABLE AT www.ProtectYourBoundaries.ca			



THIS PLAN IS NOT VALID UNLESS IT IS AN UNREVOKED ORIGINAL COPY ISSUED BY THE SURVEYOR IN ACCORDANCE WITH REGULATION 219/10, SECTION 29(3)

KRCMAR



Appendix B

Groundwater

Excerpt Hydrogeological Assessment (GEMS)
Groundwater Servicing Summary Form

GEMS[®]

Groundwater Environmental Management Services

Hydrogeological Report

15 and 17 Elm Street Toronto,
Ontario

Project: 22-1422

August 12, 2022

Prepared For:

Fora Developments 200 – 2440
Dundas St. W., Toronto, ON, M6P
1W9

Prepared By:

Groundwater Environmental
Management Services Inc.
8800 Dufferin Street, Suite 303
Concord, ON, L4K 0C5



Table 6.4.2: Groundwater Monitoring and Mitigation Plan, On-Site Water Quality Monitoring

Period	Monitoring Location	Monitoring Frequency	Method	Triggers for Mitigation	Mitigation Measures/Comments
During Construction	Discharge outlet pipe or sampling port of the dewatering system.	First sample is recommended to be obtained within first two (2) days of discharge start. Routine samples are recommended to be obtained monthly thereafter.	Samples should be sent to a certified laboratory and be analyzed against the City of Toronto sewer use By-Law.	Discharge quality exceeds City of Toronto sewer use By-Law.	Filtration/treatment approaches would be reviewed on a specific basis. Upon installation of a filtration/treatment system, an additional sample should be performed to ensure compliance with the criteria.
Post Construction	No post-construction water quality monitoring is required.				

Note: This Plan does not include Geotechnical Monitoring (settlement monitoring), which is not recommended for this site.

7.0 Conclusion

Based on the above analysis, the following conclusions and recommendations are offered for the proposed construction of 17 Elm Street, Toronto, Ontario:

- The geology within the Site is characterized by Beveled till plains, including coarse textured glaciolacustrine deposits overlaying Paleozoic bedrock.
 - The silty clay, sandy silt, fine sand, sandy clay, and shale/bedrock units at the Site are interpreted to all belong to the same unconfined water-bearing zone or aquifer.
- Hydraulic conductivity for the water-bearing zone (MW101, MW103 and MW104) ranges from 5.52×10^{-8} m/s to 1.71×10^{-6} m/s, with an overall geometric mean of 4.7×10^{-7} m/s.
- Groundwater table at the Site ranges from 80.53 masl to 86.13 masl.
 - The maximum anticipated groundwater is estimated at 86.9 masl, incorporating a 0.8 m fluctuation allowance to the peak static water level as outlined by the City of Toronto Foundation Drainage Guidelines (COT, 2021) for peak season monitoring.
- Groundwater quality at the Site currently meets the City of Toronto Sanitary and Combined Sewers Discharge Guidelines
 - Groundwater quality exceeds the City of Toronto Storm Sewer Discharge Use By-Law for Total Suspended Solids, Total Manganese (Mn), and Total Phosphorus
 - It is recommended that an additional sample is obtained from the accumulated

stormwater on-site prior to discharge to determine if the water quality meets the City of Toronto Sewer Use By-law.

- To drawdown groundwater to a target elevation of 86.47 masl, a dewatering rate of 7.6 L/min or 10,882 L/day will be required.
 - Applying a safety factor of 1.5 for permitting applications and accounting for precipitation during dewatering, GEMS forecasts a total dewatering rate of 19.5 L/min or 28,053 L/day.
- The zone of influence for steady-state construction dewatering (40 days) is expected to extend 29 m beyond the excavation area.
- Long-term dewatering rates are expected to be minimal due to deep water level conditions and low hydraulic conductivity of site material. Long-term infiltrated stormwater is estimated at 4,275 L/day with a safety factor of 1.5
- Well decommissioning will be required prior to construction. Any inactive wells within the Site should be decommissioned by a licensed well contractor under Ontario Regulation 903.

8.0 Limitations

Groundwater Environmental Management Services Inc. (GEMS) has prepared this report for our client and its agents exclusively. GEMS accepts no responsibility for any damages that may be suffered by third parties as a result of decisions or actions based on this report.

The findings and conclusions are site-specific and were developed in a manner consistent with that level of care and skill normally exercised by environmental professionals currently practicing under similar conditions in the area. Changing assessment techniques, regulations, and site conditions mean that environmental investigations and their conclusions can quickly become dated, so this report is current up to two years from the published date. The report should not be used after that without GEMS review/approval.

The project has been conducted according to our instructions and work program. Additional conditions, and limitations on our liability are set forth in our work program/contract. No warranty, expressed or implied, is made.

Use servicing report groundwater summary Dec 2017 form attached

Included in Appendix B

SERVICING REPORT GROUNDWATER SUMMARY

The form is to be completed by the Professional that prepared the Servicing Report.
 Use of the form by the City of Toronto is not to be construed as verification of engineering/hydrological content.

For City Staff Use Only:	
Name of ECS Case Manager (please print)	
Date Review Summary provided to to TW	

A. SITE INFORMATION		Included in SR (reference page number)	Report Includes this information City staff (Check)
Date Servicing Report was prepared:	2022 August	Cover Page	
Title of Servicing Report:	17 Elm Street FSRSWM Report	Cover Page	
Name of Consulting Firm that prepared Servicing Report:	IBI Group Ltd.	Cover Page	
Site Address	15-17 Elm Street Toronto, Ontario	Cover Page	
Postal Code	M5G 1H1	N/A	
Property Owner (identified on planning request for comments memo)	Trustees of Maple Leaf Aerie No. 2311, Fraternal Order of Eagles; AND Cooper, Annette; Cooper, David	N/A	
Proposed description of the project (ex. number of point towers, number of podiums, etc.)	32 storey mixed use building retail and residential space two underground levels	2	
Land Use (ex. commercial, residential, mixed, industrial, institutional) as defined by the Planning Act	Mixed	2	
Number of below grade levels	2	2	

No long term PWDS are proposed

SERVICING REPORT GROUNDWATER SUMMARY

<p>Does the SR include a private water drainage system (PWDS)?</p> <p>PWDS: Private Water Drainage System: A subsurface drainage system which may consist of but is not limited to weeping tile(s), foundation drain(s), private water collection sump(s), private water pump or any combination thereof for the disposal of private water on the surface of the ground or to a private sewer connection or drainage system for disposal in a municipal sewer.</p>	<div style="border: 1px solid red; width: 100px; height: 20px; margin-bottom: 10px;"></div> <p>If Yes continue completing Section B (Information Relating to Groundwater) ONLY</p> <p>If Yes, Number of PWDS? <u>0</u></p> <p><i>(Each of these PWDS may require a separate Toronto Water agreement)</i></p> <p>If No skip to Sections C (On-site Groundwater Containment) and/or D (Water Tight Requirements) as applicable</p>	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
B. INFORMATION RELATING TO GROUNDWATER		Included in SR (reference page number)	Report Includes this information City Staff (Check)
<p>A copy of the pump schedule(s) for ALL groundwater sump pump(s) for the development site has been included in the FSR</p> <p style="text-align: center;">or</p> <p>A letter written by a Mechanical Consultant (signed and stamped by a Professional Engineer of Ontario) shall be attached to the SR stating the peak flow rate of the groundwater discharge for the development site for all groundwater sump pump(s). This peak flow rate must be based on the pump schedule(s) that have been designed by the Mechanical Consultant. A template of this letter is attached in Schedule A.</p>	<p>The foundation of the development is located above the measured groundwater table. Therefore, no long term pumping is proposed or required.</p>	<p>Appendix B</p>	

SERVICING REPORT GROUNDWATER SUMMARY

<p>**If there is more than one sump they must ALL be included in the letters along with a combined flow**</p>			
<p>Is it proposed that the groundwater from the development site will be discharged to the sanitary, combined or storm sewer?</p>	<p><input type="checkbox"/> Sanitary Sewer</p> <p><input type="checkbox"/> Combined Sewer</p> <p><input type="checkbox"/> Storm Sewer</p>		
<p>Will the proposed PWDS discharge from the site go to the Western Beaches Tunnel (WBT)?</p> <p>*Reference attached WBT drainage map*</p>	<p><input type="checkbox"/> YES <input type="checkbox"/> NO</p> <p>If Yes, private water discharge fees will apply and site requires a sanitary discharge agreement.</p>		
<p>What is the street name where the receiving sewer is located?</p>			
<p>What is the diameter of the receiving sewer?</p>			
<p>Is there capacity in the proposed local sewer system?</p> <p><input checked="" type="checkbox"/> YES <input type="checkbox"/> NO</p>	<p>Are there any improvements required to the sewer system? If yes, identify them below and refer to the section and page number of the FSR where this information can be found.</p> <p>If a sewer upgrade is required, the owner is required to enter into an Agreement with the City to improve the infrastructure?</p> <p style="text-align: right;"><input type="checkbox"/> YES</p>		
<p>Total allowable peak flow rate during a 100 year storm event (L/sec) to storm sewer</p> <p>When groundwater is to be discharged to the storm sewer the total groundwater and stormwater discharge shall not exceed the permissible peak flow rate during a 2 year pre development storm event, as per the City's</p>	<p>_____ L/sec</p>		

Value revised to 1.95L/s, which is consistent with Table 3.1

SERVICING REPORT GROUNDWATER SUMMARY

<p>Wet Weather Flow Management Guidelines, dated 2006</p>			
<p>Short-Term Groundwater Discharge Provide proposed total flow rate to the sanitary/combined sewer in post-development scenario</p> <p>Total Flow (L/sec) = sanitary flow + peak short-term groundwater flow rate</p>	<p>2.6 L/sec</p>		
<p>Long-Term Groundwater Discharge Provide proposed total flow rate to the sanitary/combined sewer in post-development scenario</p> <p>Total Flow (L/sec) = sanitary flow + peak long-term groundwater flow rate</p>	<p>0 L/sec</p>		
<p>Does the water quality meet the receiving sewer Bylaw limits?</p> <p><input checked="" type="checkbox"/> YES</p> <p><input type="checkbox"/> NO</p>	<p>If the water quality does not meet the applicable receiving sewer Bylaw limits and the applicant is proposing a treatment system the applicant will need to include a letter stating that a treatment system will be installed and the details of the treatment system will be included in the private water discharge application that will be submitted to TW EM&P.</p>		
<p>C. ON-SITE GROUNDWATER CONTAINMENT</p>		<p>Included in SR (reference page number)</p>	<p>Report Includes this information City Staff (Check)</p>
<p>How is the site proposing to manage the groundwater discharge on site?</p>	<p>No long term groundwater discharge is required</p>	<p>5</p>	

This is not consistent with the hydrogeological report

No long term groundwater discharge is proposed. Value revised to 3.6L/s

SERVICING REPORT GROUNDWATER SUMMARY

<p>Has the above proposal been approved by:</p>	<p><input type="radio"/> TW-WIM And <input type="radio"/> TW-EM&P And <input type="radio"/> ECS</p>		
<p>If the site is proposing a groundwater infiltration gallery, has it been stated that the groundwater infiltration gallery will not be connected to the municipal sewer? A connection between the infiltration gallery/dry well and the municipal sewer is not permitted</p> <p>Please be advised if an infiltration gallery/dry well on site is not connected to the municipal sewer, the site must submit two letters using the templates in Schedule B and Schedule C.</p>	<p><input type="checkbox"/> YES <input type="checkbox"/> NO</p>		
<p>Confirm that the infiltration gallery can infiltrate 100% of the expected peak groundwater flow year round, ensure that the top of the infiltration trench is below the frost line (1.8m depth), not less than 5 m from the building foundation, bottom of the trench 1m above the seasonally high water table, and located so that the drainage is away from the building.</p>	<p>N/A</p>		
<p>D. WATER TIGHT REQUIREMENTS</p>		<p>Included in SR (reference page number)</p>	<p>Report Includes this information City Staff</p>

October 2017

SERVICING REPORT GROUNDWATER SUMMARY

		(Check)
<p>If the site is proposing a water tight structure:</p> <ol style="list-style-type: none"> 1. The owner must submit a letter using the template in Schedule D. 2. A Professional Engineer (Structural), licensed to practice in Ontario and qualified in the subject must submit a letter using the template in Schedule E. 	N/A	

Provide a copy of the approved SR to Toronto Water Environmental Monitoring & Protection Unit at pwapplication@toronto.ca.

Consulting Firm that prepared Servicing Report: IBI Group Ltd.

Professional Engineer who completed the report summary: Jason Jenkins P.E. , P.Eng
Print Name




Professional Engineer who completed the report summary: _____
Signature
Date & Stamp
August 2022

Appendix C

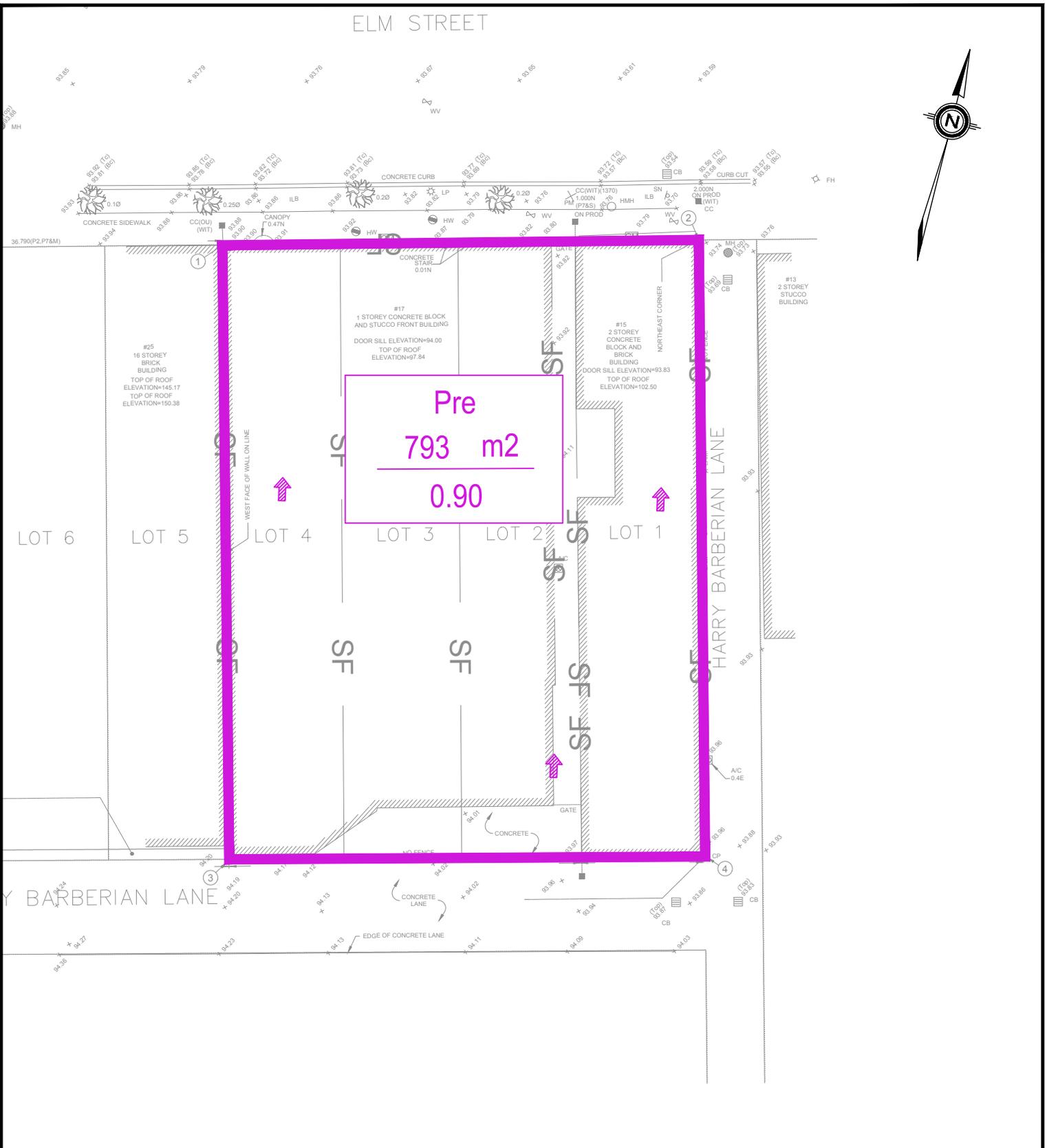
Stormwater Analysis

Pre- and Post-Development Drainage Area Plans

Stormwater Design Calculations

Irrigation Calculations

ELM STREET



LEGEND

-  PROPERTY LINE
-  DRAINAGE BOUNDARY
-  OVERLAND FLOW DIRECTION

CLIENT
FORA DEVELOPMENTS

2440 DUNDAS STREET WEST,
UNIT 200, TORONTO, ON M6P
1W9

PROJECT NAME
17 ELM STREET

SCALE: NTS	DATE: 2022-04-08
PROJECT ENG: JMJ	DRAWN BY: CG
CHECKED BY: JMJ	APPROVED BY: JMJ
PROJECT NO: 137680	



IBI GROUP
Unit 300 – 8133 Warden Avenue
Markham ON L6G 1B3 Canada
tel 905 763 2322 fax 905 763 9983
ibigroup.com

FIGURE NAME
PRE-DEVELOPMENT
STORM DRAINAGE PLAN

FIGURE NO.	REVISION
DAP-1	1



LEGEND

-  PROPERTY LINE
-  DRAINAGE BOUNDARY
-  OVERLAND FLOW DIRECTION

CLIENT
FORA DEVELOPMENTS

2440 DUNDAS STREET WEST,
UNIT 200, TORONTO, ON M6P
1W9

PROJECT NAME
17 ELM STREET

SCALE: NTS	DATE: 2022-08-17
PROJECT ENG: CG	DRAWN BY: JMJ
CHECKED BY: JMJ	APPROVED BY: JMJ
PROJECT NO: 137680	



IBI GROUP
Unit 300 – 8133 Warden Avenue
Markham ON L6G 1B3 Canada
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ibigroup.com

FIGURE NAME
POST-DEVELOPMENT
STORM DRAINAGE PLAN

FIGURE NO.	REVISION
DAP-2	1

17 Elm Street

Mixed Use Development

Runoff Coefficients

Project Name: 17 Elm Street

Project Number: 137680

Date: 19 August 2022

Designed By: Jason Jenkins, P.Eng.

Total Site Area				
Conventional Roof	650	82.0%	0.90	0.74
Extensive Green Roof	0	0.0%	0.50	0.00
Intensive Green Roof	90	11.3%	0.50	0.06
Landscape	0	0.0%	0.25	0.00
Landscape over P1	0	0.0%	0.45	0.00
Permeable Pavers	0	0.0%	0.55	0.00
Impervious (Clean)	53	6.7%	0.90	0.06
Impervious (Dirty)	0	0.0%	0.90	0.00
Total Area	793	100%		0.85

Pre Dev Total Site Area				
Conventional Roof	0	0.0%	0.90	0.00
Green Roof	0	0.0%	0.50	0.00
Landscape	0	0.0%	0.25	0.00
Landscape over P1	0	0.0%	0.45	0.00
Permeable Pavers	0	0.0%	0.55	0.00
Impervious	793	100.0%	0.90	0.90
Total Area	793	100%		0.90

17 Elm Street

Mixed Use Development



ALLOWABLE RELEASE RATE AND STORM SERVICE DESIGN

2 / 100 -YEAR STORM SEWER DESIGN SHEET

$$I_{2\text{-year}} = \frac{21.8}{(T)^{0.75}} = 88.19 \text{ mm/hr}$$

$$I_{100\text{-year}} = \frac{59.7}{(T)^{0.80}} = 250.32 \text{ mm/hr}$$

Project Name: 17 Elm Street

Project Number: 137680

Date: 19 August 2022

Designed By: Jason Jenkins, P.Eng.

	From MH	To MH	DESIGN FLOW CALCULATIONS							SEWER DESIGN & ANALYSIS										Notes	
			A (ha)	R	A x R	Accum. A x R	T _c (min)	I (mm/hr)	Q _{act} (l/s)	Size of Pipe (mm)	Slope (%)	Nominal Capacity Q _{cap} (L/s)	Full Flow Velocity (m/s)	Actual Velocity (m/s)	Length (m)	Time in Sect. (min)	Total Time (min)	Percent of Full Flow (%)			
ALLOWABLE RELEASE RATE																					
Allowable Release Rate (Total Site)			0.0793	0.50	0.040	0.040	10.0	88.2	9.7												
Uncontrolled Flow			0.0000	0.90	0.000	0.000	10.0	88.2	0.0												
Controlled Allowable Release Rate									9.7												
100-YEAR FLOWS																					
Subject Site (Un-Attenuated)			0.0793	0.90	0.071	0.071	10.0	250.3	49.6												
ORIFICE AND SERVICE DESIGN																					
			k		Orif.(mm)	Area (m2)	depth (m)	head (m)	Q (L/s)												
Orifice and Storm Service	Tank	Cntrl.MH		k=0.6	75	0.00442	0.61	0.58	9.4	200	2.00%	46.4	1.5	1.1	7.8	0.1	10.1	20%			
Storm Service	Cntrl MH	1200mm STM							9.4	200	2.00%	46.4	1.5	1.1	10.7	0.1	10.1	20%			

17 Elm Street

Rational Method - 100 Year Storm

Mixed Use Development



$$I_{100\text{-year}} = \frac{59.7}{(10)^{0.80}} = 250.32 \text{ mm/hr}$$

Project Name:	17 Elm Street	Controlled Area =			0.0793
Project Number:	137680	Weighed Runoff Coefficient =			0.85
Date:	19 August 2022	Orifice Discharge (L/s) =			9.4
Time (min)	Intensity (mm/hr)	Q-100 (L/s)	Q-Infiltrated (L/s)	Q-stored (L/s)	Storage Volume (m ³)
0	0.0	0.000	1.19	0.000	0.000
10	250.3	47.123	1.19	38.943	23.366
20	143.8	27.065	1.19	18.885	22.662
30	103.9	19.567	1.19	11.387	20.497
40	82.6	15.545	1.19	7.365	17.675
50	69.1	13.003	1.19	4.823	14.470
60	59.7	11.239	1.19	3.058	11.010
70	52.8	9.935	1.19	1.755	7.369
80	47.4	8.928	1.19	0.748	3.590
90	43.2	8.125	1.19	0.000	0.000
100	39.7	7.468	1.19	0.000	0.000
110	36.8	6.920	1.19	0.000	0.000
120	34.3	6.455	1.19	0.000	0.000
130	32.2	6.054	1.19	0.000	0.000
140	30.3	5.706	1.19	0.000	0.000
150	28.7	5.400	1.19	0.000	0.000
160	27.2	5.128	1.19	0.000	0.000
170	25.9	4.885	1.19	0.000	0.000
180	24.8	4.667	1.19	0.000	0.000
190	23.7	4.469	1.19	0.000	0.000
200	22.8	4.289	1.19	0.000	0.000
210	21.9	4.125	1.19	0.000	0.000
220	21.1	3.975	1.19	0.000	0.000
230	20.4	3.836	1.19	0.000	0.000
240	19.7	3.707	1.19	0.000	0.000
250	19.1	3.588	1.19	0.000	0.000
260	18.5	3.477	1.19	0.000	0.000
270	17.9	3.374	1.19	0.000	0.000
280	17.4	3.277	1.19	0.000	0.000
290	16.9	3.186	1.19	0.000	0.000
300	16.5	3.101	1.19	0.000	0.000
310	16.0	3.021	1.19	0.000	0.000
320	15.6	2.945	1.19	0.000	0.000
330	15.3	2.874	1.19	0.000	0.000
340	14.9	2.806	1.19	0.000	0.000
350	14.6	2.741	1.19	0.000	0.000
360	14.2	2.680	1.19	0.000	0.000

Storage Volume Required (cu.m) = **23.4**
 Storage Volume Provided (cu.m) = **152.0**
 HGL Depth (m) = 0.6
 Orifice Diameter (mm) = 75

17 Elm Street

Mixed Use Development

**Water Quality Calculations**

Project Name: 17 Elm Street
 Project Number: 137680
 Date: 19 August 2022
 Designed By: Jason Jenkins, P.Eng.

TSS Removal (Un-Treated)

Surface	Area (m ²)		Effective TSS Removal	Overall TSS Removal
Conventional Roof	650	82%	80	65.6
Extensive Green Roof	0	0%	80	0.0
Intensive Green Roof	90	11%	80	9.1
Landscape	0	0%	80	0.0
Landscape over P1	0	0%	80	0.0
Permeable Pavers	0	0%	80	0.0
Impervious (Clean)	53	7%	80	5.3
Impervious (Dirty)	0	0%	0	0.0
Total Area:	793	100%		80.0

Site Meets 80% TSS Removal

17 Elm Street

Mixed Use Development

**Water Balance Calculations**

Project Name: 17 Elm Street
 Project Number: 137680
 Date: 19 August 2022
 Designed By: Jason Jenkins, P.Eng.

Total Volume to be Retained	
Required Water Balance (mm):	5.0
Recall Site Area (m ²):	793
Total Water Balance to be Retained (m ³):	4.0

Volume Achieved Through Initial Abstraction				
Surface	Area (m ²)		I.A.	Vol. (m ³)
Conventional Roof	650		1	0.7
Extensive Green Roof	0		5	0.0
Intensive Green Roof	90		7	0.6
Landscape	0		5	0.0
Landscape over P1	0		5	0.0
Permeable Pavers	0		5	0.0
Impervious (Clean)	53		1	0.1
Impervious (Dirty)	0		1	0.0
Total Area:	793			1.3

Water Balance Summary		Vol. (m ³)
Recall Initial Abstraction (see above):		1.3
Water Re-Use (Irrigation):		1.1
Water Re-Use (Toilet Flushing):		1.6
Total Water Balance Achieved:		4.0

Site Meets City's Water Balance Criteria

Check Tank Capacity to Capture Re-Use Volume	
Area of SWM Tank (m ²):	38.0
Float Switch Operating Range (m):	0.07
Total Water Balance Achieved:	2.7

SWM Tank has sufficient capacity for Re-Use Volumes

Appendix D

Sanitary Analysis

Sanitary Service Design Calculations

17 Elm Street
Mixed use development



NOTES: Post-development domestic sewage flow based upon a unit flow of 240.0 Lpcd.
 Maximum flow velocity for pipe flowing full = 3.0 m/s.
 Minimum flow velocity for pipe flowing partially full (actual flow) = 0.6 m/s.
 Infiltration= 0.26 L/s/ha
 Mannings= 0.013

Sanitary Sewer Design Sheet

Project Name: 17 Elm Street
 Project Number: 137680
 Date: August 19, 2022
 Designed By: Jason Jenkins, P.Eng.

$$3.62 + 0.02 = 3.64 \text{ L/s}$$

3.65?

	From	To	DESIGN FLOW CALCULATIONS										SEWER DESIGN & ANALYSIS						Notes			
			Area (ha)	Density	Population	Cumulative Area (ha)	Cumulative Population	Peaking Factor	Sewage Flow (L/s) (1)	Infiltration Flow (L/s) (2)	Ground Water (L/s) (3)	Stormwater Flow (L/s) (4)	Total Flow, Qd (L/s) (1)+(2)+(3)+(4)	Nominal Diameter (mm)	Pipe Slope (%)	Pipe Length (m)	Full Flow Capacity, Qf (L/s)	Full Flow Velocity (m/s)		Actual Velocity V (m/s)	Percent of Full Flow (%)	
Pre-Development			0.0793		9	0.0763	9		0.026	0.02	0.0	9.7	9.7									
Post-Development	Services																					
240 and 250 L/cap/day	Cntrl MH	200 San Sewer	0.0793		321	0.0763	321	4.07	3.62	0.020	0.0		3.6									
450L/cap/day			0.0793		321	0.0763	321	4.07	6.79	0.020	0.0		6.8	200	2.0%	21.5	48.4	1.49	1.05	14.1%		

Pre-Development			
	Units / Area	Density	Population
Retail	737 m2	1.1 pp/100m2	8
			0
Pop. =			9

Post-Development			
	Units / Area	Density	Population
1 Bedroom	100	1.4 pp/unit	140
2 Bedroom	51	2.1 pp/unit	107
3 Bedroom	23	3.1 pp/unit	71
Retail	212 m2	1.1 pp/100m2	2
Pop. =			321

Appendix E

Water Analysis

Hydrant Flow Test (Elm Street)

Water Demand and Fire Demand Calculations

Fire Resistive Construction Confirmation Letter



HYDRANT FLOW TESTING

NOTE: Hydrants tested according to NFPA 291: Recommended Practice for Fire Flow Testing and Marking of Hydrants

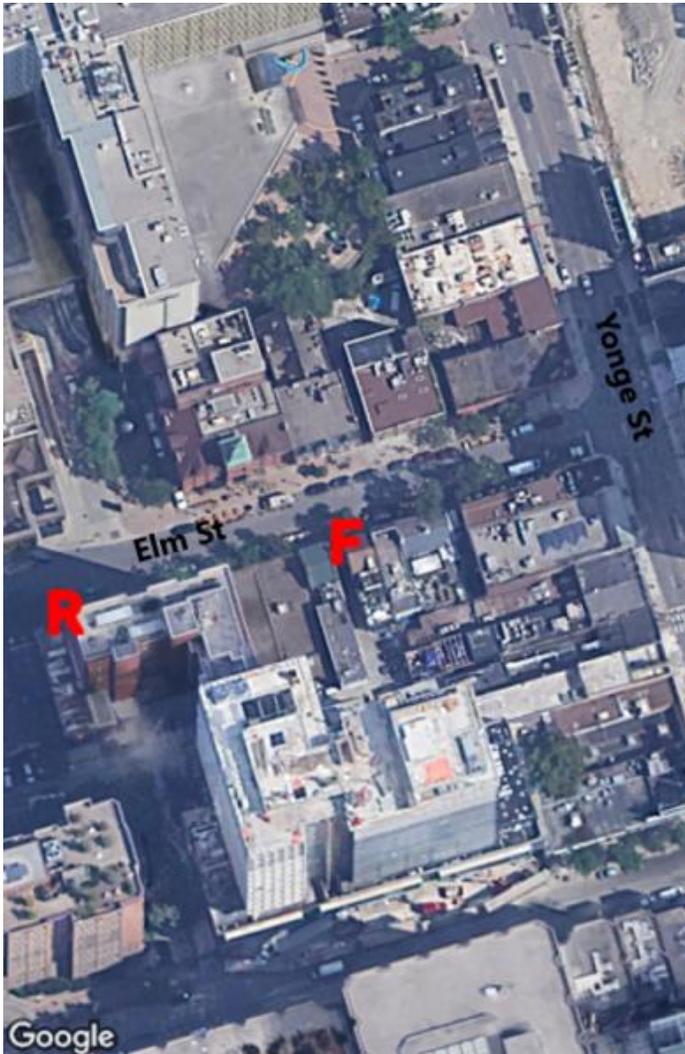
GENERAL INFORMATION

General Information

Date of Testing	20-Jul-22
Project Number:	137680-task8
Site Location / Address:	17 Elm St
Region / Municipality	Toronto
Hydrants Opened By:	Toronto
Tested by:	Daniel S Val V

HYDRANT TEST INFORMATION

Hydrant Test Location - Residual Hydrant=R, Flow Hydrant=F (North at Top)



Test Data

Time of Test 1:08 PM
Pipe Size (mm) 150
Flow Hydrant Test Location (description) 13 Elm St
Residual Hydrant Test Location (description) 31 Elm St
Static Pressure(PSIG) 61

Q1 Test Data (1 Orifice)

# OUTLETS	ORIFICE SIZE(IN)	PITOT PRESSURE(PSIG)	FLOW(USGPM)	RESIDUAL PRESSURE(PSIG)
1	2.5	<5 psi	<375	36

QT Test Data (2 Orifices)

# OUTLETS	ORIFICE SIZE(IN)	PITOT PRESSURE(PSIG)	FLOW(USGPM)	RESIDUAL PRESSURE(PSIG)
2	2.5	-	-	32

Calculations

FORMULA: $Q = 29.83 \text{ cd}^2 \sqrt{p}$Where: c- coefficient of discharge (1 in smooth pipe)
..... d- pipe diameter (inches)
.....p- pitot reading (psig)

Q1 - 1 Orifice(s) $Q1 = (29.83)(0.9)(2.5)^2 \sqrt{5} < 375$
QT - 2 Orifice(s) QT = -
Static Pressure(PSIG) 61

Additional Information

Notes/ Comments Low flow was observed during the test.

17 Elm Street
Mixed-use development



DOMESTIC WATER DEMAND CALCULATIONS

Project Name: 17 Elm Street
Project Number: 137680
Date: August 19, 2022
Designed By: Jason Jenkins, P.Eng.

1. Based on the City of Toronto Standards and
2. OBC, Part 8 "Sewage Systems", OBC Table 8.2.1.3.A and 8.2.1.3.B
3. ADD = 190 L/cap/day for residential uses

Peaking Factors		
Land Use	Peak Hour	Maximum Day
Residential	2.50	1.30
Commercial	1.20	1.10

	Units / Area	Density	Population	ADD (L/s)	(ADDxP.F.) PHD (L/s)	(ADDxP.F.) MDD (L/s)
1 Bedroom	100 units	1.4 pp/unit	140	0.3	0.8	0.4
2 Bedroom	51 units	2.1 pp/unit	107	0.2	0.6	0.3
3 Bedroom	23 units	3.1 pp/unit	71	0.2	0.4	0.2
Retail	212 m2	1.1 pp/100m2	2	0.0	0.0	0.0
Totals			321	0.7	1.8	0.9

17 Elm Street

Mixed-use development



FIRE FLOW DEMAND CALCULATIONS

Project Name: 17 Elm Street
 Project Number: 137680
 Date: August 19, 2022
 Designed By: Jason Jenkins, P.Eng.

Based on the Water Supply for Public Fire Protection Manual, 1999 by the Fire Underwriters Survey

Step 1: Calculate Fire Flow (based on area)

Construction Coefficient =	0.6	
Largest Floor Area =	1,134	m ²
Floor Above =	788	m ²
Floor Below =	1,134	m ²
Area =	1,615	m ²
Fire Flow (F) =	5,000	L/min

F = required fire flow (L/min)

$$F = 220C\sqrt{A}$$

C = coefficient related to type of construction

- 0.6 for fire resistive (fully protected, 3-hr ratings)
- 0.8 for non combustable (i.e. unprotected metal buildings)
- 1.0 for ordinary construction
- 1.5 for wood frame construction

A = total floor area excluding basements 50% below grade

* If vertical openings are inadequately protected, consider two largest two largest adjoining floors plus 50% of each of any floors above up to eight floors.

* If vertical openings are adequately protected (one hour rating), consider largest floor area + 25% of two immediately floors.

Step 2: Adjustment for Building Occupancy (shall not be less than 2000 L/s)

Occupancy Adjustment =	-0.15	
F ₁ = Fire Flow x Adjustment =	4,250	L/min

Non-Combust.	-25%	Free Burning	15%
Limited Comb.	-15%	Rapid Burning	25%
Combustable	No change		

Step 3: Adjust F1 for Fire Suppression System

Sprinkler Adjustment =	30%	
F ₂ = F ₁ x Adjustment =	1,275	L/min

Automatic Sprinklers (monitored)	-50%
Adequately Designed System	-30%

Step 4: Adjust F1 for Exposure / Proximity (shall not exceed 75%)

Proximity Adjustment =	75%	(max 75%)
F ₃ = F ₁ x Factor =	3,188	L/min

Separation	Adjustment	Separation	Adjustment
0m to 3m	25%	20.1m to 30m	10%
3.1m to 10m	20%	30.1m to 45m	5%
10.1m to 20m	15%		

Step 5: Calculate Adjusted Fire Flow (shall not be less than 2000 L/min or greater than 45,000 L/min)

F ₁ =	4,250	L/min
- F ₂ =	1,275	L/min
+ F ₃ =	3,188	L/min
Fire Flow =	6,000	L/min
Fire Flow =	100.0	L/s
Total Demand (Fire Flow + MDD) =	100.9	L/s

$$\text{Fire Flow} = F_1 - F_2 + F_3$$

Checks:

Fire Flow greater than 2000 L/min
 Fire Flow less than 45,000 L/min

17 Elm Street – Fire Restrictive Criteria Confirmation Letter

Project:

17 Elm Street

Date: August 9th, 2022**# of Pages:** 01

To whom it may concern,

Please be advised that the above-referenced building will be constructed in compliance with the 2015 Ontario Building Code (OBC), and equipped with a Fire Protection System conforming to the NFPA 13 Standards for Installation of Sprinkler Systems and specifically:

1. All structural members and floors will be of fire resistive construction per the Fire Underwriters Survey (FUS) 1999 with 2-hour ratings per the OBC.
2. All vertical openings and exterior vertical communications will be constructed with a 1-hour fire rating.

Thank you,



Alex Josephson

Partner, PARTISANS



Final Report
Functional Servicing and Stormwater Management Report (FSR/SWM)

17 Elm Street, City of Toronto



Prepared for Fora Developments
by IBI Group
IBI Group Project #137680
August 25, 2022

Document Control Page

CLIENT:	Fora Developments						
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REPORT TITLE:	Functional Servicing and Stormwater Management Report						
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DIGITAL MASTER:	137680 Fora Developments_Civil Engineering Services_17 Elm Street_City of Toronto - Internal Documents\6.0_Technical\6.04_Civil\03_Tech-Reports\Revision 1						
ORIGINATOR:	Cassidy Goetz, Project Engineer, Land Engineering						
REVIEWER:	Neil Short, Director, Sr. Practice Lead, Land Engineering						
AUTHORIZATION:	Jason Jenkins, P.Eng., P.E., Associate Manager, Land Engineering						
CIRCULATION LIST:	Fora Developments						
HISTORY:	<table border="1"> <thead> <tr> <th>Identification</th> <th>Date</th> <th>Description of Issued and/or Revision</th> </tr> </thead> <tbody> <tr> <td>FSR/SWM</td> <td>August 2022</td> <td>1st Submission</td> </tr> </tbody> </table>	Identification	Date	Description of Issued and/or Revision	FSR/SWM	August 2022	1st Submission
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FSR/SWM	August 2022	1st Submission					

AUTHORIZED FOR ISSUE BY:

IBI GROUP



Jason Jenkins, P.Eng., P.E.
 Associate Manager
 Land Engineering

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- Appendix C** Stormwater Analysis
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1 Introduction

1.1 Background

IBI Group Professional Services (Canada) Inc. (IBI Group) has been retained by For a Developments (the “Owner”) to prepare a Functional Servicing Report to support the Zoning By-Law Amendment (ZBA) and a Site Plan Application (SPA) for a proposed mixed-use development located at 15-17 Elm Street (the “Subject Site”), in the City of Toronto (the “City”). The purpose of this report is to develop a municipal site servicing strategy (stormwater, sanitary discharge, and water supply), and to identify any potential constraints within the existing municipal infrastructure.

More specifically, the report will present the following:

- Calculate allowable and proposed runoff rates for the development;
- Evaluate suitable methods for attenuation and treatment of stormwater runoff;
- Develop on-site control measures and examine theoretical performance to satisfy the City’s Wet Weather Flow Management Guidelines (WWFMG);
- Evaluate groundwater quantity and quality parameters from the hydrogeological report and develop a strategy to manage groundwater under both short- and long-term conditions to comply with the City of Toronto’s Discharge By-Law criteria;
- Develop a Stormwater Management (SWM) plan that complies with the City’s Wet Weather Flow Management Guidelines (WWFMG);
- Identify sanitary servicing opportunities and constraints and evaluate the capacity of the receiving municipal sewer; and,
- Identify water servicing opportunities and constraints, calculate the proposed domestic water and firefighting supply needs; and evaluate the capacity of the municipal infrastructure.

The following documents have been obtained from various sources:

- City of Toronto plan and profile drawings for Elm Street;
- City of Toronto Digital Map Owners Group (DMOG) mapping;
- Topographic Survey prepared by Barich Grenkie Surveyors Ltd., dated May 2022; and,
- Architectural plans and site statistics prepared by Partisans Architects.

1.2 Existing Site Description

Located in the City of Toronto at 15 and 17 Elm Street, the 793 m² (0.08 ha) subject site is bounded by a small laneway to the east and south, Elm Street to the north, and commercial buildings to the west. Please see **Figure 1** following the report for an aerial view of the site.

The site currently hosts an existing commercial building and an asphalt parking surface. The site is relatively flat with ground surface elevations ranging from 93.88 m to 94.20 m and is self-contained with no external drainage areas to consider.

The subject site is located within Basement Flooding Study Area (BFA) #42 which is currently in progress, therefore, the Environmental Assessment documentation and Infoworks model were not available at the time of this report.

1.3 Site Proposal

The proposed development includes the construction of a 32-storey mixed-use building. The existing buildings will be removed within the subject site. Two underground levels are also proposed which will contain parking, storage, and the utility rooms. Sample architectural drawings can be found in **Appendix A** for reference.

1.4 Service Connections

The City of Toronto requires individual service connections for each built form. As only one building is proposed, a single set of connections will be provided.

Furthermore, the Ontario Building Code (OBC) requires two fire service connections separated by an isolation value for any building above 84 m in height. As the proposed building will exceed this limit, two fire service connections is required. Specific site servicing details will be further discussed in subsequent sections.

2 Terms of Reference and Methodology

2.1 Terms of Reference

The terms of reference used for the scope of this report have been based on the City of Toronto Design Criteria for Sewers and Watermains, dated January 2021, and the City of Toronto Wet Weather Flow Management Guidelines, dated November 2006. The City's Sewer Capacity Assessment Guidelines (July 2021) were referenced to assess the capacity of the existing sanitary sewers.

2.2 Methodology: Stormwater Management

As the proposed development has a total site area less than 5.0 ha (Table 7, Section 2, WWFMG), the following SWM criteria shall apply:

Quantity Control

The allowable release rate to the municipal storm sewer system from the development site during a 2- year design storm event must not exceed the peak runoff rate from the site under pre-development conditions during the same storm event, or existing capacity of the receiving storm sewer, whichever is less.

A maximum runoff coefficient of 0.50 shall be used in calculating the pre-development peak runoff. An overland flow route (major system) shall be provided within the developed site to direct runoff in excess of the 100-year storm to an approved overland flow outlet.

Quality Control

Long-term average removal of 80% of the total suspended solids (TSS) on an annual loading basis must be achieved. TSS removal efficiency is to be based on 100% of the runoff leaving the site from all storm events that occurs in an average year.

Water Balance

As the proposed development aims to qualify for Tier 1 of the Toronto Green Standard (TGS), controls should be in place. The runoff resulting from a 5 mm rainfall event must be retained on-site for rainwater re-use, infiltration, and evapotranspiration.

2.3 Methodology: Sanitary Discharge

Pre- and post-development peak sewer flows will be calculated based on the following City design criteria:

Table 2.1 Sanitary Design Parameters

DESIGN FLOWS		POPULATION DENSITIES	
Residential Flow	240 L/c/day	1 Bedroom Units 2 Bedroom Units 3 Bedroom Units Retail Space Office Space	1.4 people / unit 2.1 people / unit 3.1 people / unit 1.1 people/100m ² 3.3 people/100m ²
ICI Flow	250 L/c/day		
Infiltration Allowance	0.26 L/s/ha		
Peaking Factor	Harmon Equation		
SANITARY SERVICE CONNECTION SIZING			
Population Flow	450 L/c/day		
Infiltration Allowance	0.26 L/s/ha		
Peaking Factor	Harmon Equation		

Based on the calculated peak flows, the adequacy of the existing infrastructure to support the proposed development will be discussed.

2.4 Methodology: Water Supply

The domestic water usage will be calculated based on the following City of Toronto and Ontario Building Code design criteria:

Table 2.2 Water Design Parameters

AVERAGE DAILY DEMAND		PEAKING FACTORS		
		LAND USE	PEAK HOUR	MAX DAY
Single Family	310 L/c/day	Residential	2.25	1.50
Multi-Unit	190 L/c/day	Commercial	1.20	1.10

Pressure and flow testing to determine the adequacy of the existing watermain to support the development with fire suppression in accordance with the Fire Underwriters Survey (FUS) Guidelines will be discussed in the subsequent sections.

3 Groundwater Discharge

3.1 Groundwater Quality

A hydrogeological assessment was carried out by Groundwater Environmental Management Services (GEMS), dated August 2022 to assess existing groundwater conditions. Per the hydrogeological assessment, observed levels of total manganese, TSS and total phosphorus exceed the City’s threshold for discharge to storm sewer. These observed levels do not exceed the City’s threshold for discharge to the sanitary or combined sewer. It is therefore recommended that all dewatering activities be discharged to the 900 mm combined sewer system without pre-treatment. Please see **Appendix B** for an excerpt copy of the hydrogeological assessment.

3.2 Short-Term Groundwater Discharge

The anticipated short-term groundwater discharge has been estimated by GEMS to be 28.1 m³/day (0.32 L/s). At the time of this report, a dewatering plan was not made available. It is therefore assumed that groundwater pumping will operate for 4 hours per day.

As the pre-development flow to the combined sewer exceeds the anticipated short-term pumping rate, it can be stated that there is sufficient capacity to support the dewatering rate, this will be further discussed in the subsequent sections. **Table 3.1** summarizes the recommendations for groundwater discharge during construction. It should be noted that a Permit to Take Water (PTTW) application must be submitted to the Ministry of the Environment, Conservation and Parks (MCEP) if dewatering rates exceed 50 m³/day.

Table 3.1 Short-Term Groundwater Discharge Summary

BUILDING	AVERAGE DISCHARGE	AVERAGE DISCHARGE	HOURS OF PUMPING	PEAK DISCHARGE	CONNECTION OUTLET	TREATMENT REQUIRED
17 Elm Street	28.1 m ³ /day	0.32 L/s	4 Hours	1.95 L/s	Combined	None

3.3 Long-Term Discharge Condition

Per the City’s Foundation Drainage Policy, groundwater infiltration will be collected and discharged to the municipal system under post-development conditions. Per the hydrogeological assessment, the groundwater table at the proposed foundation of the building will be above the groundwater table.

How this flow been calculated?

As infiltrated stormwater can be considered clean, it will be collected via the weeping tile system which will direct the water to the stormwater management tank located on P1. The average infiltrated stormwater flow rate has been provided by GEMS as 4.3 m³/day. At the time of preparation of this report, no mechanical confirmation letter was available. It was therefore conservatively assumed that the pump would operate for 1 hour per day.

The additional flow has been accounted for in the Allowable Release Rate and Storage Volume calculations. Detailed calculations can be found in **Appendix C** for reference.

Table 3.2 Long-Term Stormwater Infiltration Summary

BUILDING	DAILY DISCHARGE	AVERAGE DISCHARGE	HOURS OF PUMPING	PEAK DISCHARGE	CONNECTION OUTLET	TREATMENT REQUIRED
17 Elm Street	4.3 m ³ /day	0.05 L/s	1 Hour	1.19 L/s	SCSO	None

4275L/day /
 86400s/day
 = 0.05L/s

Average
 Discharge /
 1hr/24hr =
 1.19L/s

4 Stormwater Management

4.1 Pre-Development Conditions

Local storm infrastructure consists of a 1200 mm storm and combined sewer overflow sewer within Elm Street, which conveys flows east and a 900 mm combined sewer within Elm Street which conveys flows east.

The site currently hosts an existing building and a surface asphalt parking lot resulting in a pre-development runoff coefficient greater than 0.50. As per WWFM Guidelines, the allowable release rate will be calculated using a pre-development runoff coefficient of 0.50.

4.2 Grading

Under pre-development conditions, no external drainage enters the site and all drainage within the site is conveyed to the adjacent rights-of-way.

The proposed grades will match current drainage patterns wherever feasible. Grades will be maintained along property lines to the extent practical. Emergency overland flow route in excess of a 100-year storm event will continue to be directed to the adjacent rights-of-way matching pre-development conditions.

4.3 Allowable Release Rate

Using the City's IDF data for a 2-year storm event and a time of concentration of 10 minutes, the allowable release rate for the site is calculated as follows:

$$Q_{\text{Allowable}} = \frac{(A \times R) * I_2}{360} = \frac{(0.0793 \text{ ha} \times 0.50) \times 88.2 \text{ mm / hr}}{360} \times \left(\frac{1000 \text{ L}}{\text{m}^3} \right) = 9.7 \text{ L/s}$$

As shown above, the release rate from the subject site shall be limited to a maximum of **9.7 L/s**. The associated pre-development drainage area plan is shown on **Figure DAP-1** which can be found in **Appendix C** for reference.

Orifice specifications are provided in Appendix C

MENT REPORT

4.4 Quantity Control

Provide specifications for the orifice.

The post-development release rate for the subject site is calculated to be **9.7 L/s**. To attenuate flows, the site is designed with a stormwater management tank and an orifice control. Setting the 100-year storage depth at 0.62 m and utilizing a 75 mm orifice plate, the orifice discharge is calculated as follows:

$$Q_{\text{Orifice}} = (0.63) * \frac{\pi * (0.073)^2}{4} * \sqrt{2 * 9.81 * (0.62 - 0.075/2)} * \frac{1000 \text{ L}}{1 \text{ m}^3} = 9.4 \text{ L/s}$$

The following is a summary of the stormwater management parameters pertaining to quantity control:

Table 4.1 Quantity Control Summary

ORIFICE DIA. (mm)	ORIFICE TYPE	COEFF. OF DISCHARGE (k)	DEPTH (m)	HEAD (m)	ORIFICE DISCHARGE (L/s)	UNCONTROL. FLOW (L/S)	ALLOWABLE SITE DISCHARGE (L/s)
75	Plate	0.63	0.62	0.59	9.4	0.0	9.7

The total site discharge is calculated to be less than the allowable release rate. By providing on-site storage and an orifice control, the City’s objectives for quantity control have been met. Please see detailed calculations which can be found in **Appendix C**.

It should be noted that regular inspection and maintenance of any storage element and orifice control should be conducted on a regular basis to ensure that the system is functioning as designed.

4.5 Quality Control

As previously mentioned, 80% TSS removal is required in order to meet the City’s WWFMG’s. Based on the proposed site conditions and surface treatment, the following table summarizes the inferred TSS removal rate of the site:

Table 4.2 TSS Performance

SURFACE TYPE	AREA (m ²)	EFFECTIVE TSS REMOVAL	OVERALL TSS REMOVAL
Conv. Roof	650	80	65.6
Extensive Green Roof	0	80	0.0
Intensive Green Roof	90	80	9.1
Landscape	0	80	0.0
Pavers	0	80	0.0
Impervious (Clean)	53	80	5.3
TOTAL	793		80.0

As the drive aisle is covered by upper floors, there are no “dirty” areas within the site. As such, the City requirements for quality control (i.e. minimum 80% TSS removal) have been satisfied.

4.6 Water Balance

As required by the City's TGS Tier 1, a rainfall depth of 5 mm must be retained over the entire area of development, and the landscape plan should include one of the alternatives allowed by the Tier 1 TGS. The water balance volume required to be detained is calculated as follows:

$$\text{Vol.}_{5\text{ mm}} = 793 \text{ m}^2 * 5 \text{ mm} * \left(\frac{1 \text{ m}}{1000 \text{ mm}}\right) = 4.0 \text{ m}^3$$

To achieve the required volume, a combination of initial abstraction, and water re-use will be incorporated. Based on initial abstraction values for each surface type, the total abstraction is calculated as follows:

Table 4.3 Initial Abstraction

AREA	AREA (m ²)	INITIAL ABSTRACTION	TOTAL (m ³)
Conv. Roof	650	1	0.7
Extensive Green Roof	0	5	0.0
Intensive Green Roof	90	7	0.6
Landscape	0	5	0.0
Pavers	0	5	0.0
Impervious	53	1	0.1
TOTAL	793		1.3

As shown above, 1.3 m³ is retained on-site through initial abstraction. It has been identified that 1.1m³ of stormwater can be reused in 72 hours for irrigation purposes. The balance of 1.6 m³ will be retained through water re-use methods such as additional landscape irrigation and / or toilet flushing the details of which will be provided with a subsequent submission.

An adequate sump within the stormwater management tank will be provided within the P1 level to retain the total water re-use volume. Please see **Appendix C** for the detailed design sheet and detailed **Drawing SS-01**.

4.7 Storm Service Connection

It is proposed that a new 200 mm storm service at a 2.0% slope be installed from a new control manhole at the property line to the existing 1200 mm SCSO sewer within Elm Street. The following table illustrates the peak flow and corresponding capacity of the service:

Table 4.4 Storm Service Performance

FROM	TO	PIPE SIZE (mm)	PIPE SLOPE	PEAK FLOW (L/s)	CAPACITY (L/s)	PERCENT OF FULL FLOW
Cntrl.MH	Storm Sewer	200	2.0 %	9.5	46.4	20 %

As shown above, the proposed storm service and existing storm service connection can easily convey the controlled discharge while operating at 20% (or less) of full flow capacity. Please refer to the detailed design calculations which can be found in **Appendix C**, and the design **Drawing SS-01**.

4.8 Emergency Overflow

It is recommended that rooftop scuppers be installed to ensure emergency overflow from roof areas should rooftop drains become plugged. All areas at grade level have been designed with positive drainage (away from the building). The stormwater management tank shall be designed with a catchbasin lid (open grate) to allow storm flows to spill to the adjacent municipal right-of-way in an emergency situation. Maximum ponding within the development site shall not exceed City requirements of 0.30 m.

4.9 Erosion and Sediment Control

It is recommended that a sediment control fence per T-219.130-1 be installed along the perimeter of the site as required during demolition activities. All existing and proposed catch basins within close proximity of the subject site shall be protected with a geotextile fabric. A mud mat shall be installed as required to minimize distribution of mud into the public realm.

5 Sanitary Drainage System

5.1 Existing Site Flows

Per the City's record information, local sewer infrastructure consists of a 900 mm combined sewer flowing east on Elm Street. As such, MECP F-5-5 will be applied to the site.

Existing Sanitary Flows

The existing site hosts a retail/commercial building and an asphalt parking surface. The resulting pre-development population is 9. The existing peak sanitary flow is calculated as follows:

$$Q_{\text{Pre-Dev.}} = \left(\frac{250 \text{ L/c}\cdot\text{d} \cdot 9 \text{ pers}}{86400 \text{ s / day}} \right) + (0.26 \text{ L/s}\cdot\text{ha} \cdot 0.0793 \text{ ha}) = \mathbf{0.05 \text{ L/s}}$$

Existing Stormwater Flows

The existing site conveys stormwater to the combined sewer on Elm Street with no controls in place. Per Section 4, the existing stormwater flow to the combined sewer is **9.7 L/s** under a 2-year rainfall event.

5.2 Proposed Site Flows

The proposed sanitary servicing connection is proposed to connect to the 900 mm combined sewer on Elm Street while the proposed storm servicing connection is proposed to connect to the 1200 mm SCSO sewer on Elm Street.

Proposed Sanitary Flows

The anticipated sanitary discharge flows for the proposed site were calculated based on the site statistics provided by Partisans along with the design criteria outlined in **Section 2.3**. The proposed site statistics can be found in **Appendix B**. The population calculations are shown in **Table 5.1**.

Table 5.1 Proposed Development Site Populations

	UNITS	DENSITY	POPULATION
1 Bedroom	100	1.4 pp/unit	140
2 Bedroom	51	2.1 pp/unit	107
3 Bedroom	23	3.1 pp/unit	71
Commercial	212	1.1 pp/100m2	2
TOTAL PROPOSED POPULATION			321

The corresponding post-development sanitary sewer flow is calculated as follows:

$$Q_{\text{Post-Dev.}} = \left(\frac{240 \text{ L/c}\cdot\text{d} \cdot 319 \text{ pers} \cdot 4.1}{86400 \text{ s / day}} \right) + \left(\frac{250 \text{ L/c}\cdot\text{d} \cdot 2 \text{ pers}}{86400 \text{ s / day}} \right) + (0.26 \text{ L/s}\cdot\text{ha} \cdot 0.08 \text{ ha}) = \mathbf{3.6 \text{ L/s}}$$

Proposed Stormwater Flows

The proposed site will convey stormwater to the SCSO sewer on Elm Street with controls in place.

Sanitary Service Connection

It is proposed that a new sanitary service at a 2.0% slope be installed from the new control manhole to the existing 900 mm combined sewer on Elm Street. Using the design flow of 450 L/cd, the corresponding post-development sanitary sewer flow is calculated as follows:

$$Q_{\text{Post-Dev.}} = \left(\frac{450 \text{ L/c-d} \cdot 321 \text{ pers} \cdot 4.1}{86400 \text{ s / day}} \right) + (0.26 \text{ L/s} \cdot \text{ha} \cdot 0.08 \text{ ha}) = \mathbf{6.8 \text{ L/s}}$$

The following table summarizes the peak flow and corresponding capacity of each service:

Table 5.1 Sanitary Service Performance

FROM	TO	PIPE SIZE (mm)	PIPE SLOPE	PEAK FLOW (L/s)	CAPACITY (L/s)	PERCENT OF FULL FLOW
Cntrl.MH	Combined Sewer	200	2.0 %	6.8	48.4	14 %

As shown above, the sanitary service has ample capacity to convey the post-development peak sanitary flow while operating at 14% of full flow capacity. Please see the detailed design sheet which can be found in **Appendix D** and **Drawing SS-01**.

5.3 Summary of Sanitary Drainage System

As per MECP F-5-5, the proposed development must demonstrate that it will not contribute to an increase in combined sewer overflow volume to the natural system under wet weather conditions. **Table 5.3** below, summarizes the flows from the development site to the combined sewer on Elm Street between existing and proposed conditions.

Table 5.3 Total Flow to Combined Sewer

Condition	Sanitary Flow (L/s)	Storm Flow (L/s)	Groundwater Flow (L/s)	Total (L/s)
Existing	0.05	9.7	0	10.2
Proposed	3.6	0.0	0	3.6
	+3.5	-9.7	0	-6.6

As the proposed development represents an overall decrease the flows to the combined sewer under 2-year rainfall conditions, it can be stated that the existing sewer has the capacity to support the development. It can also be stated, due to the net decrease in flow to the combined sewer, that the site is compliant with MECP F-5-5.

6 Water Supply System

6.1 Existing Water Infrastructure

Per the City’s record information, local water infrastructure consists of a 150 mm watermain within Elm Street. Hydrant flow testing was performed at existing fire hydrants along Elm Street in order to confirm the available water supply’s flow-pressure response curve. These tests were performed on July 20, 2022 and were conducted in accordance with NFPA 291. The results are summarized as follows:

Table 6.1 Hydrant Response Curve

ELM STREET			
FLOW (gpm)	FLOW (L/s)	PRESSURE (psi)	PRESSURE (kPa)
0	0	61	421
375	23.7	36	248
0	0	32	221

As shown above, static pressure within the system is expected to be approximately 61 psi. A copy of the hydrant flow test can be found in **Appendix E** for reference.

Under existing conditions, the municipal water supply network cannot support the proposed development under fire flow conditions. Therefore, it is proposed that the existing 150mm watermain within Elm Street (installed 1876) be replaced with a 300mm watermain between Yonge Street and Bay Street.

Further discussions with the City will be conducted in order to determine a preferable solution.

6.2 Domestic Water Supply Demands

Using the criteria set in **Section 2.4** and the site statistics provided by the architect, the Average Day Demand (ADD), Peak Hour Demand (PHD), and Max Day Demand (MDD) have been calculated, and are summarized as follows:

Table 6.2 Domestic Water Demands

BUILDING	POPULATION	ADD (L/s)	PHD (L/s)	MDD (L/s)
1 Bedroom	140	0.3	0.8	0.4
2 Bedroom	107	0.2	0.6	0.3
3 Bedroom	71	0.2	0.4	0.2
Retail	2	0.0	0.0	0.0
TOTAL	321	0.7	1.8	0.9

The domestic supply line for the building will be designed based on PHD while maintaining a minimum available pressure of 40 psi (275 kPa) at the face of the building. Please see **Appendix E** for the detailed calculations.

6.3 Fire Supply Demands

The recommended fire flow demand for the subject site has been calculated using the design criteria outlined in the Water Supply for Public Fire Protection Manual, 1999 by the Fire Underwriters Survey (FUS).

As the building will be constructed using fire resistive materials, the effective floor area is taken as the largest floor area plus 25 % of the two adjacent floors.

- Effective Floor Area = Largest Floor Area + 25% (two adjoining floors)
- Effective Floor Area = 1,134 m² + 25% (1,134 m² + 788 m²)
- Effective Floor Area = 1,615 m²

The corresponding floor area and FUS factors will be applied as follows:

Table 6.3 Fire Underwriters Survey Factors

CONSTRUCTION COEFFICIENT	BUILDING OCCUPANCY	SPRINKLER ADJUSTMENT	PROXIMITY FACTOR
0.6 (resistive)	- 15 % (limited)	- 30 %	+ 75 %

Using the effective floor area for each building and the appropriate FUS factors, the required fire flow for each building is calculated as follows:

Table 6.4 Fire Demand Calculations

FIRE FLOW (F) CALCULATION	APPLYING FUS FACTORS	ADJUSTED FIRE FLOW	TOTAL DEMAND (TD)
$F = 220 \cdot 0.6 \sqrt{\text{Area}}$	$F_1 = F \cdot 0.85 = 4,250 \text{ L/min}$	Fire Flow = $F_1 - F_2 + F_3$	$TD = FF + MDD$
$F = 220 \cdot 0.6 \sqrt{1,615 \text{ m}^2}$	$F_2 = F_1 \cdot 0.30 = 1,275 \text{ L/min}$	FF = 6,000 L/min (rnd'd)	$TD = 100.0 \text{ L/s} + 0.9 \text{ L/s}$
$F = 5,000 \text{ L/min (rnd'd)}$	$F_3 = F_1 \cdot 0.75 = 3,188 \text{ L/min}$	FF = 100.0 L/s	TD = 100.9 L/s

The fire supply line for the building will be designed based on Total Demand (Fire Flow + MDD) while maintaining a minimum available pressure of 20 psi (140 kPa) at the face of the building. Please see **Appendix E** for the detailed calculations.

6.4 Water Service Connection

To service the proposed development, a new 200 mm fire service shall be connected to the proposed 300 mm watermain within Elm Street with a tapping sleeve and valve. A separate 150 mm domestic service will tee off from the fire line within the municipal right-of-way. A new valve and box shall be installed at the property line for each incoming service, and all required water meters, backflow preventers, and double check valves shall be located inside a mechanical room within the proposed P1 level.

As previously mentioned, the OBC requires two fire services separated by an isolation valve to be installed for any building above 84 m. As the proposed building exceeds this threshold a secondary 200 mm fire line will be required and shall be connected to the proposed 300 mm watermain within Elm Street.

The National Fire Protection Association (NFPA) considers any building over 23 m in height to be classified as a high-rise building and thus requires a remotely located secondary siamese connection for each zone. Accordingly, a second siamese connection will be provided.

6.5 Hydrant Coverage

Existing municipal hydrants are located on the south side of Elm Street and provide the required 45 m of coverage for all proposed siamese connections to satisfy OBC requirements. Please see **Drawing SS-01** for the location of all existing and proposed water infrastructure.

7 Conclusions and Recommendations

Storm Sewer and Stormwater Management

The objectives of the City's WWFMG's can be met by implementing on-site measures. Storm flows shall be attenuated on-site and released to the municipal storm sewer at an appropriate discharge rate thus meeting the City's target for quantity control. As there is no exposed drive aisle area to be considered "dirty", the site will meet the City's target for quality control. Through initial abstraction and water reuse, the site will meet the City's target for Tier 1 water balance. Details pertaining to water re-use applications will be finalized at a later stage.

Sanitary Sewers

Through the implementation of the City's WWFMG's, there is an overall reduction in flows conveyed to the receiving combined sewer within Elm Street, thus the site complies with MECP procedure F-5-5. Furthermore, as the site represent an overall improvement to the receiving municipal sewer network, it can therefore be deemed an appropriate conclusion that the proposed development can proceed without upgrades to the municipal infrastructure.

Water Supply

The existing 150 mm watermain within Elm Street does not have sufficient pressure to support the proposed fire demands. It is therefore recommended that the 150 mm watermain be upsized to a 300 mm watermain between Yonge Street and Bay Street.



CLIENT FORA DEVELOPMENTS 2440 DUNDAS STREET WEST, Unit 200, TORONTO, ON M6P 1W9	PROJECT NAME 17 ELM STREET		 IBI GROUP Unit 300 – 8133 Warden Avenue Markham ON L6G 1B3 Canada tel 905 763 2322 fax 905 763 9983 ibigroup.com		
	SCALE: NTS	DATE: 2022-08-19	FIGURE NAME AERIAL PLAN	FIGURE NO. FIG.1	REVISION 1
	PROJECT ENG: JMJ	DRAWN BY: CG			
	CHECKED BY:	APPROVED BY:			
PROJECT NO: 137680					

File Location: J:\137680_ForaDevelopment\7_0_Production\7_03_Design\04_Civil\Sheets\Figures\Figure 1 - Aerial Plan.dwg Last Saved: August 17, 2022 by cassidy.goez Plotted: Wednesday, August 17, 2022 2:38:54 PM by Cassidy Goez

SCALE CHECK 1 in 10mm

Appendix A

Background Information

Sample Architectural Drawings (Partisans)

Plan and Profile Drawings (City of Toronto)

DMOG Mapping (City of Toronto)

Existing Building Plans

Topographic Survey (KRCMAR)

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ARCHITECTURAL LIST	
A0000	Cover Sheet / Project Info / Consultants / Code Marks
A0001	Project Statistics
A0002	Schedule Area
A0003	SCA & CPA
A0011	Site Plan
A001	Level P0
A002	Level P1
A1000	Ground Floor Plan
A1002	Level 2
A1003	Typical Podium Floor (Level 3-7)
A1004	Typical Podium Floor (Level 8-9)
A1005	Podium Terrace (Level 10)
A1006	Typical Tower Floor (Level 11-20)
A1007	Attic (Level 21)
A1008	Typical Tower Floor (Level 22-30)
A1009	Mechanical Floor (Level 31)
A1010	Roof Level 32
A1011	Roof Plan
A2000	Building Elevations
A2010	Building Elevations
A2020	Exterior Building Elevations
A3000	Building Sections
A4000	Project Details
A4001	Project Details

PLANNING CONSULTANT	CIVIL ENGINEER	LANDSCAPE ARCHITECT	MECHANICAL & ELECTRICAL ENGINEER	STRUCTURAL ENGINEER	TRAFFIC CONSULTANT	ARCHITECT
GOLDBERG GROUP 2098 Avenue Road Toronto, Ontario, M5M 4A8	IBI GROUP 8133 Warden Ave, Unit 300 Markham ON L6G 1B3	STUDIO TLA 20 Champlain Blvd., Suite 102 Toronto, ON, M3H 2Z1	MCW CONSULTANTS LTD. 207 Queen's Quay W, Suite 615 Toronto, ON, M5J 1A7	JABLONSKY AST & PARTNERS 3 Concorde Gate #400 North York, ON, M3C 3N7	BA CONSULTING GROUP LTD. 45 St. Clair Ave. W., Suite 300 Toronto, ON, M4V 1K9	PARTISANS 950 Dupont St Toronto, Ontario M6H 1Z2



Client	
Owner	
Designer	
Contractor	
Construction	

NO.	DESCRIPTION	DATE
1	Issued for RFA	June 23, 2022

NOT FOR CONSTRUCTION

PARTISANS
Architects

Project Number: 2210

Scale: 1:1

Author: [Signature]
Checker: [Signature]
Approver: [Signature]

Client: Fora Developments

Project: 15-17 ELM STREET

Project Address:
17 Elm Street
Toronto, Ontario
M5G 1H1

Drawing Title:
Cover Sheet / Project Info /
Consultants / Code Marks

Sheet Number: 88 / Drawing Number: A0000

1.1 SITE INFORMATION	
NET GROSS BUILDING FOOTPRINT AREA, JANET AREA, AND PRIVATE ROAD	723 sqm
PROPOSED TOTAL GFA	14,287 sqm
PROPOSED AREA OF PRIVATE ROAD	96 sqm
PROPOSED P&G GARAGE	18,52
PROPOSED RESIDENTIAL GFA	14,587 sqm
PROPOSED NUMBER OF UNITS	174
NET AREA	82 sqm
BUILDING HEIGHT	89 m

1.1 RESIDENTIAL GFA		1.2 NON-RESIDENTIAL GFA		1.3 TOTAL GFA PER 425-1981	
SF	SM	SF	SM	SF	SM
131,832	14,007	2,153	202	133,782	14,209

1.1 UNIT COUNT TOTALS					
UNIT TYPE	TOTAL AREA (SM)	TOTAL AREA (SF)	TOTAL UNIT COUNT	% OF TOTAL UNIT	PERCENTILE
1-BED	80.0	8,302	3	1%	38%
2-B	209.0	21,767	28	16%	38%
3-B	227.0	23,723	33	19%	38%
4-B	112.0	11,528	15	9%	38%
TOTAL	1028.0	10,720	59	100%	38%

NOTES
 *As per Section 559.2(2.1), Gross Floor Area is reduced by: Parking, Loading & Bicycle spaces below-ground, Storage rooms, Washrooms, Elec. Utility, Mech and Ventilation rooms in the Basement, required Shower & Change facilities, required indoor Amenity spaces, Elevator shafts, Garbage shafts, Mech, Firehouse and Exit stairwells.

2.1 PARKING SUMMARY PROVIDED		
LEVEL	RES	TOTAL
P1	0	0
P2	22	22

2.2 BICYCLE PARKING				
LEVEL	SHORT TERM	REQUIRED (0.1 spaces/unit)	LONG TERM	REQUIRED (0.3 spaces/unit)
LEVEL 1	34	0	0	0
LEVEL 2	28	60	0	157
LEVEL PH	0	0	0	0
TOTAL	34	60	0	157

3.0 LOADING SUMMARY		
TYPE G	COUNT	REQUIRED
GARAGE & STAGING	55	60

25SM for the first 50 units, plus

4.0 RESIDENTIAL AMENITY INDOOR				
LEVEL	SM	SF	Required (SM)	Required (SF)
LEVEL 21	348	3,746	25M / Unit	345
TOTAL	348	3,746		

*Required to provide 2sm indo
 *Required indoor amenity deck

4.2 AMENITY OUTDOOR				
LEVEL	SM	SF	Required	Required (SM)
GROUND	74	797	25M / Unit	
LEVEL 21	141	1,516		
ROOFTOP	33	917		345
TOTAL	303	3,252		

*Required to provide 2sm out
 *green roof can only be 25% o

TOTAL GFA PER FLOOR		
FLOOR	BYLAW GFA 569-2013	TOTAL BUILDING GFA
	ft2	m2
P2	0	0
P1	0	0
1	1636	152
2	3197	297
3	5920	550
4	6049	562
5	6135	570
6	6469	601
7	6480	602
8	6797	632
9	6797	632
10	5776	537
11	5726	532
12	5490	510
13	5560	517
14	5560	517
15	5726	532
16	5694	529
17	5490	510
18	5560	517
19	5560	517
20	5560	517
21	334	31
22	4446	413
23	4446	413
24	4446	413
25	4446	413
26	4446	413
27	4446	413
28	4446	413
29	4446	413
30	4446	413
31 - MPH	0	0
32 - MPH	0	0
TOTALS	151525.9	14077.1

TOTAL UNIT COUNT PER FLOOR					
	<50	51-65	66-85	>85	TOTAL PER FLOOR
	Studio	1 Bedroom	2 Bedroom	3 Bedroom	
% required (total required!)	10%	85%	15%	10%	
P2	17	113	26	17	
P1	0	0	0	0	
1	0	0	0	0	
2	0	0	3	0	3
3	1	4	0	2	7
4	1	4	0	2	7
5	1	4	0	2	7
6	1	4	0	2	7
7	1	4	0	2	7
8	0	2	3	2	7
9	0	2	3	2	7
10	0	4	3	0	7 terrace
11	0	4	3	0	7
12	0	4	3	0	7
13	0	4	3	0	7
14	0	4	3	0	7
15	0	4	3	0	7
16	0	4	3	0	7
17	0	4	3	0	7
18	0	4	3	0	7
19	0	4	3	0	7
20	0	4	3	0	7
21	0	0	0	0	0 terrace
22	0	3	1	1	5
23	0	3	1	1	5
24	0	3	1	1	5
25	0	3	1	1	5
26	0	3	1	1	5
27	0	3	1	1	5
28	0	3	1	1	5
29	0	3	1	1	5
30	0	3	1	1	5
31 - MPH	0	0	0	0	0
32 - MPH	0	0	0	0	0
TOTALS	5	95	51	23	174

*By-law GFA includes area of residential suites, office, and retail, mechanical areas above grade (excluding penthouse), space allocated for storage lockers above grade

15% of units to be accessible
 1 3%
 14 55%
 8 29%
 3 13%

SECTION 11
 Date: June 23, 2022

NOT FOR CONSTRUCTION

PARTISANS
 ARCHITECTS

Author: [Signature]
 Checker: [Signature]
 Approver: [Signature]

Client: Fora Developments
 Project: 15-17 ELM STREET
 Project Address: 17 Elm Street Toronto, Ontario M5G 1H1
 Drawing Title: Project Statistics
 Scale: 1 : 1
 Date: 2022
 Sheet: 88 of A0001

DATE	
OWNER	
DESIGNER	
CONTRACTOR	
REVISIONS	

REVISION NO.	DESCRIPTION	DATE
1	Issued for RFA	June 28, 2023

RESIDENTIAL UNIT BREAKDOWN			
	UNIT NAME	UNIT TYPE	UNIT AREA SM
Level 2	Op	B1	75
		C2	63
		C3	75
			213.0
Level 3	STUDIO	A1	43
	IB	B1	63
		B2	60
		B3	65
		B4	64
	IB	D1	92
		479.0	
Level 4	STUDIO	A1	42
	IB	B1	63
		B2	60
		B3	65
		B4	65
	IB	D1	92
		484.0	
Level 5	STUDIO	A1	44
	IB	B1	67
		B2	62
		B3	62
		B4	71
	IB	D1	92
		493.0	
Level 6	STUDIO	A1	50
	IB	B1	68
		B2	69
		B3	61
		B4	71
	IB	D1	97
		524.0	
Level 7	STUDIO	A1	55
	IB	B1	69
		B2	75
		B3	64
		B4	65
	IB	D1	99
		542.0	
Level 8	IB	B1	63
		B2	70
	IB	C1	72
		C2	72
		C3	84
	IB	D1	90
		556.0	
Level 9	IB	B1	63
		B2	70
	IB	C1	72
		C2	72
		C3	84
	IB	D1	90
		556.0	
Level 10 (Podium w Terrace)	IB	B1	49
		B2	54
	IB	C1	0
		C2	79
		C3	63
	IB	D1	53
		379.0	

Level 11	IB	B1	43
		B2	51
		B3	65
		B4	59
	IB	C1	74
		446.0	
Level 12	IB	B1	43
		B2	51
		B3	65
		B4	59
	IB	C1	74
		446.0	
Level 13	IB	B1	43
		B2	51
		B3	65
		B4	59
	IB	C1	74
		446.0	
Level 14	IB	B1	43
		B2	51
		B3	65
		B4	59
	IB	C1	74
		446.0	
Level 15	IB	B1	43
		B2	51
		B3	65
		B4	59
	IB	C1	74
		446.0	
Level 16	IB	B1	43
		B2	51
		B3	65
		B4	59
	IB	C1	74
		446.0	
Level 17	IB	B1	43
		B2	51
		B3	65
		B4	59
	IB	C1	74
		446.0	
Level 18	IB	B1	43
		B2	51
		B3	65
		B4	59
	IB	C1	74
		446.0	
Level 19	IB	B1	43
		B2	51
		B3	65
		B4	59
	IB	C1	74
		446.0	
Level 20	IB	B1	43
		B2	51
		B3	65
		B4	59
	IB	C1	74
		446.0	

Level 21 (Amenity)	STUDIO		
	IB		
	IB		
	IB		
			0.0
Level 22	IB	B1	60
		B2	52
	IB	B3	60
	IB	D1	75
			342.0
Level 23	IB	B1	60
		B2	52
	IB	B3	60
	IB	D1	75
			342.0
Level 24	IB	B1	60
		B2	52
	IB	B3	60
	IB	D1	75
			342.0
Level 25	IB	B1	60
		B2	52
	IB	B3	60
	IB	D1	75
			342.0
Level 26	IB	B1	60
		B2	52
	IB	B3	60
	IB	D1	75
			342.0
Level 27	IB	B1	60
		B2	52
	IB	B3	60
	IB	D1	75
			342.0
Level 28	IB	B1	60
		B2	52
	IB	B3	60
	IB	D1	75
			342.0
Level 29	IB	B1	60
		B2	52
	IB	B3	60
	IB	D1	75
			342.0
Level 30	IB	B1	60
		B2	52
	IB	B3	60
	IB	D1	75
			342.0

TOTALS 11,786

NOT FOR CONSTRUCTION

PARTISANS

Author	_____
Checker	_____
Approver	_____

Client
Fora Developments

Project
15-17 ELM STREET

Project Address
17 Elm Street
Toronto, Ontario
M5G 1H1

Drawing Title
Saleable Area

NOT FOR CONSTRUCTION

PARTISANS

Project Name: _____
 Project No: _____
 Author: _____
 Checker: _____
 Approver: _____

Client: **Fora Developments**

Project: **15-17 ELM STREET**

Project Address:
 17 Elm Street
 Toronto, Ontario
 M5G 1H1

Drawing Title:
 GCA & GFA

Sheet No: **88**
 Drawing No: **A0003**

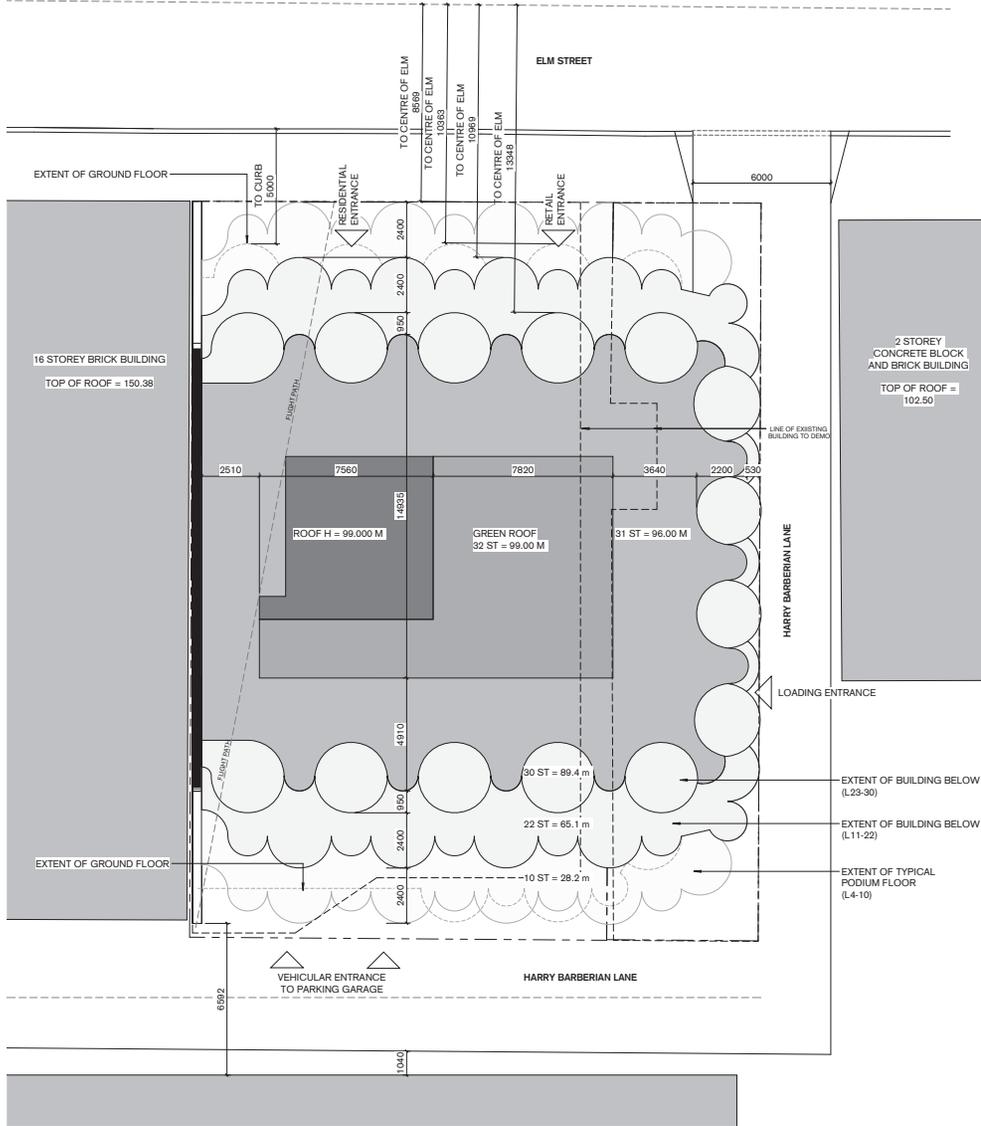
TOTAL GCA PER FLOOR

FLOOR	TOTAL BUILDING GFA	
	SF	SM
Below Grade		
P2	8481	788
P1	8481	785
total	16963	1576
Above Grade		
1	6648	525
2	5006	465
3	6507	605
4	6567	610
5	6566	619
6	7000	650
7	7778	676
8	7420	689
9	7397	697
10	7422	690
11	6334	588
12	6226	578
13	6198	576
14	6200	576
15	6270	582
16	6326	588
17	6218	576
18	6201	576
19	6180	575
20	6181	574
21	6260	582
22	5004	465
23	5004	465
24	5004	465
25	4922	457
26	4844	459
27	5004	465
28	5004	465
29	5004	465
30	4550	423
31	4520	420
32	4162	387
total	188642.3	17325.3
TOTAL GCA	205506.3	19101.2

*amenity flr

MENTIAL GFA PER BYLAW 569-2013		RESIDENTIAL GFA PER BYLAW 569-2013								BYLAW GFA 569-2013	
TOTAL NON-RESIDENTIAL		LOBBY, CIRCULATION, BOH		BALCONIES		SUITE AREA		TOTAL RESIDENTIAL		TOTAL BUILDING GFA	
ft2	m2	ft2	m2	ft2	m2	ft2	m2	ft2	m2	ft2	m2
0	0	108	10	0	0	0	0	108	10	108	10
0	0	1711	159	0	0	0	0	0	0	1711	159
0	0	441	41	1636	152	0	0	1636	152	2077	193
0	0	0	0	441	41	226	21	2530	235	3197	297
0	0	0	0	409	38	355	33	5156	479	5920	550
0	0	0	0	420	39	420	39	5210	484	6049	562
0	0	0	0	409	38	420	39	5307	493	6135	570
0	0	0	0	409	38	420	39	5640	524	6469	601
0	0	0	0	409	38	237	22	5834	542	6480	602
0	0	0	0	409	38	404	38	5985	556	6797	632
0	0	0	0	409	38	404	38	5985	556	6797	632
0	0	0	0	452	42	1244	116	4080	379	5776	537
0	0	0	0	409	38	517	48	4801	446	5726	532
0	0	0	0	409	38	280	26	4801	446	5490	510
0	0	0	0	409	38	350	33	4801	446	5560	517
0	0	0	0	409	38	350	33	4801	446	5560	517
0	0	0	0	409	38	517	48	4801	446	5726	532
0	0	0	0	409	38	484	45	4801	446	5694	529
0	0	0	0	409	38	280	26	4801	446	5490	510
0	0	0	0	409	38	350	33	4801	446	5560	517
0	0	0	0	409	38	350	33	4801	446	5560	517
0	0	0	0	409	38	350	33	4801	446	5560	517
0	0	0	0	334	31	0	0	0	0	334	31
0	0	0	0	344	32	420	39	3681	342	4446	413
0	0	0	0	344	32	420	39	3681	342	4446	413
0	0	0	0	344	32	420	39	3681	342	4446	413
0	0	0	0	344	32	420	39	3681	342	4446	413
0	0	0	0	344	32	420	39	3681	342	4446	413
0	0	0	0	344	32	420	39	3681	342	4446	413
0	0	0	0	344	32	420	39	3681	342	4446	413
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0
0.0	0.0	2152.8	200.0	13035.2	1211.0	11733.8	1090.1	126864.5	11786.0	151633.5	14087.1
										153788.3	14287.1

*By-law GFA includes
 area of residential suites,
 office, and retail,
 mechanical areas above
 grade (excluding
 penthouse), space
 allocated for storage
 lockers above grade



DATE	
REVISION	
NO.	DESCRIPTION
1	Issued for RFA
2	June 23, 2023

NOT FOR CONSTRUCTION

PARTISANS

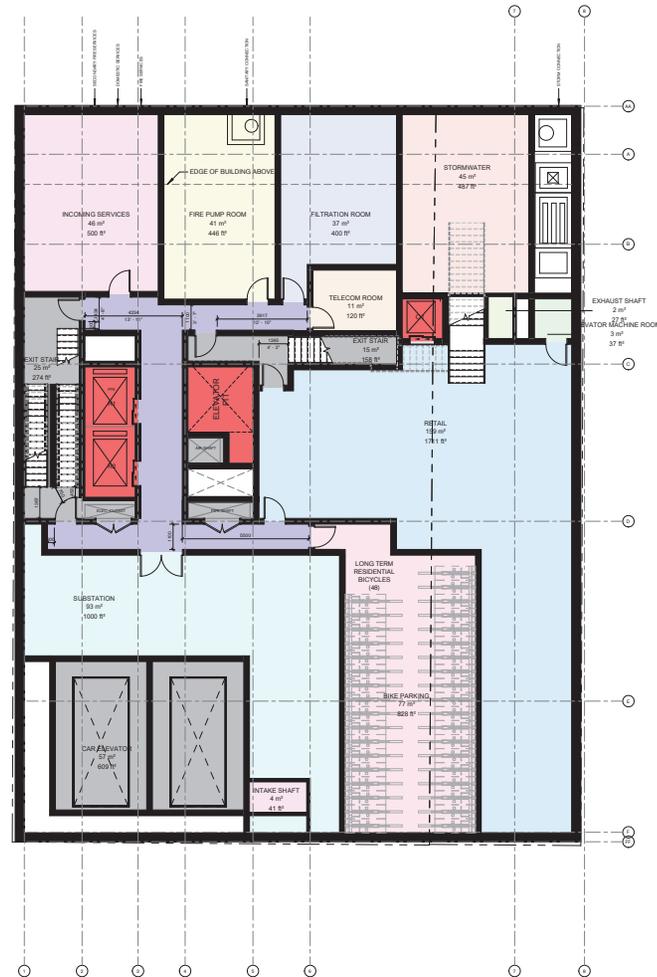
Project No.	2023
Author	As Indicated
Checker	
Approver	

Client: **Fora Developments**
 Project: **15-17 ELM STREET**

Project Address:
 17 Elm Street
 Toronto, Ontario
 M5G 1H1

Drawing Title:
 Site Plan

88 A0011



DATE	
DESCRIPTION	June 23, 2022

REVISIONS

NO.	DESCRIPTION	DATE
1	ISSUED FOR PERMITS	06/23/2022

PROJECT INFORMATION

CLIENT
FORA DEVELOPMENTS

PROJECT ADDRESS
15-17 ELM STREET
EASTON, OHIO 44821

PROJECT NO.
MSG 1911

DATE
June 23, 2022

SCALE
AS SHOWN

PROJECT TITLE
15-17 ELM STREET

PROJECT ADDRESS
15-17 Elm Street
Easton, Ohio
44821

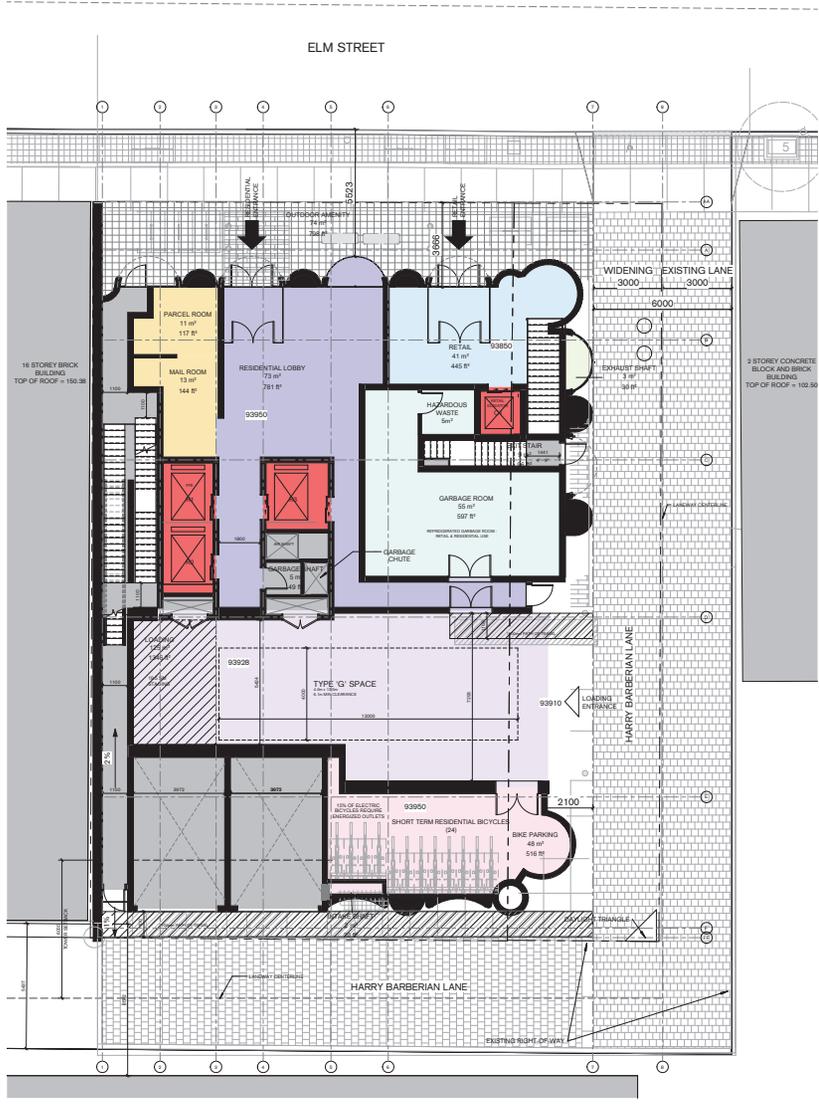
DATE
June 23, 2022

SCALE
Level P1

PROJECT NO.
88

PROJECT TITLE
A901

NOTES:
 ANY ROOFTOP AND FACADE ILLUMINATION WILL BE DIRECTED
 DOWNWARD AND TURNED OFF BETWEEN 11PM-6AM
 - LIGHTING AND PHOTOMETRIC LAYOUTS PROVIDED BY MCW



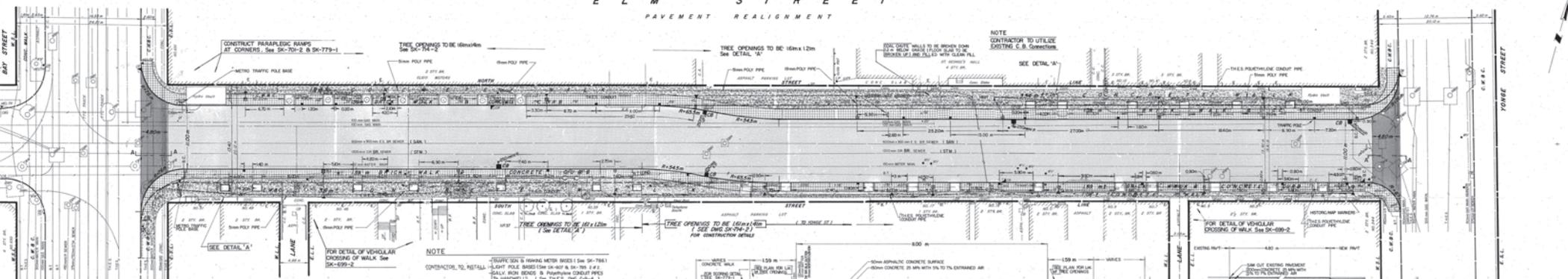
NOT FOR CONSTRUCTION

PARTISANS

Project: 15-17 ELM STREET
 Project Address: 17 Elm Street, Toronto, Ontario M5G 1H1
 Drawing Title: Ground Floor Plan

88 | A1000

E L M S T R E E T
PAVEMENT REALIGNMENT

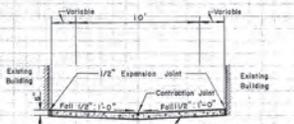
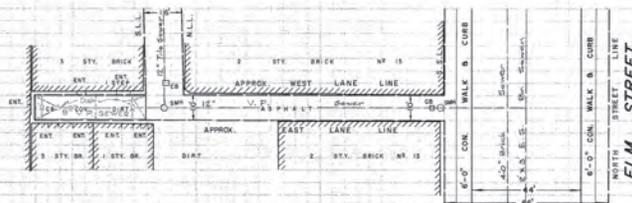


CROSS SECTION
BY 1

SECTION A-A

Station	1+00	1+10	1+20	1+30	1+40	1+50	1+60	1+70	1+80	1+90	2+00	
Grade	100.00	99.50	99.00	98.50	98.00	97.50	97.00	96.50	96.00	95.50	95.00	
Proposed	100.00	99.50	99.00	98.50	98.00	97.50	97.00	96.50	96.00	95.50	95.00	
Vertical Curve	100m x 0.8% x 0.8% (S&S)											
Water	100.00	99.50	99.00	98.50	98.00	97.50	97.00	96.50	96.00	95.50	95.00	
Gas	100.00	99.50	99.00	98.50	98.00	97.50	97.00	96.50	96.00	95.50	95.00	
Sewer	100.00	99.50	99.00	98.50	98.00	97.50	97.00	96.50	96.00	95.50	95.00	
Manhole	100.00	99.50	99.00	98.50	98.00	97.50	97.00	96.50	96.00	95.50	95.00	
Tree	100.00	99.50	99.00	98.50	98.00	97.50	97.00	96.50	96.00	95.50	95.00	
Light	100.00	99.50	99.00	98.50	98.00	97.50	97.00	96.50	96.00	95.50	95.00	
Other	100.00	99.50	99.00	98.50	98.00	97.50	97.00	96.50	96.00	95.50	95.00	

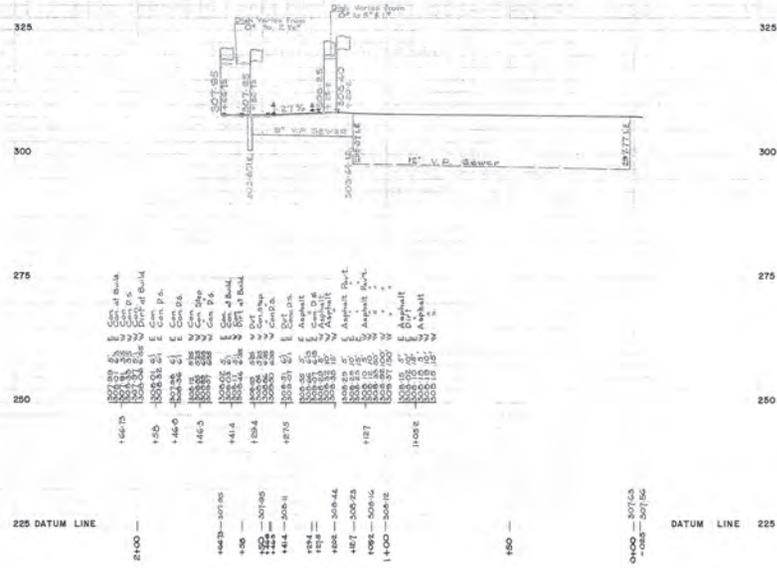
LANE 200 FEET WEST OF YONGE STREET



CROSS SECTION
Scale: 1/4" = 1'-0"

NOTE:
Color Brn. Connection Joints of
6" Extra Strength Pipe and
Welded Pipe with Mechanical
Coupling of Cast Iron Building
See Plans to C.C. 1125 for C.C. Details

NOTE:
See Plan RE. 1150 for Pw'l. Details



NOTE:
CLASS OF PAVEMENT TO BE CONCRETE
SEE L.L. 2172 FOR SURVEY & LEVELS

LEGEND:
EXISTING ELEVATIONS SHOWN THUS: 0.00 5' N. ASPHALT
PROPOSED DASH LINE ELEVATIONS SHOWN THUS: 0.00

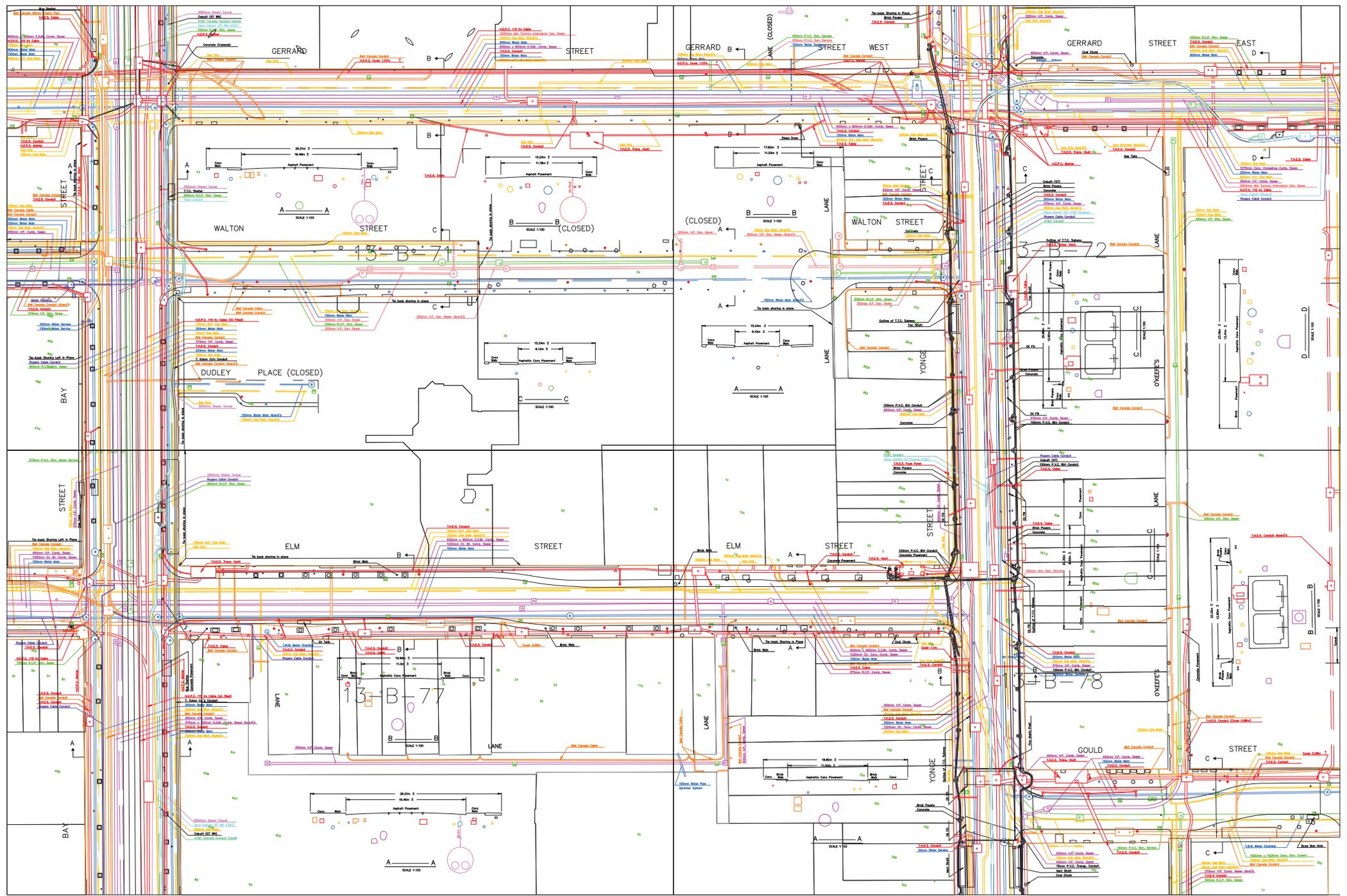
LEGEND:
CON. APPROACH
HEADWALL
DOOR SILL
WINDOW SILL
AREA. BE
BOTTOM STEP

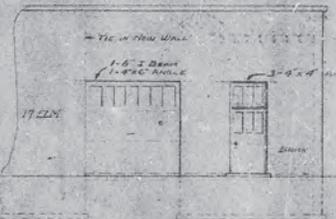
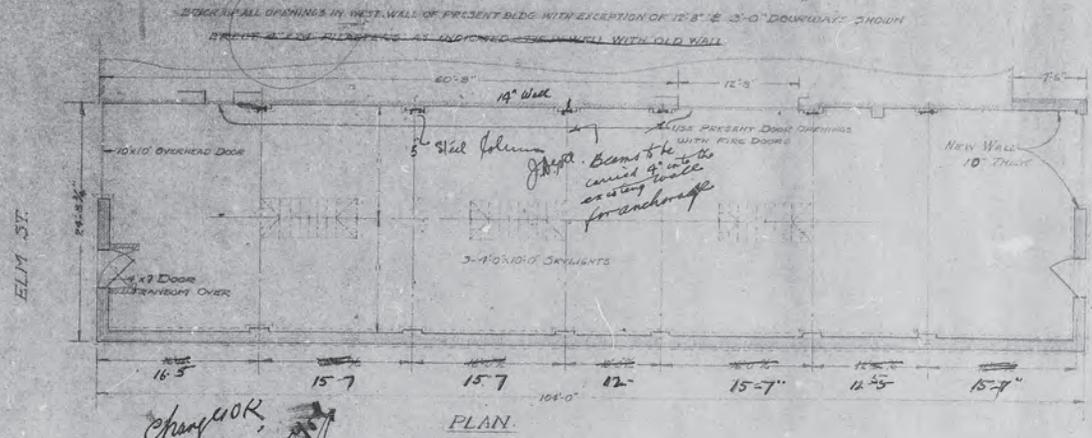
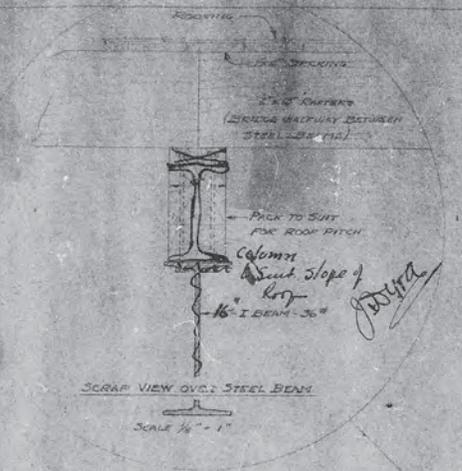
GEODEIC DATUM
B.M. NR 767 ELEV. 313.21
B.M. NR 764 ELEV. 306.45

CITY OF TORONTO DEPARTMENT OF PUBLIC WORKS	
LANE 200 FEET WEST OF YONGE STREET FROM LANE 104 FEET SOUTH OF ELM STREET TO 45 FEET SOUTH	
DRAWING NO. L-2113	SCALE 1" = 20'-0"
DESIGNED BY: <i>[Signature]</i>	CHECKED BY: <i>[Signature]</i>
DATE: 11/14/2011	DESIGNER: R. YOUNG
APPROVED BY: <i>[Signature]</i>	DATE: AUGUST, 1963

SHOW 170 FEET WEST OF YONGE STREET TO 45 FEET SOUTH
LANE 500 FEET WEST OF YONGE STREET

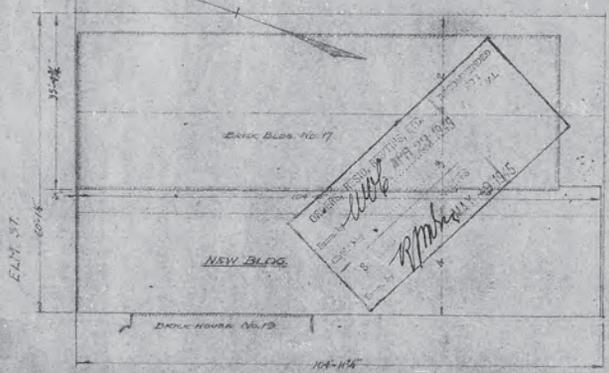
SHOW 170 FEET WEST OF YONGE STREET TO 45 FEET SOUTH
LANE 500 FEET WEST OF YONGE STREET





FRONT ELEVATION
(REAR ELEVATION SIMILAR)

SIDE ELEVATION



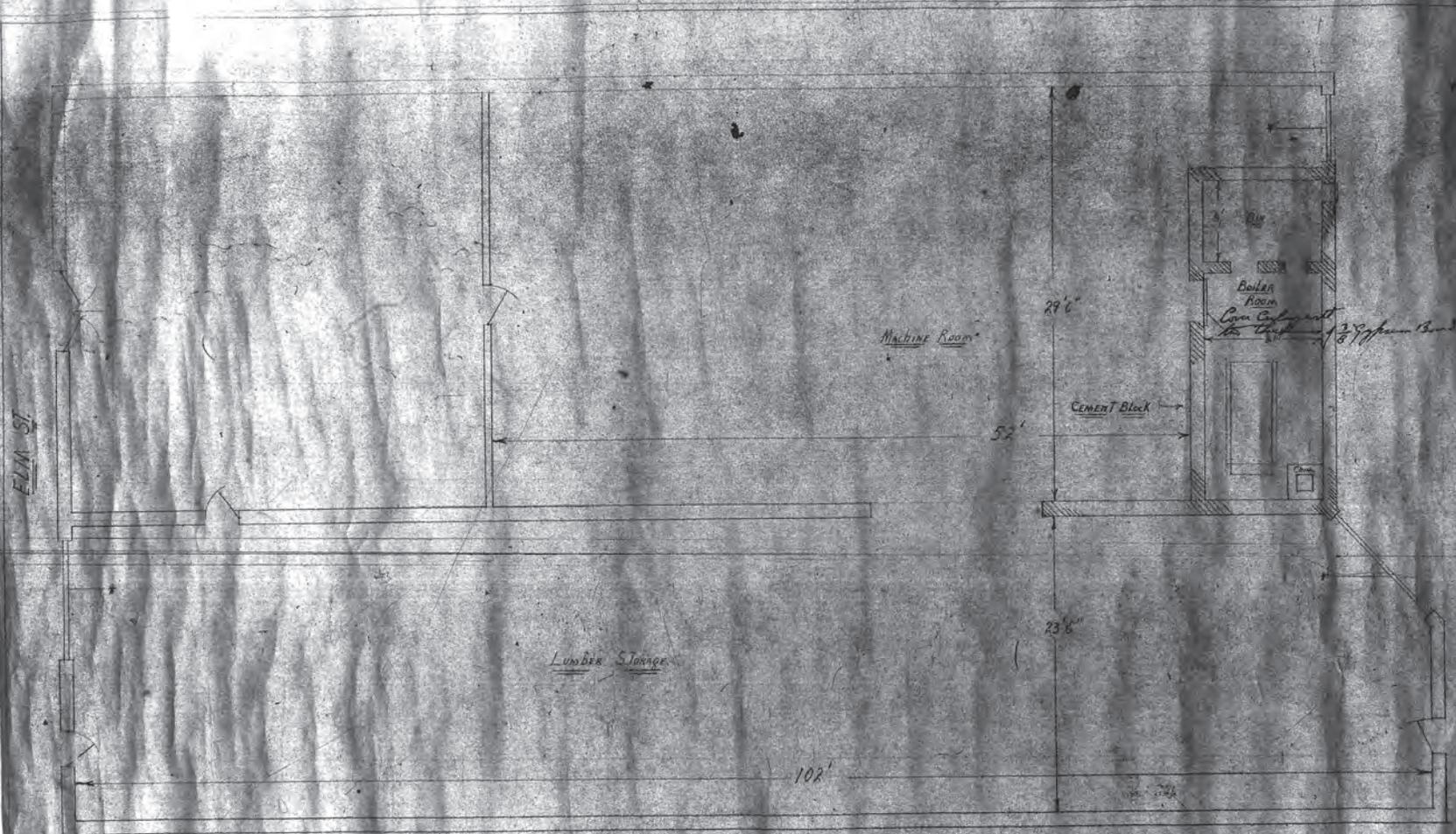
BLOCK PLAN

OWNERS, RESIDENTS, LOCAL C. APPROVED
 Examined by *W.M.* APR 23 1945
 City of Toronto
 R 23
 JTS
 MAY - 9 1945

APPROVED
 MAY - 2 1945
[Signature]
 For Chief Inspector of Factories

PROPOSED STORAGE WAREHOUSE
 FOR
 SPANNER PRODUCTS LIMITED
 16 ELM ST. - TORONTO
 NO. 17 ELM ST. W.
 SCALE 1/8" = 1'-0" HUGH A. DODDS ARCH. 76 GLENDORWAYNE RD. LY 2364
 MAR 28/45

POOR ORIGINAL



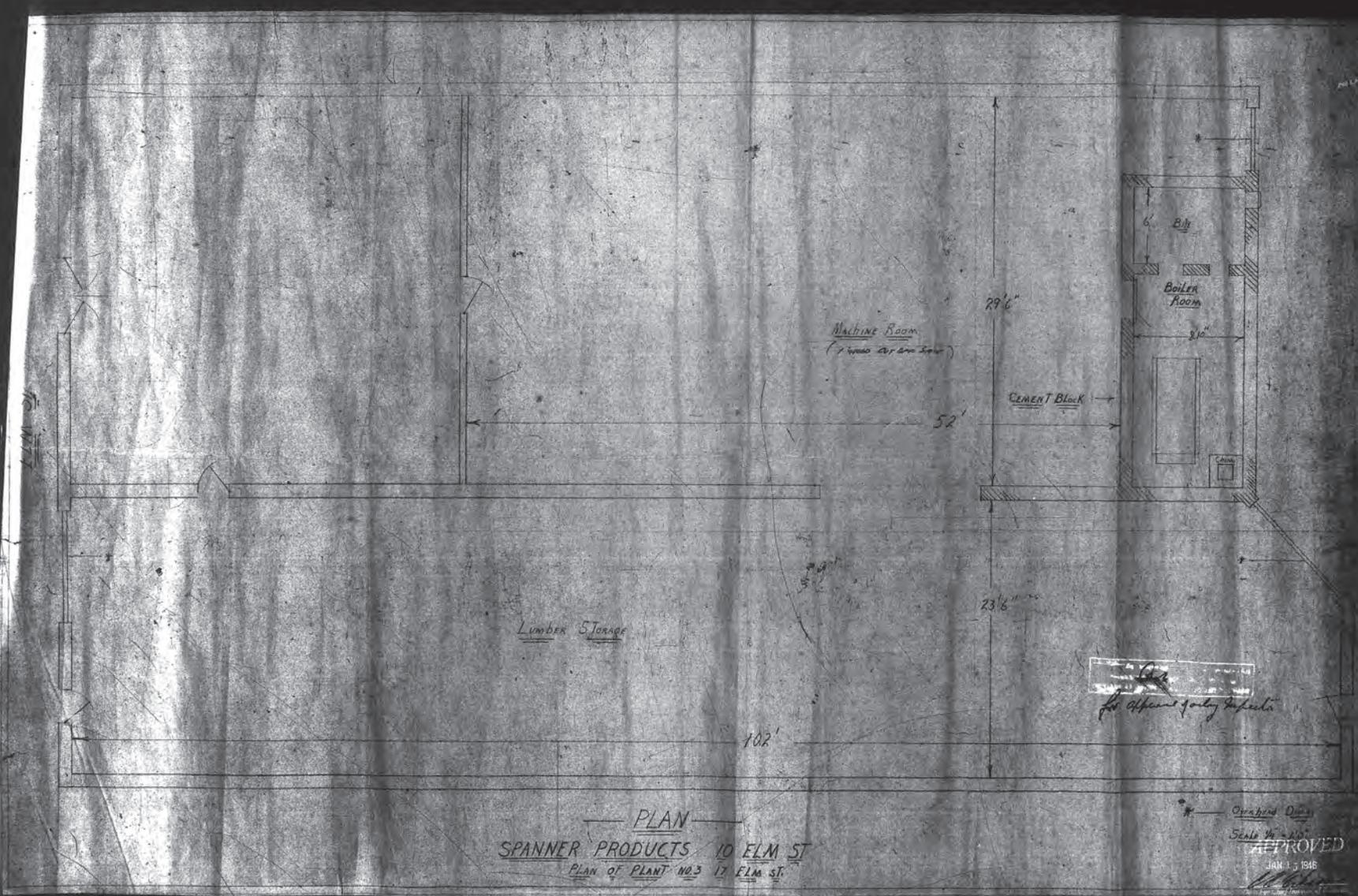
PLAN
 SPANNER PRODUCTS 10 ELM ST
 PLAN OF PLANT NO. 3 17 ELM ST.

Original Drawing
 Scale 1/4" = 1'-0"
 R.
 W.M.
 1. 1. 3
 C. J. J.

R.M. Spanner

POOR ORIGINAL

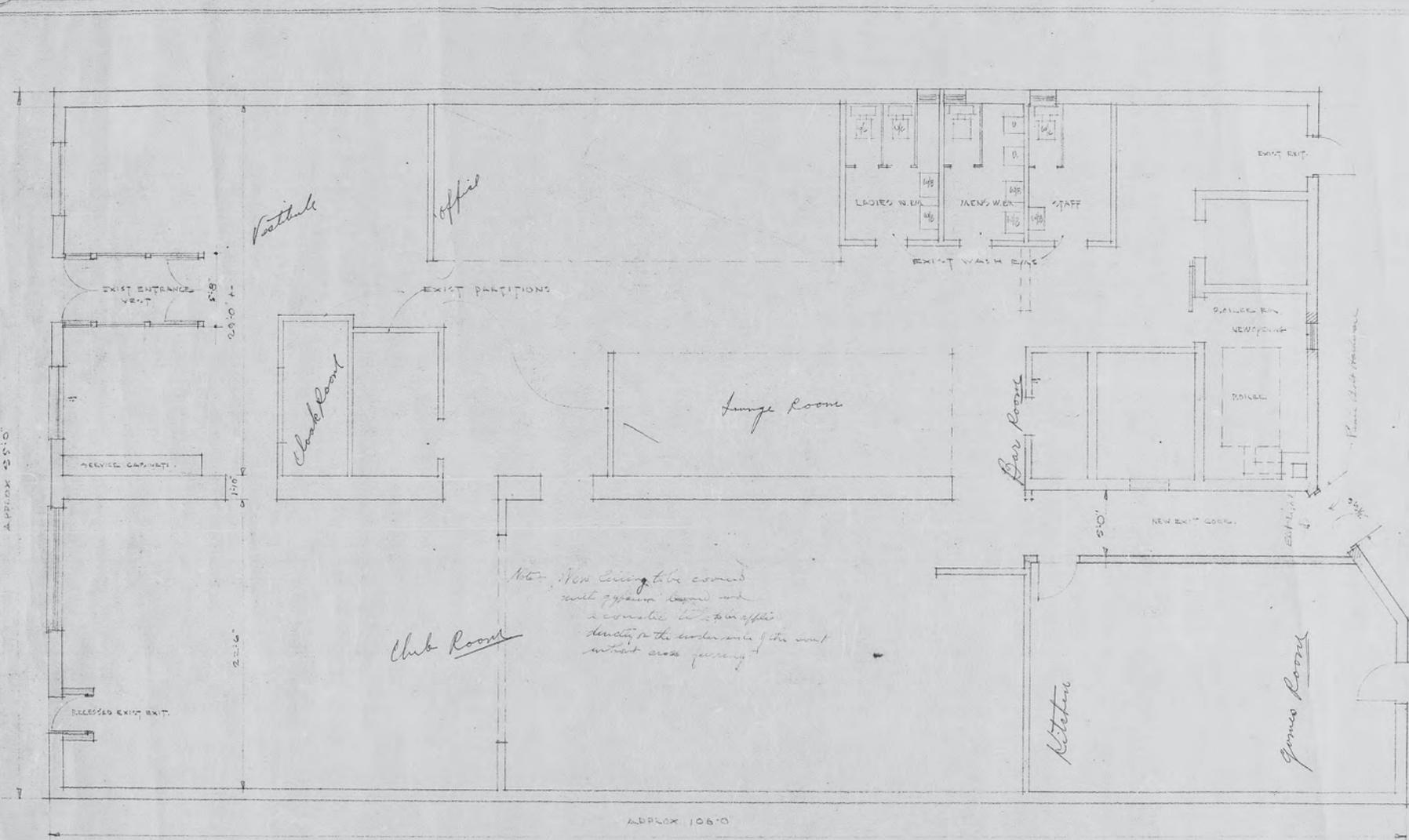
POOR ORIGINAL



PLAN
SPANNER PRODUCTS 10 ELM ST
PLAN OF PLANT NO. 3 17 ELM ST.

W. J. ...
for approval of city inspectors

Checked Over
Scale 1/4" = 1'-0"
APPROVED
JAN 13 1948



Restroom

Office

LADIES W.C. MEN W.C. STAFF

Club Room

Lounge Room

Bar Room

PAIRED B.N. NEWSPAPER

TABLE

Club Room

Note: New living table covered with glass top and a console table in office directly on the corner side of the unit without cross joining

Kitchen

Game Room

APPROX 106'-0"

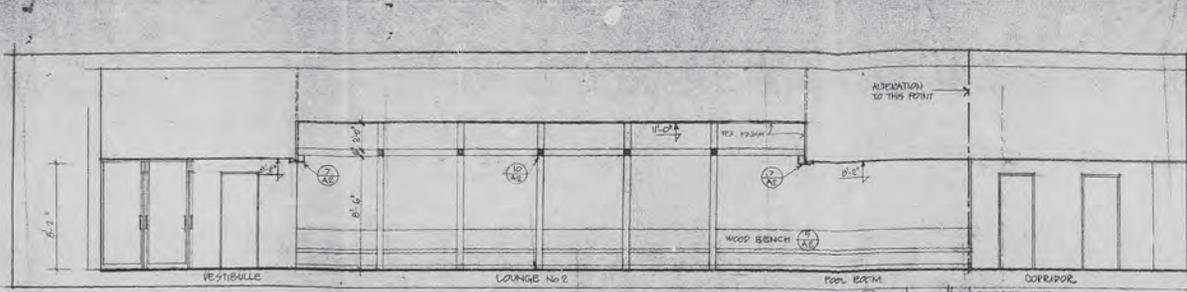
APPROX 45'-0"

PROPOSED FLOOR PLAN

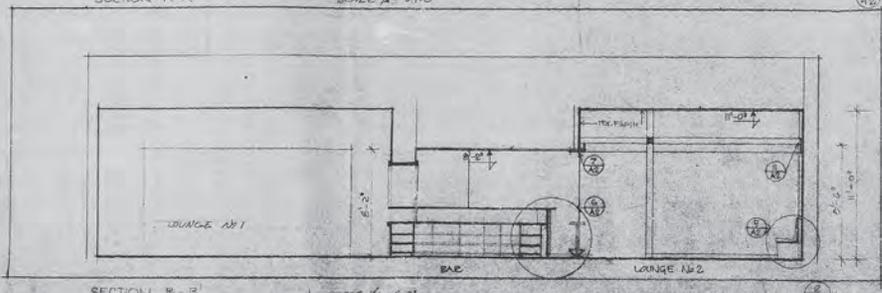
SCALE 1/4" = 1'-0"

PLAN SHOWING EXIST'G WASH ROOMS, EXITS & PROPOSED NEW EXITS TO BUILDING 17-17A ELVA STREET TORONTO
 OZITA P.L.O.
 APR 28 1954

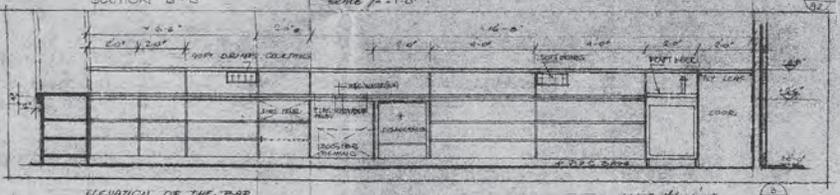
SHEET #1



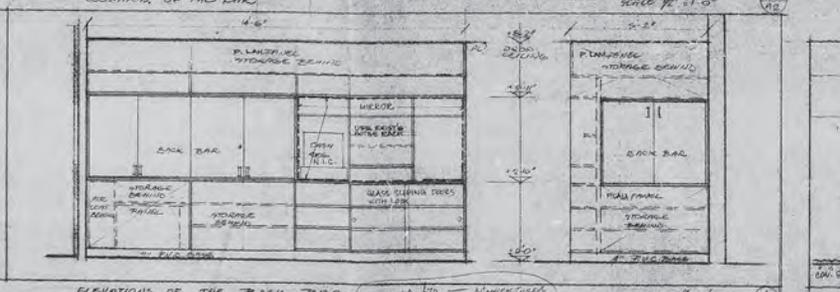
SECTION A-A SCALE 1/2" = 1'-0"



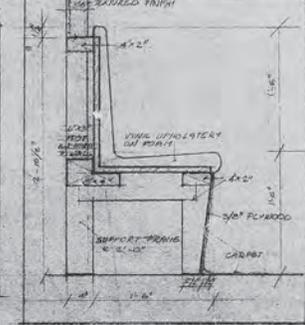
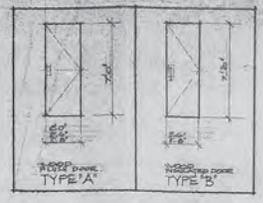
SECTION B-B SCALE 1/2" = 1'-0"



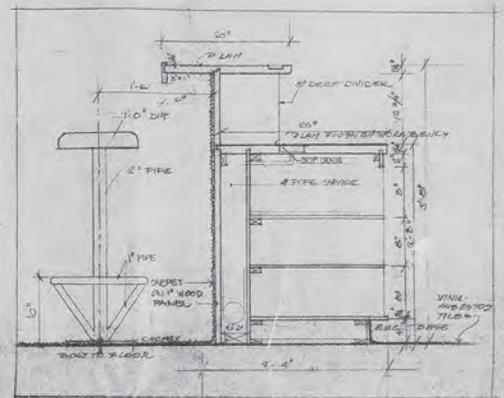
ELEVATION OF THE BAR SCALE 1/2" = 1'-0"



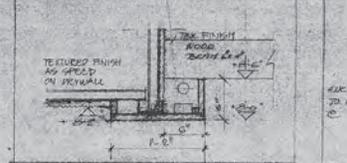
ELEVATIONS OF THE BACK BAR SCALE 1/2" = 1'-0"



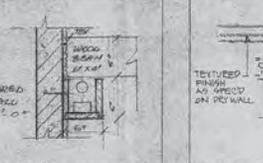
SECTION THROUGH BEACH SCALE 1/2" = 1'-0"



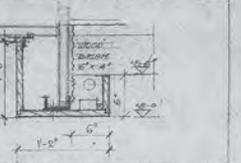
SECTION THROUGH BAR SCALE 1/2" = 1'-0"



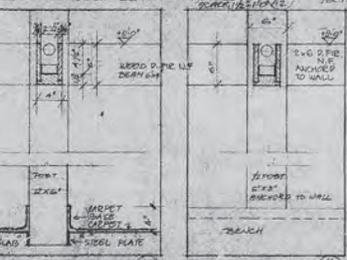
SECTION THROUGH LIGHTING FIXTURE SCALE 1/2" = 1'-0"



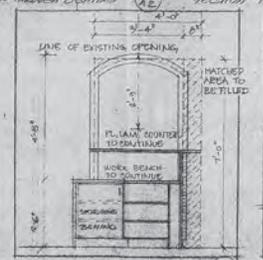
SECTION THROUGH LIGHTING FIXTURE SCALE 1/2" = 1'-0"



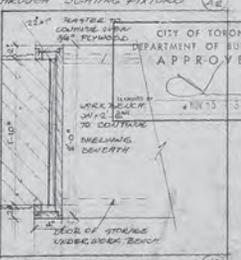
SECTION THROUGH LIGHTING FIXTURE SCALE 1/2" = 1'-0"



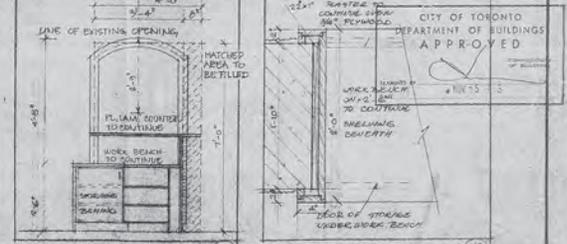
SECTION THROUGH BEACH SCALE 1/2" = 1'-0"



SECTION THROUGH LIGHTING FIXTURE SCALE 1/2" = 1'-0"



SECTION THROUGH LIGHTING FIXTURE SCALE 1/2" = 1'-0"



FRATERNAL ORDER OF EAGLES
 MAPLE LEAF AERIE No 2311
 TORONTO
 17 ELM STREET
 ONTARIO
 SHEET NO. A 2

HOWARD D. VANDEWATER
 ARCHITECT
 TORONTO
 DATE: _____
 DRAWN BY: _____
 CHECKED: _____
 SCALE: 1/2" = 1'-0"

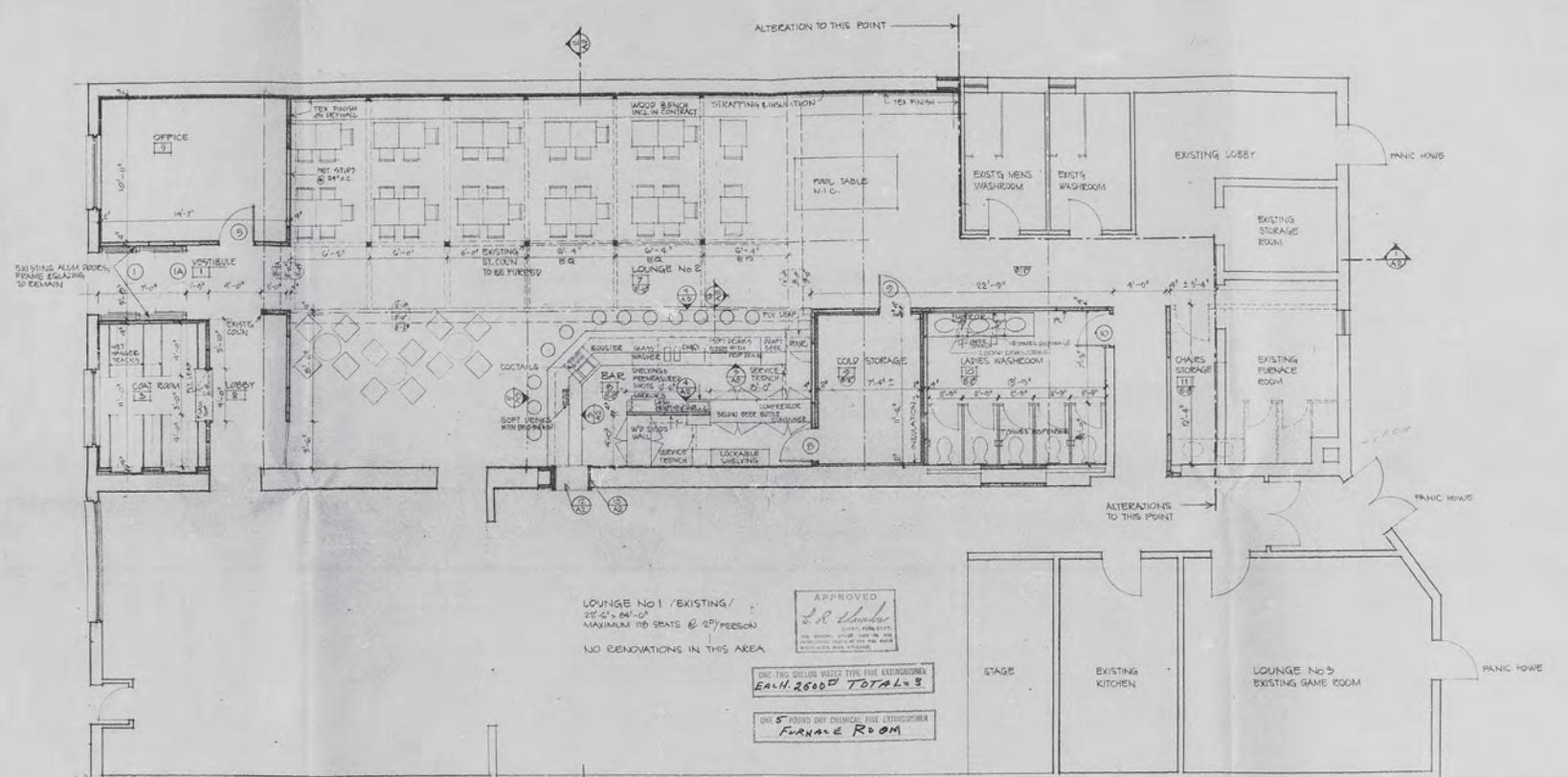


CONTRACTOR: TERRANVA
 CONTRACTOR: CHECK ALL DIMENSIONS ON THE WORK AND REPORT ANY DISCREPANCIES TO THE ARCHITECT BEFORE PROCEEDING.
 ALL DIMENSIONS AND SPECIFICATIONS ARE THE PROPERTY OF THE ARCHITECT AND MUST BE RETURNED AT THE COMPLETION OF THE WORK.
 THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION UNLESS ORDERED BY THE ARCHITECT.
 NO. DATE BY

NO.	DATE	BY	REVISIONS

841.69 - 100 12^{DL} / revision

20' x 15' ROOF KEG BEAM



LOUNGE NO 1 / EXISTING /
22' 2" x 64' 0"
MAXIMUM 110 SEATS @ 25' / PERSON
NO RENOVATIONS IN THIS AREA

APPROVED
L.R. [Signature]
L.R. [Signature]
L.R. [Signature]

ONE TWO GALLON WATER TYPE FIRE EXTINGUISHER
EACH 2000' TOTAL = 9

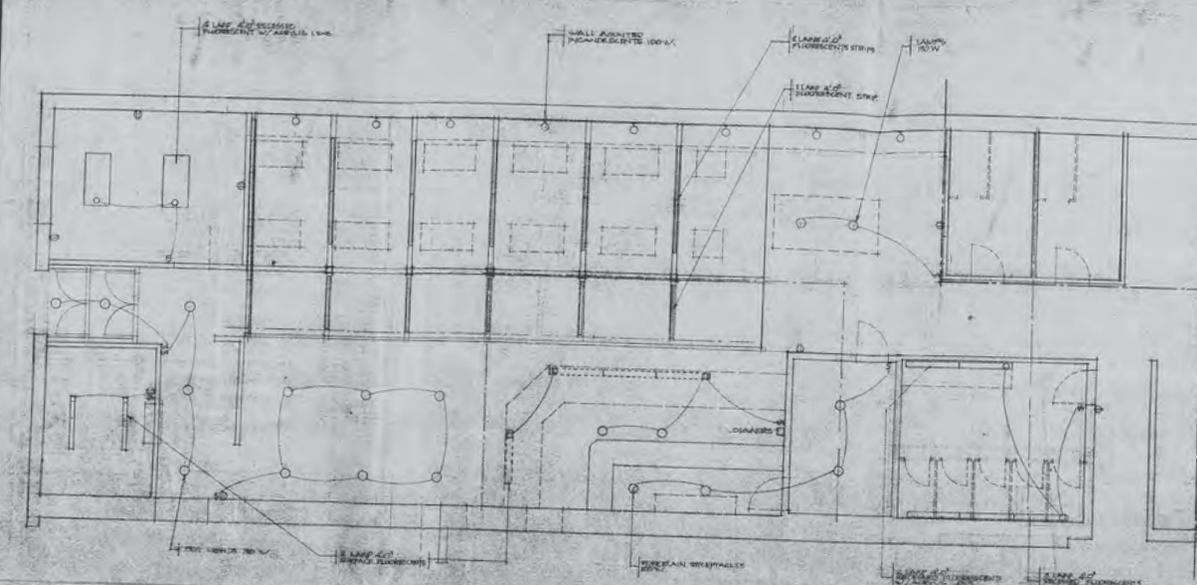
ONE 5 POUND DRY CHEMICAL FIRE EXTINGUISHER
FURNACE ROOM

CITY OF TORONTO
DEPARTMENT OF BUILDINGS
APPROVED
EXAMINED BY: [Signature]
DATE: NOV-5 1973

DESIGNED BY: [Signature]
CHECKED BY: [Signature]
EXAMINED BY: [Signature]
DATE: [Signature]
RECOMMENDED FOR APPROVAL
STRUCTURAL REQUIREMENTS

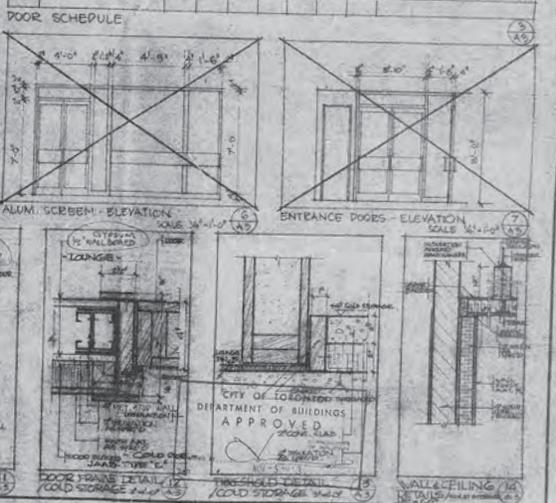
00 373

CONTRACTOR SHALL CHECK ALL DIMENSIONS ON THE WORK AND REPORT ANY DISCREPANCY TO THE ARCHITECT BEFORE PROCEEDING.		ALL DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF THE ARCHITECT AND MUST BE RETURNED AT THE COMPLETION OF THE WORK. THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION UNTIL SIGNED BY THE ARCHITECT.		HOWARD D. VANDEWATER ARCHITECT TORONTO		DATE: JULY 75 DRAWN: S. URBAN CHECKED: G.P. SCALES: 1/4" = 1'-0"		PROJECT: FRATERNAL ORDER OF EAGLES		FILE NO. 7204 SHEET NO. A 1	
REVISIONS	NO. DATE BY	REVISIONS	NO. DATE BY	DATE	CHANGE LOCATION OF EN 101 VESTIBULE, DASH 2 UPRIG, W.P. GARDEN, NEW PANIC ROOM DOOR TO EN 101 LOUNGE, CHANGE ALL SPARK WALLS TO MET. STEEL ORIGINAL, DASH 2 CASE, CASE, REPAIRS - SEE SPEC., PLATE FRONT EXTERIOR DEMONSTRATION.		1 SEP 1973 S.S.		SHEET TITLE: FLOOR PLAN		



ROOM No.	NAME	FLOOR MATERIAL	BASE MATERIAL	WALLS MATERIAL	CEILING MATERIAL	NOTES
1	VESTIBULE	V.A.S.T.	P.V.C.	BRICK	TEX. FIN.	
2	LOBBY	CARPET	CARPET	TRK. FIN.	TEX. FIN.	
3	COAT ROOM			PAINT	PAINT	
4	OFFICE No. 1			TRK. FIN.	TEX. FIN.	
5	OFFICE			TRK. FIN.	TEX. FIN.	
6	POOL ROOM			TRK. FIN.	TEX. FIN.	
7	LOUNGE No. 2			TRK. FIN.	TEX. FIN.	
8	BAR	V.A.S.T.	P.V.C.	PAINT	TEX. FIN.	
9	COLD STORAGE	PREPAB.		PREPAB.	PREPAB.	
10	LADIES WASHROOM	V.A.S.T.	P.V.C.	PAINT	PAINT	
11	CHAIR STORAGE			PAINT	PAINT	

ROOM No.	SIZE	THICK	TYPE	MATERIAL	FRAME	FIRE	NOTES
1	2 x 2'-6" x 7'-0"	1 1/2"	ALUM.	ALUM.			EXISTING
1A	2 x 2'-6"						EXISTING
4	2'-0" x 2'-0"						
5	2'-0"						
6	2'-0"						
7	2'-0"						
8	2'-0"			REFRIGERATOR	DOOR 'C'		INSULATED DOOR, SEE DET. (A.3A)
9	2'-0"			REFRIGERATOR	DOOR 'C'		INSULATED DOOR, SEE DET. (A.3A)
10	2'-6"	1 1/2"	'A'	'A'	'B'		



CONTRACTOR SHALL CHECK ALL DIMENSIONS ON THE DRAWING AND REPORT ANY DISCREPANCIES TO THE ARCHITECT BEFORE PROCEEDING.
 ALL DIMENSIONS AND SPECIFICATIONS ARE THE PROPERTY OF THE ARCHITECT AND MUST BE OBSERVED TO THE COMPLETION OF THE WORK.
 THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION OF ANY OTHER WORK WITHOUT THE WRITTEN CONSENT OF THE ARCHITECT.

HOWARD D. VANDEWATER
 ARCHITECT TORONTO

DATE: _____
 DRAWN BY: _____
 CHECKED BY: _____
 SCALE: AS NOTED
 PROJECT: **FRATERNAL ORDER OF EAGLES**
 MAPLE LEAF ABBEY No 2311 17 ELM STREET TORONTO ONTARIO

FILE NO. 7824
 SHEET NO. **A 3**

PLAN OF SURVEY SHOWING TOPOGRAPHICAL INFORMATION OF

LOTS 1, 2, 3 AND 4

PLAN D-36

CITY OF TORONTO

SCALE 1:150



KRCMAR SURVEYORS LTD. 2022

METRIC: DISTANCES AND COORDINATES SHOWN HEREON ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048

BEARING

BEARINGS SHOWN HEREON ARE GRID DERIVED FROM GPS OBSERVATIONS OF OBSERVED REFERENCE POINTS 'A' AND 'B' USING THE LEICA SMARTNET RTK NETWORK AND ARE REFERRED TO THE 3° M TM COORDINATE SYSTEM, ZONE 10, CENTRAL MERIDIAN 79°00' WEST LONGITUDE (3° MODIFIED TRANSVERSE MERCATOR PROJECTION, NAD 83 (CSRS)(2010)). DISTANCES SHOWN HEREON ARE GROUND DISTANCES AND CAN BE CONVERTED TO GRID DISTANCES BY MULTIPLYING BY A COMBINED SCALE FACTOR OF 0.999886.

INTEGRATION DATA

3° M TM ZONE 10 COORDINATES
NAD 83 (CSRS)(2010) (CENTRAL MERIDIAN 79°00' WEST LONGITUDE)
THE X,Y COORDINATES LISTED BELOW ARE TO BE USED ACCURATELY AND COMPLY WITH SUBSECTION 14(1) OF ONTARIO REGULATION 219/10 FILED UNDER THE SURVEYORS ACT.

OBSERVED REFERENCE POINTS		
MONUMENT ID.	NORTHING	EASTING
(A) CC	4 835 310.81	314 238.59
(B) CC	4 835 425.12	314 312.98
REFERENCE POINTS		
POINT	NORTHING	EASTING
1	4 835 297.52	314 298.80
2	4 835 304.64	314 283.48
3	4 835 286.88	314 289.00
4	4 835 273.91	314 292.71

COORDINATE VALUES SHOWN ARE FOR GEODETIC INFORMATION SYSTEM INTERPOLATION ONLY. COORDINATES CHANGE AS THEMES/FILES ARE USED TO RE-ESTABLISH CORNERS OF BOUNDARIES SHOWN ON THIS PLAN.

ELEVATION

ELEVATIONS SHOWN HEREON ARE GEODETIC AND ARE RELATED TO CITY OF TORONTO BENCH MARK NO. C787 HAVING AN ELEVATION OF 95.467 METRES.

LEGEND

- DENOTES SURVEY MONUMENT FOUND
 - DENOTES SURVEY MONUMENT PLANTED
 - ▣ DENOTES STANDARD IRON BAR
 - ▢ DENOTES SHORT STANDARD IRON BAR
 - ▧ DENOTES IRON BAR
 - CP DENOTES CONCRETE PIN
 - CC DENOTES C/IT CROSS
 - (M) DENOTES MEASURED
 - (S) DENOTES SET
 - (U) DENOTES ORIGIN UNKNOWN
 - (W) DENOTES WITNESS
 - (BA) DENOTES PLAN BA-1773
 - (P) DENOTES PLAN D-36
 - (P2) DENOTES PLAN 63R-2964
 - (P3) DENOTES BUILDING LOCATION SURVEY BY TOM CZERNIANSKI SURVEYING LTD., O.L.S. DATED MAY 23, 1985
 - (P7) DENOTES PLAN OF SURVEY SHOWING TOPOGRAPHICAL INFORMATION BY KRCMAR SURVEYORS LTD., O.L.S., DATED MARCH 02, 2022
 - (FN) DENOTES FIELD NOTES BY CITY OF TORONTO DATED AUGUST 4, 1982. (NOTE INDEX 38-28)
 - (1370) DENOTES KRCMAR SURVEYORS LTD., O.L.S.
 - (MM) DENOTES MARSHALL, MACKLIN & MONAGHAN, O.L.S.
 - (PROJ) DENOTES PROJECTION OF BEARING
 - (T) DENOTES TOP OF CURB
 - (B) DENOTES BOTTOM OF CURB
 - DENOTES EXISTING GRADE ELEVATION
 - A/C DENOTES AIR CONDITIONER
 - DENOTES CATCH BASIN
 - DENOTES DECIDUOUS TREE WITH TRUNK DIAMETER
 - DENOTES FIRE HYDRANT
 - DENOTES GAS METER
 - DENOTES HYDRO HAND WELL
 - DENOTES HYDRO MANHOLE
 - DENOTES LAMP POST (PRIVATE)
 - DENOTES MANHOLE
 - DENOTES PARKING METER
 - DENOTES SIGN
 - DENOTES WATER VALVE
 - DENOTES INTERLOCKING BRICK
 - DENOTES TIE TO CONCRETE BLOCK
 - DENOTES LAMP ON WALL
 - DENOTES CAMERA ON WALL
 - DENOTES OVERHEAD WIRE
- ALL BUILDING TIES TAKEN TO BRICK UNLESS NOTED OTHERWISE.

SURVEY REPORT

- THE RE-ESTABLISHMENT OF THE SUBJECT PROPERTY BOUNDARIES IS BASED ON INFORMATION CONTAINED IN THE RELEVANT TITLE DOCUMENTS, REGISTERED PLANS AND ON THE EVIDENCE OF PRIOR SURVEYS FOUND DURING THE COURSE OF PREPARING THE SUBJECT SURVEY.
- THE TYPE AND LOCATION OF THE EXISTING BUILDINGS AND OTHER IMPROVEMENTS, FENCES, ETC., ON OR NEAR THE SUBJECT PROPERTY ARE AS SHOWN ON THE SURVEY PLAN.
- COMPLIANCE WITH MUNICIPAL ZONING REQUIREMENTS IS NOT CERTIFIED BY THIS REPORT.
- LAND COMPRISES ALL OF PINN 21103-0087(LT) AND 21103-0086(LT).

TOTAL SITE AREA = 792.7m²

SURVEYOR'S CERTIFICATE

I CERTIFY THAT:

- THIS SURVEY AND PLAN ARE CORRECT AND IN ACCORDANCE WITH THE SURVEYORS ACT, THE SURVEYORS ACT AND THE REGULATIONS MADE UNDER THEM.
- THE SURVEY WAS COMPLETED ON THE 19th DAY OF MAY, 2022.

DATE: MAY 25, 2022

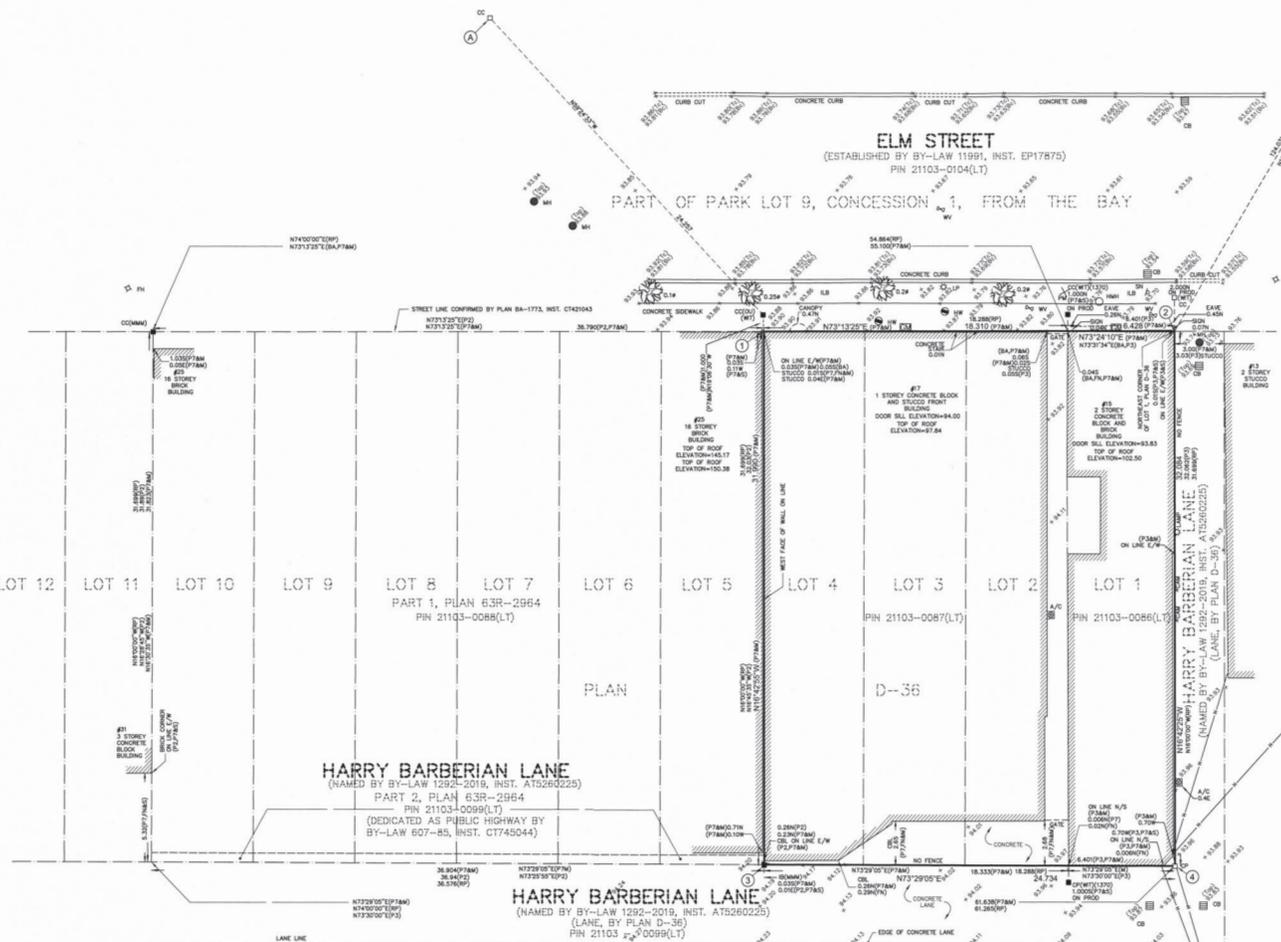
S.N. RAMSAMOOJ
ONTARIO LAND SURVEYOR

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ASSOCIATION OF ONTARIO LAND SURVEYORS PLAN SUBMISSION FORM V-26190			
FIELD:	D.L./M:	DRAWN:	DATE:
22-01-08102		SD/JF	10-32-25/May/2022
CHKD:	S.A.R.:	CHKD:	S.A.R.:
			20-04
ENG NAME:	22-01-08102	PLT INFO:	10-32-25/May/2022
1137 Centre Street, Thornhill, ON L4J 3M6	905.738.0053	F 905.738.9221	WORK ORDER NO: 36419
PLAN AVAILABLE AT www.ProtectYourBoundaries.ca			



THIS PLAN IS NOT VALID UNLESS IT IS AN UNREVOKED ORIGINAL COPY ISSUED BY THE SURVEYOR IN ACCORDANCE WITH REGULATION 219/10, SECTION 29(3)



Appendix B

Groundwater

Excerpt Hydrogeological Assessment (GEMS)
Groundwater Servicing Summary Form

GEMS[®]

Groundwater Environmental Management Services

Hydrogeological Report

15 and 17 Elm Street Toronto,
Ontario

Project: 22-1422

August 12, 2022

Prepared For:

Fora Developments 200 – 2440
Dundas St. W., Toronto, ON, M6P
1W9

Prepared By:

Groundwater Environmental
Management Services Inc.
8800 Dufferin Street, Suite 303
Concord, ON, L4K 0C5



Table 6.4.2: Groundwater Monitoring and Mitigation Plan, On-Site Water Quality Monitoring

Period	Monitoring Location	Monitoring Frequency	Method	Triggers for Mitigation	Mitigation Measures/Comments
During Construction	Discharge outlet pipe or sampling port of the dewatering system.	First sample is recommended to be obtained within first two (2) days of discharge start. Routine samples are recommended to be obtained monthly thereafter.	Samples should be sent to a certified laboratory and be analyzed against the City of Toronto sewer use By-Law.	Discharge quality exceeds City of Toronto sewer use By-Law.	Filtration/treatment approaches would be reviewed on a specific basis. Upon installation of a filtration/treatment system, an additional sample should be performed to ensure compliance with the criteria.
Post Construction	No post-construction water quality monitoring is required.				

Note: This Plan does not include Geotechnical Monitoring (settlement monitoring), which is not recommended for this site.

7.0 Conclusion

Based on the above analysis, the following conclusions and recommendations are offered for the proposed construction of 17 Elm Street, Toronto, Ontario:

- The geology within the Site is characterized by Beveled till plains, including coarse textured glaciolacustrine deposits overlaying Paleozoic bedrock.
 - The silty clay, sandy silt, fine sand, sandy clay, and shale/bedrock units at the Site are interpreted to all belong to the same unconfined water-bearing zone or aquifer.
- Hydraulic conductivity for the water-bearing zone (MW101, MW103 and MW104) ranges from 5.52×10^{-8} m/s to 1.71×10^{-6} m/s, with an overall geometric mean of 4.7×10^{-7} m/s.
- Groundwater table at the Site ranges from 80.53 masl to 86.13 masl.
 - The maximum anticipated groundwater is estimated at 86.9 masl, incorporating a 0.8 m fluctuation allowance to the peak static water level as outlined by the City of Toronto Foundation Drainage Guidelines (COT, 2021) for peak season monitoring.
- Groundwater quality at the Site currently meets the City of Toronto Sanitary and Combined Sewers Discharge Guidelines
 - Groundwater quality exceeds the City of Toronto Storm Sewer Discharge Use By-Law for Total Suspended Solids, Total Manganese (Mn), and Total Phosphorus
 - It is recommended that an additional sample is obtained from the accumulated

stormwater on-site prior to discharge to determine if the water quality meets the City of Toronto Sewer Use By-law.

- To drawdown groundwater to a target elevation of 86.47 masl, a dewatering rate of 7.6 L/min or 10,882 L/day will be required.
 - Applying a safety factor of 1.5 for permitting applications and accounting for precipitation during dewatering, GEMS forecasts a total dewatering rate of 19.5 L/min or 28,053 L/day.
- The zone of influence for steady-state construction dewatering (40 days) is expected to extend 29 m beyond the excavation area.
- Long-term dewatering rates are expected to be minimal due to deep water level conditions and low hydraulic conductivity of site material. Long-term infiltrated stormwater is estimated at 4,275 L/day with a safety factor of 1.5
- Well decommissioning will be required prior to construction. Any inactive wells within the Site should be decommissioned by a licensed well contractor under Ontario Regulation 903.

8.0 Limitations

Groundwater Environmental Management Services Inc. (GEMS) has prepared this report for our client and its agents exclusively. GEMS accepts no responsibility for any damages that may be suffered by third parties as a result of decisions or actions based on this report.

The findings and conclusions are site-specific and were developed in a manner consistent with that level of care and skill normally exercised by environmental professionals currently practicing under similar conditions in the area. Changing assessment techniques, regulations, and site conditions mean that environmental investigations and their conclusions can quickly become dated, so this report is current up to two years from the published date. The report should not be used after that without GEMS review/approval.

The project has been conducted according to our instructions and work program. Additional conditions, and limitations on our liability are set forth in our work program/contract. No warranty, expressed or implied, is made.

SERVICING REPORT GROUNDWATER SUMMARY

The form is to be completed by the Professional that prepared the Servicing Report.
 Use of the form by the City of Toronto is not to be construed as verification of engineering/hydrological content.

For City Staff Use Only:	
Name of ECS Case Manager (please print)	
Date Review Summary provided to to TW	

A. SITE INFORMATION		Included in SR (reference page number)	Report Includes this information City staff (Check)
Date Servicing Report was prepared:	2022 August	Cover Page	
Title of Servicing Report:	17 Elm Street FSRSWM Report	Cover Page	
Name of Consulting Firm that prepared Servicing Report:	IBI Group Ltd.	Cover Page	
Site Address	15-17 Elm Street Toronto, Ontario	Cover Page	
Postal Code	M5G 1H1	N/A	
Property Owner (identified on planning request for comments memo)	Trustees of Maple Leaf Aerie No. 2311, Fraternal Order of Eagles; AND Cooper, Annette; Cooper, David	N/A	
Proposed description of the project (ex. number of point towers, number of podiums, etc.)	32 storey mixed use building retail and residential space two underground levels	2	
Land Use (ex. commercial, residential, mixed, industrial, institutional) as defined by the Planning Act	Mixed	2	
Number of below grade levels	2	2	

SERVICING REPORT GROUNDWATER SUMMARY

<p>Does the SR include a private water drainage system (PWDS)?</p> <p>PWDS: Private Water Drainage System: A subsurface drainage system which may consist of but is not limited to weeping tile(s), foundation drain(s), private water collection sump(s), private water pump or any combination thereof for the disposal of private water on the surface of the ground or to a private sewer connection or drainage system for disposal in a municipal sewer.</p>	<p>If Yes continue completing Section B (Information Relating to Groundwater) <u>ONLY</u></p> <p>If Yes, Number of PWDS? <u>0</u></p> <p><i>(Each of these PWDS may require a separate Toronto Water agreement)</i></p> <p>If No skip to Sections C (On-site Groundwater Containment) and/or D (Water Tight Requirements) as applicable</p>	<p><input type="checkbox"/> YES</p> <p><input checked="" type="checkbox"/> NO</p>	
B. INFORMATION RELATING TO GROUNDWATER		Included in SR (reference page number)	Report Includes this information City Staff (Check)
<p>A copy of the pump schedule(s) for ALL groundwater sump pump(s) for the development site has been included in the FSR</p> <p style="text-align: center;">or</p> <p>A letter written by a Mechanical Consultant (signed and stamped by a Professional Engineer of Ontario) shall be attached to the SR stating the peak flow rate of the groundwater discharge for the development site for all groundwater sump pump(s). This peak flow rate must be based on the pump schedule(s) that have been designed by the Mechanical Consultant. A template of this letter is attached in Schedule A.</p>	<p>The foundation of the development is located above the measured groundwater table. Therefore, no long term pumping is proposed or required.</p>	<p>Appendix B</p>	

SERVICING REPORT GROUNDWATER SUMMARY

<p>**If there is more than one sump they must ALL be included in the letters along with a combined flow**</p>			
<p>Is it proposed that the groundwater from the development site will be discharged to the sanitary, combined or storm sewer?</p>	<p><input type="checkbox"/> Sanitary Sewer</p> <p><input type="checkbox"/> Combined Sewer</p> <p><input type="checkbox"/> Storm Sewer</p>		
<p>Will the proposed PWDS discharge from the site go to the Western Beaches Tunnel (WBT)?</p> <p>*Reference attached WBT drainage map*</p>	<p><input type="checkbox"/> YES <input type="checkbox"/> NO</p> <p>If Yes, private water discharge fees will apply and site requires a sanitary discharge agreement.</p>		
<p>What is the street name where the receiving sewer is located?</p>			
<p>What is the diameter of the receiving sewer?</p>			
<p>Is there capacity in the proposed local sewer system?</p> <p><input checked="" type="checkbox"/> YES <input type="checkbox"/> NO</p>	<p>Are there any improvements required to the sewer system? If yes, identify them below and refer to the section and page number of the FSR where this information can be found.</p> <p>If a sewer upgrade is required, the owner is required to enter into an Agreement with the City to improve the infrastructure?</p> <p style="text-align: right;"><input type="checkbox"/> YES</p>		
<p>Total allowable peak flow rate during a 100 year storm event (L/sec) to storm sewer</p> <p>When groundwater is to be discharged to the storm sewer the total groundwater and stormwater discharge shall not exceed the permissible peak flow rate during a 2 year pre development storm event, as per the City's</p>	<p>_____ L/sec</p>		

SERVICING REPORT GROUNDWATER SUMMARY

<p>Wet Weather Flow Management Guidelines, dated 2006</p>			
<p>Short-Term Groundwater Discharge Provide proposed total flow rate to the sanitary/combined sewer in post-development scenario</p> <p>Total Flow (L/sec) = sanitary flow + peak short-term groundwater flow rate</p>	<p>_____ 2.6 L/sec</p>		
<p>Long-Term Groundwater Discharge Provide proposed total flow rate to the sanitary/combined sewer in post-development scenario</p> <p>Total Flow (L/sec) = sanitary flow + peak long-term groundwater flow rate</p>	<p>_____ 0 L/sec</p>		
<p>Does the water quality meet the receiving sewer Bylaw limits?</p> <p><input checked="" type="checkbox"/> YES</p> <p><input type="checkbox"/> NO</p>	<p>If the water quality does not meet the applicable receiving sewer Bylaw limits and the applicant is proposing a treatment system the applicant will need to include a letter stating that a treatment system will be installed and the details of the treatment system will be included in the private water discharge application that will be submitted to TW EM&P.</p>		
<p>C. ON-SITE GROUNDWATER CONTAINMENT</p>		<p>Included in SR (reference page number)</p>	<p>Report Includes this information City Staff (Check)</p>
<p>How is the site proposing to manage the groundwater discharge on site?</p>	<p>No long term groundwater discharge is required</p>	<p>5</p>	

SERVICING REPORT GROUNDWATER SUMMARY

<p>Has the above proposal been approved by:</p>	<p><input type="radio"/> TW-WIM And <input type="radio"/> TW-EM&P And <input type="radio"/> ECS</p>		
<p>If the site is proposing a groundwater infiltration gallery, has it been stated that the groundwater infiltration gallery will not be connected to the municipal sewer? A connection between the infiltration gallery/dry well and the municipal sewer is not permitted</p> <p>Please be advised if an infiltration gallery/dry well on site is not connected to the municipal sewer, the site must submit two letters using the templates in Schedule B and Schedule C.</p>	<p><input type="checkbox"/> YES <input type="checkbox"/> NO</p>		
<p>Confirm that the infiltration gallery can infiltrate 100% of the expected peak groundwater flow year round, ensure that the top of the infiltration trench is below the frost line (1.8m depth), not less than 5 m from the building foundation, bottom of the trench 1m above the seasonally high water table, and located so that the drainage is away from the building.</p>	<p>N/A</p>		
<p>D. WATER TIGHT REQUIREMENTS</p>		<p>Included in SR (reference page number)</p>	<p>Report Includes this information City Staff</p>

October 2017

SERVICING REPORT GROUNDWATER SUMMARY

		(Check)
<p>If the site is proposing a water tight structure:</p> <ol style="list-style-type: none"> 1. The owner must submit a letter using the template in Schedule D. 2. A Professional Engineer (Structural), licensed to practice in Ontario and qualified in the subject must submit a letter using the template in Schedule E. 	N/A	

Provide a copy of the approved SR to Toronto Water Environmental Monitoring & Protection Unit at pwapplication@toronto.ca.

Consulting Firm that prepared Servicing Report: IBI Group Ltd.

Professional Engineer who completed the report summary: Jason Jenkins P.E. , P.Eng
 Print Name





Professional Engineer who completed the report summary: _____
 Signature Date & Stamp

August 2022

Appendix C

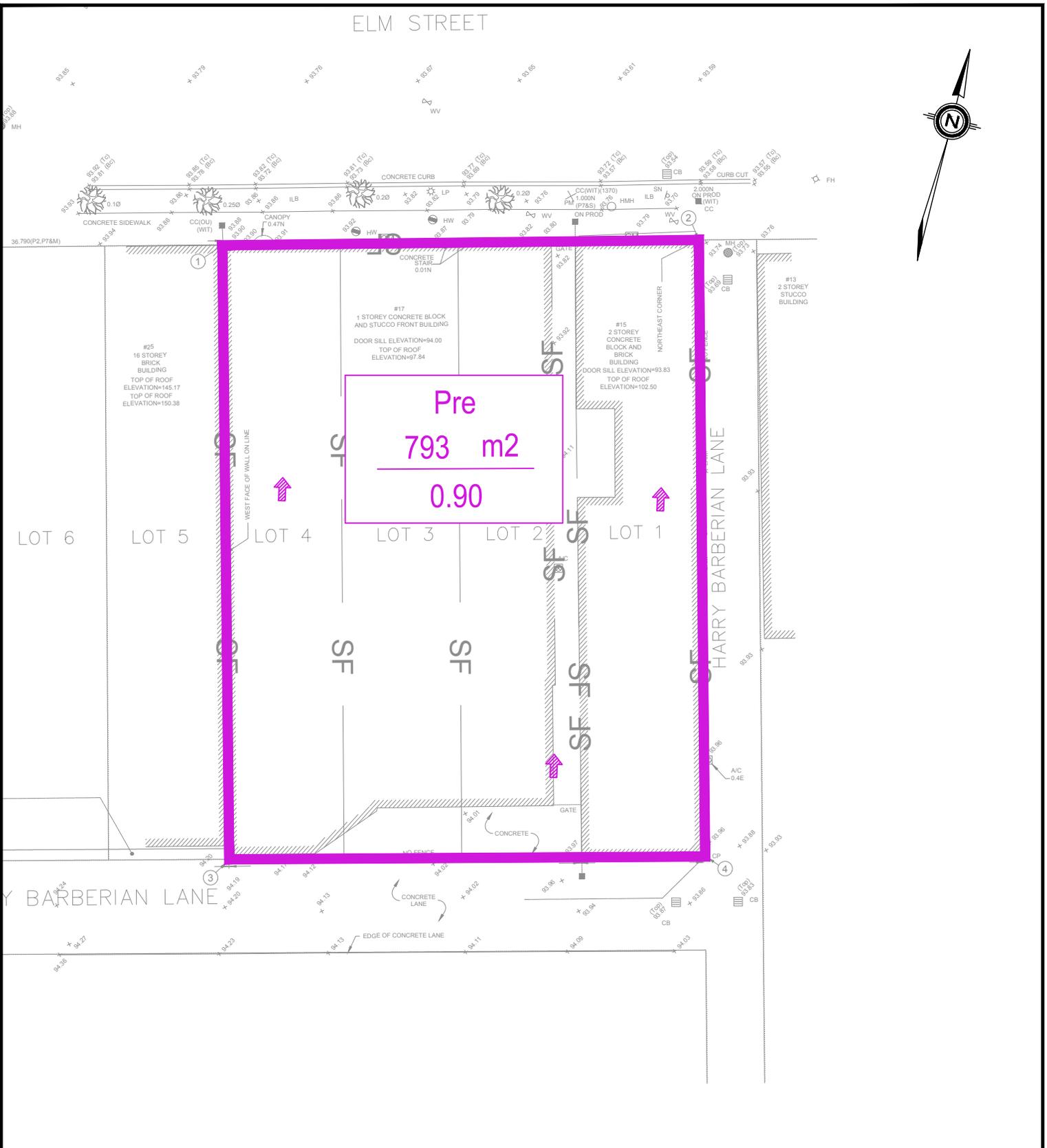
Stormwater Analysis

Pre- and Post-Development Drainage Area Plans

Stormwater Design Calculations

Irrigation Calculations

ELM STREET



LEGEND

-  PROPERTY LINE
-  DRAINAGE BOUNDARY
-  OVERLAND FLOW DIRECTION

CLIENT FORA DEVELOPMENTS 2440 DUNDAS STREET WEST, UNIT 200, TORONTO, ON M6P 1W9	PROJECT NAME 17 ELM STREET		 IBI GROUP Unit 300 – 8133 Warden Avenue Markham ON L6G 1B3 Canada tel 905 763 2322 fax 905 763 9983 ibigroup.com	
	SCALE: NTS	DATE: 2022-04-08	FIGURE NAME PRE-DEVELOPMENT STORM DRAINAGE PLAN	FIGURE NO. DAP-1
PROJECT ENG: JMJ	DRAWN BY: CG			
CHECKED BY: JMJ	APPROVED BY: JMJ			
PROJECT NO: 137680				



LEGEND

-  PROPERTY LINE
-  DRAINAGE BOUNDARY
-  OVERLAND FLOW DIRECTION

CLIENT
FORA DEVELOPMENTS

2440 DUNDAS STREET WEST,
UNIT 200, TORONTO, ON M6P
1W9

PROJECT NAME
17 ELM STREET

SCALE: NTS	DATE: 2022-08-17
PROJECT ENG: CG	DRAWN BY: JMJ
CHECKED BY: JMJ	APPROVED BY: JMJ
PROJECT NO: 137680	



IBI GROUP
Unit 300 – 8133 Warden Avenue
Markham ON L6G 1B3 Canada
tel 905 763 2322 fax 905 763 9983
ibigroup.com

FIGURE NAME
POST-DEVELOPMENT
STORM DRAINAGE PLAN

FIGURE NO.	REVISION
DAP-2	1

17 Elm Street

Mixed Use Development

Runoff Coefficients

Project Name: 17 Elm Street
 Project Number: 137680
 Date: 19 August 2022
 Designed By: Jason Jenkins, P.Eng.

Total Site Area				
Conventional Roof	650	82.0%	0.90	0.74
Extensive Green Roof	0	0.0%	0.50	0.00
Intensive Green Roof	90	11.3%	0.50	0.06
Landscape	0	0.0%	0.25	0.00
Landscape over P1	0	0.0%	0.45	0.00
Permeable Pavers	0	0.0%	0.55	0.00
Impervious (Clean)	53	6.7%	0.90	0.06
Impervious (Dirty)	0	0.0%	0.90	0.00
Total Area	793	100%		0.85

Pre Dev Total Site Area				
Conventional Roof	0	0.0%	0.90	0.00
Green Roof	0	0.0%	0.50	0.00
Landscape	0	0.0%	0.25	0.00
Landscape over P1	0	0.0%	0.45	0.00
Permeable Pavers	0	0.0%	0.55	0.00
Impervious	793	100.0%	0.90	0.90
Total Area	793	100%		0.90

17 Elm Street

Mixed Use Development



ALLOWABLE RELEASE RATE AND STORM SERVICE DESIGN

2 / 100 -YEAR STORM SEWER DESIGN SHEET

$$I_{2\text{-year}} = \frac{21.8}{(T)^{0.75}} = 88.19 \text{ mm/hr}$$

$$I_{100\text{-year}} = \frac{59.7}{(T)^{0.80}} = 250.32 \text{ mm/hr}$$

Project Name: 17 Elm Street

Project Number: 137680

Date: 19 August 2022

Designed By: Jason Jenkins, P.Eng.

	From MH	To MH	DESIGN FLOW CALCULATIONS							SEWER DESIGN & ANALYSIS										Notes	
			A (ha)	R	A x R	Accum. A x R	T _c (min)	I (mm/hr)	Q _{act} (l/s)	Size of Pipe (mm)	Slope (%)	Nominal Capacity Q _{cap} (L/s)	Full Flow Velocity (m/s)	Actual Velocity (m/s)	Length (m)	Time in Sect. (min)	Total Time (min)	Percent of Full Flow (%)			
ALLOWABLE RELEASE RATE																					
Allowable Release Rate (Total Site)			0.0793	0.50	0.040	0.040	10.0	88.2	9.7												
Uncontrolled Flow			0.0000	0.90	0.000	0.000	10.0	88.2	0.0												
Controlled Allowable Release Rate									9.7												
100-YEAR FLOWS																					
Subject Site (Un-Attenuated)			0.0793	0.90	0.071	0.071	10.0	250.3	49.6												
ORIFICE AND SERVICE DESIGN																					
			k		Orif.(mm)	Area (m2)	depth (m)	head (m)	Q (L/s)												
Orifice and Storm Service	Tank	Cntrl.MH		k=0.6	75	0.00442	0.61	0.58	9.4	200	2.00%	46.4	1.5	1.1	7.8	0.1	10.1	20%			
Storm Service	Cntrl MH	1200mm STM							9.4	200	2.00%	46.4	1.5	1.1	10.7	0.1	10.1	20%			

17 Elm Street

Rational Method - 100 Year Storm

Mixed Use Development



$$I_{100\text{-year}} = \frac{59.7}{(10)^{0.80}} = 250.32 \text{ mm/hr}$$

Project Name:	17 Elm Street	Controlled Area =			0.0793
Project Number:	137680	Weighed Runoff Coefficient =			0.85
Date:	19 August 2022	Orifice Discharge (L/s) =			9.4
Time (min)	Intensity (mm/hr)	Q-100 (L/s)	Q-Infiltrated (L/s)	Q-stored (L/s)	Storage Volume (m ³)
0	0.0	0.000	1.19	0.000	0.000
10	250.3	47.123	1.19	38.943	23.366
20	143.8	27.065	1.19	18.885	22.662
30	103.9	19.567	1.19	11.387	20.497
40	82.6	15.545	1.19	7.365	17.675
50	69.1	13.003	1.19	4.823	14.470
60	59.7	11.239	1.19	3.058	11.010
70	52.8	9.935	1.19	1.755	7.369
80	47.4	8.928	1.19	0.748	3.590
90	43.2	8.125	1.19	0.000	0.000
100	39.7	7.468	1.19	0.000	0.000
110	36.8	6.920	1.19	0.000	0.000
120	34.3	6.455	1.19	0.000	0.000
130	32.2	6.054	1.19	0.000	0.000
140	30.3	5.706	1.19	0.000	0.000
150	28.7	5.400	1.19	0.000	0.000
160	27.2	5.128	1.19	0.000	0.000
170	25.9	4.885	1.19	0.000	0.000
180	24.8	4.667	1.19	0.000	0.000
190	23.7	4.469	1.19	0.000	0.000
200	22.8	4.289	1.19	0.000	0.000
210	21.9	4.125	1.19	0.000	0.000
220	21.1	3.975	1.19	0.000	0.000
230	20.4	3.836	1.19	0.000	0.000
240	19.7	3.707	1.19	0.000	0.000
250	19.1	3.588	1.19	0.000	0.000
260	18.5	3.477	1.19	0.000	0.000
270	17.9	3.374	1.19	0.000	0.000
280	17.4	3.277	1.19	0.000	0.000
290	16.9	3.186	1.19	0.000	0.000
300	16.5	3.101	1.19	0.000	0.000
310	16.0	3.021	1.19	0.000	0.000
320	15.6	2.945	1.19	0.000	0.000
330	15.3	2.874	1.19	0.000	0.000
340	14.9	2.806	1.19	0.000	0.000
350	14.6	2.741	1.19	0.000	0.000
360	14.2	2.680	1.19	0.000	0.000

Storage Volume Required (cu.m) = **23.4**
 Storage Volume Provided (cu.m) = **152.0**
 HGL Depth (m) = 0.6
 Orifice Diameter (mm) = 75

17 Elm Street

Mixed Use Development

**Water Quality Calculations**

Project Name: 17 Elm Street
 Project Number: 137680
 Date: 19 August 2022
 Designed By: Jason Jenkins, P.Eng.

TSS Removal (Un-Treated)

Surface	Area (m ²)		Effective TSS Removal	Overall TSS Removal
Conventional Roof	650	82%	80	65.6
Extensive Green Roof	0	0%	80	0.0
Intensive Green Roof	90	11%	80	9.1
Landscape	0	0%	80	0.0
Landscape over P1	0	0%	80	0.0
Permeable Pavers	0	0%	80	0.0
Impervious (Clean)	53	7%	80	5.3
Impervious (Dirty)	0	0%	0	0.0
Total Area:	793	100%		80.0

Site Meets 80% TSS Removal



Can not achieve 7mm from 5 mm storm. 5mm is recommended.

Water Balance Calculations

Project Name: 17 Elm Street
Project Number: 137680
Date: 19 August 2022
Designed By: Jason Jenkins, P.Eng.

Total Volume to be Retained	
Required Water Balance (mm):	5.0
Recall Site Area (m ²):	793
Total Water Balance to be Retained (m ³):	4.0

Volume Achieved Through Initial Abstraction				
Surface	Area (m ²)		I.A.	Vol. (m ³)
Conventional Roof	650		1	0.7
Extensive Green Roof	0		5	0.0
Intensive Green Roof	90		7	0.6
Landscape	0		5	0.0
Landscape over P1	0		5	0.0
Permeable Pavers	0		5	0.0
Impervious (Clean)	53		1	0.1
Impervious (Dirty)	0		1	0.0
Total Area:	793			1.3

Water Balance Summary		Vol. (m ³)
Recall Initial Abstraction (see above):		1.3
Water Re-Use (Irrigation):		1.1
Water Re-Use (Toilet Flushing):		1.6
Total Water Balance Achieved:		4.0

Site Meets City's Water Balance Criteria

Check Tank Capacity to Capture Re-Use Volume	
Area of SWM Tank (m ²):	38.0
Float Switch Operating Range (m):	0.07
Total Water Balance Achieved:	2.7

SWM Tank has sufficient capacity for Re-Use Volumes

Per email correspondences with the City, 7mm is to be accepted for Intensive green roof. Email included in Appendix C. Calculations are not done by looking at a 5mm rainfall event, they are done to capture half of the average rainfall which is a 10mm event

Appendix D

Sanitary Analysis

Sanitary Service Design Calculations

17 Elm Street

Mixed use development



Sanitary Sewer Design Sheet

NOTES: Post-development domestic sewage flow based upon a unit flow of 240.0 Lpcd.

Maximum flow velocity for pipe flowing full = 3.0 m/s.

Minimum flow velocity for pipe flowing partially full (actual flow) = 0.6 m/s.

Infiltration= **0.26 L/s/ha**

Mannings= **0.013**

Project Name: 17 Elm Street

Project Number: 137680

Date: August 19, 2022

Designed By: Jason Jenkins, P.Eng.

	From	To	DESIGN FLOW CALCULATIONS											SEWER DESIGN & ANALYSIS						Notes		
			Area (ha)	Density	Population	Cumulative Area (ha)	Cumulative Population	Peaking Factor	Sewage Flow (L/s) (1)	Infiltration Flow (L/s) (2)	Ground Water (L/s) (3)	Stormwater Flow (L/s) (4)	Total Flow, Qd (L/s) (1)+(2)+(3)+(4)	Nominal Diameter (mm)	Pipe Slope (%)	Pipe Length (m)	Full Flow Capacity, Qf (L/s)	Full Flow Velocity (m/s)	Actual Velocity V (m/s)		Percent of Full Flow (%)	
Pre-Development																						
			0.0793		9	0.0763	9		0.026	0.02	0.0	9.7	9.7									
Post-Development																						
	Services																					
240 and 250 L/cap/day	Cntrl MH	200 San Sewer	0.0793		321	0.0763	321	4.07	3.62	0.020	0.0		3.6									
450L/cap/day			0.0793		321	0.0763	321	4.07	6.79	0.020	0.0		6.8	200	2.0%	21.5	48.4	1.49	1.05	14.1%		

Pre-Development			
	Units / Area	Density	Population
Retail	737 m2	1.1 pp/100m2	8
			0
			Pop. = 9

Post-Development			
	Units / Area	Density	Population
1 Bedroom	100	1.4 pp/unit	140
2 Bedroom	51	2.1 pp/unit	107
3 Bedroom	23	3.1 pp/unit	71
Retail	212 m2	1.1 pp/100m2	2
			Pop. = 321

Appendix E

Water Analysis

Hydrant Flow Test (Elm Street)

Water Demand and Fire Demand Calculations

Fire Resistive Construction Confirmation Letter



HYDRANT FLOW TESTING

NOTE: Hydrants tested according to NFPA 291: Recommended Practice for Fire Flow Testing and Marking of Hydrants

GENERAL INFORMATION

General Information

Date of Testing	20-Jul-22
Project Number:	137680-task8
Site Location / Address:	17 Elm St
Region / Municipality	Toronto
Hydrants Opened By:	Toronto
Tested by:	Daniel S Val V

HYDRANT TEST INFORMATION

Hydrant Test Location - Residual Hydrant=R, Flow Hydrant=F (North at Top)



Test Data

Time of Test 1:08 PM
Pipe Size (mm) 150
Flow Hydrant Test Location (description) 13 Elm St
Residual Hydrant Test Location (description) 31 Elm St
Static Pressure(PSIG) 61

Q1 Test Data (1 Orifice)

# OUTLETS	ORIFICE SIZE(IN)	PITOT PRESSURE(PSIG)	FLOW(USGPM)	RESIDUAL PRESSURE(PSIG)
1	2.5	<5 psi	<375	36

QT Test Data (2 Orifices)

# OUTLETS	ORIFICE SIZE(IN)	PITOT PRESSURE(PSIG)	FLOW(USGPM)	RESIDUAL PRESSURE(PSIG)
2	2.5	-	-	32

Calculations

FORMULA: $Q = 29.83 \text{ cd}^2 \sqrt{p}$Where: c- coefficient of discharge (1 in smooth pipe)
..... d- pipe diameter (inches)
.....p- pitot reading (psig)

Q1 - 1 Orifice(s) $Q1 = (29.83)(0.9)(2.5)^2 \sqrt{5} < 375$
QT - 2 Orifice(s) QT = -
Static Pressure(PSIG) 61

Additional Information

Notes/ Comments Low flow was observed during the test.

17 Elm Street
Mixed-use development



DOMESTIC WATER DEMAND CALCULATIONS

Project Name: 17 Elm Street
Project Number: 137680
Date: August 19, 2022
Designed By: Jason Jenkins, P.Eng.

1. Based on the City of Toronto Standards and
2. OBC, Part 8 "Sewage Systems", OBC Table 8.2.1.3.A and 8.2.1.3.B
3. ADD = 190 L/cap/day for residential uses

Peaking Factors		
Land Use	Peak Hour	Maximum Day
Residential	2.50	1.30
Commercial	1.20	1.10

	Units / Area	Density	Population	ADD (L/s)	(ADDxP.F.) PHD (L/s)	(ADDxP.F.) MDD (L/s)
1 Bedroom	100 units	1.4 pp/unit	140	0.3	0.8	0.4
2 Bedroom	51 units	2.1 pp/unit	107	0.2	0.6	0.3
3 Bedroom	23 units	3.1 pp/unit	71	0.2	0.4	0.2
Retail	212 m2	1.1 pp/100m2	2	0.0	0.0	0.0
Totals			321	0.7	1.8	0.9

17 Elm Street

Mixed-use development



FIRE FLOW DEMAND CALCULATIONS

Project Name: 17 Elm Street
 Project Number: 137680
 Date: August 19, 2022
 Designed By: Jason Jenkins, P.Eng.

Based on the Water Supply for Public Fire Protection Manual, 1999 by the Fire Underwriters Survey

Step 1: Calculate Fire Flow (based on area)

Construction Coefficient =	0.6	
Largest Floor Area =	1,134	m2
Floor Above =	788	m2
Floor Below =	1,134	m2
Area =	1,615	m2
Fire Flow (F) =	5,000	L/min

F = required fire flow (L/min)

$$F = 220C\sqrt{A}$$

C = coefficient related to type of construction

- 0.6 for fire resistive (fully protected, 3-hr ratings)
- 0.8 for non combustable (i.e. unprotected metal buildings)
- 1.0 for ordinary construction
- 1.5 for wood frame construction

A = total floor area excluding basements 50% below grade

* If vertical openings are inadequately protected, consider two largest two largest adjoining floors plus 50% of each of any floors above up to eight floors.

* If vertical openings are adequately protected (one hour rating), consider largest floor area + 25% of two immediately floors.

Step 2: Adjustment for Building Occupancy (shall not be less than 2000 L/s)

Occupancy Adjustment =	-0.15	
F ₁ = Fire Flow x Adjustment =	4,250	L/min

Non-Combust.	-25%	Free Burning	15%
Limited Comb.	-15%	Rapid Burning	25%
Combustable	No change		

Step 3: Adjust F1 for Fire Suppression System

Sprinkler Adjustment =	30%	
F ₂ = F ₁ x Adjustment =	1,275	L/min

Automatic Sprinklers (monitored)	-50%
Adequately Designed System	-30%

Step 4: Adjust F1 for Exposure / Proximity (shall not exceed 75%)

Proximity Adjustment =	75%	(max 75%)
F ₃ = F ₁ x Factor =	3,188	L/min

Separation	Adjustment	Separation	Adjustment
0m to 3m	25%	20.1m to 30m	10%
3.1m to 10m	20%	30.1m to 45m	5%
10.1m to 20m	15%		

Step 5: Calculate Adjusted Fire Flow (shall not be less than 2000 L/min or greater than 45,000 L/min)

F ₁ =	4,250	L/min
- F ₂ =	1,275	L/min
+ F ₃ =	3,188	L/min
Fire Flow =	6,000	L/min
Fire Flow =	100.0	L/s
Total Demand (Fire Flow + MDD) =	100.9	L/s

$$\text{Fire Flow} = F_1 - F_2 + F_3$$

Checks:

Fire Flow greater than 2000 L/min
 Fire Flow less than 45,000 L/min

17 Elm Street – Fire Restrictive Criteria Confirmation Letter

Project:

17 Elm Street

Date: August 9th, 2022**# of Pages:** 01

To whom it may concern,

Please be advised that the above-referenced building will be constructed in compliance with the 2015 Ontario Building Code (OBC), and equipped with a Fire Protection System conforming to the NFPA 13 Standards for Installation of Sprinkler Systems and specifically:

1. All structural members and floors will be of fire resistive construction per the Fire Underwriters Survey (FUS) 1999 with 2-hour ratings per the OBC.
2. All vertical openings and exterior vertical communications will be constructed with a 1-hour fire rating.

Thank you,



Alex Josephson

Partner, PARTISANS