Report
Project: 135883-6.04.01

DESIGN BRIEF
255 RICHMOND ROAD

Prepared for Y Street Capital C/O Vince Colizza Architects
by IBI Group
April 3, 2023

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APPENDICIES:

1 INTRODUCTION

1.1 Scope

The purpose of this report is to outline the required municipal services, including water supply, stormwater management and wastewater disposal, needed to support the redevelopment of the subject property. The property is approximately 0.21 hectares in area and is an assembly of parcels of land comprised of 249-255 Richmond Road and 372 Tweedsmuir Ave.

The subject site is bounded by Tweedsmuir Ave to the east, and Richmond Road to the south, as well as existing commercial lands to the west and residential lands to the north. Refer to Figure 1 in **Appendix A** for site location.

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

1.2 Subject Site

The proposed development consists of one mixed use multi-storey building consisting of 104 residential units, retail on the first floor fronting Richmond Road, and underground parking to support the proposed building. A copy of the proposed Site Plan, prepared by Vince Colizza Architects is included in **Appendix A**. The plan illustrates the building occupying most of the parcel and vehicular access to the site is provided from Tweedsmuir Ave.

The site currently consists of several commercial buildings (Ottawa Medispa, Capital Printers, Rikochet Resale, and Whispers Pub) and a residential building. All existing structures within the subject property will be demolished to facilitate the proposed development.

1.3 Pre-consultation

A pre-consultation meeting with the City of Ottawa was held regarding the proposed development. Notes from this meeting may be found in **Appendix A**. No significant constraints relating to the site servicing or stormwater management for the subject lands were identified during the consultation.

2 WATER DISTRIBUTION

2.1 Existing Conditions

The proposed development is located within the City of Ottawa pressure zone 1W. There is a 300 mm diameter watermain along Richmond Road and a 150mm diameter watermain along Tweedsmuir Ave, both mains service the existing buildings within the subject parcel. Existing services within the project site will be disconnected and abandoned per City of Ottawa Standards. A survey of the subject parcel was completed by Farley, Smith, Denis Surveying Ltd. and is included in **Appendix B** the survey illustrates the location of the existing water plant adjacent to the site.

2.2 Design Criteria

2.2.1 Water Demands

The proposed development plan includes 104 residential units, as well as some commercial space on the first floor. Water demands have been calculated for the full development. Per unit population density and consumption rates are taken from Tables 4.1 and 4.2 at the Ottawa Design Guidelines – Water Distribution and are summarized as follows:

- ICI Average Day Demand 2500 l/m^2/day
- ICI Peak Daily Demand 3750 l/m^2/day
- ICI Peak Hour Demand 6750 l/m^2/day
- Residential Average Day Demand 280 l/cap/day
- Residential Peak Daily Demand 700 l/cap/day
- Residential Peak Hour Demand 1540 l/cap/day

A watermain demand calculation sheet is included in **Appendix B** and the total water demands are summarized as follows:

- Average Day 0.59 l/s
- Maximum Day 1.46 l/s
- Peak Hour 3.20 l/s

The watermain demand calculation was forwarded to the city to determine the boundary conditions at the site, copy of the boundary conditions is included in **Appendix B** and summarized below.

	Richmond Connection	Tweedsmuir Connection
Minimum HGL	108.7	108.7
Maximum HGL	114.9	114.9
Max Day + FireFlow (133.3 L/s)	110.0	104.4

2.2.2 System Pressures

The 2010 City of Ottawa Water Distribution Guidelines states that the preferred practice for design of a new distribution system is to have normal operating pressures range between 345 kPa (50 psi) and 552 kPa (80 psi) under maximum daily flow conditions. Other pressure criteria identified in the guidelines are as follows:

Minimum Pressure	Minimum system pressure under peak hour demand conditions shall not be less than 276 kPa (40 psi).
Fire Flow	During the period of maximum day demand, the system pressure shall not be less than 140 kPa (20 psi) during a fire flow event.
Maximum Pressure	Maximum pressure at any point in the distribution system in unoccupied areas shall not exceed 689 kPa (100 psi). In accordance with the Ontario Building/Plumbing Code the maximum pressure should not exceed 552 kPa (80 psi) in occupied areas. Pressure reduction controls may be required for buildings where it is not possible/feasible to maintain the system pressure below 552 kPa.

2.2.3 Fire Flow Rate

A calculation using the Fire Underwriting Survey (FUS) method was conducted to determine the fire flow requirement for the site. The building is considered non-combustible construction and is fully sprinklered. Results of the analysis provides a maximum fire flow rate of 8,000 l/min or 133.3 l/s is required which is used in the hydraulic analysis. A copy of the FUS calculation is included in **Appendix B**.

2.3 Proposed Water Plan

Two proposed 150mm diameter water services will connect the building to the municipal system. It is proposed to provide a connection to both Tweedsmuir and Richmond mains for redundancy purposes, see site servicing plan 135883-C-001 in **Appendix E**. An existing valve chamber separates the two connections. Two existing fire hydrants are expected to provide fire flow coverage for the site, as can be seen in **Figure 2.2** in **Appendix B**. For the purposes of this report, assuming a minimal loss within the service connection the pressures within the site can be estimated as follows:

Minimum Pressure (Peak Hour) – The minimum peak hour pressure on the site can be estimated as HGL 108.7m – meter elevation (assumed to be 1m above level P1) 63.06m = 45.64m or 447.46 kPa which exceeds the minimum requirement of 276 kPa. The pressure on the top floor can be estimated as 108.7m – 92.58m = 16.12m or 158.1 KPa which is below the minimum of 276 kPa and will require a water pump.

Fire Flow – On Richmond Rd, the max day plus fire flow can be estimated as HGL 110.0 – ground floor 67.47 = 42.53m or 417.2 KPa which exceeds the minimum of 140kPa. On Tweedsmuir Ave, the max day plus fire flow can be estimated as HGL 104.4 – 67.47 = 36.93m or 362.3 KPa which also exceeds the minimum of 140kPa.

Max HGL (High Pressure Check) – The high-pressure check can be estimated as HGL 114.9 – lowest level) 55.66 = 59.24m or 580.8 KPa which exceeds the maximum of 552 kPa, therefore a pressure reducing valve is required.

The above results indicate the municipal infrastructure can support the proposed development.

All existing water services will be located and abandoned per City of Ottawa specifications.

Two hydrants are available to service the subject property as seen in **Figure 2**. Both hydrants are within 75m of the building's Siamese connection. With 2 AA hydrants within 75m of the building the minimum number of hydrants needed to deliver the required fire flow to the structure is being provided in accordance with Technical Bulletin ISTB-2018-02 dated March 21, 2018.

BUILDING ID	FIRE FLOW DEMAND (L/MIN)	FIRE HYDRANT(S) WITHIN 75M (5,700 L/MIN)	FIRE HYDRANT(S) WITHIN 150M (3,800 L/MIN)	COMBINED FIRE FLOW (L/MIN)
255 Richmond	8,000	2	0	11,400

3 WASTEWATER SYSTEM

3.1 Existing Conditions

Municipal sanitary sewers abut the property along both Richmond Road and Tweedsmuir Ave, which provide servicing to the existing properties. A survey of the subject parcel was completed by Farley, Smith, Denis Surveying Ltd. and is included in **Appendix B** the survey illustrates the location of the existing sanitary sewers adjacent to the site.

3.2 Design Criteria

The sanitary flows for the development are based on the City of Ottawa design criteria which includes, but it not limited to the following criteria:

- Average Residential Flow — 280 l/p/d
- Average Population density — 1.8 PPU for apartments
- Residential Peaking Factor — Harmon Formula [max = 4.0, min. = 2.0]
- Retail Flow — 5 l/m^2/d
- Restaurant Flow — 125 l/seat/d
- ICI Peaking factor — 1.5 if ICI in contributing area >20%
1.0 if ICI in contributing area <20%
- Infiltration allowance — 0.33 l/s/ha
- Velocities — 0.60 m/s min. to 3.0 m/s max.

3.3 Recommended Wastewater Plan

It is proposed to abandon the existing services for 372 Tweedsmuir and 249-255 Richmond, in accordance with City of Ottawa specifications. The sanitary sewer design sheet in **Appendix C** confirms the proposed service lateral to service the proposed building has sufficient capacity to accommodate the development.

The proposed development is a mixed-use development designed to provide a higher density meet this City objective of more intensification to maximize use of existing infrastructure. The following reviews the impact of increased density on the volume of wastewater to be generated from the proposed development. The existing municipal sanitary sewer system that services these parcels would have been designed based on commercial sewage loading of 50,000 l/Ha/d and infiltration allowance of 0.28 l/s/Ha, for the 0.21 Ha site would result in an average flow of 0.187 l/s.

Avg commercial flow: 50,000 l/Ha/d X 0.218 Ha=10,900 l/d = 0.126 l/s

Infiltration allowance: 0.218 Ha X 0.28 l/s/Ha = 0.061 l/s,

Original avg. design flow, 0.126 + 0.061 = 0.187 l/s

The proposed mixed-use development includes residential and commercial uses. Based on the previously noted flow rates of 280 l/p/d for residential, 5 l/m^2/d for retail, and 125 l/seat/d for the

restaurant portion, including an ICI peaking factor of 1.5, the average wastewater flow plus infiltration allowance calculates to 0.81 l/s, as noted below:

Avg pop flow: 177 (61 units @ 1.4ppu, 42 units @ 2.1ppu & 1 unit @ 3.1ppu) X 280 l/p/d = 49,560 l/d = 0.57 l/s

Plus retail flow of 5 l/m^2/d X 391m^2 X 1.5 = 1,955 l/d = 0.034 l/s,

and restaurant flow of 125 l/seat/d X 60 seats X 1.5 = 7500 l/d = 0.130 l/s

avg flow = 0.57+0.034+0.130 = 0.734 l/s

Infiltration allowance: 0.218Ha X 0.33l/s/Ha = 0.072 l/s,

Rezoned avg flow, 0.734 + 0.072 = 0.806 l/s

The proposed redevelopment results in a theoretical increase in average flow to the downstream system of 0.806-0.187= 0.619 l/s. The sanitary service connection is to an existing 375mm dia sanitary sewer which discharges into the 1500 mm dia West Nepean Collector at the end of Tweedsmuir Ave, given the size of these sewers and that City Staff have not advised of any downstream issues, that there is ample available capacity to accommodate the proposed redevelopment. The proposed design meets City of Ottawa and MOE requirements. Existing services within the project site will be disconnected and abandoned per City of Ottawa Standards.

4 STORMWATER MANAGEMENT

4.1 Existing Conditions

During the Pre-consult with the City no infrastructure concerns were noted, and follow-up memo was provided by the City along with the preconsult meeting notes, the stormwater infrastructure comments are summarized below:

Available Infrastructure:

Tweedsmuir Avenue, Storm: 1200mm Conc (Install 2002)

Richmond Road, Storm: 375mm PVC (Install 2004)

Stormwater Management:

Coefficient (C) of runoff determined as per existing conditions but in no case more than 0.5

TC = To be calculated, minimum 10 minutes

Any storm events greater than 2 year, up to 100 year, and including 100-year storm event must be detained on site.

Foundation drains are to be independently connected to sewer main unless being pumped with appropriate back up power, sufficient sized pump and back flow prevention.

Roof drains are to be connected downstream of any incorporated ICD within the SWM system.

Stormwater management criteria (Quality Control):

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

As noted above there is a 1200 mm diameter storm sewer along Tweedsmuir Ave and a 375mm diameter storm sewer along Richmond Road, both sewers service the existing buildings within the subject parcel. Existing services within the project site will be disconnected and abandoned per City of Ottawa Standards. A survey of the subject parcel was completed by Farley, Smith, Denis Surveying Ltd. and is included in **Appendix B** the survey illustrates the location of the existing storm sewers adjacent to the site.

4.2 Design Criteria

As noted in the preconsult memo the City of Ottawa requires the site to follow the following design criteria;

- Storm sewers designed to a 2 year level of service
- Site to be designed to limit the 100 year post development flow to a maximum of the 2 year rate with C=0.5.

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

Some of the key criteria include the following:

- Design Storm — 1:2 year return (Ottawa)
- Rational Method Sewer Sizing
- Initial Time of Concentration — 10 minutes
- Runoff Coefficients
  - Landscaped Areas — C = 0.25
  - Asphalt/Concrete — C = 0.90
  - Roof — C = 0.90
- Pipe Velocities — 0.80 m/s to 6.0 m/s
- Minimum Pipe Size — 250 mm diameter

4.3 Proposed Minor System

Using the above-noted criteria, the proposed storm service lateral was sized accordingly. The storm sewer design sheet and the associated storm sewer drainage area plan are included in **Appendix D**. The site servicing drawing in **Appendix E** illustrates the proposed building above grade outline, and where the underground structure extends beyond the above grade building. All decks and roof drains will be routed inside the building via the mechanical plumbing systems and directed to the building cistern located adjacent to the northeast corner of the building. Two landscaped areas will be serviced by rear yard catchbasins, these catchbasins will discharge into the building plumbing system and will be directed to the building cistern. The cistern will be equipped with duplex storm pumps to control the flow rate of the storm water runoff from the site

directed to the municipal storm sewer system. The pumps will discharge to a storm sewer lateral which will also service as an outlet for the building foundation drain.

4.4 Stormwater Management

The subject site will be limited to a release rate established using the criteria described in section 4.2. This will be achieved through a duplex storm pump system set to discharge at the identified release rate. When rainfall events generate flows that are more than the site's allowable release rate excess volume will be stored within the cistern.

At certain locations within the site, the opportunity to capture runoff is limited due to grading constraints and building geometry. These locations are generally located at the perimeter of the site where it is necessary to tie into public boulevards and adjacent properties, and it is not always feasible to capture stormwater runoff. These "uncontrolled" areas total 0.016 hectares. The runoff from the remaining site will be collected and discharged into the cistern, sized to accommodate inflow during the 1:100-year event with no overflow leaving the site.

The restricted release rate for the 0.218 Ha site as noted previously is limited to the 2yr flow with C-=0.5

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

C = **0.5**

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

= $732.951 \times (T_c + 6.119)^{0.810}$ = 78.61 mm/hr; where T_c = 10 minutes

$\mathbf{Q_{restricted}}$ = **23.28l/s**

As noted above, a portion of the site will be left to discharge to the surrounding boulevards and roadways uncontrolled.

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

$\mathbf{Q_{uncontrolled}}$ = **2.78** x **C** x $\mathbf{i_{100yr}}$ x **A** where:

$\mathbf{C_{100}}$ = Average runoff coefficient of uncontrolled area = 1.00

$\mathbf{i_{100yr}}$ = Intensity of 100-year storm event (mm/hr)

= $1735.688 \times (T_c + 6.014)^{0.820}$ = 178.56 mm/hr; where T_c = 10 minutes

$\mathbf{A_{1+2+3}}$ = Uncontrolled Area = 0.010 Ha +0.001 Ha+ 0.005 Ha = 0.016 Ha

Therefore, the uncontrolled release rate can be determined as:

$\mathbf{Q_{uncontrolled}}$ = **7.94 L/s**

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

$\mathbf{Q_{max\ allowable}}$ = $\mathbf{Q_{restricted} - Q_{uncontrolled}}$

= 23.28 L/s – 7.94 L/s = **15.34 L/s**

As noted in the preconsult notes, any excess storm water runoff up to the 100-year event is to be stored on-site, in order to not surcharge the downstream municipal storm sewer system. For this site a building cistern will be used, no roof top or surface storage will be employed. A duplex storm pump will be designed to limit discharge from the tank to 15.00 L/s to meet the maximum allowable release rate to the storm sewer system. The Modified Rational Method was used to identify the required storage, the MRM spreadsheet in **Appendix D** identifies the required storage to accommodate the 1:100yr and 1:2yr events. The following table summarizes the on-site storage requirements during both the events.

AREA	TRIBUTARY AREA	AVAILABLE STORAGE (M^3)	100-YEAR STORM		2-YEAR STORM	
			RESTRICTED FLOW (L/S)	REQUIRED STORAGE (M^3)	RESTRICTED FLOW (L/S)	REQUIRED STORAGE (M^3)
Roof & Deck	0.202	70	15.00	65.96	15.00	14.68
Unrestricted	0.016		7.94		3.07	
TOTAL	**0.218**	**70**	**22.94**	**65.96**	**18.07**	**14.68**

In all instances the required storage is met with the building cistern.

As demonstrated above, the proposed site controls will restrict the 100-year storm event runoff from the site into the existing storm sewer system to 23.28 l/s. Restricted stormwater will be contained onsite by the building cistern. Should a more extreme event occur, or should a roof inlet become blocked, scuppers will provide for overflow to the street. In the unlikely event the duplex pump system fails, or the storm service lateral is blocked, an emergency overflow from the building cistern to the street is provided.

5 SOURCE CONTROLS

5.1 General

The existing municipal storm sewer system collects and conveys storm runoff to the Ottawa river without any end of pipe quality treatment for captured stormwater. On site level or source control management of runoff will be provided. The proposed building configuration consists of a podium covering most of the site and no onsite surface parking or exposed drive lanes are proposed. Surface runoff will be collected and controlled by a cistern and duplex pump system. It is proposed to include a sump within the cistern. The sump will trap pollutants such as sand, grit and debris which can be mechanically removed prior to being flushed into the minor pipe system. The underground garage extends beyond the above grade building at the cistern location allowing for a maintenance hole exterior to the building to facilitate the use of a vacuum truck to clean out any debris/sediment from the tank as needed.

6 SEDIMENT AND EROSION CONTROL PLAN

6.1 General

During construction, existing conveyance systems can be exposed to significant sediment loadings. Although construction is only a temporary situation, it is proposed to introduce a number of mitigative construction techniques to reduce unnecessary construction sediment loadings. These include:

- Installation of filter cloths on open surface structures such as maintenance holes and catchbasins during building construction.
- Installation of silt fence on the site perimeter, where practical.

The Erosion and Sedimentation Control measures are detailed in drawing 135883-C-900 in **Appendix E**.

6.2 Trench Dewatering

Although little groundwater is expected during construction of municipal services, any trench dewatering using pumps will be discharged into a filter trap made up of geotextile filters and straw bales similar in design to the OPSD 219.240 Dewatering Trap. These will be constructed in a bowl shape with the fabric forming the bottom and the straw bales forming the sides. Any pumped groundwater will be filtered prior to release to the existing surface runoff. The contractor will inspect and maintain the filters as needed including sediment removal and disposal and material replacement as needed.

6.3 Surface Structure Filters

All catchbasins, and to a lesser degree manholes, convey surface water to sewers. However, until the surrounding surface has been completed these structures should be covered in some fashion to prevent sediment from entering the minor storm sewer system. Until landscaped areas are sodded or until drive isles and parking lots are asphalted and curbed, catchbasins and manholes will be constructed with geotextile filter bags or a geotextile filter fabric located between the structure frame and cover respectively. These will stay in place and be maintained during construction and build until it is appropriate to remove.

7 SOILS and GRADING

Paterson Group was retained to prepare a geotechnical investigation for the proposed development. The objectives of the investigation were to prepare a report to:

- Determine the subsoil and groundwater conditions at the site by means of test holes.
- To provide geotechnical recommendations pertaining to design of the proposed development including construction considerations.

The geotechnical report PG5946-1 rev 2, "Geotechnical Investigation 249, 255 Richmond Road and 372 Tweedsmuir Ave." dated September 24, 2021. A copy of the report has been included with the SPA application. The report contains recommendations for building construction and site services, which include but are not limited to the following for site servicing:

- At least 300 mm of OPSS Granular A should be used for pipe bedding for sewer and water pipes. The bedding should extend to the spring line of the pipe. Cover material, from the spring line to at least 300 mm above the obvert of the pipe, should consist of OPSS Granular A or Granular B Type II with a maximum size of 25 mm. The bedding and cover materials should be placed in maximum 225 mm thick lifts compacted to 99% of the material's standard Proctor maximum dry density.
- The pavement granular base and subbase should be placed in maximum 300 mm thick lifts and compacted to a minimum of 99% of the material's SPMDD
- Long term groundwater level is expected to range between 5 to 7m below grade
- No Grade raise restrictions were noted.

MATERIAL	Layer Thickness
• **Access Lanes**	
• Asphalt Wearing Course (Superpave 12.5)	• 40 mm
• Asphalt Binder Course (Superpave 19.0)	• 50 mm
• Well Graded Granular Base Course (Granular 'A')	• 150 mm
• Well Graded Granular Sub-Base Course (Granular 'B' Type II)	• 300 mm

A topographic survey of the subject parcel was completed by Farley, Smith, Denis Surveying Ltd. and is included in **Appendix B** the survey illustrates spot elevations within and along the perimeter of the site. The topo survey reveals the high point on the site is where the property lines along Richmond Road and Tweedsmuir Ave. intersect. Along the Richmond Road frontage, the elevation drops 0.28m across the 61m frontage for an average slope of 0.46%, along Tweedsmuir Ave frontage, the elevation drops 2.05m across 57m frontage for an average slope of 3.6%. To take advantage of the drop in elevation along Tweedsmuir the ramp to the underground parking was located along that frontage. To deal with the elevation drop across Tweedsmuir Ave.and provide barrier free access at the various entrances the ground floor Finished Floor elevation drops from 67.47 for the retail entrances along Richmond Road, to 66.47 for the tower lobby, and 66.73 with steps for the north entrance. Detailed grading plan 135883-C-200 is provided in **Appendix E**.

8 Conclusions

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

This report has demonstrated sanitary and storm flows from and water supply to the subject site can be accommodated by the existing infrastructure. Also, the proposed servicing has been designed in accordance with MECP and City of Ottawa current level of service requirements.

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

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

Report prepared by:

Demetrius Yannoulopoulos, P.Eng.
Director

S.E. Labadie, P.Eng.
Project Engineer

APPENDIX A

J:\135883_255_Richmond\7.0_Production\7.03_Design\04_Civil\Sheets\FIGURES\FIGURE-1-SITELOCATION.dwg Layout Name: Layout1

IBI

Project Title	Drawing Title	Sheet No.
255 RICHMOND ROAD	SITE LOCATION	FIGURE 1

ZONING INFORMATION

ZONE DESIGNATION

TM H(15)

ZONING REQUIREMENTS

NOTE:

MIN. LOT WIDTH REQUIRED:	NO MINIMUM
LOT WIDTH PROVIDED (NORTH PROPERTY LINE):	46.8M
LOT WIDTH PROVIDED (SOUTH PROPERTY LINE):	49.6M
MIN. LOT AREA REQUIRED (M^2):	NO MINIMUM
LOT AREA PROVIDED:	$2181.2M^2$
MAX BUILDING HEIGHT:	15.0M
BUILDING HEIGHT FROM AVG GRADE:	31.0M
MAX FRONT YARD SETBACK:	2M
FRONT YARD SETBACK(RETAIL) (VARIES AT GRADE)	0M
FRONT YARD SETBACK (RESIDENTIAL)	2M
MIN. REAR YARD SETBACK:	7.5M
REAR YARD SETBACK (FORMER R4 ZONE):	1.2M
REAR YARD SETBACK (AMENITY AREAS):	0.07M
REAR YARD SETBACK (BUILDING ABOVE GRADE):	7.5M
MAX INTERIOR SIDE YARD SETBACK:	3M
INTERIOR SIDE YARD SETBACK (FORMER R4 ZONE):	7.5M
INTERIOR SIDE YARD SETBACK (TM ZONE):	0.135M
INTERIOR SIDE YARD SETBACK (WEST):	1.2M
MIN. CORNER YARD SETBACK (EAST):	3M
MIN. CORNER YARD SETBACK (ABOVE 15M):	2M
CORNER YARD SETBACK (EAST) PROVIDED:	0M
CORNER YARD SETBACK (ABOVE 15M) PROVIDED:	2.5M
MIN. DRIVEWAY AISLE WIDTH:	6.7M
DRIVEWAY AISLE WIDTH:	6M

DEVELOPMENT INFORMATION

PROPOSED:

GROUND FLOOR G.F.A. (UNITS ONLY):	$214.88M^2$
SECOND FLOOR GFA:	$694.15M^2$
THIRD FLOOR GFA:	$1105.07M^2$
FOURTH FLOOR GFA:	$1195.00M^2$
FIFTH FLOOR GFA:	$1101.14M^2$
SIXTH FLOOR GFA:	$1071.04M^2$
SEVENTH FLOOR GFA:	$987.52M^2$
EIGHTH FLOOR GFA:	$866.64M^2$
NINTH FLOOR GFA:	$819.32M^2$
TOTAL GFA (RETAIL/LOBBY/AMENITY):	$1006.5M^2$
TOTAL GFA (RESIDENTIAL):	$8146.76M^2$
TOTAL BUILDING GFA:	$9153.26M^2$
PROPOSED # UNIT (RETAIL):	3 UNITS
PROPOSED # UNITS (RESIDENTIAL):	104 UNITS

PARKING REQUIREMENTS

NOTE:

MIN. RESIDENT PARKING STALLS REQUIRED: (STALLS/DWELLING UNIT)	0.5
MIN. VISITOR PARKING STALLS REQUIRED: (STALLS/DWELLING UNIT)	0.1
MIN. REQUIRED PARKING STALLS @ 105 UNITS:	53

PROPOSED PARKING

DRIVE AISLE WIDTH (RETAIL AND VISITOR PARKING SHARED)	6.0M
PINCH POINT IN GARAGE:	5.2M
PROPOSED RETAIL PARKING:	1
PROPOSED RESIDENTIAL PARKING:	84
PROPOSED VISITOR PARKING:	10
SUBTOTAL OF PROPOSED PARKING:	95

PROPOSED BICYCLE PARKING

REQUIRED RETAIL BICYCLE PARKING:	2
REQUIRED RESIDENTIAL BICYCLE PARKING (@ 1/UNIT):	105
SUB-TOTAL OF REQUIRED BYCYCLE PARKING:	107
PROVIDED RESIDENTIAL BICYCLE PARKING	1.8/SUITE
BICYCLE PARKING PROVIDED (UNDERGROUND):	194
BICYCLE PARKING PROVIDED (EXTERIOR):	2
BICYCLE PARKING PROVIDED (TOTAL):	196

AMENITY AREA CALCULATIONS - PROPOSED

NOTE: CALCULATIONS DONE IN ACCORDANCE WITH CITY OF OTTAWA BY-LAW 2008-250, SECTION 137 - AMENITY AREA

RESIDENTIAL TOTAL REQUIRED AMENITY AREA (MIN.): (105 UNITS @ $6.0M^2$/UNIT	$630.0M^2$
COMMUNAL AREA (MIN.): (50% OF REQ'D TOTAL AMENITY AREA)	$315.0M^2$
TOTAL RESIDENTIAL AMENITY AREA REQUIRED:	**$945.0M^2$**
TOTAL AMENITY AREA PROVIDED:	
BALCONY AREA (105 UNITS):	$705.00M^2$
INDOOR AMENITY AREA (COMMUNAL):	$187.0M^2$
OUTDOOR AMENITY AREA (COMMUNAL):	$251.00M^2$
TOTAL RESIDENTIAL AMENITY AREA PROVIDED:	**$1,143.00M^2$**
LANDSCAPED AREA REQUIRED:	NON MINIMUM
LANDSCAPED AREA PROVIDED:	$400.00M^2$
MINIMUM WIDTH OF LANDSCAPE AREA ABUTTING A RESIDENTIAL ZONE:	1.0M WITH FENCE
WIDTH OF LANDSCAPE AREA PROVIDED ABUTTING RESIDENTIAL ZONE (FORMER R4 REAR YARD):	1.2M WITH FENCE
WIDTH OF LANDSCAPE AREA PROVIDED ABUTTING RESIDENTIAL ZONE (FORMER R4 SIDE YARD):	7.5M
WIDTH OF LANDSCAPE AREA PROVIDED ABUTTING RESIDENTIAL ZONE (TM ZONE REAR YARD):	0.070M
WIDTH OF LANDSCAPE AREA PROVIDED ABUTTING RESIDENTIAL ZONE (TM ZONE ABOVE GARAGE RAMP):	7.5M

No.	DESCRIPTION	DATE	CHD
1	Issued for Zoning Amendment	[illegible]	

REVISIONS

CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND REPORT ANY OMMISSIONS OR DISCREPANCIES TO THE ARCHITECT BEFORE PROCEEDING WITH THE WORK.

DO NOT SCALE THE DRAWINGS

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

DATE 04/03/2023

DRAWN SH

DATE 04/03/2023

CHECKED VPC

DATE PRINTED 2023-04-02 11:58:43 AM

VINCENT P. COLIZZA ARCHITECT INCORPORATED

255 Richmond Road

Ottawa, ON

DWG. TITLE Site Plan

SCALE As indicated

DWG. NO. A01.00

PROJ. NO. 2219

IBI

Scale	Project Title	Drawing Title	Sheet No.
N.T.S.	255 RICHMOND ROAD	SITE PLAN	FIGURE 2

255 Richmond Road – Infrastructure Notes

Available Infrastructure:

Tweedsmuir Avenue:
Sanitary: 375mm PVC (Install 2002)
Storm: 1200mm Conc (Install 2002)
Water: 150mm PVC (Install 2001)

Richmond Road
Storm: 375mm PVC (Install 2004)
Water: 300mm PVC (Install 2004)

Water Boundary Conditions:

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

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

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

Stormwater Management:

- Coefficient (C) of runoff determined **as per existing conditions** but in no case more than 0.5
- TC = To be calculated, minimum 10 minutes
- Any storm events greater than 2 year, up to 100 year, and including 100-year storm event must be detained on site.
- Foundation drains are to be independently connected to sewer main unless being pumped with appropriate back up power, sufficient sized pump and back flow prevention.
- Roof drains are to be connected downstream of any incorporated ICD within the SWM system.

Stormwater management criteria (Quality Control)

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

Noise Study:

- Noise study required – property fronts an Arterial Road (Richmond Road).

Phase I and Phase II ESA:

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

Required Studies

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

Required Plans

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

Relevant information

1. The Servicing Study Guidelines for Development Applications are available at the following address: https://ottawa.ca/en/city-hall/planning-and-development/information-developers/development-application-review-process/development-application-submission/guide-preparing-studies-and-plans#servicing-study-guidelines-development-applications
2. Servicing and site works shall be in accordance with the following documents:
   - ⇨ Ottawa Sewer Design Guidelines (October 2012)
   - ⇨ Ottawa Design Guidelines – Water Distribution (2010)
   - ⇨ Geotechnical Investigation and Reporting Guidelines for Development Applications in the City of Ottawa (2007)
   - ⇨ City of Ottawa Slope Stability Guidelines for Development Applications (revised 2012)
   - ⇨ City of Ottawa Environmental Noise Control Guidelines (January, 2016)
   - ⇨ City of Ottawa Park and Pathway Development Manual (2012)
   - ⇨ City of Ottawa Accessibility Design Standards (2012)
   - ⇨ Ottawa Standard Tender Documents (latest version)
   - ⇨ Ontario Provincial Standards for Roads & Public Works (2013)

3. Record drawings and utility plans are also available for purchase from the City (Contact the City's Information Centre by email at InformationCentre@ottawa.ca or by phone at (613) 580-2424 x.44455).
4. Any proposed work in utility easements requires written consent of easement owner.

APPENDIX B

363499, 5028479

TOPOGRAPHIC PLAN OF SURVEY OF

PART OF LOT 4
AND ALL OF LOTS 5, 6 & 42
REGISTERED PLAN 263
CITY OF OTTAWA

FARLEY, SMITH & DENIS SURVEYING LTD. 2020

Scale 1: 150

0 1.5 3 6 9 12 15 metres

Metric Note

Distances and coordinates on this plan are in metres and can be converted to feet by dividing by 0.3048.

Distance Note

Distances shown on this plan are ground distances and can be converted to grid distances by multiplying by the combined scale factor of 0.99996.

Bearing Note

Bearings are grid, are referred to the Easterly limit of Athlone Avenue having a bearing of N 22° 48' 00" W as shown on Plan 4R-29565 and are referred to the Central Meridian of MTM Zone 9 (76°30' West Longitude) Nad-83 (Original).

Elevation Notes

1. Elevations shown are geodetic and are referred to Geodetic Datum CGVD-1928 :1978, (FSD File 246-16)
2. It is the responsibility of the user of this information to verify that the job benchmark has not been altered or disturbed and that it's relative elevation and description agrees with the information shown on this drawing.

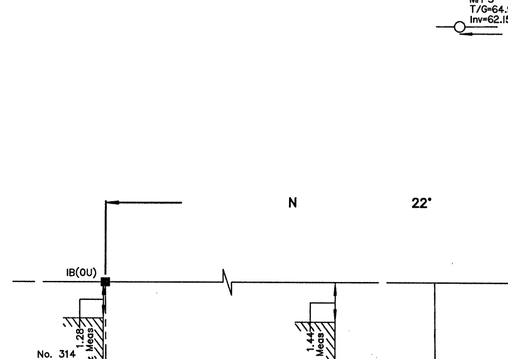
Utility Notes

1. This drawing cannot be accepted as acknowledging all of the utilities and it will be the responsibility of the user to contact the respective utility authorities for confirmation.
2. Only visible surface utilities were located.
3. Underground utility data derived from City of Ottawa utility sheet reference: E-04-15, 3378p&p02 & 13695p&p12.
4. Sanitary and storm sewer grades and inverts were compiled from: Field measurement and City of Ottawa plans.
5. A field location of underground plant by the pertinent utility authority is mandatory before any work involving breaking ground, probing, excavating etc.

Notes & Legend

Denotes

□	=	Survey Monument Planted
■	=	Survey Monument Found
SIB	=	Standard Iron Bar
SSIB	=	Short Standard Iron Bar
IB	=	Iron Bar
CC	=	Cut Cross
CP	=	Concrete Pin
(Wit)	=	Witness
Meas	=	Measured
(P1)	=	Registered Plan 263
(P2)	=	Plan 5R-10274
(P3)	=	Plan 4R-15898
(P4)	=	Plan 4R-29565
(P5)	=	Plan by (857) dated December 10, 1991 (Ref. No. 21-263 NP)
(P6)	=	Plan by (647) dated April 22, 1965
(P7)	=	Plan by (1692) dated January 9, 2019 (File No. 272-18)
(P8)	=	Plan by (1692) dated August 27, 2014 (File No. 160-14)
○ MH-ST	=	Maintenance Hole (Storm)
○ MH-S	=	Maintenance Hole (Sanitary)
○ MH-B	=	Maintenance Hole (Bell)
⊕ VC	=	Valve Chamber (Watermain)
———	=	Underground Storm Sewer
———	=	Underground Sanitary Sewer
———	=	Underground Water
———	=	Underground Power
———	=	Underground Gas
———	=	Underground Bell
———	=	Overhead Wires
○ UP	=	Utility Pole
○ AN	=	Anchor
○ LS	=	Light Standard
□ CB	=	Catch Basin
□ CBI	=	Catch Basin Inlet
⊕ WV	=	Water Valve
○ SP	=	Water Stand Post
○ GV	=	Gas Valve
○ GM	=	Gas Meter
△ S	=	Sign
⊢⊣	=	Gate
○ PO-W	=	Wood Pole
○ PO-M	=	Metal Pole
○ M-W	=	Monitoring Well
□ AC	=	Air Conditioner
Ø	=	Diameter
CLF	=	Chain Link Fence
BF	=	Board Fence
PF	=	Picket Fence
CRW	=	Concrete Retaining Wall
TRW	=	Timber Retaining Wall
Inv.	=	Invert
Inv(City)	=	Invert From City of Ottawa Plans
T/G	=	Top of Grade
U/Eave	=	Underside of Eave
T/Fdn	=	Top of Foundation
C/L	=	Centreline
+65.00	=	Location of Elevations
+65.00	=	Top of Concrete Curb/Wall Elevation
———	=	Property Line
	=	Deciduous Tree
	=	Coniferous Tree



Detail 'A' Scale 1:25

Surveyor's Certificate

I certify that :

1. This survey and plan are correct and in accordance with the Surveys Act, the Surveyors Act and the Regulations made under them.
2. The survey was completed on the 3rd day of September, 2020.

Sept. 10/20
Date

Daniel Robinson
Ontario Land Surveyor

ASSOCIATION OF ONTARIO LAND SURVEYORS
PLAN SUBMISSION FORM
2130264

THIS PLAN IS NOT VALID UNLESS IT IS AN EMBOSSED ORIGINAL COPY ISSUED BY THE SURVEYOR
In accordance with Regulation 1026, Section 29 (3).

FARLEY, SMITH & DENIS SURVEYING LTD.

ONTARIO LAND SURVEYORS
CANADA LAND SURVEYORS

190 COLONNADE ROAD, OTTAWA, ONTARIO K2E 7J5
TEL. (613) 727-8226 FAX. (613) 727-1826

FILE No. : 394-20

J:\2020\394-20_249-255 Richmond Rd_372 Tweedsmuir Ave_topo\Final\394-20_249-255 Richmond Rd_372 Tweedsmuir Ave_Lts 4,5,6 and 42 RP263_T_F.dwg

IBI GROUP
333 PRESTON STREET
OTTAWA, ON
K1S 5N4

WATERMAIN DEMAND CALCULATION SHEET

PROJECT : 255 Richmond Road
LOCATION : 255 Richmond Road
DEVELOPER :

FILE: 135883.6.04
DATE PRINTED: 03-Apr-23
DESIGN: SEL
PAGE : 1 OF 1

NODE	RESIDENTIAL UNITS 1BD	2BD	3BD	POP'N	NON-RESIDENTIAL INDTRL (ha.)	INST. (ha.)	COMM. (m^2)	AVERAGE DAILY DEMAND (l/s) Res.	Non-res.	Total	MAXIMUM DAILY DEMAND (l/s) Res.	Non-res.	Total	MAXIMUM HOURLY Res.	Non-res.	Total	FIRE DEMAND (l/s)
Site	61	42	1	177			582	0.57	0.02	0.59	1.43	0.03	1.46	3.15	0.05	3.20	133.3

ASSUMPTIONS

RESIDENTIAL DENSITIES

1 Bedroom Apartment	1.4 persons/unit
2 Bedroom Apartment	2.1 persons/unit
3 Bedroom Apartment	3.1 persons/unit

AVG. DAILY DEMAND

Residential	280 l / cap / day
Commercial	28,000 l / ha / day

MAX. DAILY DEMAND

Residential	700 l / cap / day
Commercial	42,000 l / ha / day

MAX. HOURLY DEMAND

Residential	1,540 l / cap / day
Commercial	75,600 l / ha / day

FIRE FLOW

Site	8,000 l / min

Samantha Labadie

From: Fawzi, Mohammed <mohammed.fawzi@ottawa.ca>
Sent: Thursday, October 7, 2021 1:41 PM
To: Samantha Labadie
Subject: RE: 255 Richmond - Boundary Conditions Request
Attachments: 255 Richmond Road October 2021.pdf

Hi Samantha,

The following are boundary conditions, HGL, for hydraulic analysis at 255 Richmond Road (zone 1W) assumed to be connected to the 305 mm watermain on Richmond Road and the 152 mm on Tweedsmuir Street (see attached PDF for location).

Both Connections

Minimum HGL: 108.7 m

Maximum HGL: 114.9 m

Max Day + FF (133.3 L/s): 110.0 m (Richmond) 104.4 m (Tweedsmuir)

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

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

Best Regards,

Mohammed Fawzi, E.I.T.
Project Manager
Planning, Infrastructure and Economic Development Department - Services de la planification, de l'infrastructure et du développement économique
Development Review - Central Branch
City of Ottawa | Ville d'Ottawa
110 Laurier Avenue West Ottawa, ON | 110, avenue. Laurier Ouest. Ottawa (Ontario) K1P 1J1
613.580.2424 ext./poste 20120, Mohammed.Fawzi@ottawa.ca

Please note that due to the current situation, I am working remotely. Email is currently the best way to contact me

---

From: Fawzi, Mohammed
Sent: October 04, 2021 11:25 AM

To: Samantha Labadie <samantha.labadie@ibigroup.com>
Subject: RE: 255 Richmond - Boundary Conditions Request

Hi Samantha,

This is to confirm your request has been received. I will get back to you as early as possible.

Thank you.

Best Regards,

Mohammed Fawzi, E.I.T.
Project Manager
Planning, Infrastructure and Economic Development Department - Services de la planification, de l'infrastructure et du développement économique
Development Review - Central Branch
City of Ottawa | Ville d'Ottawa
110 Laurier Avenue West Ottawa, ON | 110, avenue. Laurier Ouest. Ottawa (Ontario) K1P 1J1
613.580.2424 ext./poste 20120, Mohammed.Fawzi@ottawa.ca

Please note that due to the current situation, I am working remotely. Email is currently the best way to contact me

---

From: Samantha Labadie <samantha.labadie@ibigroup.com>
Sent: October 04, 2021 11:12 AM
To: Fawzi, Mohammed <mohammed.fawzi@ottawa.ca>
Subject: 255 Richmond - Boundary Conditions Request

Hi Mohammed,

We are requesting for boundary conditions for the above noted site. It is a 9-Storey Residential building with some commercial space. The proposed building will have two connections, one on Tweedsmuir Ave and one on Richmond Road, as shown in the attached site plan. Demand and fire flows can be found on the attached and are summarized below,

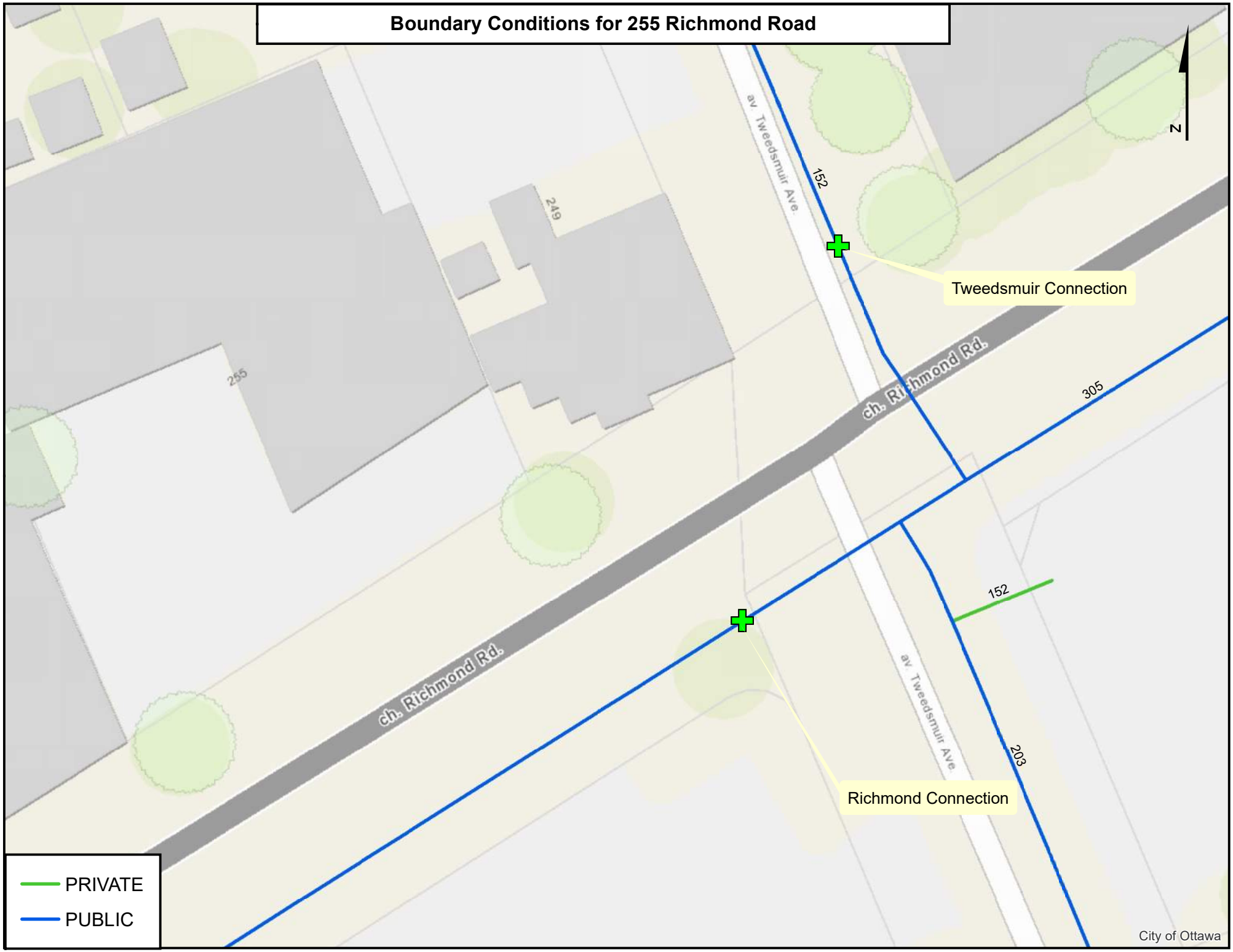
Fire Flow per FUS = 8000 L/min
Average Daily Demand = 0.74 L/s
Maximum Daily Demands = 1.64 L/s
Maximum Hourly Demand = 3.48 L/s

Thank you,

Sam Labadie P.ENG

Civil Engineer

IBI GROUP
Suite 400, 333 Preston Street
Ottawa ON K1S 5N4 Canada
tel +1 613 225 1311 ext 64059 cell +1 613 899 5717


Boundary Conditions for 255 Richmond Road
N
av. Tweedsmuir Ave.
152
249
255
Tweedsmuir Connection
ch. Richmond Rd.
305
152
ch. Richmond Rd.
av. Tweedsmuir Ave.
203
Richmond Connection
PRIVATE
PUBLIC
City of Ottawa

Fire Flow Requirement from Fire Underwriters Survey

Building - 9 Storey Residential

Building Floor Area (for Type II Noncombustible Construction)
(2 largest adjoining floors plus 50% of floors above up to eight)

Floors 1-2	3,223	m^2
50% Floors 3-8	4,030	
Total	7,253	m^2

Fire Flow

$F = 220C\sqrt{A}$

C	0.8	C =	1.5	wood frame
A	7,253 m^2		1.0	ordinary
			0.8	non-combustile
F	14,988 l/min		0.6	fire-resistive
Use	15,000 l/min			

Occupancy Adjustment

		-25%	non-combustile
		-15%	limited combustile
Use	0%	0%	combustile
		+15%	free burning
Adjustment	0 l/min	+25%	rapid burning
Fire flow	15,000 l/min		

Sprinkler Adjustment

		-30%	system conforming to NFPA 13
		-50%	complete automatic system
Use	-50%		
Adjustment	-7500 l/min		

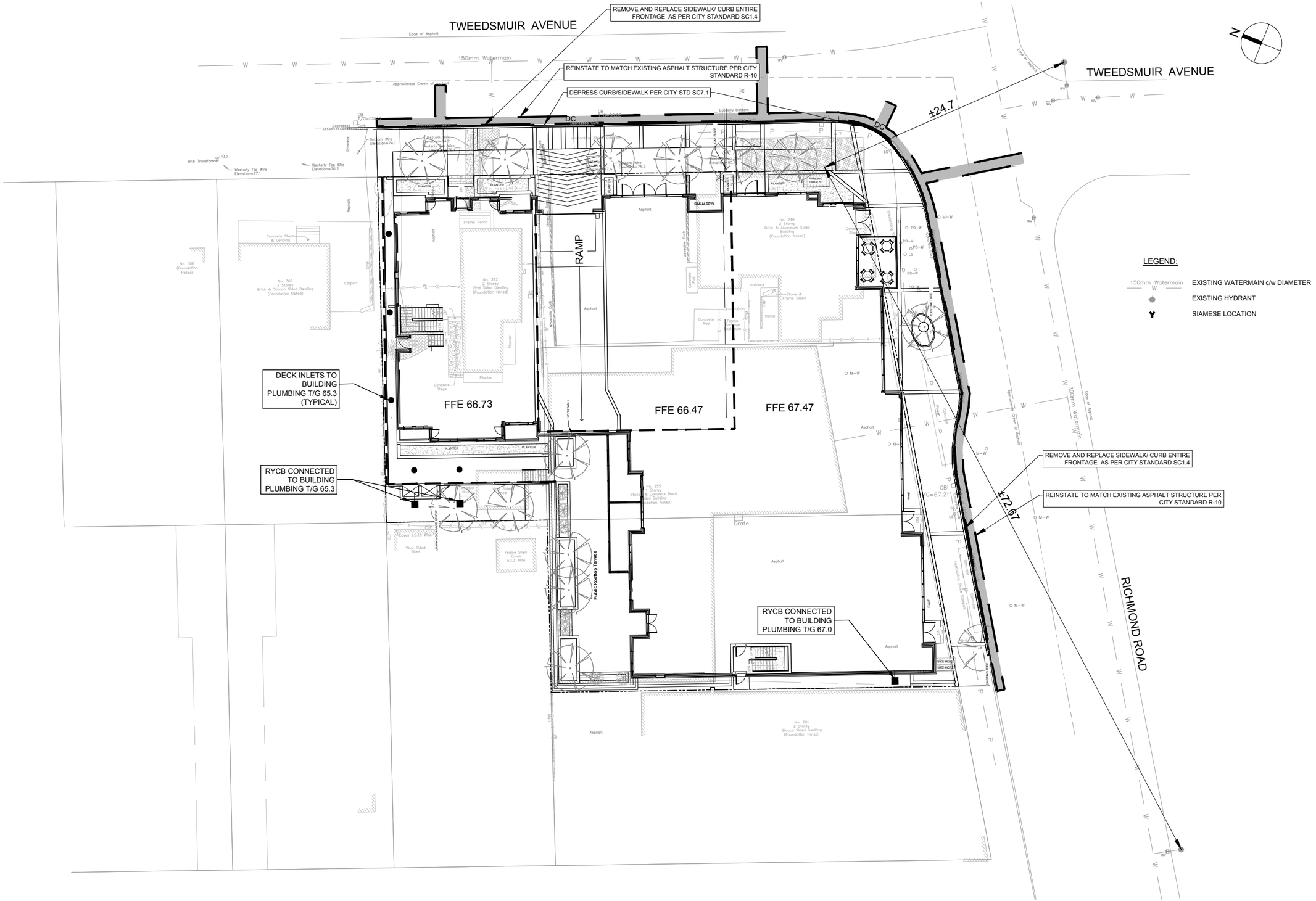
Exposure Adjustment

Building Face	Separation (m)	Adjacent Exposed Wall			Exposure Charge *
		Length	Stories	L*H Factor	
north	2.1	Lower elevation			0%
east	19	Lower elevation			0%
south	31	Lower elevation			0%
west	1.3	Lower elevation			0%
Total					0%

Adjustment - l/min

Required Fire Flow

Total adjustments	(7,500)	l/min
Fire flow	7,500	l/min
Use	**8,000**	**l/min**
	133.3	**l/s**



IBI

Scale: N.T.S.

Project Title: 255 RICHMOND ROAD

Drawing Title: HYDRANT COVERAGE

Sheet No.: Figure 2.2

Samantha Labadie

From: Mark Sarasin <marks@gwal.com>
Sent: Friday, March 31, 2023 11:57 AM
To: Samantha Labadie
Cc: Victor Menasce; Matthew Maxsom; Lisa Dalla Rosa; Vincent P. Colizza; Demetrius Yannoulopoulos
Subject: RE: 255 Richmond (YStreet) - Update to Plans/Studies

Yes it is, to NFPA 13 and fully supervised

Mark Sarasin P.Eng | **Senior Associate, Mechanical Engineer**
GOODKEY, WEEDMARK & ASSOCIATES LTD.

Email: marks@gwal.com

Office: (613) 727-5111 ext. 308 Mobile: (613) 816-0844

Address: 1688 Woodward Drive | Ottawa, Ontario | K2C 3R8

Website: www.gwal.com

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From: Samantha Labadie <samantha.labadie@ibigroup.com>
Sent: Friday, March 31, 2023 11:53 AM
To: Mark Sarasin <marks@gwal.com>
Cc: Victor Menasce <victorm@ystreetcapital.com>; Matthew Maxsom <mattm@ystreetcapital.com>; Lisa Dalla Rosa <dallarosa@fotenn.com>; Vincent P. Colizza <vcolizza@colizzaarchitects.com>; Demetrius Yannoulopoulos <dyannoulopoulos@IBIGroup.com>
Subject: RE: 255 Richmond (YStreet) - Update to Plans/Studies

Thanks Mark, and can you indicate on page 4? Is the water supply standard for both system and fire dept hose lines, and is it a fully supervised system?

Sam

From: Mark Sarasin <marks@gwal.com>
Sent: Friday, March 31, 2023 11:48 AM
To: Samantha Labadie <samantha.labadie@ibigroup.com>
Cc: Victor Menasce <victorm@ystreetcapital.com>; Matthew Maxsom <mattm@ystreetcapital.com>; Lisa Dalla Rosa <dallarosa@fotenn.com>; Vincent P. Colizza <vcolizza@colizzaarchitects.com>; Demetrius Yannoulopoulos

<dyannoulopoulos@IBIGroup.com>
Subject: RE: 255 Richmond (YStreet) - Update to Plans/Studies

*** Exercise caution. This is an EXTERNAL email. DO NOT open attachments or click links from unknown senders or unexpected email. ***
All systems will be protected

C = 0.8 ☐	**Type II Noncombustible Construction** A building is considered to be of Noncombustible construction (Type II) when all structural elements, walls, arches, floors, and roofs are constructed with a minimum 1-hour fire resistance rating and are constructed with noncombustible materials. Total Effective Area (A) = ☐ if any vertical openings in the building (ex. interconnected floor spaces, atria, elevators, escalators, etc.) are unprotected**, consider the two largest adjoining floor areas plus 50% of all floors immediately above them up to a maximum of eight; or ☐ if all vertical openings and exterior vertical communications are properly protected* in accordance with the National Building Code, consider only the single largest Floor Area plus 25% of each of the two immediately adjoining floors.

Mark Sarasin P.Eng | **Senior Associate, Mechanical Engineer**
GOODKEY, WEEDMARK & ASSOCIATES LTD.

Email: marks@gwal.com

Office: (613) 727-5111 ext. 308 Mobile: (613) 816-0844

Address: 1688 Woodward Drive | Ottawa, Ontario | K2C 3R8

Website: www.gwal.com

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From: Samantha Labadie <samantha.labadie@ibigroup.com>
Sent: Friday, March 31, 2023 11:27 AM
To: Mark Sarasin <marks@gwal.com>
Cc: Victor Menasce <victorm@ystreetcapital.com>; Matthew Maxsom <mattm@ystreetcapital.com>; Lisa Dalla Rosa <dallarosa@fotenn.com>; Vincent P. Colizza <vcolizza@colizzaarchitects.com>; Demetrius Yannoulopoulos <dyannoulopoulos@IBIGroup.com>
Subject: RE: 255 Richmond (YStreet) - Update to Plans/Studies

Hi Mark,

Are you able to mark which checkboxes the sprinkler system fulfills on the attached?

APPENDIX C

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

SANITARY SEWER DESIGN SHEET

255 Richmond
CITY OF OTTAWA
Y Street Capital

LOCATION				RESIDENTIAL									ICI AREAS								INFILTRATION ALLOWANCE			FIXED FLOW (L/s)		TOTAL FLOW	PROPOSED SEWER DESIGN						
				AREA	UNIT TYPES			AREA	POPULATION		PEAK	PEAK	AREA						ICI	PEAK	AREA (Ha)		FLOW				CAPACITY	LENGTH	DIA	SLOPE	VELOCITY	AVAILABLE CAPACITY	
STREET	AREA ID	FROM MH	TO MH	w/ Units (Ha)	1BD	2BD	3BD	w/o Units (Ha)	IND	CUM	FACTOR	FLOW (L/s)	INSTITUTIONAL IND	INSTITUTIONAL CUM	RETAIL (m2) IND	RETAIL (m2) CUM	REST. (S) IND	REST. (S) CUM	PEAK FACTOR	FLOW (L/s)	IND	CUM	(L/s)	IND	CUM	(L/s)	(L/s)	(m)	(mm)	(%)	(full) (m/s)	L/s	(%)
	Proposed Sanitary			0.218	61	42	1		177	177	4.00	2.29	0.00	0.00	391	391	60	60	1.50	0.16	0.218	0.218	0.07	0.00	0.00	2.53	87.74	5.50	250	2.00	1.731	85.21	97.12%

Design Parameters:

Residential			ICI Areas			
1BD	1.4	p/p/u				
2BD	2.1	p/p/u	INST	28,000	L/Ha/day	
3BD	3.1	p/p/u	RETAIL	5	L/m2/day	
Other	60	p/p/Ha	REST.	125	L/seat/day	MOE Chart

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

Designed: S.E.L

Checked: D.G.Y.

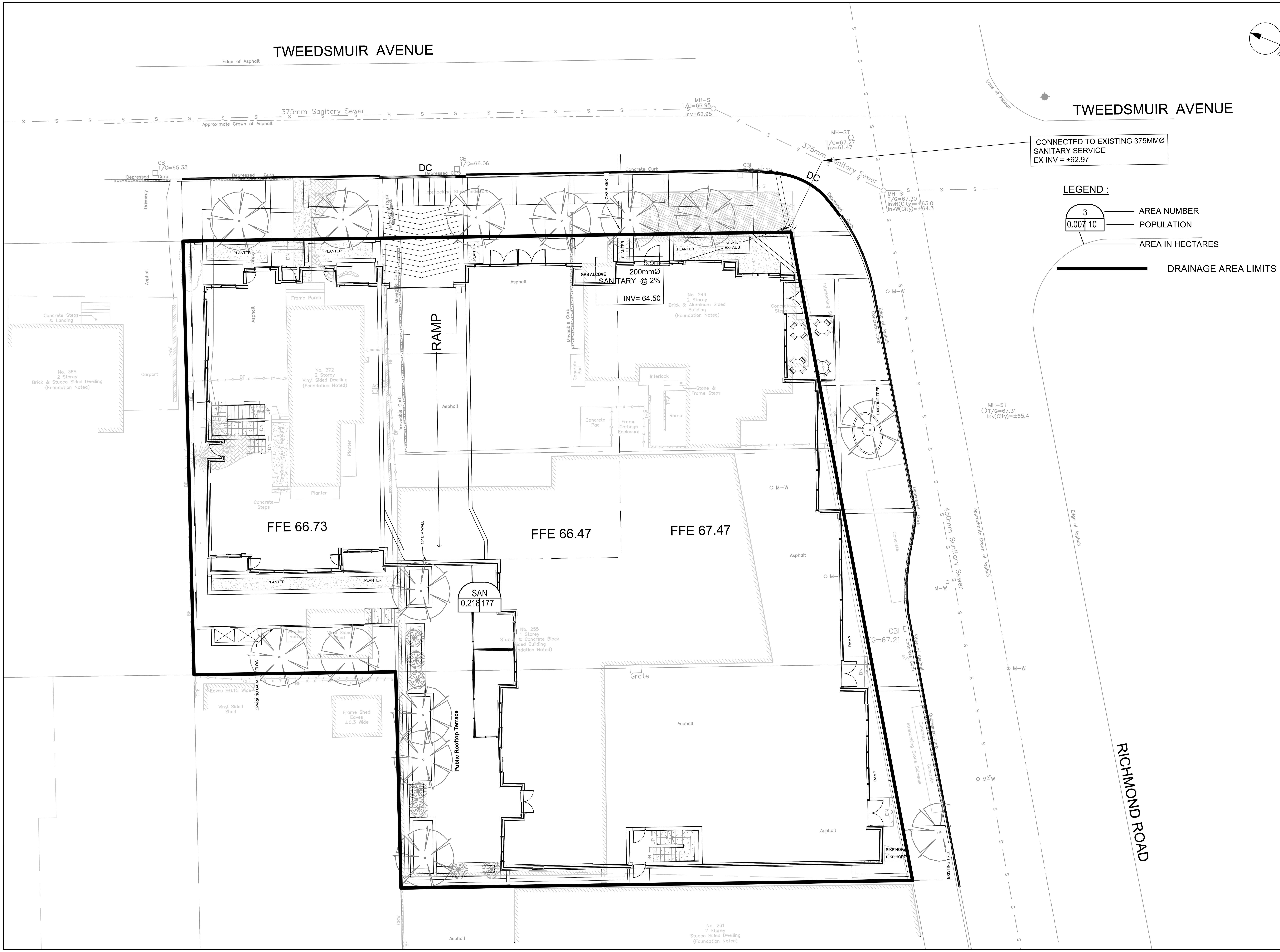
Dwg. Reference:

No.	Revision	Date
1.	Adequacy of Public Services Report	2021-10-21
2.	Adequacy of Public Services Report - Submission 2	2022-04-06
3.	Design Brief	2023-03-27

File Reference: 135883.6.04.04

Date: 2023-03-27

Sheet No: 1 of 1



Project North

CLIENT

YSTREET CAPITAL INC

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ISSUES

No.	DESCRIPTION	DATE
1	ISSUED FOR SPA	2022-10-04
2	REVISED AS PER CITY COMMENTS	2023-04-03
3		
4		
5		
6		
7		
8		

NOT FOR CONSTRUCTION

KEY PLAN

CONSULTANTS

1:250

SEAL

LICENSED PROFESSIONAL ENGINEER
S. E. LABADIE
100214983
2023/04/03
PROVINCE OF ONTARIO

IBI GROUP
Suite 500 – 333 Preston Street
Ottawa ON K1S 5N4 Canada
tel 613 225 1311 / 613 241 3300 fax 613 225 9868
ibigroup.com

PROJECT

255 RICHMOND

PROJECT NO:
135883

DRAWN BY:	CHECKED BY:
SPG	**S.E.L**
PROJECT MGR:	APPROVED BY:
D.G.Y	**D.G.Y**

SHEET TITLE

SANITARY DRAINAGE AREA PLAN

SHEET NUMBER: C-400

ISSUE: 2

SCALE CHECK 1 in 10mm

CITY FILE No. D07-XX-XX-XXXX

File Location: J:\135883_255_Richmond\7.0_Production\7.03_Design\04_Civil\Sheets\C-400 SANITARY DRAINAGE AREA PLAN.dwg Last Saved: March 27, 2023, by dsiuma Plotted: Monday, April 3, 2023 11:07:15 AM by Don Siuma

CITY PLAN No. xxxxx

APPENDIX D

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

STORM SEWER DESIGN SHEET

255 Richmond
CITY OF OTTAWA
Y Street Capital

LOCATION				AREA (Ha)										RATIONAL DESIGN FLOW													SEWER DATA								
STREET	AREA ID	FROM	TO	C= 0.20	C= 0.25	C= 0.40	C= 0.50	C= 0.55	C= 0.65	C= 0.70	C= 0.80	C= 0.90	C= 1.00	IND 2.78AC	CUM 2.78AC	INLET (min)	TIME IN PIPE	TOTAL (min)	i (2) (mm/hr)	i (5) (mm/hr)	i (10) (mm/hr)	i (100) (mm/hr)	2yr PEAK FLOW (L/s)	5yr PEAK FLOW (L/s)	10yr PEAK FLOW (L/s)	100yr PEAK FLOW (L/s)	FIXED FLOW (L/s)	DESIGN FLOW (L/s)	CAPACITY (L/s)	LENGTH (m)	PIPE SIZE (mm) DIA	PIPE SIZE (mm) W	PIPE SIZE (mm) H	SLOPE (%)	VELOCITY (m/s)	AVAIL CAP (2yr) (L/s)	AVAIL CAP (2yr) (%)
	Proposed Storm											0.202		0.51	0.51	10.00	0.06	10.06	76.81	104.19	122.14	178.56	38.82	52.66	61.73	90.24		38.82	87.74	6.60	250			2.00	1.731	48.92	55.76%

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

Notes:
1. Mannings coefficient (n) = 0.013

Designed: SEL

Checked: D.G.Y.

Dwg. Reference:

No.	Revision	Date
1.	Assessment of Adequacy Report	2021-10-21
2.	Design Brief	2023-03-27

File Reference: 135883.6.04.04
Date: 2023-03-27
Sheet No: 1 of 1

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PROJECT: 255 Richmond
DATE: 2023-03-27
FILE: 135883 6.04.04
REV #: 2
DESIGNED BY: SEL
CHECKED BY: D.Y.

STORMWATER MANAGEMENT

Formulas and Descriptions

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

Maximum Allowable Release Rate

Restricted Flowrate (based on C=0.50 Tc=10min)

C =	0.5	
T_c =	10	min
$i2_{yr}$ =	76.81	mm/hr
A_{site} =	0.218	Ha
$Q_{restricted}$ =	23.28	L/s

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

C =	1.00	
T_c =	10	min
i_{100yr} =	178.56	mm/hr
$A_{uncontrolled}$ =	0.016	Ha
Q_{uncon} =	7.94	L/s

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

$Q_{max\ allowable}$ =	15.34	L/s

MODIFIED RATIONAL METHOD (100-Year, & 2-Year Ponding)

Drainage Area	***Roof & Decks***		
Area (Ha)	0.202		
C =	1.00	Restricted Flow Q_r (L/s)=	15.00

100-Year Ponding

T_c Variable (min)	***i_{100yr} (mm/hour)***	***Peak Flow Q_p=2.78xCi_{100yr}A (L/s)***	***Q_r (L/s)***	***Q_p-Q_r (L/s)***	***Volume 100yr (m^3)***
30	91.87	51.59	15.00	36.59	65.861
32	87.89	49.35	15.00	34.35	65.958
33	86.03	48.31	15.00	33.31	**65.960**
34	84.27	47.32	15.00	32.32	65.935
36	80.96	45.47	15.00	30.47	65.806

Storage (m^3)

Overflow	Required	Surface	Sub-surface	Balance
0.00	65.96		70.00	0.00

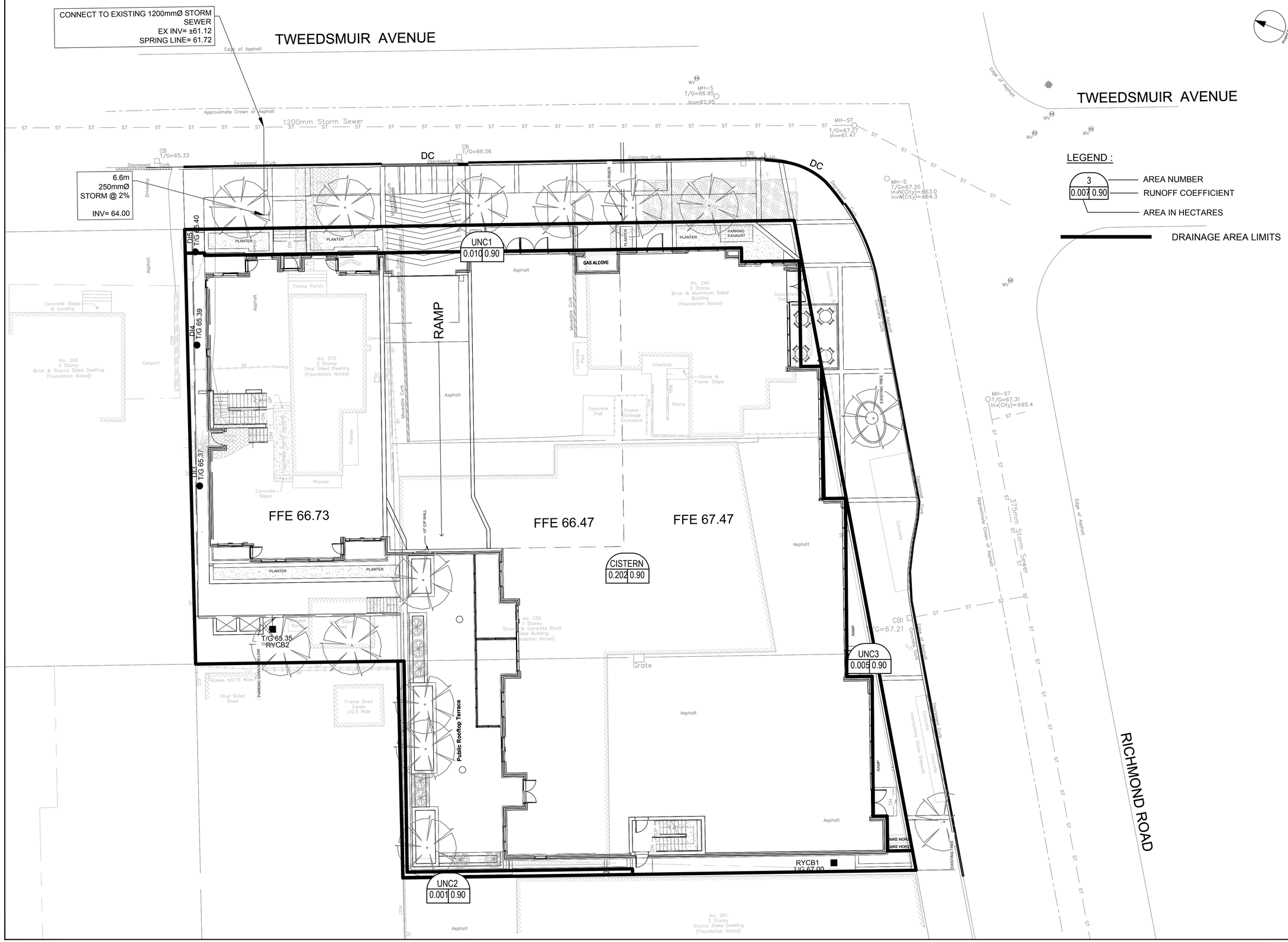
Drainage Area	***Roof & Decks***		
Area (Ha)	0.202		
C =	0.90	Restricted Flow Q_r (L/s)=	15.00

2-Year Ponding

T_c Variable (min)	***i_{2yr} (mm/hour)***	***Peak Flow Q_p=2.78xCi_{2yr}A (L/s)***	***Q_r (L/s)***	***Q_p-Q_r (L/s)***	***Volume 2yr (m^3)***
10	76.81	38.82	15.00	23.82	14.29
12	69.89	35.32	15.00	20.32	14.63
13	66.93	33.83	15.00	18.83	**14.68**
14	64.23	32.46	15.00	17.46	14.67
16	59.50	30.07	15.00	15.07	14.47

Storage (m^3)

Overflow	Required	Surface	Sub-surface	Balance
0.00	14.68		70.00	0.00



CLIENT

Y STREET CAPITAL INC

ISSUES

No.	DESCRIPTION	DATE
1	**ISSUED FOR SPA**	2022-10-04
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KEY PLAN

CONSULTANTS

1:250 0 2.5 7.5 12.5m

SEAL

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PROJECT
255 RICHMOND

PROJECT NO:
135883

DRAWN BY:	CHECKED BY:
SPG	**S.E.L**
PROJECT MGR:	APPROVED BY:
D.G.Y	**D.G.Y**

SHEET TITLE
STORM DRAINAGE AREA PLAN

SHEET NUMBER	ISSUE
C-500	2

SCALE CHECK

CITY FILE No. D07-XX-XX-XXXX

CITY PLAN No. xxxxx

File Location: J:\135883_255_Richmond\7.0_Production\7.03_Design\04_Civil\Sheets\C-500 STORM DRAINAGE AREA PLAN.dwg Last Saved: March 27, 2023, by dsiuma Plotted: Monday, April 3, 2023 11:09:14 AM by Don Siuma

APPENDIX E

LEGEND

- PROPERTY LINE
- F.F.= 80.50 — FINISHED FLOOR ELEVATION
- DEPRESSED CURB
- WATER METER (SEE MECH. DRWG. FOR EXACT LOCATION)
- REMOTE WATER METER (SEE MECH. DRWG. FOR EXACT LOCATION)
- SIAMESE CONNECTIONS (SEE MECH. DRWG. FOR EXACT LOCATION)
- GAS SERVICE
- RETAINING WALL C/W TOP OF WALL AND GRASS GRADE
- V&VB — VALVE AND VALVE BOX
- V&VC — VALVE AND VALVE CHAMBER
- 150Ø WATERMAIN — WATER SERVICE
- 200Ø SAN — SANITARY SEWER SERVICE
- 250Ø STM — STORM SEWER SERVICE
- EXISTING CURB
- CB — EXISTING CATCHBASIN
- WV — EXISTING WATER VALVE
- LS — EXISTING LAMP STANDARD
- UP — EXISTING UTILITY POLE
- FH — EXISTING FIRE HYDRANT
- MH — EXISTING MANHOLE
- EXISTING SIGN
- BL — EXISTING BOLLARDS
- EXISTING DECIDUOUS TREE
- —S— EXISTING SANITARY SEWER
- —ST— EXISTING STORM SEWER
- —W— EXISTING WATERMAIN
- —G— EXISTING GAS LINE
- —UH— EXISTING HYDRO EXISTING
- EXISTING OVERHEAD UTILITY WIRES
- —C— EXISTING COMBINED SEWER
- —SL— EXISTING STREET LIGHTING

NOTES:

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

2. SEWER LATERALS TO BE PVC DR 35.

3. WATER MAIN AND SERVICES TO BE PVC. DR 18 CL150. MINIMUM COVER OF 2.4m FOR WATER SERVICE IS REQUIRED, USE THERMAL INSULATION AS PER CITY STANDARDS WHEN COVER IS LESS THAN 2.4m. WATER MAIN AND SERVICES TO HAVE RESTRAINTS AND THRUST BLOCKS AS PER CITY STD W23, W25.5 AND W25.6. NEW WATER MAIN TO HAVE TRACING WIRE PER STD W36

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

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

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

7. BUILDING INFORMATION TAKEN FROM VINCE P. COLIZZA ARCHITECTS DRAWINGS.

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

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

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

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

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

13. FOR GEOTECHNICAL INFORMATION SEE PATERSON REPORT PG5946-1 DATED SEPTEMBER 24, 2021

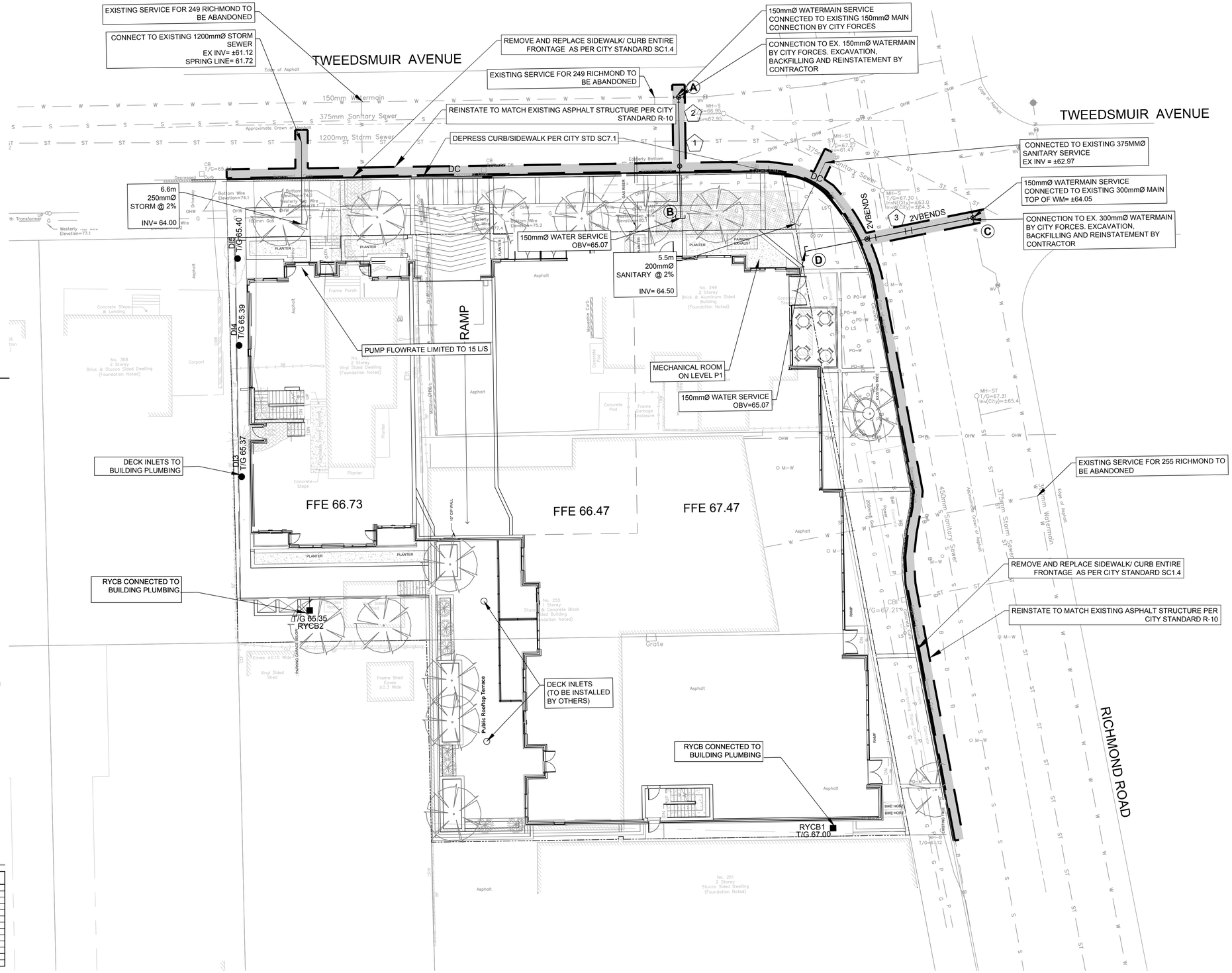
14. MONITORING PORTS ARE TO BE INSTALLED ON THE SANITARY AND STORM SEWERS INSIDE THE PROPERTY LINE.

Pipe Interference Table

Crossing No.	PIPE 1	PIPE 2	Clearance
1	WM Bottom 64.190	EX STM Top 62.707	1.483
2	WM Bottom 64.223	EX SAN Top 63.295	0.929
3	WM Bottom 65.000	EX SAN Top 64.742	0.258

WATERMAIN SCHEDULE

	Station	Description	Finished Grade	Top of Waterain	As Built Waterain
A	0+000.00	TVS	66.798	±65.67	
	0+001.47	SAN CROSSING	66.793	±64.393	
	0+003.43	STM CROSSING	66.762	±64.362	
	0+005.55	VB	66.714	±64.314	
B	0+009.75	CAP	66.937	64.579	
C	0+000.00	TVS	67.433	±65.05	
	0+005.02	V BEND	67.360	±64.96	
	0+005.53	V BEND	67.349	±65.17	
	0+007.98	V BEND	67.297	±65.17	
	0+008.47	V BEND	67.286	±64.886	
	0+008.70	VB	67.281	±64.881	
D	0+013.76	CAP	67.406	65.070	



CLIENT

YSTREET CAPITAL INC

ISSUES

No.	DESCRIPTION	DATE
1	**ISSUED FOR SPA**	**2022-10-04**
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NOT FOR CONSTRUCTION

KEY PLAN

CONSULTANTS

1:250 0 2.5 7.5 12.5m

SEAL

LICENSED PROFESSIONAL ENGINEER
S. E. LABADIE
100214983
2023/04/03
PROVINCE OF ONTARIO

IBI GROUP
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ibigroup.com

PROJECT
255 RICHMOND

PROJECT NO: 135883

DRAWN BY:	CHECKED BY:
SPG	**S.E.L**
PROJECT MGR: **D.G.Y**	APPROVED BY: **D.G.Y**

SHEET TITLE
GENERAL PLAN OF SERVICES

SHEET NUMBER **C-001** | ISSUE **2**

CITY PLAN No. xxxxx

CITY FILE No. D07-XX-XX-XXXX

File Location: J:\135883_255_Richmond\7.0_Production\7.03_Design\04_Civil\Sheets\C-001 GENERAL PLAN OF SERVICES.dwg Last Saved: March 27, 2023, by dsiuma Plotted: Monday, April 3, 2023 10:59:37 AM by Don Siuma

REMOVE AND REPLACE SIDEWALK/ CURB ENTIRE FRONTAGE AS PER CITY STANDARD SC1.4

TWEEDSMUIR AVENUE

LIMIT OF GRADING
MATCH EXISTING GRADES

REINSTATE TO MATCH EXISTING ASPHALT STRUCTURE PER CITY STANDARD R-10

DEPRESS CURB/SIDEWALK PER CITY STD SC7.1

TWEEDSMUIR AVENUE

FFE 66.73

FFE 66.47

FFE 67.47

RAMP

LIMIT OF GRADING
MATCH EXISTING GRADES

REMOVE AND REPLACE SIDEWALK/ CURB ENTIRE FRONTAGE AS PER CITY STANDARD SC1.4

REINSTATE TO MATCH EXISTING ASPHALT STRUCTURE PER CITY STANDARD R-10

LIMIT OF GRADING
MATCH EXISTING GRADES

RICHMOND ROAD

CITY PLAN No. xxxxx

CLIENT

YSTREET CAPITAL INC

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KEY PLAN

1:250 0 2.5 7.5 12.5m

SEAL

LICENSED PROFESSIONAL ENGINEER
S. E. LABADIE
100214983
2023/04/03
PROVINCE OF ONTARIO

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PROJECT
255 RICHMOND

PROJECT NO: 135883

DRAWN BY:	CHECKED BY:
SPG	**S.E.L**
PROJECT MGR:	APPROVED BY:
D.G.Y	**D.G.Y**

SHEET TITLE
GRADING PLAN

SHEET NUMBER	ISSUE
C-200	2

CITY FILE No. D07-XX-XX-XXXX

File Location: J:\135883_255_Richmond\7.0_Production\7.03_Design\04_Civil\Sheets\C-200 GRADING PLAN.dwg Last Saved: April 3, 2023, by dsiuma Plotted: Monday, April 3, 2023 11:05:52 AM by Don Siuma

SCALE CHECK 1:250

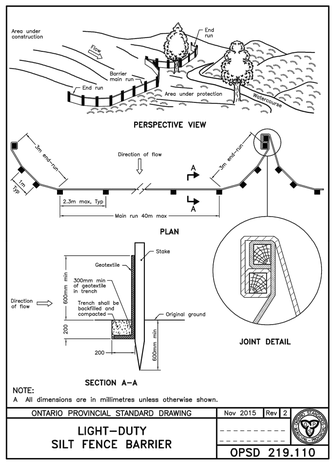
NOTES:

THE CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES, TO PROVIDE FOR PROTECTION OF THE AREA DRAINAGE SYSTEM AND THE RECEIVING WATERCOURSE, DURING CONSTRUCTION ACTIVITIES. THE CONTRACTOR ACKNOWLEDGES THAT FAILURE TO IMPLEMENT APPROPRIATE EROSION AND SEDIMENT CONTROL MEASURES MAY BE SUBJECT TO PENALTIES IMPOSED BY ANY APPLICABLE REGULATORY AGENCY,

1. SILT FENCE TO BE ERECTED PRIOR TO EARTH WORKS BEING COMMENCED. SILT FENCE TO BE MAINTAINED UNTIL VEGETATION IS ESTABLISHED OR UNTIL START OF SUBSEQUENT PHASE.
2. SILT SACK TO BE PLACED AND MAINTAINED UNDER COVER OF ALL CATCHBASINS. GEOTEXTILE SILT SACK IN STREET CBs TO REMAIN UNTIL ALL CURBS ARE CONSTRUCTED. GEOTEXTILE FABRIC IN RYCBs TO REMAIN UNTIL VEGETATION IS ESTABLISHED. ALL CATCHBASINS TO BE REGULARLY INSPECTED AND CLEANED, AS NECESSARY, UNTIL SOD AND CURBS ARE CONSTRUCTED.
3. WORKS NOTED ABOVE ARE TO BE INSTALLED, INSPECTED, MAINTAINED AND ULTIMATELY REMOVED BY SERVICING CONTRACTOR.
4. THIS IS A "LIVING DOCUMENT" AND MAY BE MODIFIED IN THE EVENT THE PROPOSED CONTROL MEASURES ARE INSUFFICIENT
5. SEE DRAWING C-010 FOR ADDITIONAL DETAILS AND NOTES.

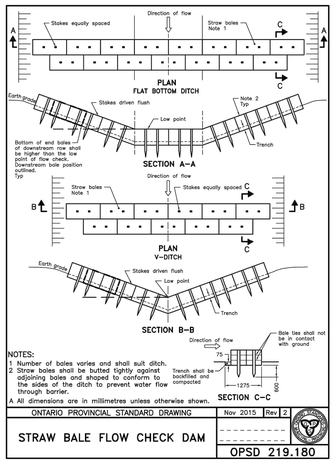
LEGEND :

- LIGHT DUTY SILT FENCE AS PER OPSD-219.110
- SNOW FENCE
- STRAW BALE CHECK DAM AS PER OPSD-219.180
- ROCK CHECK DAM AS PER OPSD-219.210
- CB — SILT SACK PLACED UNDER EXISTING CB COVER
- TEMPORARY MUD MAT 0.15m THICK 50mm CLEAR STONE ON NON WOVEN FILTER CLOTH (6.0 x 15.0)



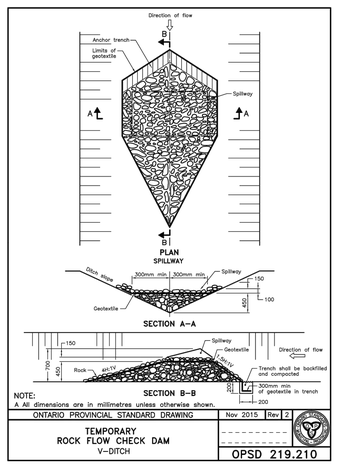
NOTE:
A All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2015	Rev 2
LIGHT–DUTY SILT FENCE BARRIER		OPSD 219.110



NOTES:
1 Number of bales varies and shall suit ditch.
2 Straw bales shall be butted tightly against adjoining bales and shaped to conform to the sides of the ditch to prevent water flow through barrier.
A All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2015	Rev 2
STRAW BALE FLOW CHECK DAM		OPSD 219.180



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

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2015	Rev 2
TEMPORARY ROCK FLOW CHECK DAM V–DITCH		OPSD 219.210

CLIENT

YSTREET CAPITAL INC

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1:250 0 2.5 7.5 12.5m

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PROJECT NO: 135883

DRAWN BY:	CHECKED BY:
SPG	**S.E.L**
PROJECT MGR:	APPROVED BY:
D.G.Y	**D.G.Y**

SHEET TITLE
SEDIMENT AND EROSION PLAN

SHEET NUMBER
C-900

ISSUE
2

CITY FILE No. D07-XX-XX-XXXX

CITY PLAN No. xxxxx

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