PROPOSED

THREE (3) STOREY APARTMENT BUILDING SITE

LOT 75

R-PLAN 263

370 ATHLONE AVENUE

CITY OF OTTAWA

SERVICEABILITY REPORT

REPORT No. R-823-83A (REV. #1)

JANUARY 2025

T.L. MAK ENGINEERING CONSULTANTS LTD.

MAY 2024

REFERENCE FILE NUMBER 823-83

Introduction

The developer of this property is proposing to redevelop the existing residential lot described as Lot 75 Registered Plan 263 City of Ottawa by constructing a three (3) storey residential apartment building plus a basement consisting of sixteen (16)-units, including four (2)-bedroom units, eight (1)-bedroom units and four (4) bachelor units.

The municipal address of this property is referenced as 370 Athlone Avenue and it is located in the City Ward (15 - Kitchissippi). The site is situated on the west side of Athlone Avenue, south of Scott Street and north of Richmond Road, see site plan and legal survey plan in Appendix A for details.

The area of this property is ±0.0508 hectares. In addition to the three (3) storey residential building, the other development features will comprise of an interlock paver access to the front entrance plus an interlock paver access along the north side yard to the waste storage and bike racks at the rear (west) side of the building and an amenity area is also located in the rear yard including landscaped areas throughout the site, etc., to meet the City of Ottawa's site plan requirements.

A site geotechnical report was prepared by the owner's soils engineer Paterson Group entitled "Geotechnical Investigation – Proposed Multi Storey Building" 370 Athlone Avenue (Project No. PG6996-1) dated February 12, 2024 for this proposed development property.

This serviceability report will provide the City of Ottawa with our serviceability brief to address the proposed servicing scheme for this site.

Existing Site Conditions and Servicing

This property is presently occupied by a one (1) storey vinyl sided residential building. The existing house is located near the front centre on this property with an existing garage structure, concrete shed and gravel laneway located along the north side of the property limit which currently provides vehicle access and parking for this lot. For additional details of the site's pre-development conditions, refer to the coloured Google Image (2020) and aerial photography from (GeoOttawa 2022) in Appendix B.

Approximately one half of this site is currently permeable surface covered and consisting of grass/landscaped areas with the remaining areas being roof area, gravel laneway, concrete steps and deck. Currently, most of the landscape areas are concentrated at the rear of lot and along the south side yard.

The topography of the land is found to be graded primarily to drain from front to the rear of the lot (east to west). The existing gradient of the property is sloping approximately 3.5% from front to back.

The existing house water and sanitary service lateral currently servicing the existing dwelling on 370 Athlone Avenue will be removed. The existing water services shall be blanked at the main and the existing house laterals shall be capped at the front property line for re-development of this lot.

As for the availability of underground municipal services, there are existing municipal services along Athlone Avenue in front of this property consisting of a 600mm diameter storm sewer, a 300mm diameter sanitary sewer, and a 150mm diameter watermain for development of this property. Refer to the City of Ottawa Athlone Avenue UCC drawing and As-Built plan and profile drawing included in Appendix C for details.

Because the site will be connecting to and outletting into the separated Athlone Avenue storm sewer located within the Athlone Avenue road right of way in the City of Ottawa, therefore, the approval exemption under Ontario Regulations 525/98 would apply since storm water discharges from this site will outlet flow into a downstream storm sewer. Thus, an Environmental Compliance Approval (ECA) application will not be required to be submitted to the Ministry.

An Environmental Site Assessment – Phase II was carried out by the Paterson Group for this site. A subsequent follow up Risk Assessment Report was then prepared by the owner's soils engineer Paterson Group entitled Human and Ecological Risk Assessment – 370 Athlone Avenue Ottawa, Ontario" (Report No. PE6096-RA) dated January 7, 2025 for this proposed development property.

Fill Encountered on-site of questionable quality was identified by the geotechnical engineer's report. A layer of fill was encountered above native soils in each of the boreholes at the (RA) property.

The contaminants of potential concern (COPCs) associated with the areas of potential environmental concern (APECs) area are referenced in the (RA) report. Refer to Paterson Group (Report No. PE6096-RA) for details of conclusions and recommendations.

Proposed Residential Apartment Building Site

There are no requirements for vehicle access or parking for this site. Interlock pavers are proposed at the front and at the north side of the new building for pedestrian access to the waste disposal and bicycle parking located in the rear accessory building.

A. Water Supply

The The proposed building located within Pressure Zone 1W at 370 Athlone Avenue is 3-storey residential building consisting of 16 residential units. The building contains four (4) 2-bedroom, eight (8) 1-bedroom, and (4) four bachelor units. Each floor covers an area of approximately 2,555 ft^2 (237 m^2), for a gross floor area of 7,665 ft^2 (712 m^2), excluding the basement.

The building is to be serviced by the 150 mm diameter watermain along Athlone Avenue. The ground elevation along Athlone Avenue is approximately 65.2 m.

Demand Projections

The domestic demands were calculated using the City of Ottawa's Water Design Guidelines, where the residential consumption rate of 280 L/cap/d was used to estimate average day demands (AVDY). Persons per unit (PPU) for each unit were estimated based on the City of Ottawa's Water Design Guidelines.

Following discussions with the City, peaking factors are to be estimated from Table 3-3 of the MECP Design Guidelines for Drinking-Water Systems, given that the proposed development population is less than 500 people. Maximum day (MXDY) demands were calculated by multiplying AVDY demands by a factor of 9.5. Peak hour (PKHR) demands were calculated by multiplying AVDY by a factor of 14.3. **Table 1** shows the estimated domestic demands of the proposed building.

Table 1: Estimated Domestic Demand

Unit Type	Unit Count	PPU	Consumption	AVDY		MXDY		PKHR	
				L/d	L/s	L/d	L/s	L/d	L/s
Apartment, 2-Bedroom	4	2.1	280	2,352	0.03	22,344	0.26	33,634	0.39
Apartment, 1-Bedroom	8	1.4	280	3,136	0.04	29,792	0.34	44,845	0.52
Apartment, Bachelor	4	1.4	280	1,568	0.02	14,896	0.17	22,422	0.26
Total	***16***			***7,056***	***0.08***	***67,032***	***0.78***	***100,901***	***1.17***

As per the City of Ottawa's Water Design, Guidelines, the FUS method is to be used for fire flow requirements affecting watermain sizing; with regards to fire protection on private property and not requiring new watermains, these are covered by the Ontario Building Code (OBC), using the OBC's Office of the Fire Marshal (OFM) method. However, both methods were assessed in this assessment.

It was assumed that building would have a wood-frame construction with a limited combustibility. It is understood that the building won't be equipped with sprinklers. It was also assumed that the basement is below 50% above ground level. First, the OFM calculations were

determined and are provided in the attached worksheet in Appendix D (**Fire Flow Calculations – OFM**). The resulting total required fire flow (RFF) is 4,500 L/min (75 L/s) for a duration of 40 minutes. Secondly, the fire flow required was also determined following the Fire Underwriter Survey (FUS) method and is provided in the attached worksheet in Appendix D (**Fire Flow Calculations - FUS**). The resulting total RFF is 13,000 L/min (217 L/s) for a duration of 2.75 hours.

The proposed **Site Plan** attached in Appendix D was used to determine distances from the proposed building to the property lines. Furthermore, **Figure 1** in Appendix D provides separation distances for the FUS calculations.

In summary, the estimated water demands for the proposed building are as follows:

- AVDY = 7,056 L/d (0.08 L/s)
- MXDY = 67,032 L/d (0.78 L/s);
- PKHR = 100,901 L/d (1.17 L/s); and,
- Fire Flow (FUS) = 13,000 L/min (217 L/s)
- Fire Flow (OFM) = 4,500 L/min (75 L/s)

Boundary Conditions

The hydraulic gradeline (HGL) boundary conditions for 370 Athlone Avenue, as presented in **Table 2**, were provided by the City on May 16, 2024 (see attached **Water Boundary Conditions Email** in Appendix D).

Table 2: Boundary Conditions

Demand Scenario	Head (m)	Flow (L/s)
Minimum HGL (Peak Hour)	108.7	
Maximum HGL (Average Day)	114.9	
Available Fire Flow @ Residual 20 psi		86[1]

[1] From the 152 mm dia. watermain on Athlone Avenue, only.

However, the City indicated that 217 L/s (13,000 L/min) can be met from the local hydrants flowing simultaneously (see attached **Water Boundary Conditions Email** in Appendix D). This value was considered in the hydraulic analysis to compare to the fire flow requirement for the proposed building.

Hydraulic Analysis

Peak Hour & Average Day

During peak hour demands, the resulting minimum hydraulic gradeline of 108.7 m corresponds to a peak hour pressure of 426 kPa (62 psi). This value is above the minimum pressure objective of 276 kPa (40 psi) for residential buildings up to two storeys. Adding 5 psi per floor above two stories, to account for headloss due to elevation and pipe losses, a minimum pressure of 310 kPa (45 psi) would be required to service the third floor. The peak hour pressure at ground level is above this objective and therefore considered acceptable.

During average day demands, the resulting maximum hydraulic gradeline of 114.9 m corresponds to a maximum pressure of 487 kPa (71 psi). This value is less than the maximum pressure objective of 552 kPa (80 psi) and therefore considered acceptable.

Supporting hydraulic calculations are attached in Appendix D.

Maximum Day + Fire Flow

The reported available fire flow at a residual pressure of 20 psi is 86 L/s (5,160 L/min). This is less than the RFF of 13,000 L/min, as per FUS, but does meet the OFM's RFF of 75 L/s (4,500 L/min). However, the City indicated that 13,000 L/min can be met from the local hydrants flowing simultaneously, meeting the FUS's RRF. Hydrant coverage and classes in the vicinity of the proposed building are illustrated in **Figure 2** attached in Appendix D.

Based on Table 1 of Appendix I of the City of Ottawa Technical Bulletin ISTB-2018-02 and a desktop review (i.e., Google Street View) to confirm hydrant class, five (5) hydrants are located in the vicinity of the proposed building. Two (2) Class AA hydrants are within 75 m, both with a capacity contribution of up to 5,700 L/min. Three (3) other Class AA hydrants are within 150 m from the site, both with a capacity contribution of up to 3,800 L/min. The combined hydrant flow coverage for 370 Athlone Avenue is therefore 22,800 L/min, which is above the RFF obtained from the FUS (13,000 L/min) method. A breakdown of the hydrant coverage is summarized in **Table 3** below.

Table 3: Fire Hydrant Coverage

Building	Fire Flow Demand (L/min)	Fire Hydrants					Combined Hydrant Flow Coverage (L/min)
		Hydrant Class	Within 75 m		Between 75 m and 150 m		
			Quantity	Max Contrib. to RFF	Quantity	Max Contrib. to RFF	
370 Athlone Avenue	13,000 L/min (FUS)	AA	2	5,700	3	3,800	22,800*
		A					
		B					
		C					

* *For this analysis, the hydrant capacity considered is the reported available multi-hydrant flow noted above (i.e., 13,000 L/min).*

In conclusion, based on the boundary condition provided, the local watermain network in the vicinity of the proposed building at 370 Athlone Avenue provides adequate fire flow capacity, for both the Fire Underwriters Survey (FUS) and the Office of the Fire Marshal (OFM) methods. Resulting pressures during anticipated demand flows meet the pressure objectives during average and peak demand conditions, as per the City of Ottawa's Drinking Water Design Guidelines.

B. Sanitary Flow

The peak sanitary flow for the 16 units, which comprise of four (2)-bedroom, eight (1)-bedroom and four bachelor apartment units, is estimated at Q = 0.32 L/s with an infiltration rate of 0.02 L/s. Refer to Appendix E sheet 1 of 1 regarding sanitary flow calculations. This flow will enter the existing 300mm diameter sanitary sewer on Athlone Avenue via the proposed 150 mm diameter PVC sanitary service lateral from the three (3)-storey residential apartment building.

The existing peak sanitary flow of the site for single detached dwelling unit is Q = 0.06 L/s with an infiltration rate of 0.02 L/s. The net increase in flow from this proposed development is 0.26 L/s which is not expected to negatively impact the existing 300mm dia. sanitary sewer.

Waste water from the Athlone Avenue 300mm dia. sanitary sewer then in turn outlets north into the existing downstream 1500mm dia. concrete sanitary collector sewer located along the Scott Street corridor which further direct sewage flow eastward.

C. Storm Flow

The storm-water outlet for the proposed development property will be the existing 600mm diameter concrete storm sewer located on Athlone Avenue. Stormwater attenuation on site will be accomplished by means of rooftop storage with controlled roof drains that regulate flow off site.

The building foundation weeping-tile drainage system shall have its own separate pipe for gravity flow where weeping-tile water is outletted via a 150mm diameter storm pipe to the existing 600mm diameter storm sewer. The storm-water outlet for the rooftop water from roof drains will be a separately designated proposed 150mm diameter PVC pipe that will also be outletted directly into the existing 600mm diameter storm sewer. The 150mm dia. roof water drain pipe will "wye" into the 150mm dia. weeping tile storm lateral on private property and outlet to the existing Athlone Avenue storm sewer.

Two (2) roof drains are proposed for this apartment building to restrict flow at a rate of 0.316 L/s each or 2 x 0.316 L/s = 0.63 L/s into the Athlone Avenue storm sewer. The calculated net allowable controlled release rate from this site is estimated at 5.45 L/s.

Based on the residential site plan from the owner's architect, the average post-development runoff coefficient is estimated at C = 0.79 and A = 0.0508 hectares.

An estimation of the pre-development flow condition was carried out using the criteria accepted by the City of Ottawa. If post-development C valve exceeds the lesser of the C_{pre} = 0.55 or C_{allow} = 0.5 (max) then SWM is required. So from our calculations, the C_{allow} = 0.5 value will be used at t_c = 10 minutes for pre-development allowable flow calculation off-site.

The pre-development calculated flow rate into the 600mm dia. storm sewer for this residential area is the lesser of either the two (2)-year storm event where C_{allow} = 0.5 (max.) runoff value or the average C_{pre} value which is 0.55 using t_c = 10 minutes. Because this site C_{post} = 0.79 and C_{allow} = 0.5 then SWM measures are required.

Therefore, based on our calculation, on-site retention is required for this proposed development site, because the site post-development C value of 0.79 is greater than the C_{allow} = 0.5.

The storage volume for the two (2)-year and up to the 100-year storm event will be stored by means of flat rooftop at the top of the 3-storey apartment building. Also refer to the site storm drainage report (Report No. R-823-83) for further details.

Conclusion

At this proposed residential site and to develop this lot to house a 16 unit apartment building on a 0.0508 ha. parcel of land, the estimated allowable flow off-site is calculated at 5.45 L/s based on City of Ottawa Drainage and Stormwater Management (SWM) criteria of 2-year pre-development flow at C_{allow} = 0.50. For on-site SWM attenuation, the flat roof top of the proposed apartment building will be utilized and (2) controlled roof drains are incorporated each with a controlled release rate of 0.316 L/s (5.0 U.S. gal/min.). The controlled flow from this

site totals to 0.63 L/s for the post development condition. The uncontrolled 2-year post development flow from the remainder of the site is estimated at 3.52 L/s and 9.27 L/s for the 100-year event respectively.

During the two (2)-year storm event for the flat rooftop storage, the ponding depth of rooftop area 1 and 2 is estimated at 110 mm at the drain and 0mm at the roof perimeter, assuming a 1.9% minimum roof pitch to the drain. The rooftop storage available at Roof Area 1 is 2.46 m^3 and the rooftop storage available at Roof Area 2 is 2.48 m^3, for a total of 4.94 m^3, which is greater than the required volume of 3.62 m^3.

During the 100-year storm event for the flat rooftop storage, the ponding depth of Roof Area 1 and 2 is estimated at 150 mm at the drain and 0mm at the roof perimeter, assuming a 1.9% minimum roof pitch to the drain. The rooftop storage available at Roof Area 1 is 6.39 m^3 and the rooftop storage available at Roof Area 2 is 6.40 m^3, for a total of 12.79 m^3, which is greater than the required volume of 12.66 m^3.

Therefore, by means of flat building rooftop storage and grading the site to the proposed grades as shown on the Proposed Grading and Servicing Plan and Proposed Rooftop Stormwater Management Plan Dwg. 823-83 G-1 and 823-83 SWM-1 respectively, the desirable two (2)-year storm and 100-year storm event detention volume of 4.94 m^3 and 12.79 m^3 respectively will be available on site. Refer to Appendix D for detailed calculations of available storage volumes.

Thus for this development site, the 2-year maximum post development flow draining off-site is the controlled roof top flow plus the uncontrolled flow from the remainder of the site totals to 4.15 L/s (0.63 L/s + 3.52 L /s) which is less than the allowable 5.45 L/s. For event up to and including 100 year, the estimated maximum post development flow draining off-site is 9.90 L/s (0.63 L/s + 9.27 L/s) which exceeds the site allowable of 5.45 L/s by 4.45 L/s for this site.

In comparing the pre-development flow of the current site conditions to the post development flow, the SWM regulated flow plus uncontrolled flow from the proposed site under the post development conditions at the 2-year event = 4.15 L/s and the 100 year event = 9.90 L/s where both of the post development flow events are less than current pre-development flow estimate for the site at 2-Year $_{Pre}$ = 5.99 L/s and 100-Year $_{Pre}$ = 15.65 L/s. Therefore with this proposed development, stormwater flow is improved from that of the existing condition.

The building weeping tile drainage will outlet via its separate 150mm diameter PVC storm lateral. The roof drains will be outletted also via a separate 150mm PVC storm lateral from the apartment building which "wye" into the proposed 150mm dia. weeping tile storm lateral, whereupon both laterals are outletting to the existing Athlone Avenue 600mm diameter storm sewer with only one (1) connection. The City of Ottawa recommends that pressurized drain

pipe material be used in the building for the roof drain leader pipe in the event of surcharging on the City storm sewer system. Refer to the proposed site grading and servicing plan Dwg. 823-83 G-1 for details.

Erosion and Sediment Control

The contractor shall implement Best Management Practices to provide for protection of the receiving storm sewer during construction activities. These practices are required to ensure no sediment and/or associated pollutants are released to the receiving watercourse. These practices include installation of a "siltsack" catch basin sediment control device or equal in catch basins as recommended by manufacturer on-site and off-site within the Athlone Avenue road right of way adjacent to this property. Siltsack shall be inspected every 2 to 3 weeks and after major storm. The deposits will be disposed of as per the requirements of the contract. See Dwg. #823-83 ESC-1 for details.

Refer to Appendix G for the summary of the Development Servicing Study Checklist that is applicable to this development.

PREPARED BY T.L. MAK ENGINEERING CONSULTANTS LTD.

TONY L. MAK, P.ENG

LICENSED PROFESSIONAL ENGINEER
01/23/25
TONY L-M. MAK
PROVINCE OF ONTARIO

For SPC Application

PROPOSED

THREE (3) STOREY APARTMENT BUILDING SITE

LOT 75

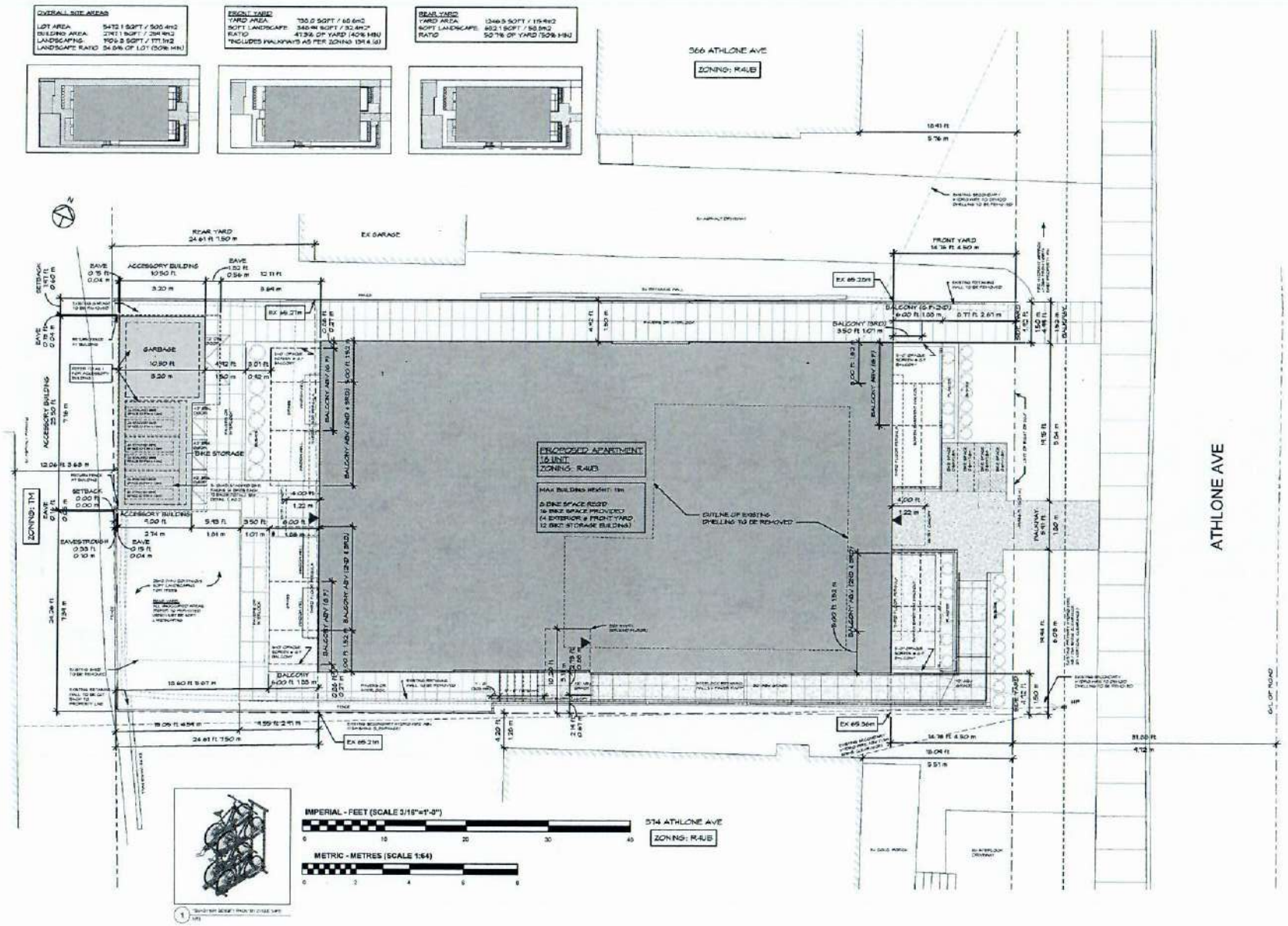
R-PLAN 263

370 ATHLONE AVENUE

CITY OF OTTAWA

APPENDIX A

SITE PLAN AND LEGAL SURVEY PLAN



PROPERTY BOUNDARY AND TOPOGRAPHIC INFORMATION DERIVED FROM "LOT 15, REGISTERED PLAN 269, CITY OF OTTAWA" BY FARLEY, SMITH & DENIS SURVEYING LTD., DATED MAY 26 2022

GROSS FLOOR AREA SCHEDULE

BASEMENT		
UNIT 001	1 BEDROOM	49.9 m²
UNIT 002	1 BEDROOM	50.1 m²
UNIT 003	1 BEDROOM	38.7 m²
UNIT 004	STUDIO	39.6 m²
		198.4 ft²
GROUND FLOOR		
UNIT 101	1 BEDROOM (BF)	49.3 m²
UNIT 102	2 BEDROOM (BF)	61.2 m²
UNIT 103	1 BEDROOM	45.4 m²
UNIT 104	STUDIO (BF)	33.2 m²
		190.1 ft²
SECOND FLOOR		
UNIT 201	2 BEDROOM	63.5 m²
UNIT 202	1 BEDROOM	54.8 m²
UNIT 203	1 BEDROOM	55.5 m²
UNIT 204	STUDIO	38.9 m²
		212.8 ft²
THIRD FLOOR		
UNIT 301	2 BEDROOM	59.5 m²
UNIT 302	2 BEDROOM	58.6 m²
UNIT 303	1 BEDROOM	55.5 m²
UNIT 304	STUDIO	39.7 m²
		214.3 ft²
GROSS FLOOR AREA		816.3 ft²

FILE NUMBER: D07-12-24-0114
PLAN NUMBER: #19203

PROPOSED SITE PLAN

370 ATHLONE AVE

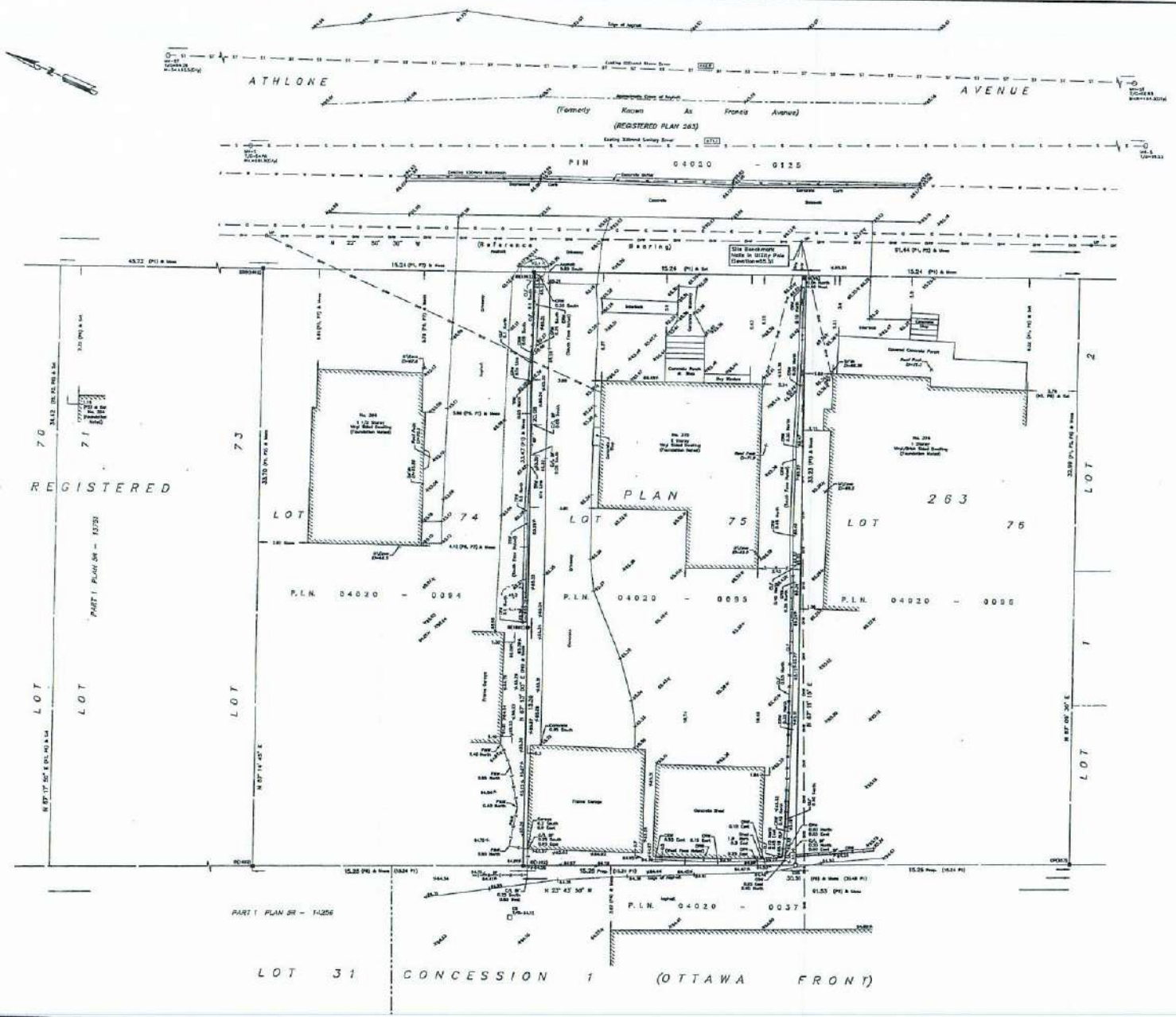
JAN 13 2025

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

A0.2

GRANT HENLEY

PROPOSED PROJECT
FOR SITE PLAN CONTROL



TOPOGRAPHIC PLAN OF SURVEY OF

LOT 75
REGISTERED PLAN 263
CITY OF OTTAWA

FARLEY, SMITH & DENIS SURVEYING LTD. 2022

Scale 1: 100

0 2.5 5 7.5 10 metres

Metric Note

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

Bearing Note

Bearings hereon are grid bearings derived from the westerly limit of Athlone Ave as shown on plan 5R-14256, having a bearing of N22°30'30"W and are referred to the Central Meridian of MTM Zone 9 (76°30' West Longitude) NAD 83 (Original).

For bearing comparisons, a rotation of 0°11'20" counter-clockwise was applied to bearings on P2.

Elevation Notes

1. Elevations shown are geodetic and are referred to Geodetic Datum CGVD-1928 (1978). (Monument No. 197534238)
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-94-20, E-04-15, E20m1.
4. Sanitary and storm sewer grades and inverts were compiled from: Field measurement and City of Ottawa Utility 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	-	Short Standard Iron Bar
IB	-	Iron Bar
CC	-	Cut Cross
CP	-	Concrete Pin
(WIT)	-	Witness
Meas	-	Measured
(P1)	-	Registered Plan 263
(P2)	-	Plan 5R-14256
(P3)	-	Plan 5R-13751
(P4)	-	Plan by (P17) dated April 28, 2022 Ref. No. 248-(D) NP
(P5)	-	Plan by (1282) dated September 20, 1990 Ref. No. D-765-1
(P6)	-	Plan by (1892) dated February 24, 2022 Job No. 240-21)
(P7)	-	Plan by (726) dated August 12, 1983 (Ref. No 313-81)
(M1)	-	Notes by (647) dated October 24, 1985
CBMH-ST	-	Maintenance Hole (Storm)
CBMH-S	-	Maintenance Hole (Sanitary)
ST	-	Underground Storm Sewer
S	-	Underground Sanitary Sewer
W	-	Underground Water
G	-	Underground Gas
OHW	-	Overhead Wires
HP	-	Utility Pole
CB	-	Catch Basin
FH	-	Fire Hydrant
Ø	-	Diameter
CLF	-	Chain Link Fence
PW/W	-	Post and Wire
WF	-	Board Fence
MF	-	Metal Fence
CRW	-	Concrete Retaining Wall
TRW	-	Timber Retaining Wall
INV.	-	Invert
T/G	-	Top of Grate
EL.	-	Elevation
U/Face	-	Underside of Eave
T/Fdn	-	Top of Foundation
C/L	-	Centreline
Inv.(cb)	-	Invert obtained from City utility sheets
x 65.00	-	Location of Elevations
+65.00	-	Top of Concrete Curb Elevation
	-	Property Line
	-	Deciduous Tree - The Symbol shown denotes location and trunk diameter only. Size of its' root system/branch canopy may be smaller/larger than the symbol size depicted on this plan.

Site Area=508.5 sq.m.

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 26th day of May, 2022.

June 15/2022
Date

Eric Adelizi
Ontario Land Surveyor

This plan of survey relates to AOLS Plan Submission Form Number V-28461

FARLEY, SMITH & DENIS SURVEYING LTD.
ONTARIO LAND SURVEYORS
CANADA LAND SURVEYORS
UNIT 200, 30 COLONNADE ROAD, OTTAWA, ONTARIO K2E 7J6
TEL. (613) 727-0225 E-mail: fsdsurvey@bellnet.ca

FILE No.: 244-22

PROPOSED

THREE (3) STOREY APARTMENT BUILDING SITE

LOT 75

R-PLAN 263

370 ATHLONE AVENUE

CITY OF OTTAWA

APPENDIX B

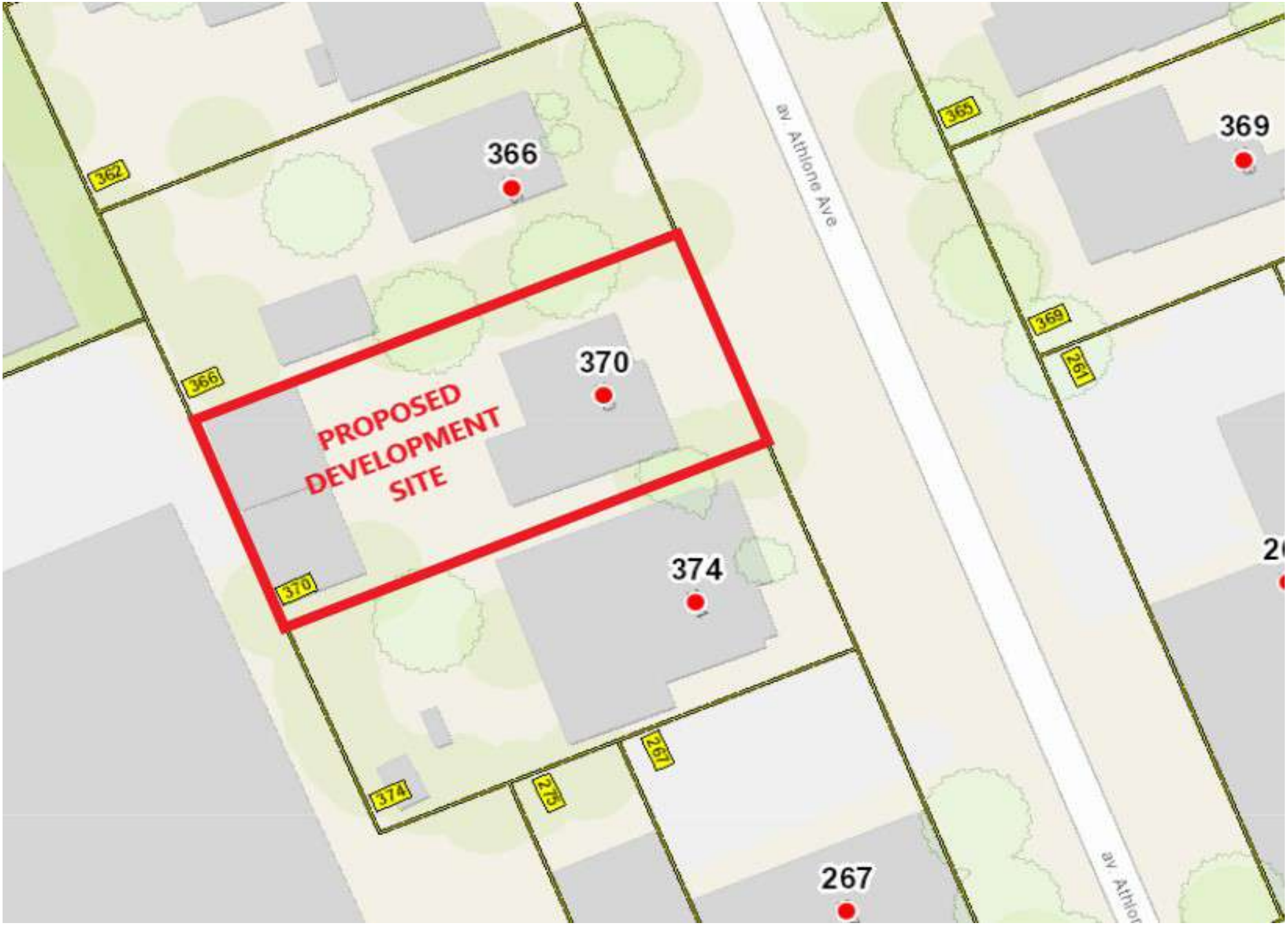
SITE PRE-DEVELOPMENT CONDITION

GOOGLE IMAGE (2020)

AND

AERIAL PHOTOGRAPHY 2022 (GEOOTTAWA)

2020


366
369
370
374
267
PROPOSED
DEVELOPMENT
SITE
av. Athlone Ave
362
366
365
369
261
370
374
275
267

2022


366
369
370
374
267
PROPOSED
DEVELOPMENT
SITE
av. Athlone Ave.
362
365
366
369
261
370
374
275
267

2022

PROPOSED

THREE (3) STOREY APARTMENT BUILDING SITE

LOT 75

R-PLAN 263

370 ATHLONE AVENUE

CITY OF OTTAWA

APPENDIX C

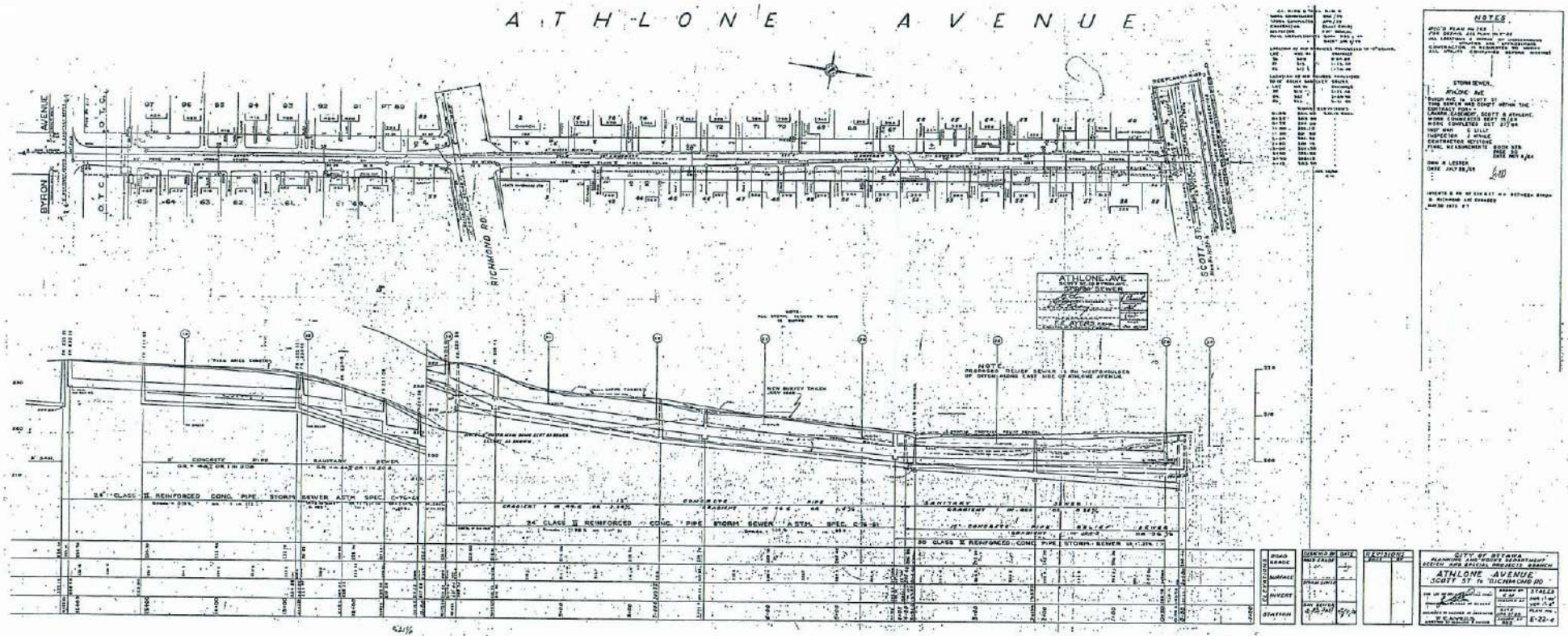
ATHLONE AVENUE

CITY OF OTTAWA

PLAN AND PROFILE

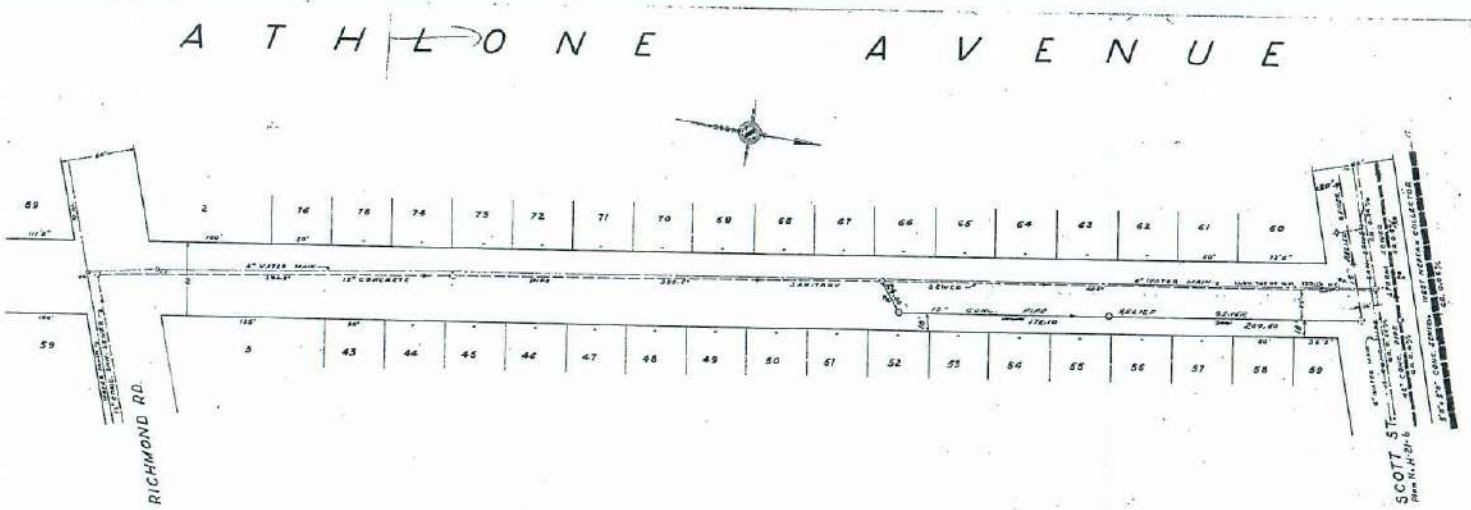
AND

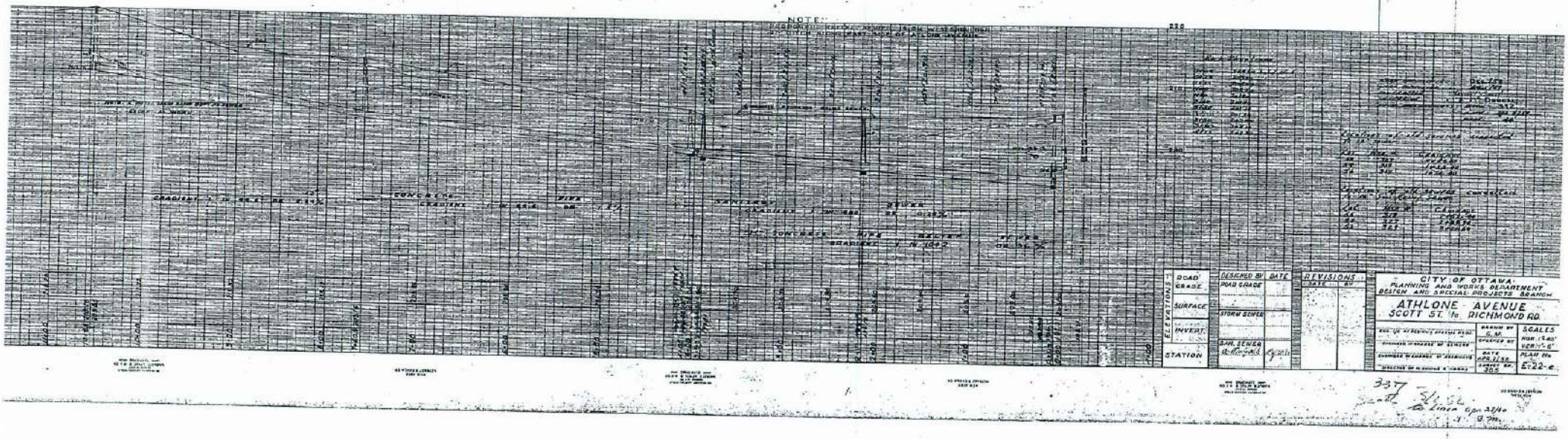
UCC DRAWINGS

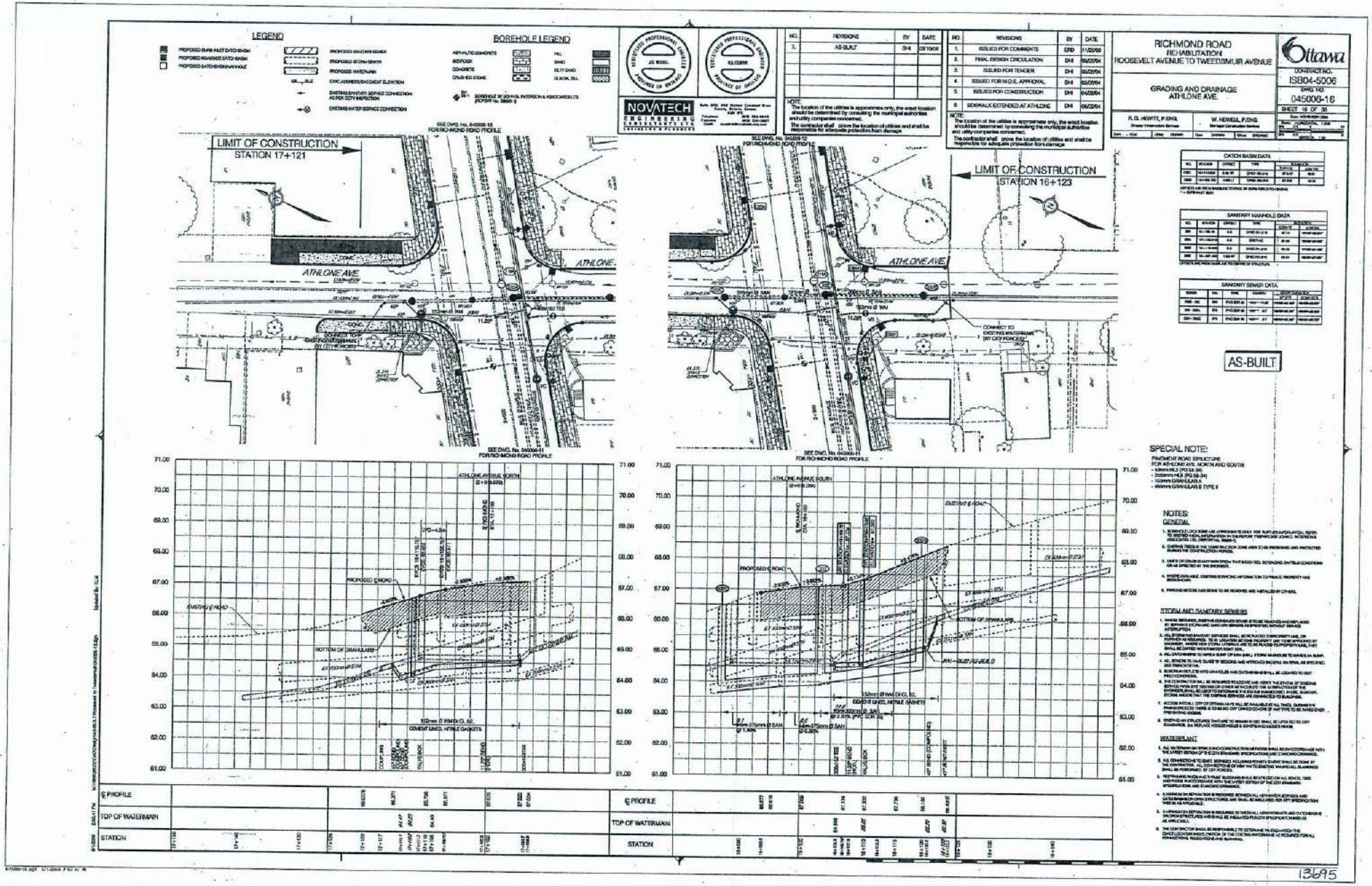

ATHLONE AVENUE
BYRON AVENUE
RICHMOND RD.
SCOTT ST.
NOTES
STORM SEWER
ATHLONE AVE
ATHLONE AVE. SEWER
NOTE
PROPOSED RELIEF SEWER IS ON WESTBOUNDER OF DITCH ALONG EAST SIDE OF ATHLONE AVENUE
24" CLASS II REINFORCED CONC. PIPE STORM SEWER A.S.T.M. SPEC. C-76-61
30" CLASS II REINFORCED CONC. PIPE STORM SEWER A.S.T.M. SPEC. C-76-61
36" CLASS II REINFORCED CONC. PIPE STORM SEWER
SANITARY SEWER
CITY OF OTTAWA
ATHLONE AVENUE
SCOTT ST. to RICHMOND RD.
E-22-e

E22e-2

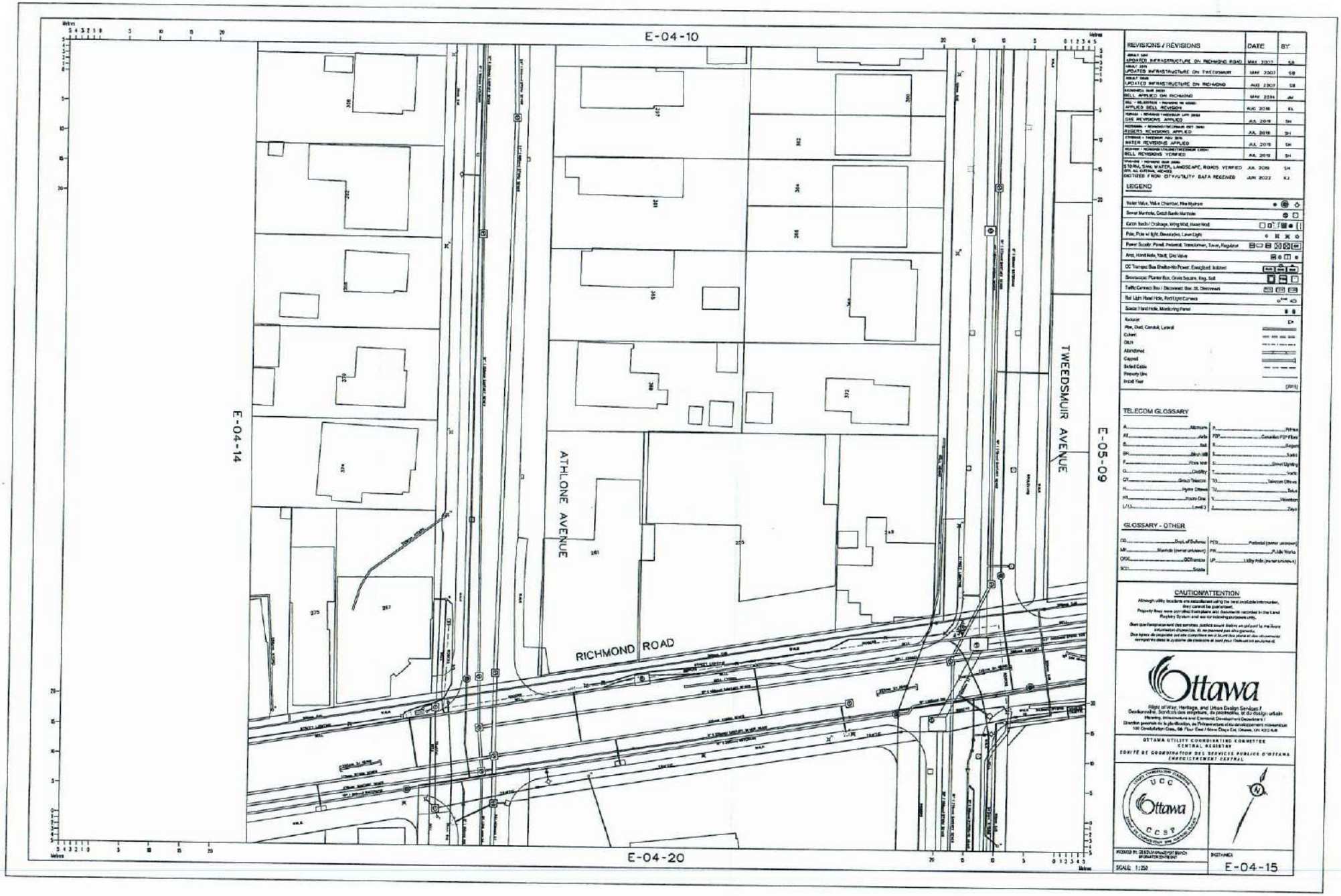
E22e-1


ATHLONE AVENUE
RICHMOND RD.
SCOTT ST.
NOTES
REG'D. PLAN No. 263
FOR DETAIL SEE PLAN No. Y-38


CITY OF OTTAWA
PLANNING AND WORKS DEPARTMENT
DESIGN AND SPECIAL PROJECTS BRANCH
ATHLONE AVENUE
SCOTT ST. to RICHMOND RD.
ROAD GRADE
SURFACE
INVERT
STATION
STORM SEWER
SAN. SEWER
SCALES
HOR. 1"=40'
VER. 1"=6'
PLAN No
E-22-e


LEGEND
BOREHOLE LEGEND
LIMIT OF CONSTRUCTION
STATION 17+121
LIMIT OF CONSTRUCTION
STATION 16+123
ATHLONE AVE.
PROPOSED ℄ ROAD
EXISTING ℄ ROAD
BOTTOM OF GRANULARS
CONNECT TO EXISTING WATERMAIN BY CITY FORCES
AS-BUILT
SPECIAL NOTE:
NOTES:
GENERAL
STORM AND SANITARY SEWERS
WATERPLANT
RICHMOND ROAD
REHABILITATION
ROOSEVELT AVENUE TO TWEEDSMUIR AVENUE
GRADING AND DRAINAGE
ATHLONE AVE.
CONTRACT NO.
ISB04-5006
DWG. NO.
045006-16
SHEET 16 OF 30
℄ PROFILE
TOP OF WATERMAIN
STATION

13695



REVISIONS / REVISIONS	DATE	BY
UPDATED INFRASTRUCTURE ON RICHMOND ROAD	MAY 2007	SB
UPDATED INFRASTRUCTURE ON TWEEDSMUIR	MAY 2007	SB
UPDATED INFRASTRUCTURE ON RICHMOND	AUG 2007	SB
BELL APPLIED ON RICHMOND	MAY 2014	JM
APPLIED BELL REVISION	AUG 2016	EL
GAS REVISIONS APPLIED	JUL 2018	SH
ROGERS REVISIONS APPLIED	JUL 2018	SH
WATER REVISIONS APPLIED	JUL 2018	SH
BELL REVISIONS VERIFIED	JUL 2018	SH
STN INV, SAN, WATER, LANDSCAPE, ROADS VERIFIED	JUL 2018	SH
DIGITIZED FROM CITY/UTILITY DATA RECEIVED	JUN 2022	KJ

LEGEND

Water Valve, Valve Chamber, Fire Hydrant
Sewer Manhole, Catch Basin Manhole
Catch Basin / Drainage, Wing Wall, Head Wall
Pole, Pole w/ light, Decorative, Lane Light
Power Supply: Panel, Pedestal, Transformer, Tower, Regulator
Anti, Hand Hole, Vault, Gas Valve
CC Transpo: Bus Shelter-No Power, Enclosed, Isolated
Streetscape: Planter Box, Grate Square, Ring, Soil
Traffic: Camera Box / Disconnect Box: SL Disconnect
Rail Light: Hand Hole, Post Light Camera
Space: Hand Hole, Monitoring Panel
Reducer
Pipe, Duct, Conduit, Lateral
Culvert
Ditch
Abandoned
Capped
Bridal Cable
Property Line
Inset Year

TELECOM GLOSSARY

A	Allstream	P	Primus
AT	Aerial	PDF	Canadian PDF Fibre
B	Bell	R	Rogers
BH	Birch Hill	S	Shaw
F	Fibre Vault	S	Street Lighting
G	Cogeco	T	Telus
GT	Group Telecom	TO	Telecom Others
H	Hydro Ottawa	TV	Telus
HT	Hydro One	V	Videotron
L/U	Level 3	Z	Zayo

GLOSSARY - OTHER

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

CAUTION/ATTENTION

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

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

Ottawa

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

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

UCC Ottawa CCSP

PRODUCED BY: DESIGN AND DIGITIZING BRANCH / INFORMATION DEPARTMENT

SCALE: 1:250

KEY PLAN

E-04-15

PROPOSED

THREE (3) STOREY APARTMENT BUILDING SITE

LOT 75

R-PLAN 263

370 ATHLONE AVENUE

CITY OF OTTAWA

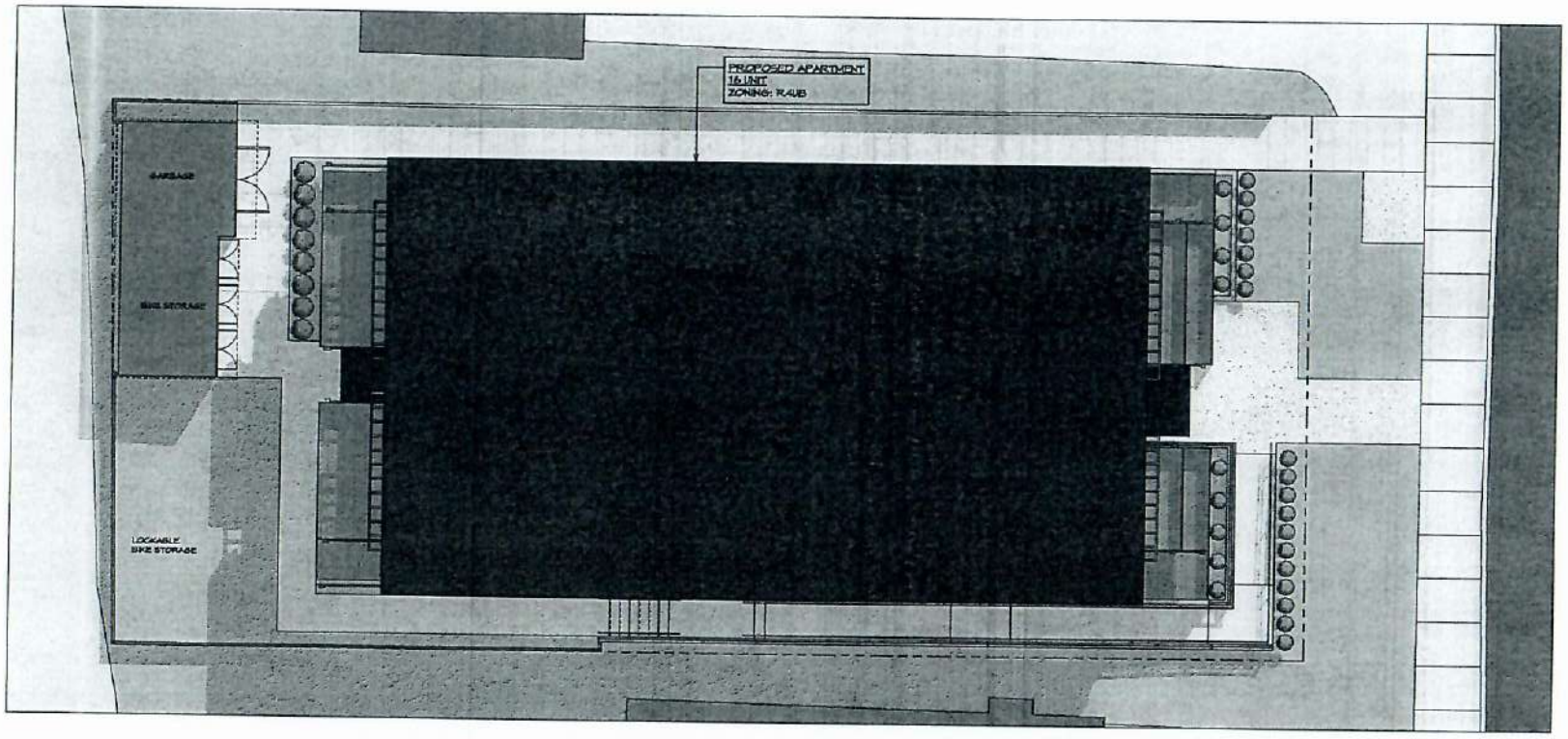
APPENDIX D

CITY OF OTTAWA

- **SITE PLAN AND ARCHITECTURAL DRAWINGS**
- **WATER BOUNDARY CONDITIONS E-MAIL**
- **FIRE FLOW CALCULATION – FUS**
- **FIRE FLOW CALCULATION – OFM**
- **FUS EXPOSURE DISTANCES – FIGURE 1**
- **SUPPORTING HYDRAULIC CALCULATIONS**
- **HYDRANT SPACING – FIGURE 2**

ATTACHMENT 1 : SITE PLAN AND ARCHITECTURAL DRAWINGS

370 ATHLONE AVE
PROPOSED APARTMENT



DRAWING LIST	
Sheet No	Sheet Name
A0.0	
A0.1	SITE PLAN
A0.2	SITE PLAN- COLOUR
A0.3	SITE PLAN- EXISTING
A0.4	HYDRO
A1.0	AREA PLANS 1
A1.1	AREA PLANS 2
A2.0	BASEMENT
A2.1	GROUND FLOOR
A2.2	SECOND FLOOR
A2.3	THIRD FLOOR
A2.4	ROOF PLAN
A3.1	FRONT ELEVATION
A3.2	LEFT ELEVATION
A3.3	REAR ELEVATION
A3.4	RIGHT ELEVATION
A4.1	SECTION 1
A4.2	SECTION 2

Declaration of Designer:
I, Jason Grant, declare that I review and take responsibility for the design work on behalf of a firm registered under subsection 3.2.4. of Division C, of the Building Code. I am qualified, and the firm is registered, in the appropriate classes/categories.

Individual BCIN: 41118

Firm BCIN: 106426

I certify that:
1. The information contained in this schedule is true to the best of my knowledge.
2. I have submitted this application with the knowledge and consent of the firm.

Date: Signature of Designer:

GENERAL NOTES APPLICABLE TO ALL DRAWINGS INCLUSIVE

-GC/PROJECT MANAGER TO PROVIDE SAMPLES FOR ANY PRODUCTS THAT ARE SUBSTITUTED FOR THOSE SPECIFIED IN THE FOLLOWING CONSTRUCTION DOCUMENTS OR ANY OTHER GENERAL SCOPE OF WORK ISSUED DOCUMENTS. ALTERNATE SAMPLES TO BE APPROVED BY DESIGNER AND CLIENT. ALL MATERIALS TO BE STORED AS PER MANUFACTURER'S SPECIFICATIONS.

-GC AND ALL SUBCONTRACTORS (SUBC) ASSOCIATED WITH THE CONSTRUCTION OF THIS PROJECT MUST COMPLY WITH ALL MUNICIPAL BYLAWS AND ALL APPLICABLE BUILDING CODES, SPECIFICALLY THE ONTARIO BUILDING CODE, 2012 AND ALL UPDATED AMENDMENTS.

-THE GC/PM IS RESPONSIBLE FOR MAINTAINING A CLEAN AND SAFE SITE AT ALL TIMES AND FOR THE REMOVAL AND DISPOSAL OF ALL DEBRIS FROM THE SITE ON A REGULAR BASIS. THE WORK SITE IS TO BE BROOM SWEPT AT THE END OF EACH DAY WHEN APPLICABLE.

-THE GC/PM AND ANY OF HIS/HER SUBCONTRACTORS ARE REQUESTED TO REPORT ANY DISCREPANCIES IN THE FOLLOWING CONSTRUCTION DOCUMENTS TO GRANT & HENLEY DESIGN GROUP (2465359 ONTARIO INC.) PRIOR TO COMMENCEMENT OF WORK.

-ALL WORK TO BE PERFORMED TO THE HIGHEST STANDARDS. ALL TRADES TO PROTECT ALL WORK AND MATERIALS OF OTHER TRADES WHILE PERFORMING WORK.

-DAMAGE TO THE BUILDING OR PREMISES CAUSED BY THE GC/PM OR HIS EMPLYEE(S) OR SUBCONTRACTORS SHALL BE REPAIRED AT HIS/HERS EXPENSE. ALL SURFACES DAMAGED BY CONSTRUCTION TO BE MADE GOOD.

-THE GC/PM IS REQUESTED TO PROVIDE THE CLIENT WITH ALL LEFT OVER FINISHING PRODUCTS FOR FLOORING, PAINT, WALLS ETC) AT THE COMPLETION OF THE PROJECT.

-DO NOT SCALE DRAWINGS

370 ATHLONE AVE

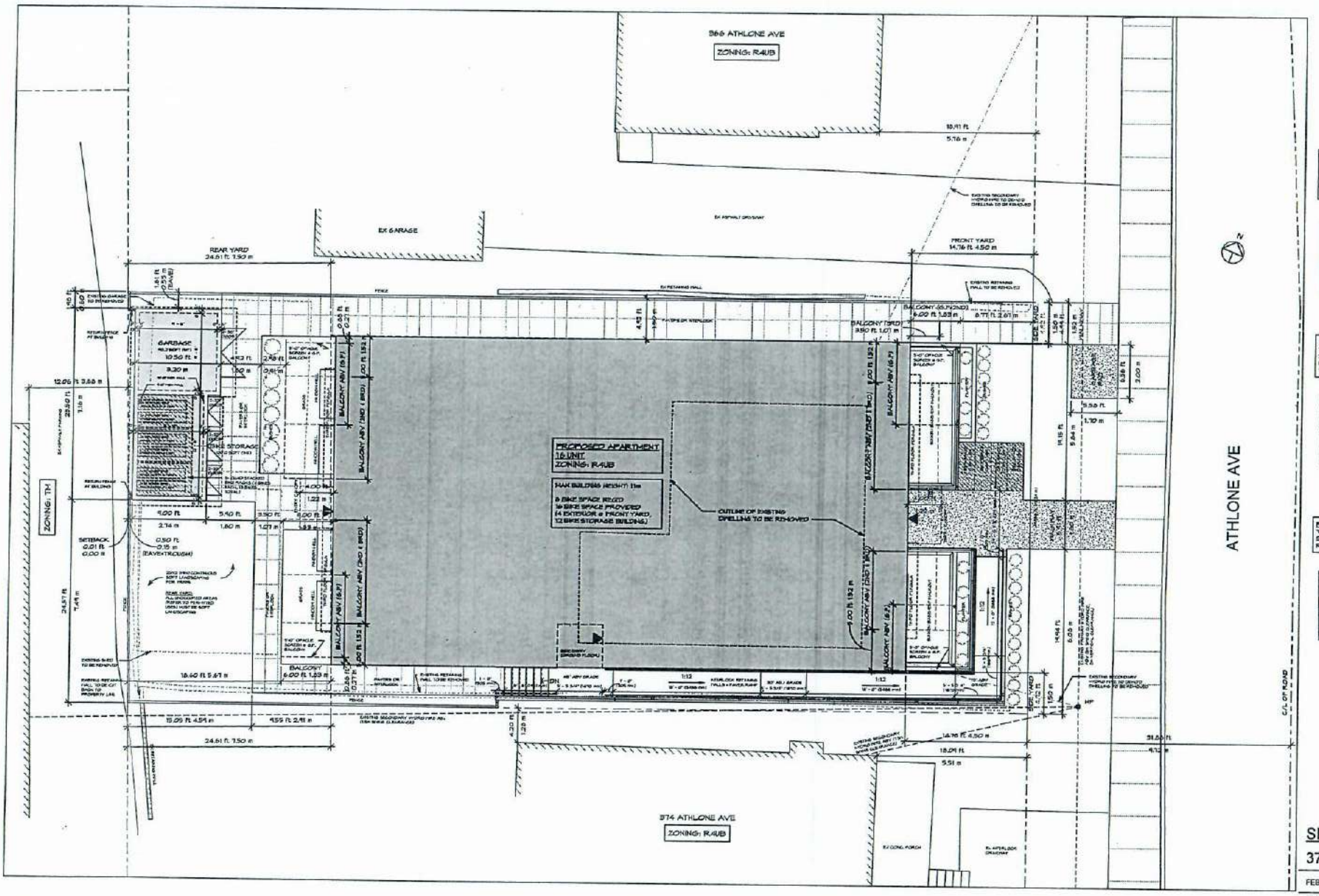
FEB 13 2024

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

A0.0

GRANT HENLEY

PRELIMINARY- NOT FOR CONSTRUCTION



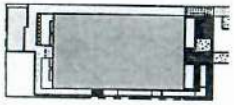
OVERALL SITE AREAS

LOT AREA:	5412.1 SQFT
BUILDING AREA:	2747.1 SQFT
LANDSCAPING:	1941.7 SQFT
RATIO	34.5% OF LOT (30% MIN)

FRONT YARD

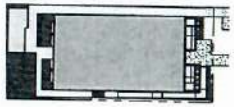
YARD AREA:	730.0 SQFT
SOFT LANDSCAPE:	353.1 SQFT*
RATIO	47.8% OF YARD (40% MIN)

*INCLUDES WALKWAYS AS PER ZONING 134.4(d)



REAR YARD

YARD AREA:	1246.3 SQFT
SOFT LANDSCAPE:	634.1 SQFT
RATIO	50.8% OF YARD (50% MIN)



SITE PLAN

370 ATHLONE AVE

FEB 13 2024

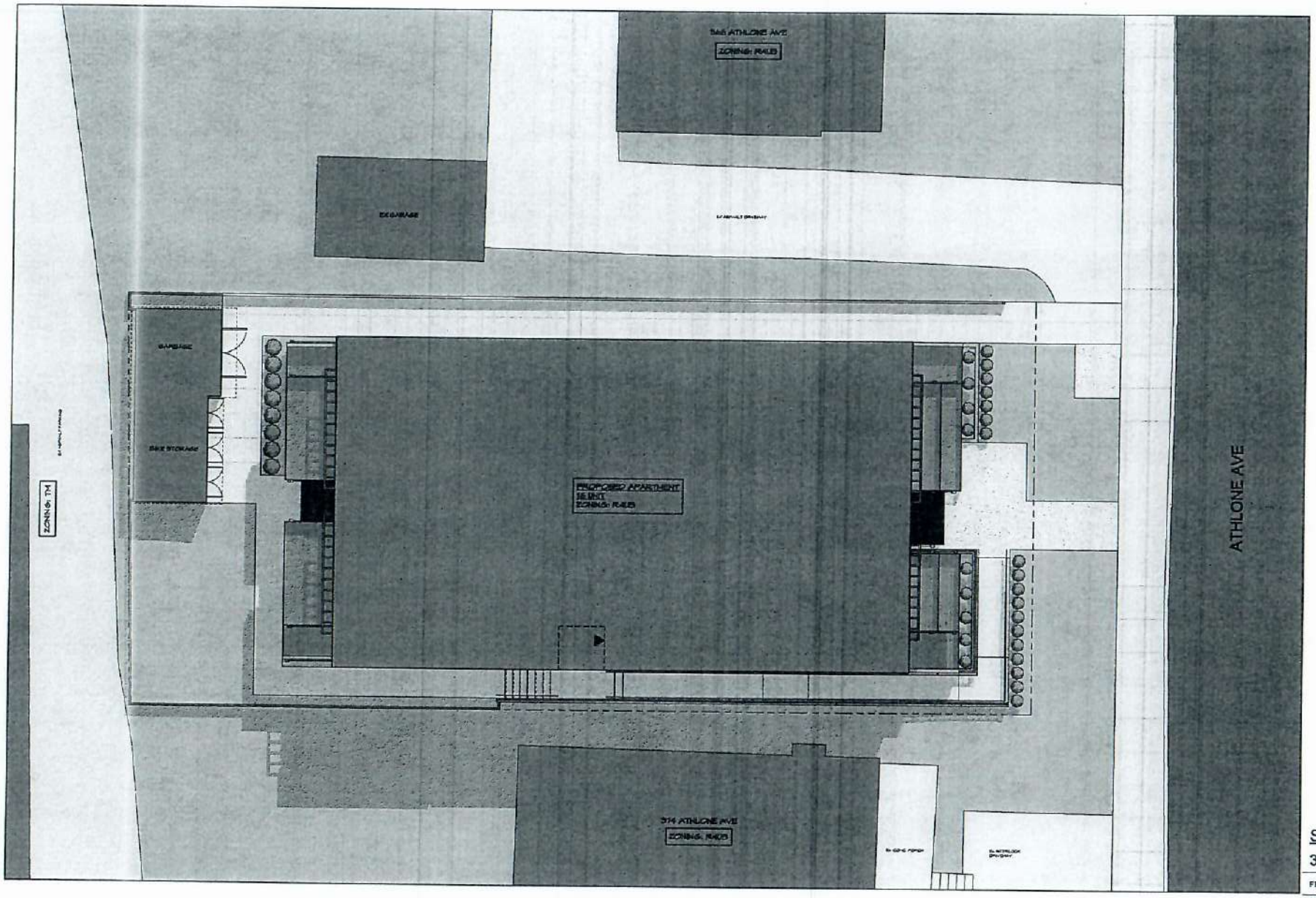
SCALE: 3/16" = 1'-0"

NOTE: HALF SCALE FOR 11x17

A0.1

GRANT HENLEY

PRELIMINARY- NOT FOR CONSTRUCTION



SITE PLAN- COLOUR

370 ATHLONE AVE

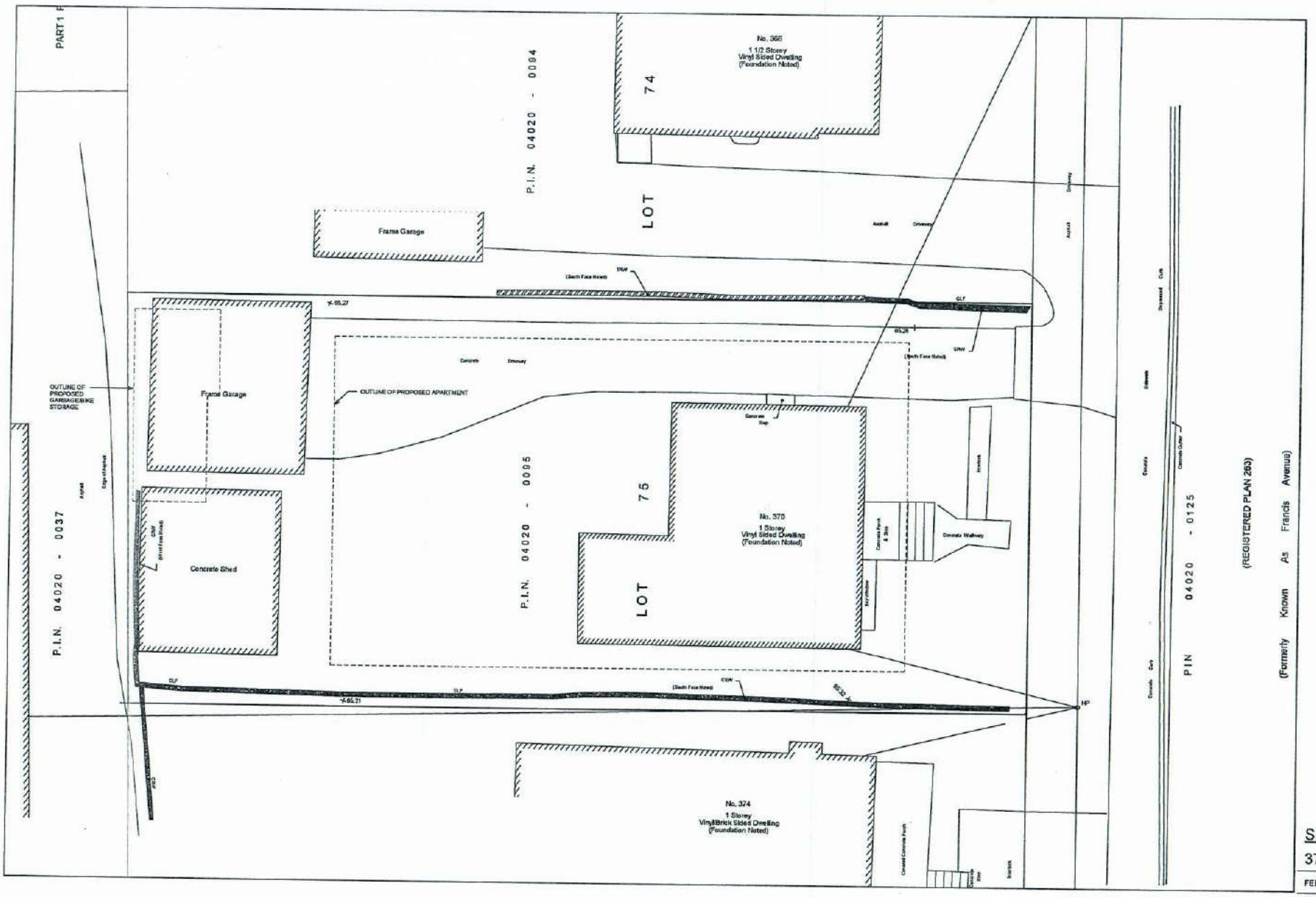
FEB 13 2024

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

A0.2

GRANT HENLEY

PRELIMINARY- NOT FOR CONSTRUCTION



SITE PLAN- EXISTING

370 ATHLONE AVE

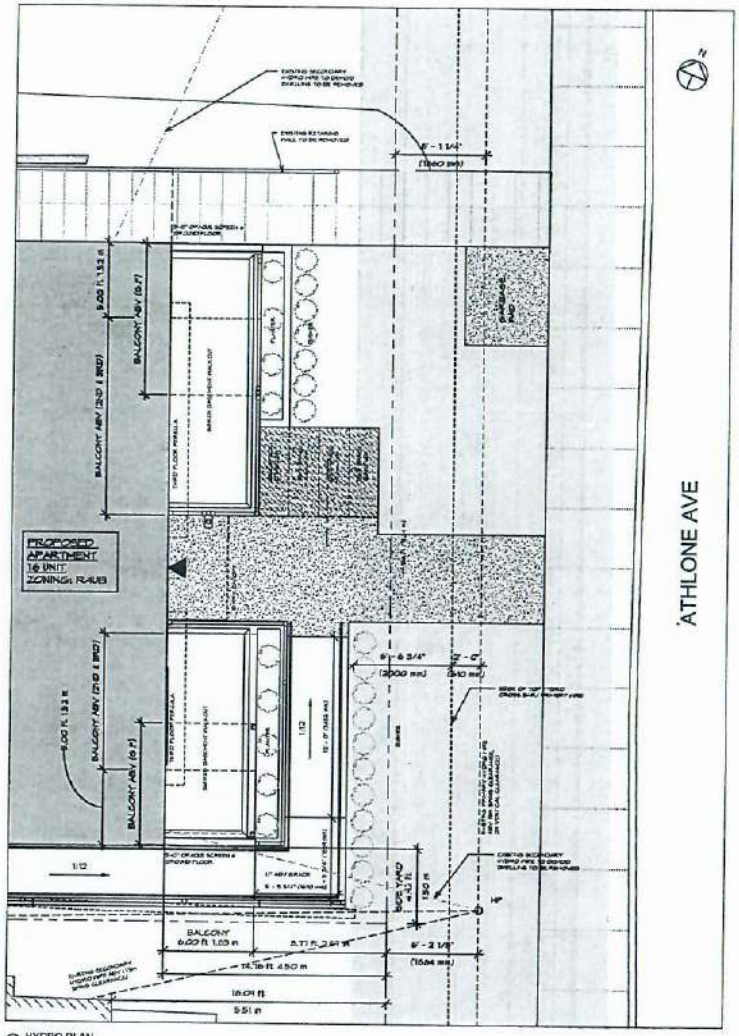
FEB 13 2024

A0.3

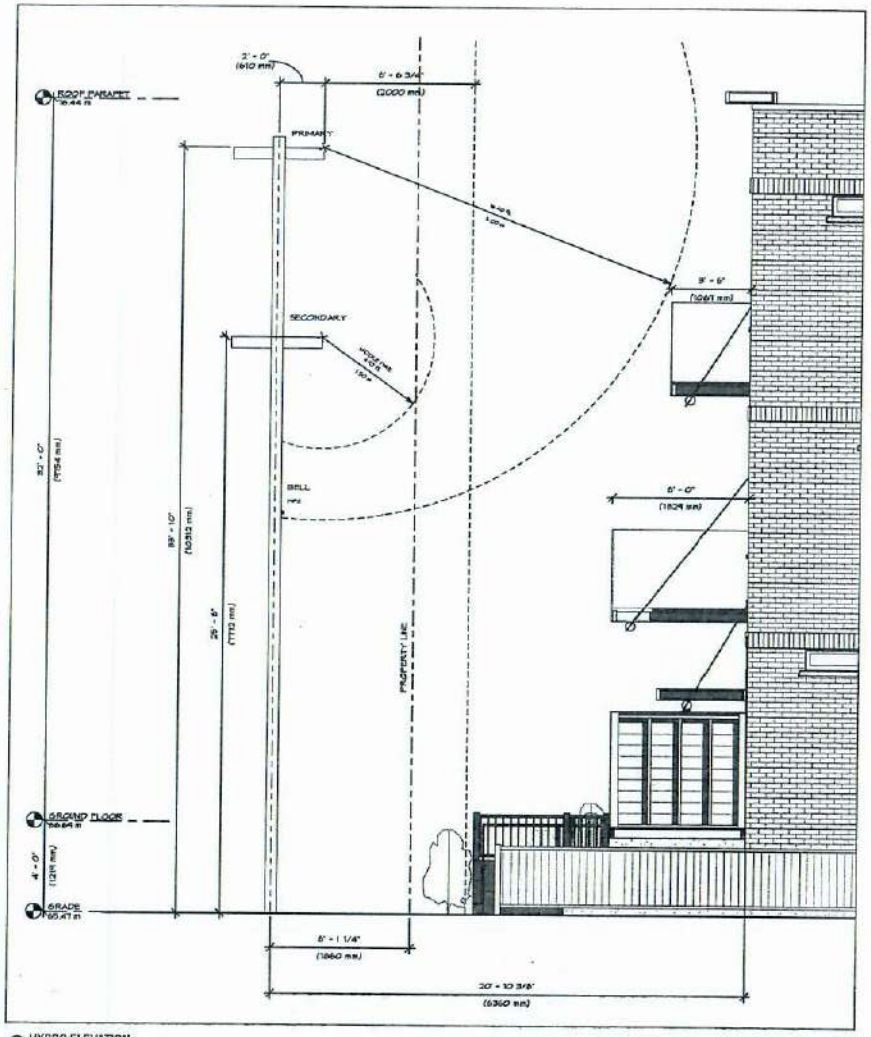
SCALE: 3/16" = 1'-0"

GRANT HENLEY

PRELIMINARY- NOT FOR CONSTRUCTION



① HYDRO PLAN
1/4" = 1'-0"



② HYDRO ELEVATION
3/8" = 1'-0"

HYDRO

370 ATHLONE AVE

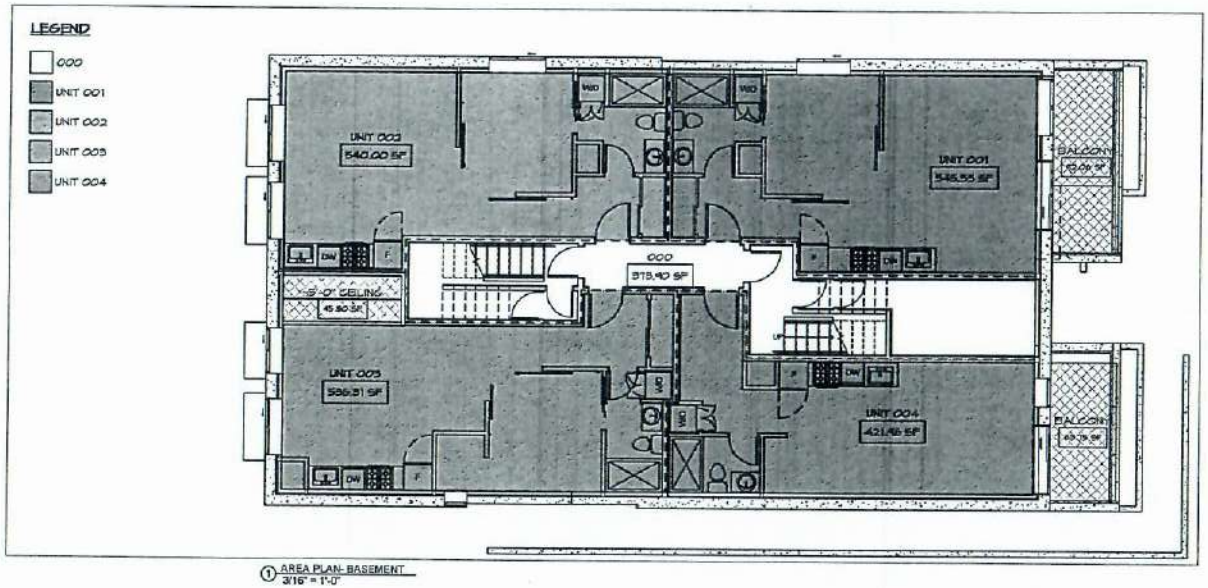
FEB 13 2024

SCALE: As indicated

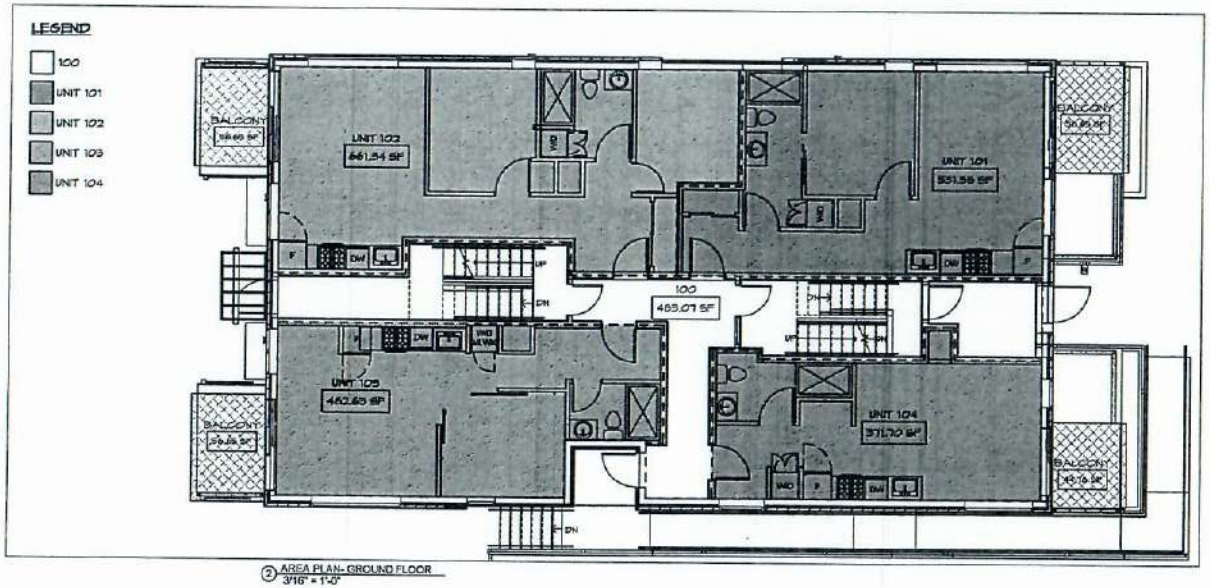
A0.4

GRANT HENLEY

PRELIMINARY - NOT FOR CONSTRUCTION



① AREA PLAN- BASEMENT
3/16" = 1'-0"



② AREA PLAN- GROUND FLOOR
3/16" = 1'-0"

BUILDING AREA EFFICIENCY

CIRCULATION	1408.51 SF	14.0%
DWELLING	8673.91 SF	86.0%
TOTAL	10082.41 SF	

BASEMENT

CIRCULATION			
000	HALLWAY, STAIRS, CRAWL SPACE	373.9 SF	15%
		373.9 SF	15%
DWELLING			
UNIT 001	1 BEDROOM / 1 BATH	545.6 SF	23%
UNIT 002	1 BEDROOM / 1 BATH	540.0 SF	22%
UNIT 003	1 BEDROOM / 1 BATH	536.3 SF	22%
UNIT 004	STUDIO / 1 BATH	422.0 SF	17%
		2043.8 SF	85%

GROUND FLOOR

CIRCULATION			
100	HALLWAY, STAIRS, ENTRY	468.1 SF	14%
		468.1 SF	14%
DWELLING			
UNIT 101	1 BEDROOM / 1 BATH (BF)	551.6 SF	21%
UNIT 102	2 BEDROOM / 1 BATH (BF)	661.3 SF	26%
UNIT 103	1 BEDROOM / 1 BATH (BF)	452.6 SF	19%
UNIT 104	STUDIO / 1 BATH	371.7 SF	15%
		2047.2 SF	81%

SECOND FLOOR

CIRCULATION			
200	HALLWAY, STAIRS	284.5 SF	11%
		284.5 SF	11%
DWELLING			
UNIT 201	2 BEDROOM / 1 BATH	670.2 SF	26%
UNIT 202	1 BEDROOM / 1 BATH	597.4 SF	23%
UNIT 203	1 BEDROOM / 1 BATH	597.5 SF	23%
UNIT 204	STUDIO / 1 BATH	417.6 SF	16%
		2282.7 SF	89%

THIRD FLOOR

CIRCULATION			
300	HALLWAY, STAIRS	267.0 SF	10%
		267.0 SF	10%
DWELLING			
UNIT 301	2 BEDROOM / 1 BATH	681.9 SF	25%
UNIT 302	2 BEDROOM / 1 BATH	644.6 SF	25%
UNIT 303	1 BEDROOM / 1 BATH	597.9 SF	23%
UNIT 304	STUDIO / 1 BATH	428.9 SF	17%
		2300.2 SF	90%

AREA CALCULATION NOTES:
- FROM FINISHED FACE OF EXTERIOR WALLS
- FROM CENTERLINE OF INTERIOR FIRE SEPARATION WALLS
- BALCONIES NOT INCLUDED IN UNIT OR OVERALL AREAS

AREA PLANS 1

370 ATHLONE AVE

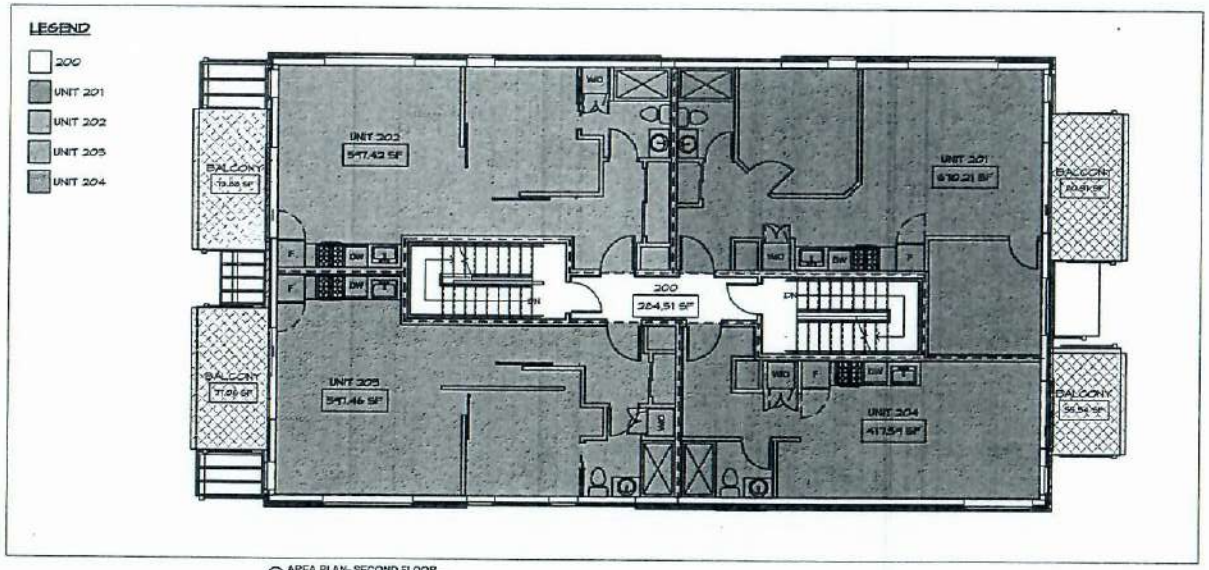
FEB 13 2024

SCALE 3/16" = 1'-0"

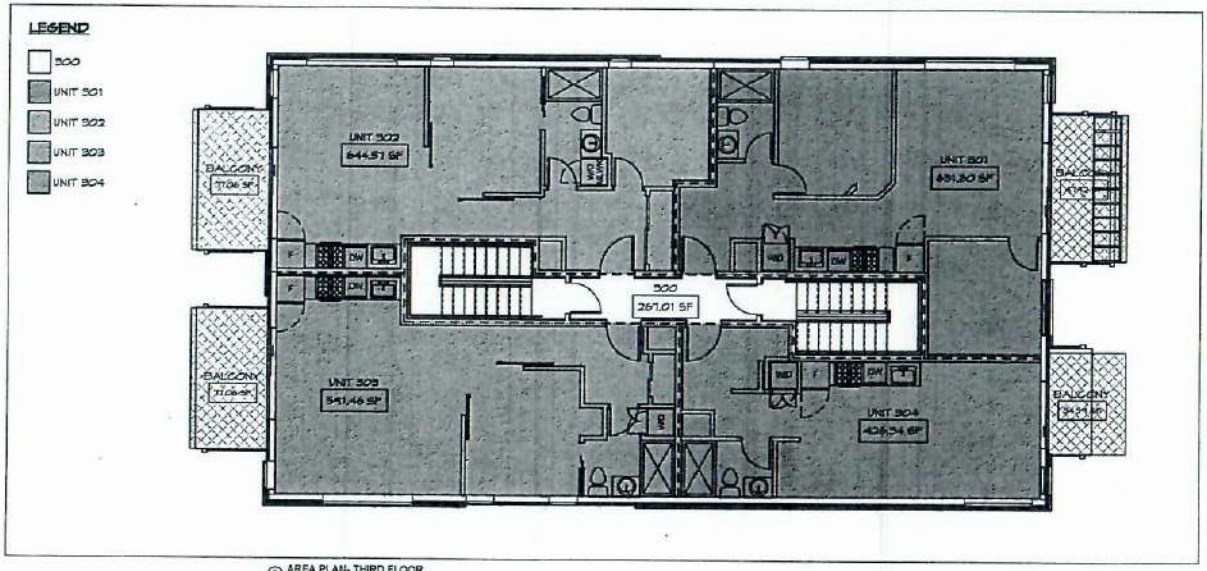
A1.0

GRANT HENLEY

PRELIMINARY- NOT FOR CONSTRUCTION



1 AREA PLAN- SECOND FLOOR
3/16" = 1'-0"



2 AREA PLAN- THIRD FLOOR
3/16" = 1'-0"

BUILDING AREA EFFICIENCY

CIRCULATION	1408.51 SF	14.0%
DWELLING	8673.91 SF	86.0%
TOTAL	10082.41 SF	

BASEMENT

CIRCULATION

000	HALLWAY, STAIRS, CRAWL SPACE	373.9 SF	15%
		373.9 SF	15%

DWELLING

UNIT 001	1 BEDROOM / 1 BATH	545.6 SF	23%
UNIT 002	1 BEDROOM / 1 BATH	540.0 SF	22%
UNIT 003	1 BEDROOM / 1 BATH	536.3 SF	22%
UNIT 004	STUDIO / 1 BATH	422.0 SF	17%
		2043.8 SF	85%

GROUND FLOOR

CIRCULATION

100	HALLWAY, STAIRS, ENTRY	483.1 SF	19%
		483.1 SF	19%

DWELLING

UNIT 101	1 BEDROOM / 1 BATH (BF)	531.6 SF	21%
UNIT 102	2 BEDROOM / 1 BATH (BF)	661.3 SF	26%
UNIT 103	1 BEDROOM / 1 BATH (BF)	482.6 SF	19%
UNIT 104	STUDIO / 1 BATH	371.7 SF	15%
		2047.2 SF	81%

SECOND FLOOR

CIRCULATION

200	HALLWAY, STAIRS	284.5 SF	11%
		284.5 SF	11%

DWELLING

UNIT 201	2 BEDROOM / 1 BATH	670.2 SF	26%
UNIT 202	1 BEDROOM / 1 BATH	547.4 SF	22%
UNIT 203	1 BEDROOM / 1 BATH	541.5 SF	22%
UNIT 204	STUDIO / 1 BATH	417.6 SF	16%
		2282.7 SF	86%

THIRD FLOOR

CIRCULATION

300	HALLWAY, STAIRS	267.0 SF	10%
		267.0 SF	10%

DWELLING

UNIT 301	2 BEDROOM / 1 BATH	691.3 SF	25%
UNIT 302	2 BEDROOM / 1 BATH	644.6 SF	25%
UNIT 303	1 BEDROOM / 1 BATH	541.5 SF	21%
UNIT 304	STUDIO / 1 BATH	426.3 SF	17%
		2303.2 SF	90%

AREA CALCULATION NOTES:
- FROM FINISHED FACE OF EXTERIOR WALLS
- FROM CENTERLINE OF INTERIOR FIRE SEPARATION WALLS
- BALCONIES NOT INCLUDED IN UNIT OR OVERALL AREAS

AREA PLANS 2

370 ATHLONE AVE

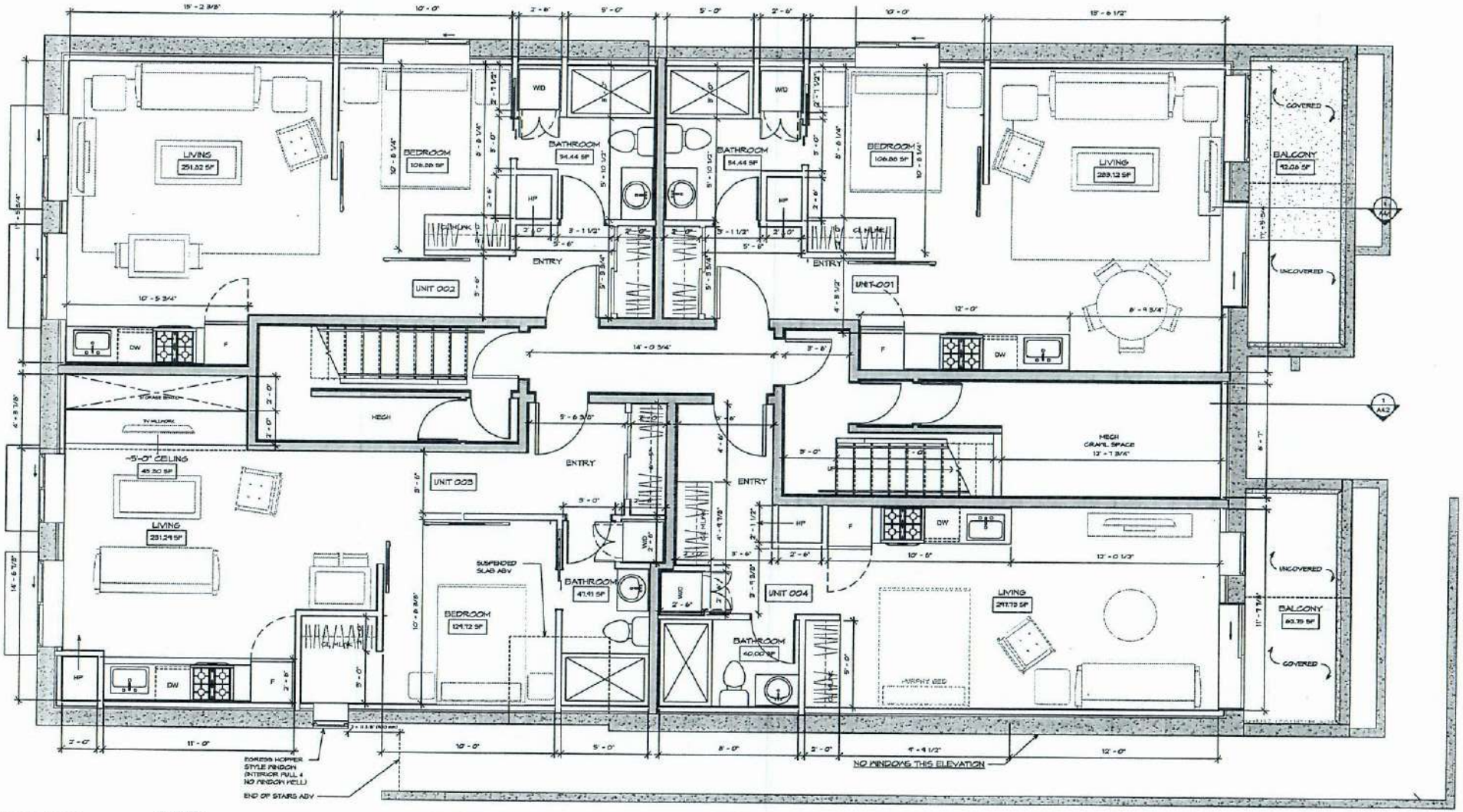
FEB 13 2024

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

A1.1

GRANT HENLEY

PRELIMINARY- NOT FOR CONSTRUCTION



BUILDING AREA EFFICIENCY

CIRCULATION	1408.51 SF	14.0%
DWELLING	8673.41 SF	86.0%
TOTAL	10082.41 SF	

CONSTRUCTION LEGEND
- TYPICAL WALL (WOOD STUD)
- FIRE SEPARATION (WOOD STUD)
- FIRE SEPARATION (STEEL STUD)

BASEMENT

CIRCULATION

000	HALLWAY, STAIRS, CRAWL SPACE	373.9 SF	15%
		373.9 SF	15%

DWELLING

UNIT 001	1 BEDROOM / 1 BATH	545.6 SF	25%
UNIT 002	1 BEDROOM / 1 BATH	540.0 SF	22%
UNIT 003	1 BEDROOM / 1 BATH	536.3 SF	22%
UNIT 004	STUDIO / 1 BATH	422.0 SF	17%
		2043.8 SF	85%

GROUND FLOOR

CIRCULATION

100	HALLWAY, STAIRS, ENTRY	483.1 SF	19%
		483.1 SF	19%

DWELLING

UNIT 101	1 BEDROOM / 1 BATH (BP)	531.6 SF	21%
UNIT 102	2 BEDROOM / 1 BATH (BP)	661.3 SF	26%
UNIT 103	1 BEDROOM / 1 BATH (BP)	482.6 SF	19%
UNIT 104	STUDIO / 1 BATH	371.7 SF	15%
		2047.2 SF	81%

SECOND FLOOR

CIRCULATION

200	HALLWAY, STAIRS	284.5 SF	11%
		284.5 SF	11%

DWELLING

UNIT 201	2 BEDROOM / 1 BATH	610.2 SF	28%
UNIT 202	1 BEDROOM / 1 BATH	547.4 SF	28%
UNIT 203	1 BEDROOM / 1 BATH	547.5 SF	28%
UNIT 204	STUDIO / 1 BATH	417.6 SF	16%
		2282.7 SF	84%

THIRD FLOOR

CIRCULATION

300	HALLWAY, STAIRS	267.0 SF	10%
		267.0 SF	10%

DWELLING

UNIT 301	2 BEDROOM / 1 BATH	631.5 SF	25%
UNIT 302	2 BEDROOM / 1 BATH	644.6 SF	25%
UNIT 303	1 BEDROOM / 1 BATH	547.5 SF	25%
UNIT 304	STUDIO / 1 BATH	426.3 SF	17%
		2300.2 SF	90%

BASEMENT

370 ATHLONE AVE

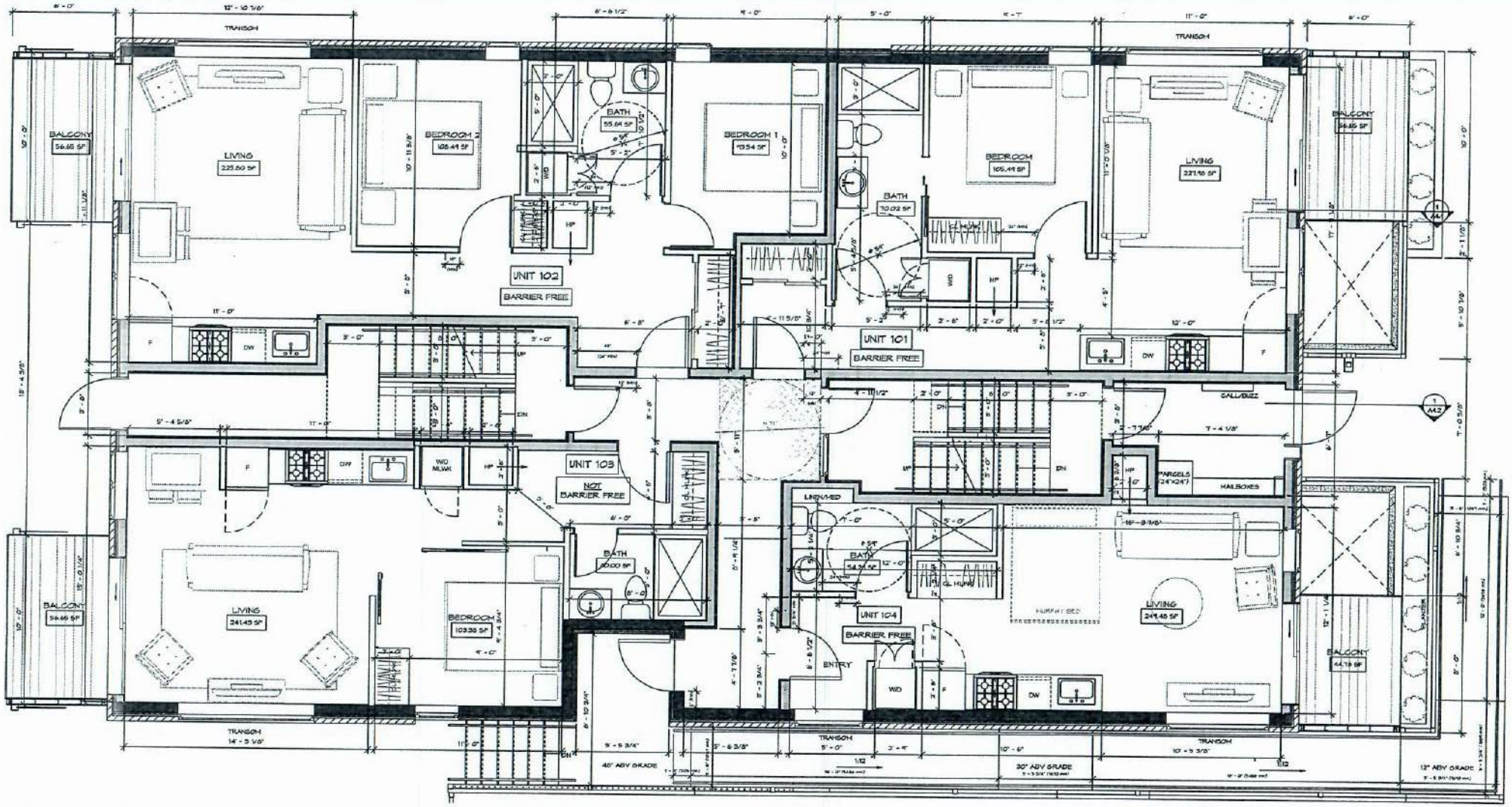
FEB 13 2024

SCALE: 3/8" = 1'-0"

A2.0

GRANT HENLEY

PRELIMINARY- NOT FOR CONSTRUCTION



BUILDING AREA EFFICIENCY

CIRCULATION	1408.51 SF	14.0%
DWELLING	8675.41 SF	86.0%
TOTAL	10083.41 SF	

CONSTRUCTION LEGEND
- TYPICAL WALL (WOOD STUD)
- FIRE SEPARATION (WOOD STUD)
- FIRE SEPARATION (STEEL STUD)

BASEMENT

CIRCULATION

000	HALLWAY, STAIRS, CRAWL SPACE	373.9 SF	15%
		373.9 SF	15%

DWELLING

UNIT 001	1 BEDROOM / 1 BATH	545.6 SF	23%
UNIT 002	1 BEDROOM / 1 BATH	540.0 SF	22%
UNIT 003	1 BEDROOM / 1 BATH	538.3 SF	22%
UNIT 004	STUDIO / 1 BATH	422.0 SF	17%
		2045.8 SF	85%

GROUND FLOOR

CIRCULATION

100	HALLWAY, STAIRS, ENTRY	483.1 SF	19%
		483.1 SF	19%

DWELLING

UNIT 101	1 BEDROOM / 1 BATH (BF)	531.8 SF	21%
UNIT 102	2 BEDROOM / 1 BATH (BF)	661.3 SF	26%
UNIT 103	1 BEDROOM / 1 BATH (BF)	483.6 SF	19%
UNIT 104	STUDIO / 1 BATH	371.7 SF	15%
		2047.2 SF	81%

SECOND FLOOR

CIRCULATION

200	HALLWAY, STAIRS	284.5 SF	11%
		284.5 SF	11%

DWELLING

UNIT 201	2 BEDROOM / 1 BATH	670.2 SF	26%
UNIT 202	1 BEDROOM / 1 BATH	597.4 SF	23%
UNIT 203	1 BEDROOM / 1 BATH	597.5 SF	23%
UNIT 204	STUDIO / 1 BATH	417.6 SF	16%
		2282.7 SF	89%

THIRD FLOOR

CIRCULATION

300	HALLWAY, STAIRS	267.0 SF	10%
		267.0 SF	10%

DWELLING

UNIT 301	2 BEDROOM / 1 BATH	651.8 SF	25%
UNIT 302	2 BEDROOM / 1 BATH	644.6 SF	25%
UNIT 303	1 BEDROOM / 1 BATH	597.5 SF	23%
UNIT 304	STUDIO / 1 BATH	426.3 SF	17%
		2320.2 SF	90%

GROUND FLOOR

370 ATHLONE AVE

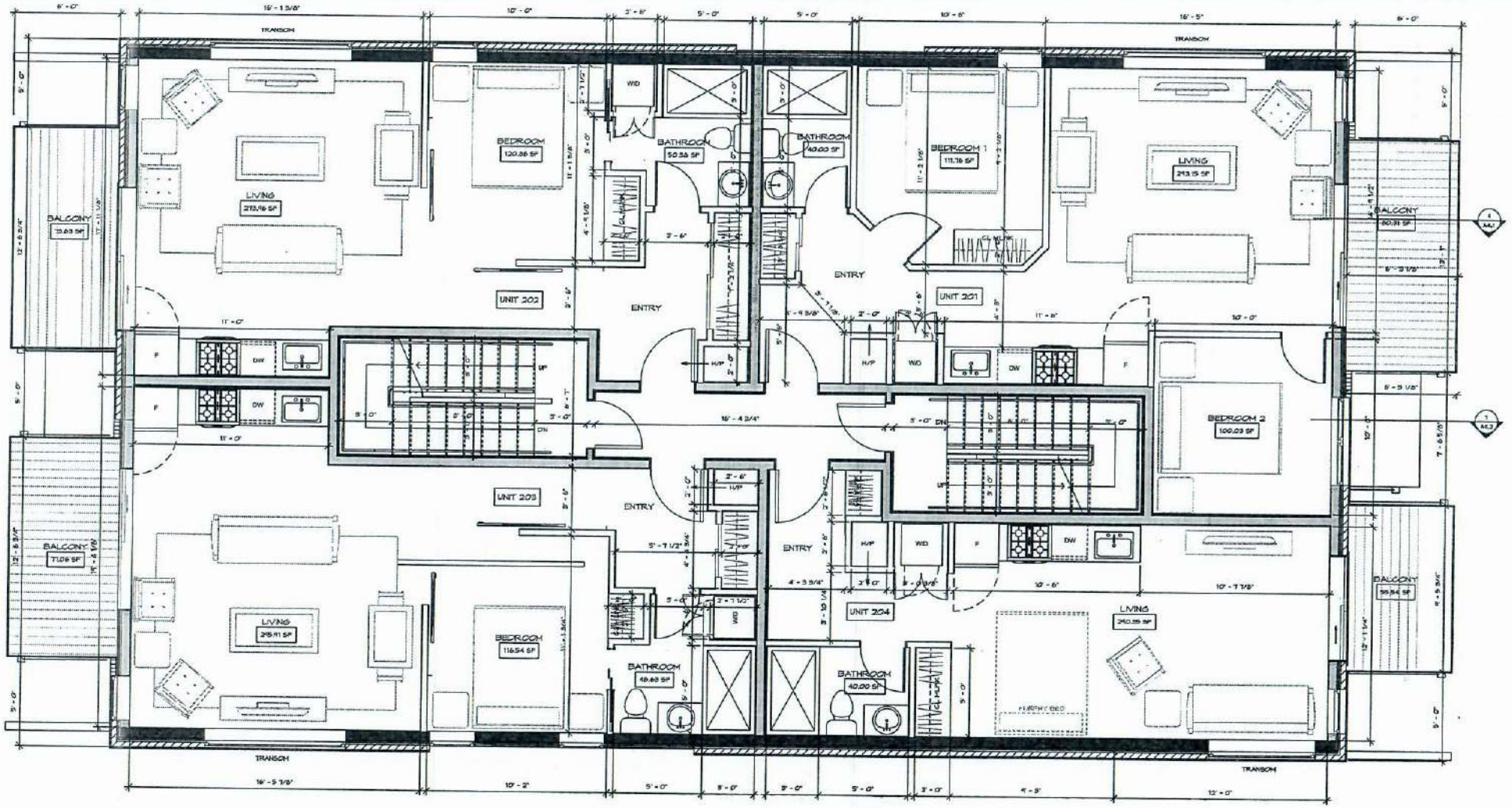
FEB 13 2024

SCALE: 3/8" = 1'-0"
NOTE: HALF SCALE FOR 11"x17"

A2.1

GRANT HENLEY

PRELIMINARY- NOT FOR CONSTRUCTION



BUILDING AREA EFFICIENCY

CIRCULATION	1408.51 SF	14.0%
DWELLING	8673.41 SF	86.0%
TOTAL	10081.41 SF	

CONSTRUCTION LEGEND
- TYPICAL WALL (WOOD STUD)
- FIRE SEPARATION (WOOD STUD)
- FIRE SEPARATION (STEEL STUD)

BASEMENT

CIRCULATION

000	HALLWAY, STAIRS, CRAWL SPACE	379.9 SF	15%
		379.9 SF	15%

DWELLING

UNIT 001	1 BEDROOM / 1 BATH	545.6 SF	23%
UNIT 002	1 BEDROOM / 1 BATH	540.0 SF	22%
UNIT 003	1 BEDROOM / 1 BATH	538.3 SF	22%
UNIT 004	STUDIO / 1 BATH	422.0 SF	17%
		2045.8 SF	85%

GROUND FLOOR

CIRCULATION

100	HALLWAY, STAIRS, ENTRY	493.1 SF	19%
		493.1 SF	19%

DWELLING

UNIT 101	1 BEDROOM / 1 BATH (BF)	531.6 SF	21%
UNIT 102	2 BEDROOM / 1 BATH (BF)	661.3 SF	26%
UNIT 103	1 BEDROOM / 1 BATH (BF)	482.6 SF	19%
UNIT 104	STUDIO / 1 BATH	371.7 SF	15%
		2047.2 SF	81%

SECOND FLOOR

CIRCULATION

200	HALLWAY, STAIRS	284.5 SF	11%
		284.5 SF	11%

DWELLING

UNIT 201	2 BEDROOM / 1 BATH	670.2 SF	26%
UNIT 202	1 BEDROOM / 1 BATH	541.4 SF	23%
UNIT 203	1 BEDROOM / 1 BATH	541.5 SF	23%
UNIT 204	STUDIO / 1 BATH	417.6 SF	16%
		2283.7 SF	84%

THIRD FLOOR

CIRCULATION

300	HALLWAY, STAIRS	267.0 SF	10%
		267.0 SF	10%

DWELLING

UNIT 301	2 BEDROOM / 1 BATH	631.8 SF	25%
UNIT 302	2 BEDROOM / 1 BATH	644.8 SF	25%
UNIT 303	1 BEDROOM / 1	541.5 SF	23%
UNIT 304	STUDIO / 1 BATH	426.8 SF	17%
		2300.2 SF	90%

SECOND FLOOR

370 ATHLONE AVE

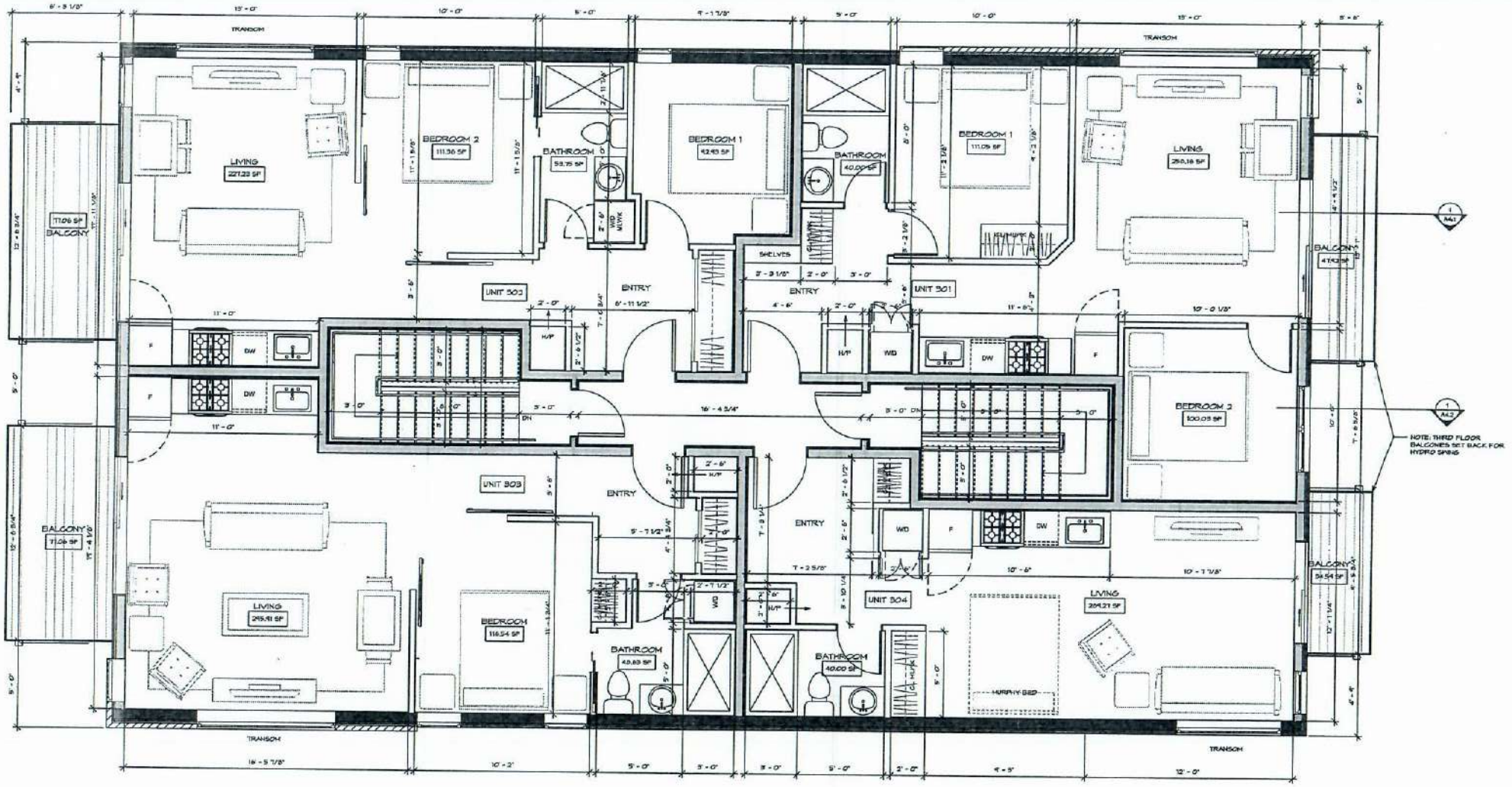
FEB 13 2024

SCALE: 3/8" = 1'-0"

A2.2

GRANT HENLEY

PRELIMINARY- NOT FOR CONSTRUCTION



BUILDING AREA EFFICIENCY

CIRCULATION	1408.61 SF	14.0%
DWELLING	8615.41 SF	86.0%
TOTAL	10024.41 SF	

CONSTRUCTION LEGEND
- TYPICAL WALL (WOOD STUD)
- FIRE SEPARATION (WOOD STUD)
- FIRE SEPARATION (STEEL STUD)

BASEMENT

CIRCULATION

000	HALLWAY, STAIRS, CRAWL SPACE	373.4 SF	15%
		373.4 SF	15%

DWELLING

UNIT 001	1 BEDROOM / 1 BATH	545.6 SF	23%
UNIT 002	1 BEDROOM / 1 BATH	540.0 SF	22%
UNIT 003	1 BEDROOM / 1 BATH	536.3 SF	22%
UNIT 004	STUDIO / 1 BATH	422.0 SF	17%
		2043.9 SF	85%

GROUND FLOOR

CIRCULATION

100	HALLWAY, STAIRS, ENTRY	483.1 SF	14%
		483.1 SF	14%

DWELLING

UNIT 101	1 BEDROOM / 1 BATH (BF)	531.6 SF	21%
UNIT 102	2 BEDROOM / 1 BATH (BF)	661.3 SF	26%
UNIT 103	1 BEDROOM / 1 BATH (BF)	482.6 SF	14%
UNIT 104	STUDIO / 1 BATH	371.7 SF	15%
		2047.2 SF	81%

SECOND FLOOR

CIRCULATION

200	HALLWAY, STAIRS	284.5 SF	11%
		284.5 SF	11%

DWELLING

UNIT 201	2 BEDROOM / 1 BATH	670.2 SF	26%
UNIT 202	1 BEDROOM / 1 BATH	547.4 SF	22%
UNIT 203	1 BEDROOM / 1 BATH	547.5 SF	22%
UNIT 204	STUDIO / 1 BATH	417.6 SF	16%
		2282.7 SF	84%

THIRD FLOOR

CIRCULATION

300	HALLWAY, STAIRS	267.0 SF	10%
		267.0 SF	10%

DWELLING

UNIT 301	2 BEDROOM / 1 BATH	691.8 SF	25%
UNIT 302	2 BEDROOM / 1 BATH	644.6 SF	25%
UNIT 303	1 BEDROOM / 1 BATH	547.5 SF	23%
UNIT 304	STUDIO / 1 BATH	426.3 SF	17%
		2300.2 SF	90%

THIRD FLOOR

370 ATHLONE AVE

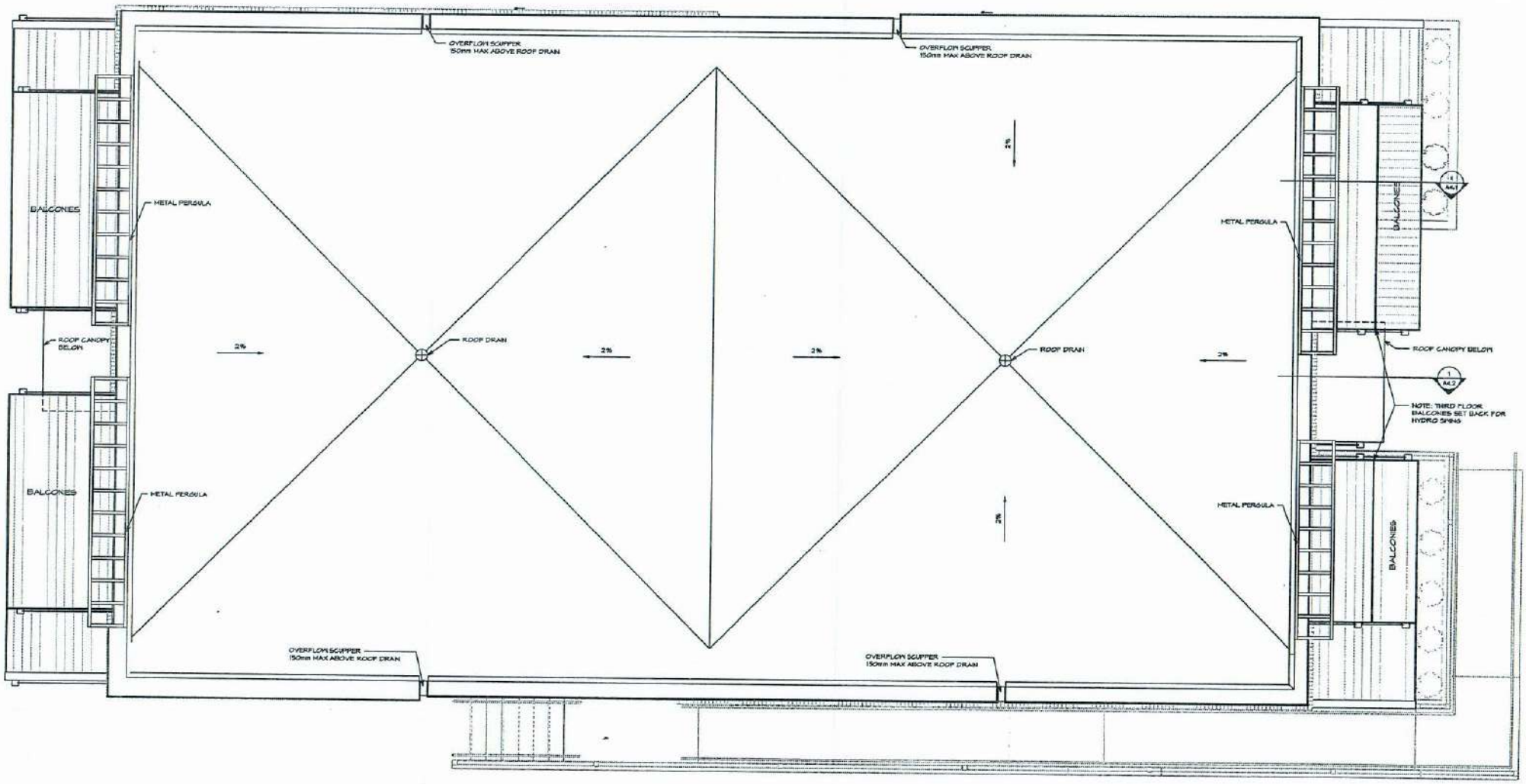
FEB 13 2024

SCALE: 3/8" = 1'-0"
NOTE HALF SCALE FOR 11"x17"

A2.3

GRANT HENLEY

PRELIMINARY- NOT FOR CONSTRUCTION



ROOF PLAN

370 ATHLONE AVE

FEB 13 2024

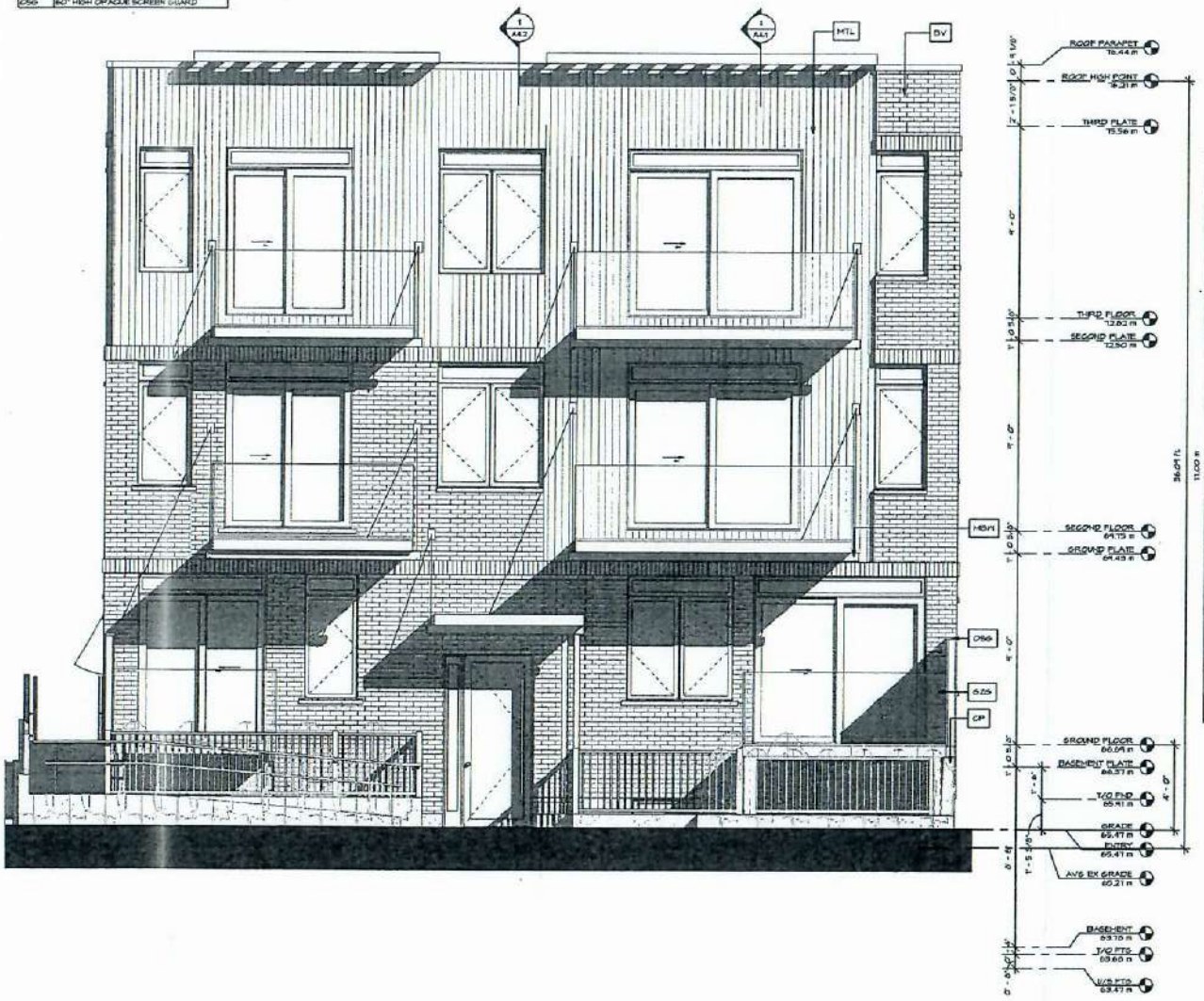
SCALE: 3/8" = 1'-0"

A2.4

GRANT HENLEY

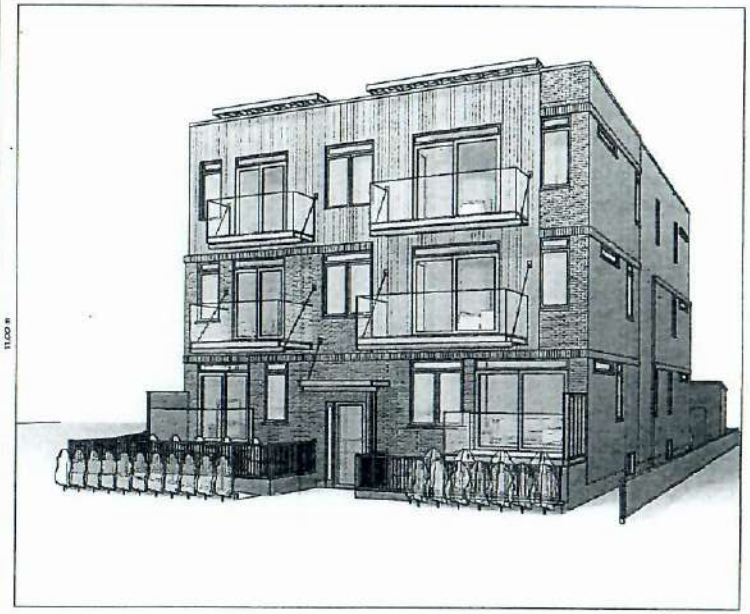
PRELIMINARY- NOT FOR CONSTRUCTION

MATERIALS	
BV	BRICK VANEER
CP	CONCRETE PARDOING
CHP	HARDIEPLANK SIDING BY JAMES HARDIE
GLG	42" GLASS GAURD
MBM	METAL FRAMED BALCONY C/W FIRE SUPPORT @ 2ND AND 3RD FLOOR
MTL	METAL SIDING
OSG	80" HIGH OPAQUE SCREEN GUARD



WALL/WINDOW RATIO								
ELEVATION	UNPROTECTED OPENINGS	EXPOSED BUILDING FACE	RATIO	SETBACK	MAX PERM 9.10.14.4(1)(a)	MAX PERM 9.10.14.4(1)(c)	MAX RATIO 9.10.14.4(1)(c)	CONSTRUCTION
FRONT	939.22 SF	1321.45 SF	40.36%	14.22 ft	1320.69 SF	2119.55 SF	99%	COMBUSTABLE CONSTRUCTION & CLADDING PERMITTED, 45 MIN FRR MIN
LEFT	126.30 SF	2506.56 SF	5.41%	1.30 m	181.60 SF	15.50 SF	7%	NON-COMBUSTABLE CONSTRUCTION & CLADDING REQ'D, 1 HR FRR
REAR	346.99 SF	1828.45 SF	44.79%	1.50 m	252.41 SF	609.41 SF	99%	COMBUSTABLE CONSTRUCTION PERMITTED, NON-COMBUSTABLE CLADDING REQ'D, 1 HR FRR MIN
RIGHT	169.50 SF	2506.56 SF	7.34%	1.20 m	181.60 SF	15.50 SF	7%	NON-COMBUSTABLE CONSTRUCTION & CLADDING REQ'D, 1 HR FRR
TOTAL	1423.91 SF	7214.02 SF	19.56%					

* CALCULATED BY FIRE COMPARTMENT AS PER 9.10.14.2.(1) REFER TO A9.4



FRONT ELEVATION

370 ATHLONE AVE

FEB 13 2024

SCALE 3/8" = 1'-0"

A3.1

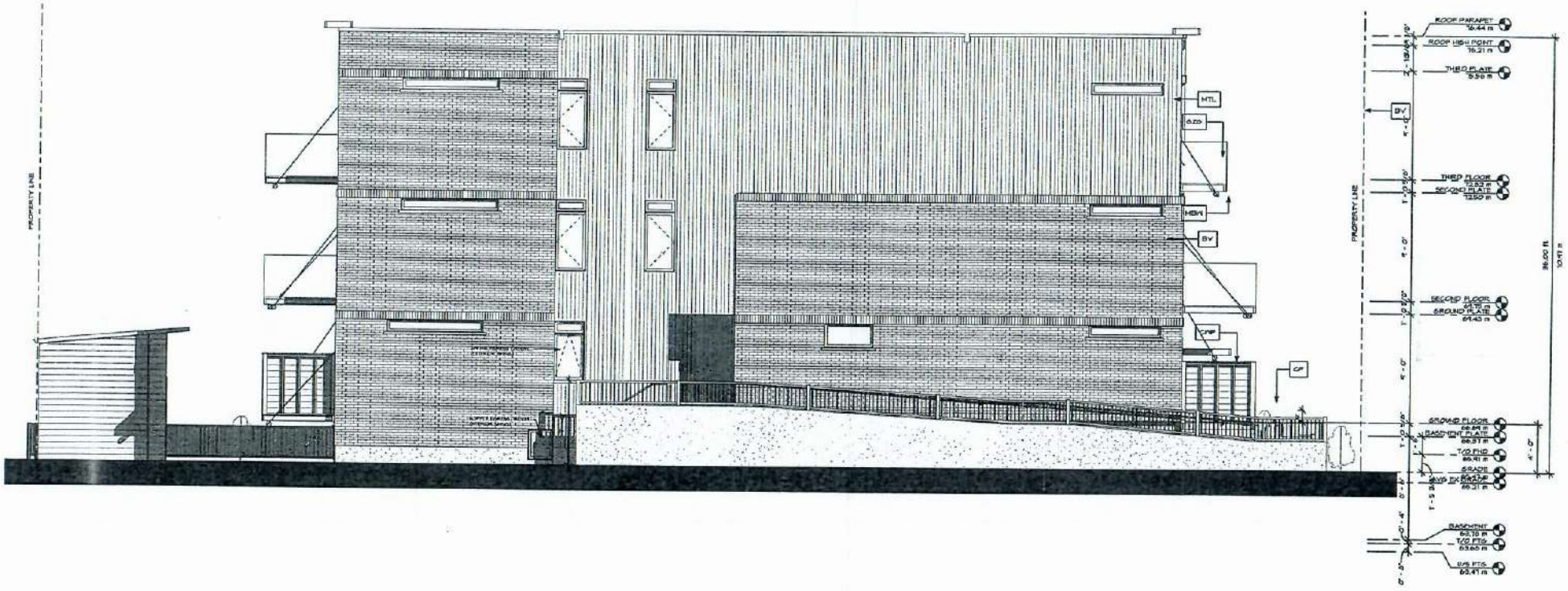
GRANT HENLEY

PRELIMINARY- NOT FOR CONSTRUCTION

MATERIALS	
BV	BRICK VENEER
CP	CONCRETE PARGING
CMP	HARDIEPLANK SIDING BY JAMES HARDIE
GZG	42" GLASS GUARD
MBM	METAL FRAMED BALCONY C/W WIRE SUPPORT @ 2ND AND 3RD FLOOR
MTL	METAL SIDING
OSG	60" HIGH OPAQUE SCREEN GUARD

WALL/WINDOW RATIO								
ELEVATION	UNPROTECTED OPENINGS	EXPOSED BUILDING FACE	RATIO	SETBACK	MAX ALLOWED 9.10.14.4(1)(a)	MAX ALLOWED 9.10.14.4(1)(c)	MAX RATIO 9.10.14.4(1)(c)	CONSTRUCTION
FRONT	338.23 SF	1928.45 SF	40.14%	14.22 m	100%	2176.55 SF	55%	COMBUSTABLE CONSTRUCTION & CLADDING PERMITTED, 45 MIN FRR MIN
LEFT	126.20 SF	2508.56 SF	5.47%	1.20 m	10%	250.85 SF	11%	NON-COMBUSTABLE CONSTRUCTION & CLADDING REQ'D, 1 HR FRR
REAR	944.49 SF	1928.45 SF	44.71%	7.50 m	252.41 SF	605.41 SF	19%	COMBUSTABLE CONSTRUCTION PERMITTED, NON-COMBUSTABLE CLADDING REQ'D, 1 HR FRR, MIN
RIGHT	164.50 SF	2508.56 SF	7.34%	1.20 m	184.60 SF	15.50 SF	1%	NON-COMBUSTABLE CONSTRUCTION & CLADDING REQ'D, 1 HR FRR
TOTAL	1423.41 SF	7214.02 SF	19.56%					

* CALCULATED BY FIRE COMPARTMENT AS PER 9.10.14.2(1) REFER TO A3.4



LEFT ELEVATION

370 ATHLONE AVE

FEB 13 2024

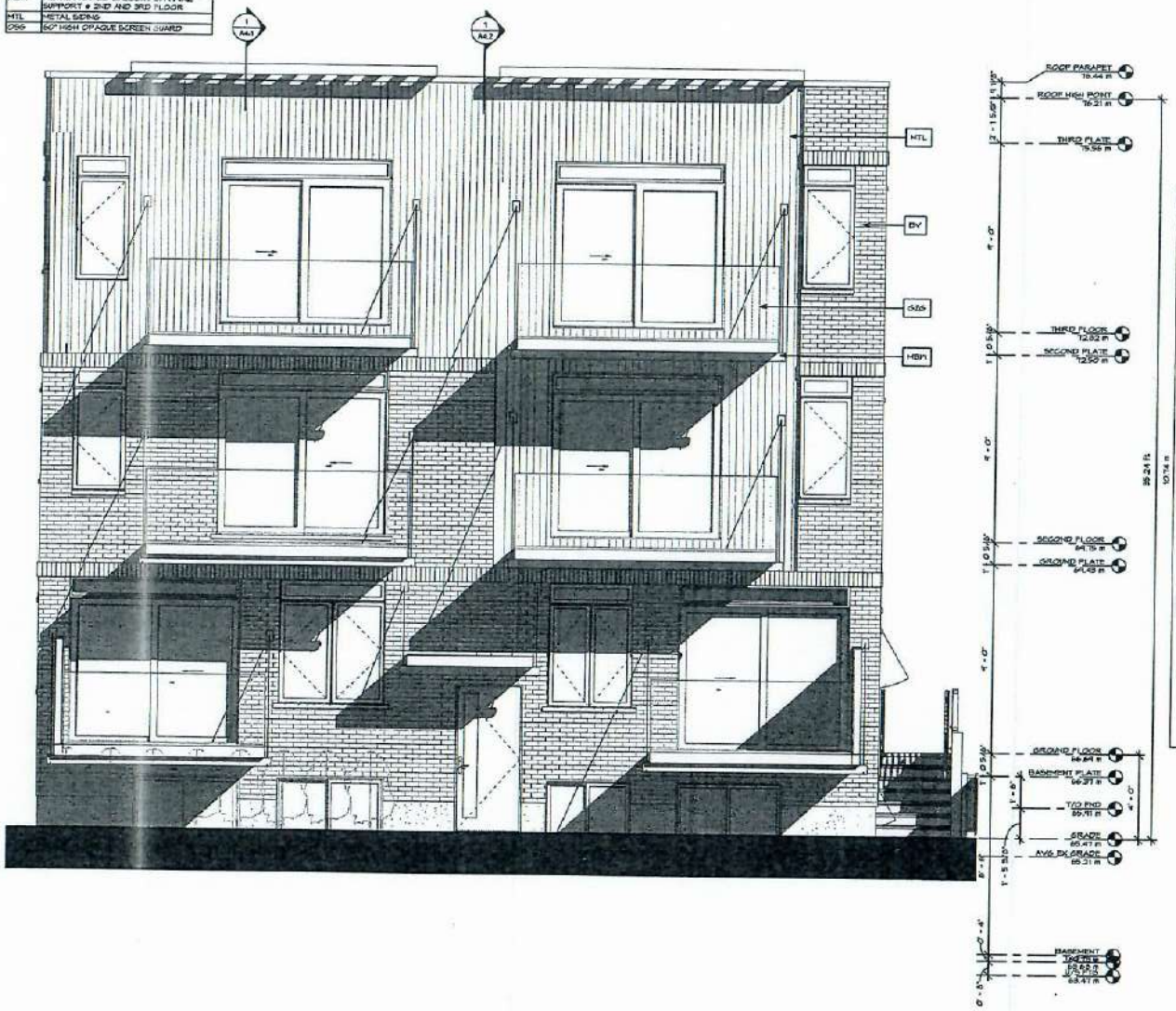
SCALE: 1/4" = 1'-0"
NOTE: HALF SCALE FOR 11x17

A3.2

GRANT HENLEY

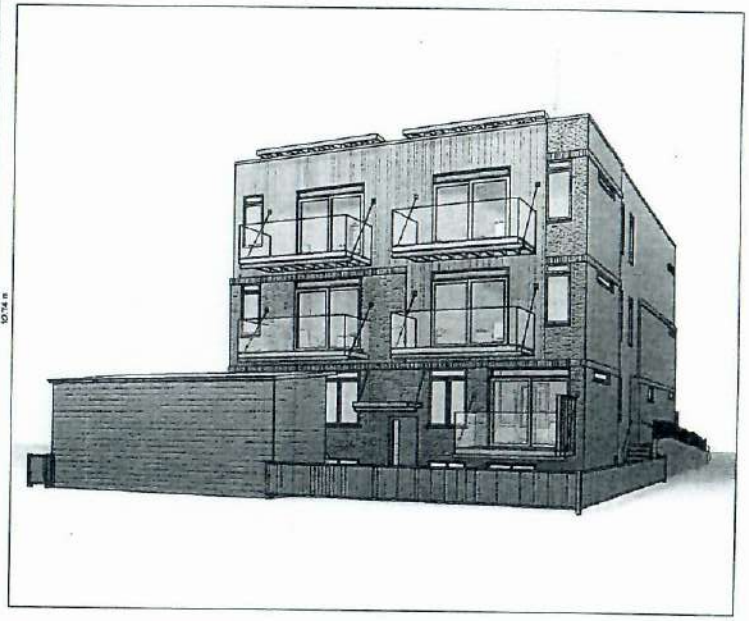
PRELIMINARY- NOT FOR CONSTRUCTION

MATERIALS	
BV	BRICK VANEER
CP	CONCRETE PARGING
CHP	HARDIEPLANK SIDING BY JAMES HARDIE
GDS	42" GLASS GUARD
MBM	METAL FRAMED BALCONY C/W FIRE SUPPORT @ 2ND AND 3RD FLOOR
MTL	METAL SIDING
OBS	60" HIGH OPAQUE SCREEN GUARD



FULL/WINDOW RATIO								
ELEVATION	UNPROTECTED OPENINGS	EXPOSED BUILDING FACE	RATIO	SETBACK	MAX PERM 9.10.14.4(1)(a)	MAX PERM 9.10.14.4(1)(c)	MAX RATIO 9.10.14.4(1)(c)	CONSTRUCTION
FRONT	539.22 SF	1328.45 SF	40.14%	14.22 m	190.65 SF	217.65 SF	25%	COMBUSTABLE CONSTRUCTION & CLADDING PERMITTED, 45 MIN FRR MIN
LEFT	126.20 SF	2503.56 SF	5.41%	1.20 m	161.80 SF	15.50 SF	1%	NON-COMBUSTABLE CONSTRUCTION & CLADDING REQ'D, 1 HR FRR
REAR	594.91 SF	1320.49 SF	44.79%	7.50 m	252.41 SF	605.47 SF	14%	COMBUSTABLE CONSTRUCTION PERMITTED, NON-COMBUSTABLE CLADDING REQ'D, 1 HR FRR MIN
RIGHT	164.50 SF	2503.56 SF	7.34%	1.20 m	161.80 SF	15.50 SF	1%	NON-COMBUSTABLE CONSTRUCTION & CLADDING REQ'D, 1 HR FRR
TOTAL	1423.81 SF	1214.02 SF	14.55%					

* CALCULATED BY FIRE COMPARTMENT AS PER 9.10.14.4.(1) REFER TO A5.4



REAR ELEVATION

370 ATHLONE AVE

FEB 13 2024

SCALE: 3/8" = 1'-0"
NOTE HALF SCALE FOR 11x17

A3.3

GRANT HENLEY

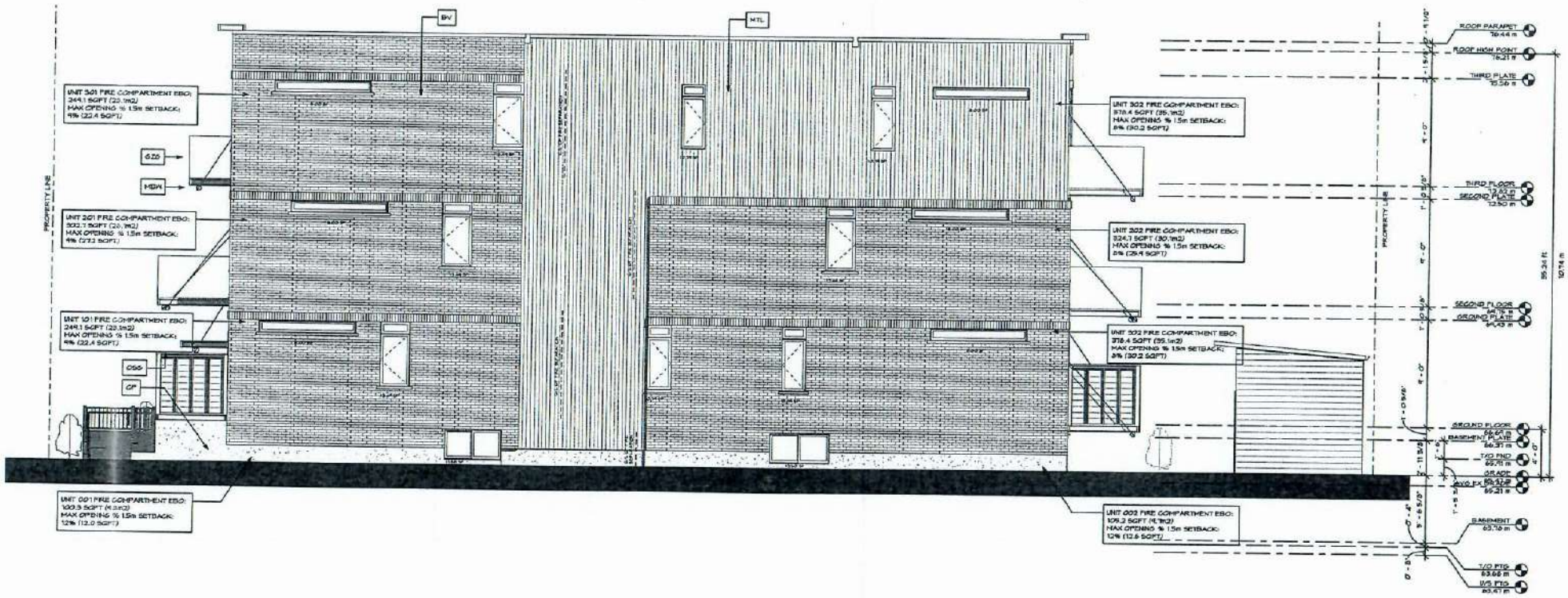
PRELIMINARY- NOT FOR CONSTRUCTION

MATERIALS	
BV	BRICK VENEER
CP	CONCRETE PARGGING
CPP	HARDIEPLANK SIDING BY JAMES HARDIE
6.2S	42" GLASS GUARD
MB/A	METAL FRAMED BALCONY C/W FIRE SUPPORT @ 2ND AND 3RD FLOOR
MTL	METAL SIDING
OSG	60" HIGH OPAQUE SCREEN GUARD

WALL/WINDOW RATIO

ELEVATION	UNPROTECTED OPENINGS	EXPOSED BUILDING FACE	RATIO	SETBACK	MAX EBO 9.10.14.4(1)(a)	MAX EBO 9.10.14.4(1)(c)	MAX RATIO 9.10.14.4(1)(c)	CONSTRUCTION
FRONT	333.22 SF	1928.45 SF	40.14%	14.22 m	730.85 SF	3716.55 SF	55%	COMBUSTABLE CONSTRUCTION & CLADDING PERMITTED, 45 MIN FRR MIN
LEFT	126.20 SF	2308.56 SF	9.47%	1.20 m	161.60 SF	5.50 SF	1%	NON-COMBUSTABLE CONSTRUCTION & CLADDING REQ'D, 1 HR FRR
REAR	944.91 SF	1928.45 SF	44.71%	7.50 m	252.41 SF	605.41 SF	14%	COMBUSTABLE CONSTRUCTION PERMITTED, NON-COMBUSTABLE CLADDING REQ'D, 1 HR FRR MIN
RIGHT	1845.50 SF	2308.56 SF	7.34%	1.20 m	161.60 SF	5.50 SF	1%	NON-COMBUSTABLE CONSTRUCTION & CLADDING REQ'D, 1 HR FRR
TOTAL	1425.91 SF	7214.02 SF	19.58%					

* CALCULATED BY FIRE COMPARTMENT AS PER 9.10.14.5.(1) REFER TO A3.4



RIGHT ELEVATION

370 ATHLONE AVE

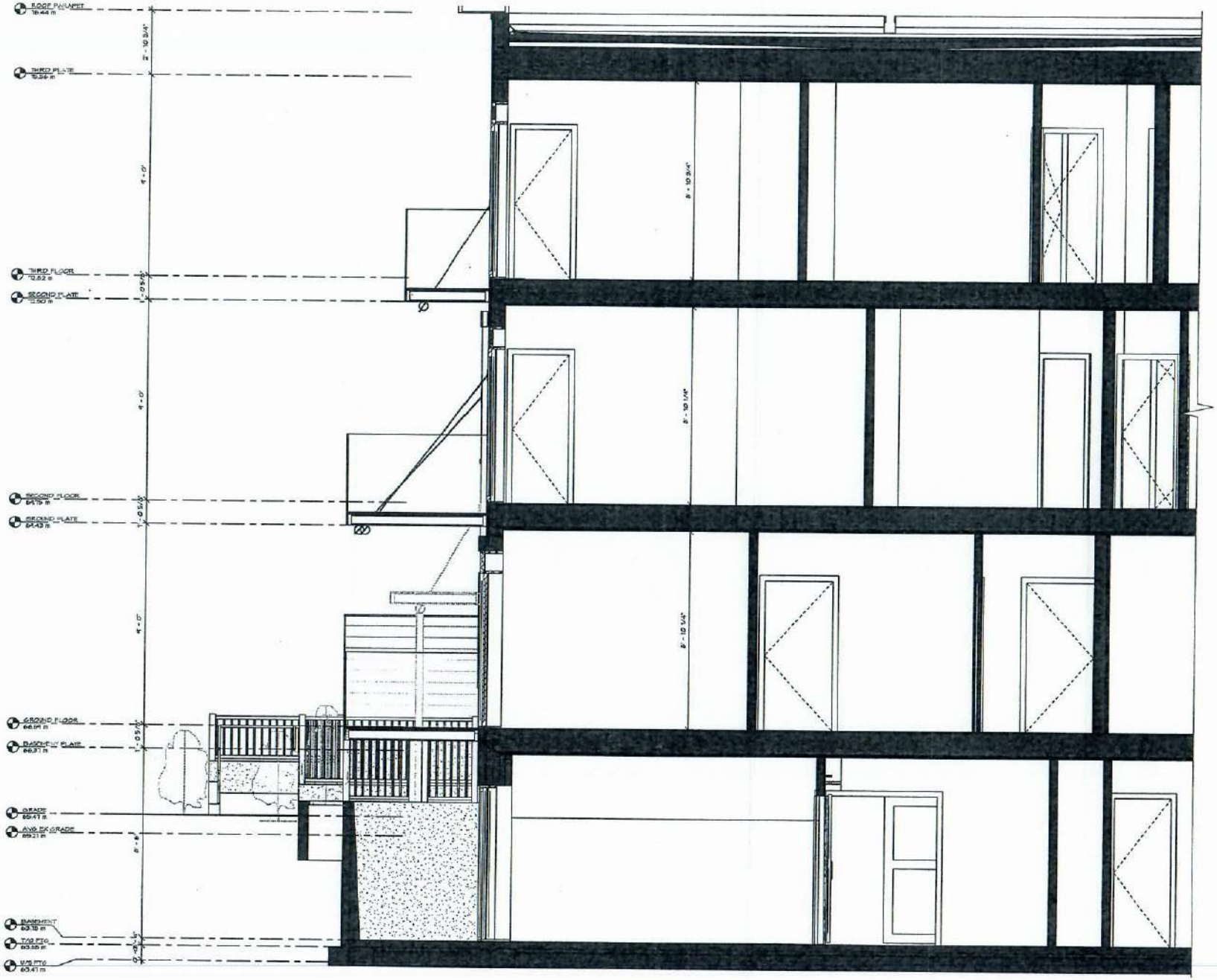
FEB 13 2024

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

A3.4

GRANT HENLEY

PRELIMINARY- NOT FOR CONSTRUCTION



SECTION 1

370 ATHLONE AVE

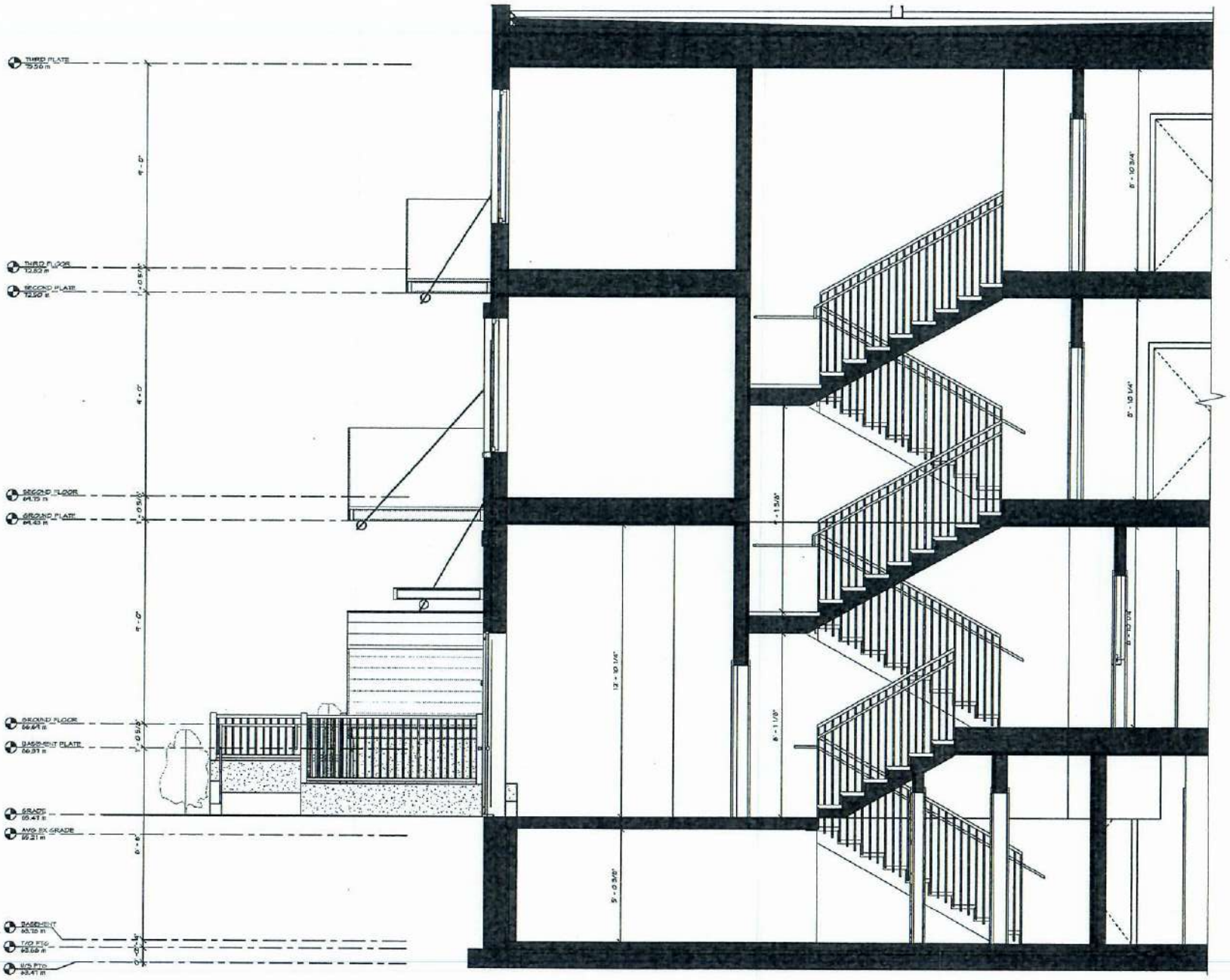
FEB 13 2024

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

A4.1

GRANT HENLEY

PRELIMINARY- NOT FOR CONSTRUCTION



SECTION 2

370 ATHLONE AVE

FEB 13 2024

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

A4.2

GRANT HENLEY

PRELIMINARY- NOT FOR CONSTRUCTION

ATTACHMENT 2 : WATER BOUNDARY CONDITIONS E-MAIL

Mineault-Guitard, Alexandre

From: Whelan, Amy <amy.whelan@ottawa.ca>
Sent: Thursday, May 16, 2024 1:49 PM
To: TL MaK
Cc: Mineault-Guitard, Alexandre
Subject: RE: 370 Athlone Avenue - Water Boundary Conditions Request

Hi Tony,

Water resources team has confirmed that the hydrants identified in the multi-hydrant analysis can provide the fire flow of 13,000L/min. You may use this email as confirmation from the City of Ottawa that the hydrants you identified in the multi-hydrant analysis can provide the required fire flow. Please use the results from the initial boundary condition request for the serviceability report.

The following are boundary conditions, HGL, for hydraulic analysis at 370 Athlone Avenue (zone 1W) assumed to be connected to the 152mm watermain on Athlone Avenue (see attached PDF for location).

Minimum HGL: 108.7 m

Maximum HGL: 114.9 m

Available Fire Flow at 20 (psi): 86.0 L/s, assuming ground elevation of 65.2 m

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

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

Kind regards,

Amy

From: TL MaK <tlmakecl@bellnet.ca>
Sent: May 15, 2024 2:19 PM
To: Whelan, Amy <amy.whelan@ottawa.ca>
Cc: 'Mineault-Guitard, Alexandre' <Alexandre.Mineault-Guitard@stantec.com>
Subject: RE: 370 Athlone Avenue - Water Boundary Conditions Request


Boundary Conditions for 370 Athlone Avenue
N
358
361
362
365
366
369
370
374
255
261
267
152mm
av. Athlone Ave.
Legend
Private
Public
City of Ottawa

ATTACHMENT 3 : FIRE FLOW CALCULATION – FUS

Stantec

FUS Fire Flow Calculation - Long Method

Calculations based on: *"Water Supply for Public Fire Protection"* by Fire Underwriters' Survey, 2020

Stantec Project #: 163401084
Project Name: 370 Athelone Ave. - Potable Water Serviceability Assessment **Fire Flow Calculation #:** 1
Date: March 11, 2024 **Building Type/Description/Name:** Residential
Data inputted by: Hamidreza Mohabbat, MASc.
Data reviewed by: Alexandre Mineault-Guitard, P.Eng.

Notes: *Wood frame; multi-unit 3 storeys building with a basement 50% below grade. Gross floor area of 8,670 sqf. Not sprinklered. Calculations based on the updated plans (received on Feb 13, 2024)*

Fire Underwriters Survey Determination of Required Fire Flow - Long Method

Step	Task	Term	Options	Multiplier Associated with Option	Choose:	Value Used	Unit	Total Fire Flow (L/min)
1	Choose Frame Used for Construction of Unit	**Framing Material**						
		Coefficient related to type of construction (C)	Type V - Wood Frame	1.5	Type V - Wood Frame	1.5	m	
			Type IV-A - Mass Timber	0.8				
			Type IV-B - Mass Timber	0.9				
			Type IV-C - Mass Timber	1				
			Type IV-D - Mass Timber	1.5				
			Type III - Ordinary construction	1				
			Type II - Non-combustible construction	0.8				
			Type I - Fire resistive construction	0.6				
2	Choose Type of Housing (if TH, Enter Number of Units Per TH Block)	**Floor Space Area**						
		Type of Housing	Single Family	1	Other (Comm, Ind, Apt etc.)	16	Units	
			Townhouse - indicate # of units	0				
			Other (Comm, Ind, Apt etc.)	16				
2.2	# of Storeys	Number of Floors/Storeys in the Unit (do not include basement if 50% below grade):			3	3	Storeys	
3	Enter Ground Floor Area of One Unit	Average Floor Area (A) based on total floor area of all floors for one unit (non-fire resistive construction):			2,555 Square Feet (ft2)	2,555	Area in Square Metres (m^2)	
3.1	Obtain Total Effective Building Area	Total Effective Building Area (# of Storeys x # of Units (if single family or townhouse) x Average Floor Area):			712	712		
4	Obtain Required Fire Flow without Reductions	Required Fire Flow (without reductions or increases per FUS) (F = 220 * C * √A) Round to nearest 1,000 L/min						9,000
5	Apply Factors Affecting Burning	**Reductions/Increases Due to Factors Affecting Burning**						
5.1	Choose Combustibility of Building Contents	Occupancy Content Hazard Reduction or Surcharge	Non-combustible	-0.25	Limited combustible	-0.15	N/A	7,650
			Limited combustible	-0.15				
			Combustible	0				
			Free burning	0.15				
			Rapid burning	0.25				
5.2	Choose Reduction Due to Presence of Sprinklers	Sprinkler Reduction	Adequate Sprinkler conforms to NFPA13	-0.3	None	0	N/A	0
			None	0				
		Water Supply Credit	Water supply is standard for sprinkler and fire dept. hose line	-0.1	Water supply is not standard or N/A	0	N/A	0
			Water supply is not standard or N/A	0				
		Sprinkler Supervision Credit	Sprinkler system is fully supervised	-0.1	Sprinkler not fully supervised or N/A	0	N/A	0
			Sprinkler not fully supervised or N/A	0				
5.3	Choose Presence of Sprinklers for Exposures within 30m	Sprinkler Conforms to NFPA13	Adequate sprinkler for exposures conforms to NFPA13		None for exposures	0	N/A	0
			None for exposures					
		Water Supply	Water supply is standard for sprinkler and fire dept. hose line of exposures		Water supply is not standard or N/A for exposures		N/A	
			Water supply is not standard or N/A for exposures					
		Sprinkler Supervision	Sprinkler system of exposures is fully supervised		Sprinkler not fully supervised or N/A for exposures		N/A	
			Sprinkler not fully supervised or N/A for exposures					
5.4	Choose Separation Distance Between Units	Exposure Distance Between Units	Front Yard	20.1 to 30.1m	0.1	0.75	m	5,738
			Right Side	0 to 3.0m	0.25			
			Rear Yard	10.1 to 20.0m	0.15			
			Left Side	0 to 3.0m	0.25			
6	Obtain Required Fire Flow, Duration & Volume	*Total Required Fire Flow, rounded to nearest 1,000 L/min, with max/min limits applied:*						13,000
		Total Required Fire Flow (above) in L/s:						217
		Required Duration of Fire Flow (hrs)						2.75
		Required Volume of Fire Flow (m^3)						2,145

ATTACHMENT 4 : FIRE FLOW CALCULATION – OFM

Fire Flow Calculations as per the Ontario Building Code (OBC)

Stantec

OFM Fire Flow Calculation

Calculations based on *Fire Protection Water Supply Guideline for Part 3 in the Ontario Building Code* by the Office of the Fire Marshal (OFM 1999)

Stantec Project #: 163401084
Project Name: 370 Athelone Ave. - Potable Water Serviceability
Date: January 13, 2025
Data inputted by: Melissa Nelson, P.Eng.
Data reviewed by: Alexandra Mineault-Guitard, P.Eng.

Fire Flow Calculation #: 1
Building Type/Description/Name: Residential

Wood frame; multi-unit 3 storeys building with a basement 50% below grade. Gross floor area of 8,670 sqf. Not sprinklered.
Calculations based on the updated plans (received on Feb 13, 2024)

Office of the Fire Marshal Determination of Required Fire Protection Water Supply

Step	Task	Term	Options	Multiplier Associated with Option	Choose:	Value Used	Unit
1	**General Building Details**						
1.1	Enter Number of Storeys	Number of Floors/Storeys in the Unit (incl. basement):			4	4	Storeys
1.2	Choose Type of Housing (if TH, Enter Number of Units Per TH Block)	Type of Housing	Single Family	0	Other (Comm, Ind, Apt etc.)	16	Units
			Townhouse - indicate # of units	0			
			Other (Comm, Ind, Apt etc.)	16			
1.3	Choose Presence of Sprinklers	Sprinklers?			None	None	N/A
1.4	Choose Presence of Firewalls	Firewall separations?			None	None	N/A
1.5	Choose Presence of Stand-Pipe System	Stand-pipe system?			None	None	N/A
2	**Determining Water Supply Coefficient K**						
2.1	Choose Type of Construction	**Type of Construction**					
		Type of Construction	Non-combustible construction + fire separations + fire-resistance ratings in accordance with Section 3.2.2 of OBC	Type I	Type IV	N/A	N/A
			Non-combustible construction + fire separations + no fire-resistance rating	Type II			
			Combustible construction + fire separations + fire-resistance ratings in accordance with Section 3.2.2 of OBC	Type III			
			Combustible construction + fire separations + no fire-resistance rating	Type IV			
2.2	Choose Classification	**Building Classification**					
		Occupancy Classification (OBC)	A-2, B-1, B-2, B-3, C, D	23	C	A-2, B-1, B-2, B-3, C, D	N/A
			A-4, F-3	28			
			A-1, A-3	32			
			E, F-2	39			
			F-1	53			
2.3	Water Supply Coefficient (K)	Water Supply Coefficient K				23	N/A
3	**Determining Building Volume V**						
3.1	Enter Ground Floor Area of One Unit	**Floor Space Area**					
		Average Floor Area (A) :			2,521 Square Feet (ft2)	234	Area in Square Meters (m^2)
3.2	Building Height (h)	**Building Height**					
		Bottom Elevation :			63.8 Meters (m)	12.7	Height in Meters (m)
		Top Elevation :			76.4 Meters (m)		
3.3	Building Volume (V)	Building Volume V = A * h				2,970	Volume in Meters Cube (m^3)
4	**Determining Spatial Coefficient S**						
4.1	Choose Exposure Distances from Building to Property Line	Exposure Distance from Building to Property Line in Meters (m)	**North Side**	1.5	0.50	1.25	Distance in Meters (m)
			Property Line to Street Centreline (Street Facing)	0			
			Total Exposure Distance	1.5			
			East Side	4.5	0.00		
			Property Line to Street Centreline (Street Facing)	9.7			
			Total Exposure Distance	14.2			
			South Side	1.5	0.50		
			Property Line to Street Centreline (Street Facing)	0			
			Total Exposure Distance	1.5			
			West Side	7.5	0.25		
			Property Line to Street Centreline (Street Facing)	0			
			Total Exposure Distance	7.5			
4.2	Total Spatial Coefficient	Total Spatial Coefficient $S_{tot} = 1 + \Sigma S_x$				2.00	N/A
5	**Determining Required Minimum Supply of Water Q and Fire Flow**						
5.1	Obtain Required Fire Volume, Flow & Duration	*Minimum Supply of Water, rounded to nearest 1,000 L; $Q = K*V*S_{tot}$*				137,000 L	
		Required Minimum Water Supply Flow Rate (L/min)				4,500 L/min	
		Required Minimum Water Supply Flow Rate (L/s)				75 L/s	
		Required Minimum Duration of Fire Flow (min)				40 min	

ATTACHMENT 5 : FIGURE 1 – FUS EXPOSURE DISTANCES

Figure 1: FUS Exposure Distances (Property Line to Adjacent Buildings)

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ATTACHMENT 6 : SUPPORTING HYDRAULIC CALCULATIONS

Stantec

Supporting Hydraulic Calculations

Stantec Project #: 163401084
Project Name: 370 Athelone Avenue
Date: May 16, 2024
Data inputted by: Alexandre Mineault-Guitard, M.A.Sc., P.Eng.
Data reviewed by: Alexandre Mineault-Guitard, M.A.Sc., P.Eng.

Boundary Conditions provided by the City:

Scenario 1: Peak Hour (Min HGL): 108.7 m;
Scenario 2: Average Day (Max HGL): 114.9 m; and
Scenario 3: Maximum Day plus Fire Flow: 79.3 m.

Sample Calculations

$HGL\ (m) = hp + hz$ *(1)*

where: hp = Pressure Head (m); and hz = Elevation Head (m), estimated from topography.

For Scenario 1, we have:

HGL(m) = 108.7 and hz (m) = 65.2.

Rearranging Equation 1, we can calculate the Pressure Head (hp) as follow:

$hp\ (m) = HGL - hz$

∴ hp = 108.7 - 65.2 m = 43.5 m.

To convert from Pressure Head (m) to a pressure value (kPa), the following equation can be used:

$P\ (kPa) = (\rho * g * hp) / 1000$ *(2)*

where: ρ = density of water = 1000 kg/m^3; and g = gravitational acceleration = 9.81 m/s^2.

Using Equation 2, we can calculate the Pressure Head (hp) as follow:

P (kPa) = (1000 * 9.81 * 43.5) / 1000

∴ P = 426 kPa.

Considering that 1 kPa = 0.145 psi, the pressure under Scenario 1 is equal to:

P = 62 psi.

Applying the same procedures, the pressures under Scenario 2 and Scenario 3 are calculated as follows:
Scenario 2: P = 71 psi; and Scenario 3: P = 20 psi.

To summarize:

Scenario 1: Minimum Pressure under Peak Hour Demand: 426 kPa (62 psi)
Scenario 2: Maximum Pressure under Average Day Demand: 487 kPa (71 psi)
Scenario 3: Minimum Pressure under Maximum Day + Fire Flow Demand: 138 kPa (20 psi)

ATTACHMENT 7 : FIGURE 2 – HYDRANT SPACING

Figure 2: Hydrant Spacing

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PROPOSED

THREE (3) STOREY APARTMENT BUILDING SITE

LOT 75

R-PLAN 263

370 ATHLONE AVENUE

CITY OF OTTAWA

APPENDIX E

CITY OF OTTAWA

SANITARY SEWER DESIGN SHEET

SHEET No. 1 OF 1

SANITARY SEWER DESIGN SHEET

q = average daily per capita flow (280 L/cap. d)
I = unit of peak extraneous flow (0.33 L/ha. s)
M = peaking factor
Q (p) = peak population flow (L/s)
Q (i) = peak extraneous flow (L/s)
Q (d) = peak design flow

DENSITY
- 2 BEDROOM = 2.1 PPU
- 1 BEDROOM = 1.4 PPU
- BACHELOR = 1.4 PPU

$M = 1 + \frac{14}{4 + \sqrt{P}} * K$ where P population in 1000's $K = 0.8$

$Q(p) = \frac{PqM}{86.4}$ (L/s)

Q(i) = IA (L/s) where A = area in hectares

Q(d) = Q(p) + Q(i) (L/s)

LOCATION			INDIVIDUAL		CUMULATIVE		Peaking factor M	Pop. flow Q(p) (L/s)	Peak extraneous flow Q(i) (L/s)	Peak design flow Q(d) (L/s)	PROPOSED SEWER						
STREET	FROM	TO	Pop.	Area A (hectares)	Pop.	Area A (hectares)					Length (m)	Pipe size (mm)	Type of pipe	Grade %	Capacity (L/s) n = 0.013	Full flow velocity (m/s)	Actual velocity at Q(d)
370 ATHLONE AVENUE	SITE	EX 300ϕ SANITARY SEWER	25.2	0.05	25.2	0.05	3.69	0.03	0.02	0.32	12.0	150	PVC	1% (min)	19.8	1.12	

LICENSED PROFESSIONAL ENGINEER
05/31/24
TODD L.M. MAK
PROVINCE OF ONTARIO

(FILE # 823-83)

DESIGN	TLM
CHECKED	TLM
DATE	MAY 2024

PROJECT 370 ATHLONE AVENUE
PROPOSED THREE STOREY APARTMENT
BUILDING SITE - CITY OF OTTAWA

SHEET No. 1 of 1

PROPOSED

THREE (3) STOREY APARTMENT BUILDING SITE

LOT 75

R-PLAN 263

370 ATHLONE AVENUE

CITY OF OTTAWA

APPENDIX F

DEVELOPMENT SERVICING STUDY CHECKLIST SUMMARY

Servicing study guidelines for development applications

4. Development Servicing Study Checklist

The following section describes the checklist of the required content of servicing studies. It is expected that the proponent will address each one of the following items for the study to be deemed complete and ready for review by City of Ottawa Infrastructure Approvals staff.

The level of required detail in the Servicing Study will increase depending on the type of application. For example, for Official Plan amendments and re-zoning applications, the main issues will be to determine the capacity requirements for the proposed change in land use and confirm this against the existing capacity constraint, and to define the solutions, phasing of works and the financing of works to address the capacity constraint. For subdivisions and site plans, the above will be required with additional detailed information supporting the servicing within the development boundary.

4.1 General Content

- ☐ Executive Summary (for larger reports only).
- ☒ Date and revision number of the report.
- ☒ Location map and plan showing municipal address, boundary, and layout of proposed development.
- ☒ Plan showing the site and location of all existing services.
- ☐ Development statistics, land use, density, adherence to zoning and official plan, and reference to applicable subwatershed and watershed plans that provide context to which individual developments must adhere.
- ☐ Summary of Pre-consultation Meetings with City and other approval agencies.
- ☐ Reference and confirm conformance to higher level studies and reports (Master Servicing Studies, Environmental Assessments, Community Design Plans), or in the case where it is not in conformance, the proponent must provide justification and develop a defendable design criteria.
- ☒ Statement of objectives and servicing criteria.
- ☒ Identification of existing and proposed infrastructure available in the immediate area.
- ☐ Identification of Environmentally Significant Areas, watercourses and Municipal Drains potentially impacted by the proposed development (Reference can be made to the Natural Heritage Studies, if available).
- ☐ Concept level master grading plan to confirm existing and proposed grades in the development. This is required to confirm the feasibility of proposed stormwater management and drainage, soil removal and fill constraints, and potential impacts to neighbouring properties. This is also required to confirm that the proposed grading will not impede existing major system flow paths.
- ☐ Identification of potential impacts of proposed piped services on private services (such as wells and septic fields on adjacent lands) and mitigation required to address potential impacts.
- ☐ Proposed phasing of the development, if applicable.

☒ Reference to geotechnical studies and recommendations concerning servicing.

☒ All preliminary and formal site plan submissions should have the following information:
- Metric scale
- North arrow (including construction North)
- Key plan
- Name and contact information of applicant and property owner
- Property limits including bearings and dimensions
- Existing and proposed structures and parking areas
- Easements, road widening and rights-of-way
- Adjacent street names

4.2 Development Servicing Report: Water

☐ Confirm consistency with Master Servicing Study, if available
☒ Availability of public infrastructure to service proposed development
☒ Identification of system constraints
☒ Identify boundary conditions
☒ Confirmation of adequate domestic supply and pressure
☒ Confirmation of adequate fire flow protection and confirmation that fire flow is calculated as per the Fire Underwriter's Survey. Output should show available fire flow at locations throughout the development.
☒ Provide a check of high pressures. If pressure is found to be high, an assessment is required to confirm the application of pressure reducing valves.
☐ Definition of phasing constraints. Hydraulic modeling is required to confirm servicing for all defined phases of the project including the ultimate design
☐ Address reliability requirements such as appropriate location of shut-off valves
☒ Check on the necessity of a pressure zone boundary modification.
☒ Reference to water supply analysis to show that major infrastructure is capable of delivering sufficient water for the proposed land use. This includes data that shows that the expected demands under average day, peak hour and fire flow conditions provide water within the required pressure range

- ☒ Description of the proposed water distribution network, including locations of proposed connections to the existing system, provisions for necessary looping, and appurtenances (valves, pressure reducing valves, valve chambers, and fire hydrants) including special metering provisions.
- ☐ Description of off-site required feedermains, booster pumping stations, and other water infrastructure that will be ultimately required to service proposed development, including financing, interim facilities, and timing of implementation.
- ☒ Confirmation that water demands are calculated based on the City of Ottawa Design Guidelines.
- ☒ Provision of a model schematic showing the boundary conditions locations, streets, parcels, and building locations for reference.

4.3 Development Servicing Report: Wastewater

- ☒ Summary of proposed design criteria (Note: Wet-weather flow criteria should not deviate from the City of Ottawa Sewer Design Guidelines. Monitored flow data from relatively new infrastructure cannot be used to justify capacity requirements for proposed infrastructure).
- ☐ Confirm consistency with Master Servicing Study and/or justifications for deviations.
- ☐ Consideration of local conditions that may contribute to extraneous flows that are higher than the recommended flows in the guidelines. This includes groundwater and soil conditions, and age and condition of sewers.
- ☒ Description of existing sanitary sewer available for discharge of wastewater from proposed development.
- ☐ Verify available capacity in downstream sanitary sewer and/or identification of upgrades necessary to service the proposed development. (Reference can be made to previously completed Master Servicing Study if applicable)
- ☒ Calculations related to dry-weather and wet-weather flow rates from the development in standard MOE sanitary sewer design table (Appendix 'C') format.
- ☐ Description of proposed sewer network including sewers, pumping stations, and forcemains.
- ☐ Discussion of previously identified environmental constraints and impact on servicing (environmental constraints are related to limitations imposed on the development in order to preserve the physical condition of watercourses, vegetation, soil cover, as well as protecting against water quantity and quality).
- ☐ Pumping stations: impacts of proposed development on existing pumping stations or requirements for new pumping station to service development.
- ☐ Forcemain capacity in terms of operational redundancy, surge pressure and maximum flow velocity.
- ☐ Identification and implementation of the emergency overflow from sanitary pumping stations in relation to the hydraulic grade line to protect against basement flooding.
- ☐ Special considerations such as contamination, corrosive environment etc.

4.4 Development Servicing Report: Stormwater Checklist

- ☒ Description of drainage outlets and downstream constraints including legality of outlets (i.e. municipal drain, right-of-way, watercourse, or private property)
- ☐ Analysis of available capacity in existing public infrastructure.
- ☒ A drawing showing the subject lands, its surroundings, the receiving watercourse, existing drainage patterns, and proposed drainage pattern.
- ☒ Water quantity control objective (e.g. controlling post-development peak flows to pre-development level for storm events ranging from the 2 or 5 year event (dependent on the receiving sewer design) to 100 year return period); if other objectives are being applied, a rationale must be included with reference to hydrologic analyses of the potentially affected subwatersheds, taking into account long-term cumulative effects.
- ☐ Water Quality control objective (basic, normal or enhanced level of protection based on the sensitivities of the receiving watercourse) and storage requirements.
- ☒ Description of the stormwater management concept with facility locations and descriptions with references and supporting information.
- ☐ Set-back from private sewage disposal systems.
- ☐ Watercourse and hazard lands setbacks.
- ☐ Record of pre-consultation with the Ontario Ministry of Environment and the Conservation Authority that has jurisdiction on the affected watershed.
- ☐ Confirm consistency with sub-watershed and Master Servicing Study, if applicable study exists.
- ☒ Storage requirements (complete with calculations) and conveyance capacity for minor events (1:5 year return period) and major events (1:100 year return period).
- ☐ Identification of watercourses within the proposed development and how watercourses will be protected, or, if necessary, altered by the proposed development with applicable approvals.
- ☒ Calculate pre and post development peak flow rates including a description of existing site conditions and proposed impervious areas and drainage catchments in comparison to existing conditions.
- ☐ Any proposed diversion of drainage catchment areas from one outlet to another.
- ☒ Proposed minor and major systems including locations and sizes of stormwater trunk sewers, and stormwater management facilities.
- ☐ If quantity control is not proposed, demonstration that downstream system has adequate capacity for the post-development flows up to and including the 100 year return period storm event.
- ☐ Identification of potential impacts to receiving watercourses
- ☐ Identification of municipal drains and related approval requirements.
- ☒ Descriptions of how the conveyance and storage capacity will be achieved for the development.
- ☒ 100 year flood levels and major flow routing to protect proposed development from flooding for establishing minimum building elevations (MBE) and overall grading.

- ☐ Inclusion of hydraulic analysis including hydraulic grade line elevations.
- ☒ Description of approach to erosion and sediment control during construction for the protection of receiving watercourse or drainage corridors.
- ☐ Identification of floodplains – proponent to obtain relevant floodplain information from the appropriate Conservation Authority. The proponent may be required to delineate floodplain elevations to the satisfaction of the Conservation Authority if such information is not available or if information does not match current conditions.
- ☐ Identification of fill constraints related to floodplain and geotechnical investigation.

4.5 Approval and Permit Requirements: Checklist

The Servicing Study shall provide a list of applicable permits and regulatory approvals necessary for the proposed development as well as the relevant issues affecting each approval. The approval and permitting shall include but not be limited to the following:

- ☐ Conservation Authority as the designated approval agency for modification of floodplain, potential impact on fish habitat, proposed works in or adjacent to a watercourse, cut/fill permits and Approval under Lakes and Rivers Improvement Act. The Conservation Authority is not the approval authority for the Lakes and Rivers Improvement Act. Where there are Conservation Authority regulations in place, approval under the Lakes and Rivers Improvement Act is not required, except in cases of dams as defined in the Act.
- ☐ Application for Certificate of Approval (CofA) under the Ontario Water Resources Act.
- ☐ Changes to Municipal Drains.
- ☐ Other permits (National Capital Commission, Parks Canada, Public Works and Government Services Canada, Ministry of Transportation etc.)

4.6 Conclusion Checklist

- ☒ Clearly stated conclusions and recommendations
- ☐ Comments received from review agencies including the City of Ottawa and information on how the comments were addressed. Final sign-off from the responsible reviewing agency.
- ☒ All draft and final reports shall be signed and stamped by a professional Engineer registered in Ontario