







FLOW TOWERS (22 September 2016)			
BUILDING A UNITS:			139
BUILDING B UNITS:			146
TOTAL UNIT COUNT:			285
DENSITY			
1 BR UNITS	125 x 2 ppl		250
2 BR UNITS	160 x 2.25 ppl		360
TOTAL			610
PROPERTY AREA			
PROPERTY AREA			±59,608 SF
LOT COVERAGE			± 32,159 SF (54%)
INDOOR AMENITY SPACE AREA (LEVELS 5, 6):			
INDOOR AMENITY SPACE AREA (LEVELS 5, 6):			± 3,637 SF
GROUND FLOOR COMMERCIAL RETAIL AREA:			
GROUND FLOOR COMMERCIAL RETAIL AREA:			± 6,915 SF
OUTDOOR AMENITY SPACE AREA (LEVELS 5, 6):			
OUTDOOR AMENITY SPACE AREA (LEVELS 5, 6):			± 7127 SF
LANDSCAPE OPEN SPACE AT GRADE			
LANDSCAPE OPEN SPACE AT GRADE			±21,008 SF
TOTAL BELOW GRADE PARKING			
TOTAL BELOW GRADE PARKING			± 294



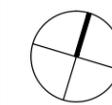
FLOW TOWERS

11-15 CANAL STREET, DARTMOUTH COVE, NS

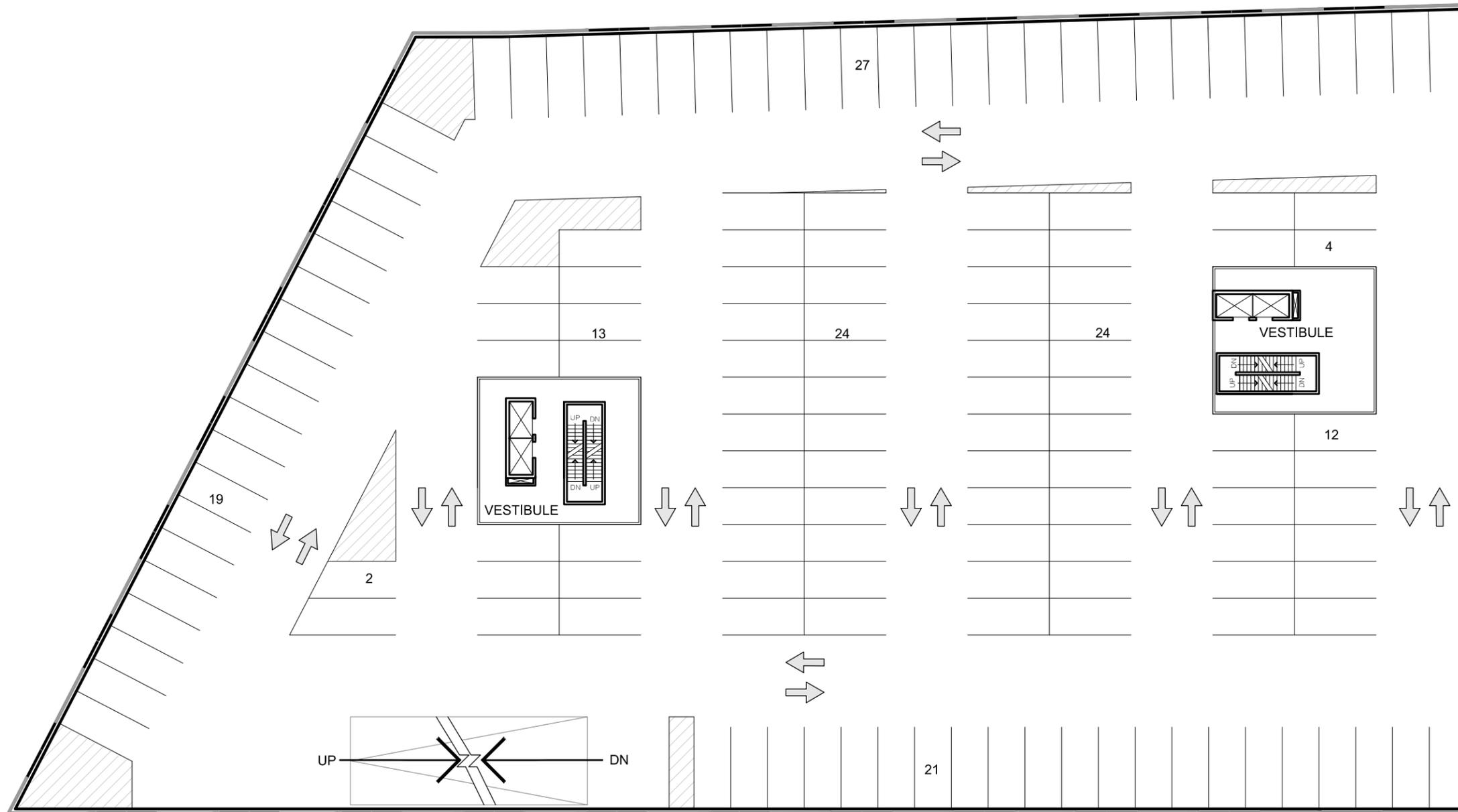
CONTEXT

SITE PLAN

Project No.: P2015.23
Scale: 1" = 200'-0"
Date: 12 Sep 2016



SP01



FLOW TOWERS

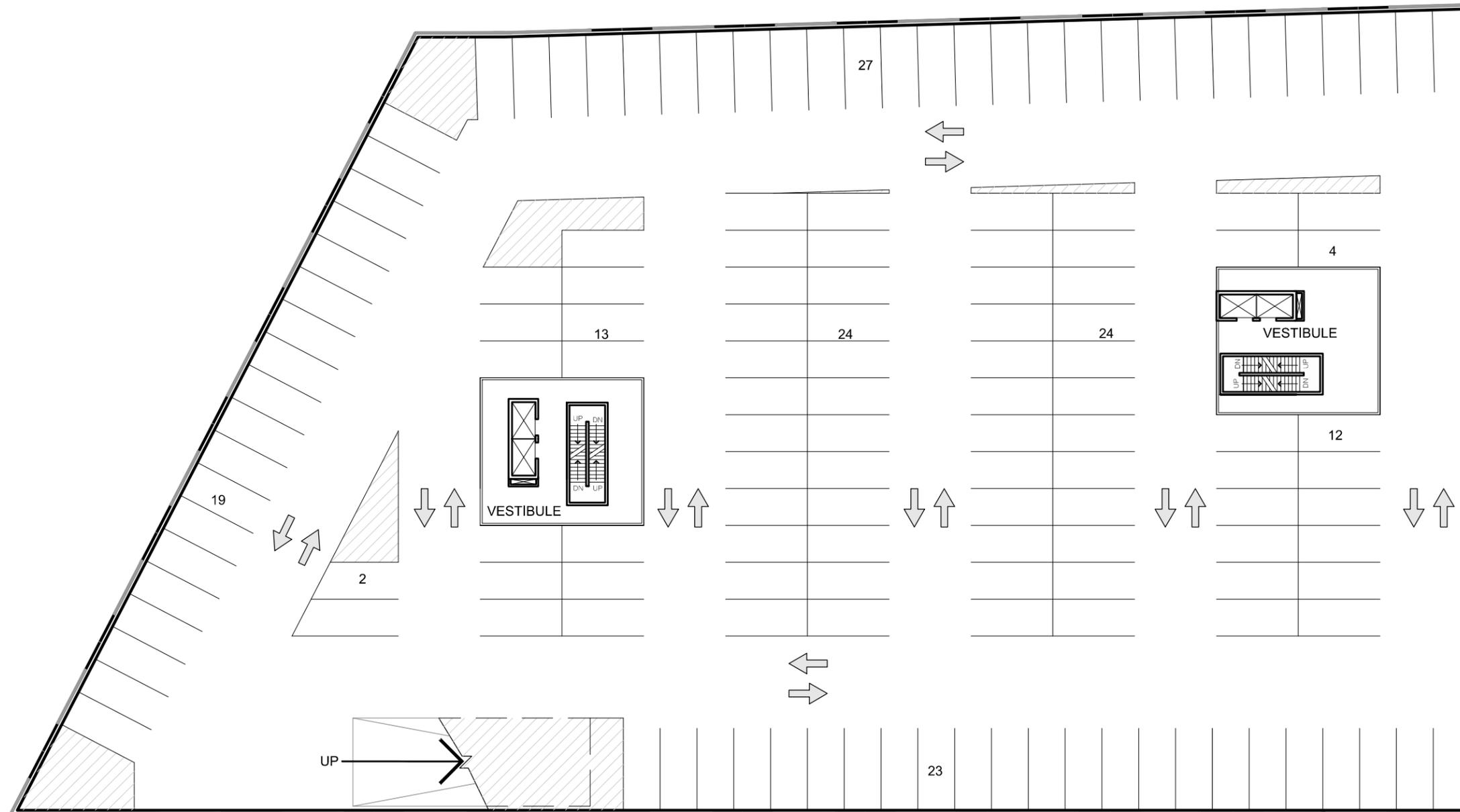
11-15 CANAL STREET, DARTMOUTH COVE, NS

**PARKING LEVEL 1
FLOOR PLAN**

Project No.: P2015.23
Scale: 1" = 30'-0"
Date: 22 Sep 2016



SP03



FLOW TOWERS

11-15 CANAL STREET, DARTMOUTH COVE, NS

**PARKING LEVEL 2
FLOOR PLAN**

Project No.: P2015.23
Scale: 1" = 30'-0"
Date: 22 Sep 2016



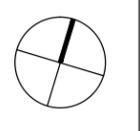
SP04



FLOW TOWERS
DARTMOUTH COVE, NS

**LANDSCAPE
SITE PLAN**

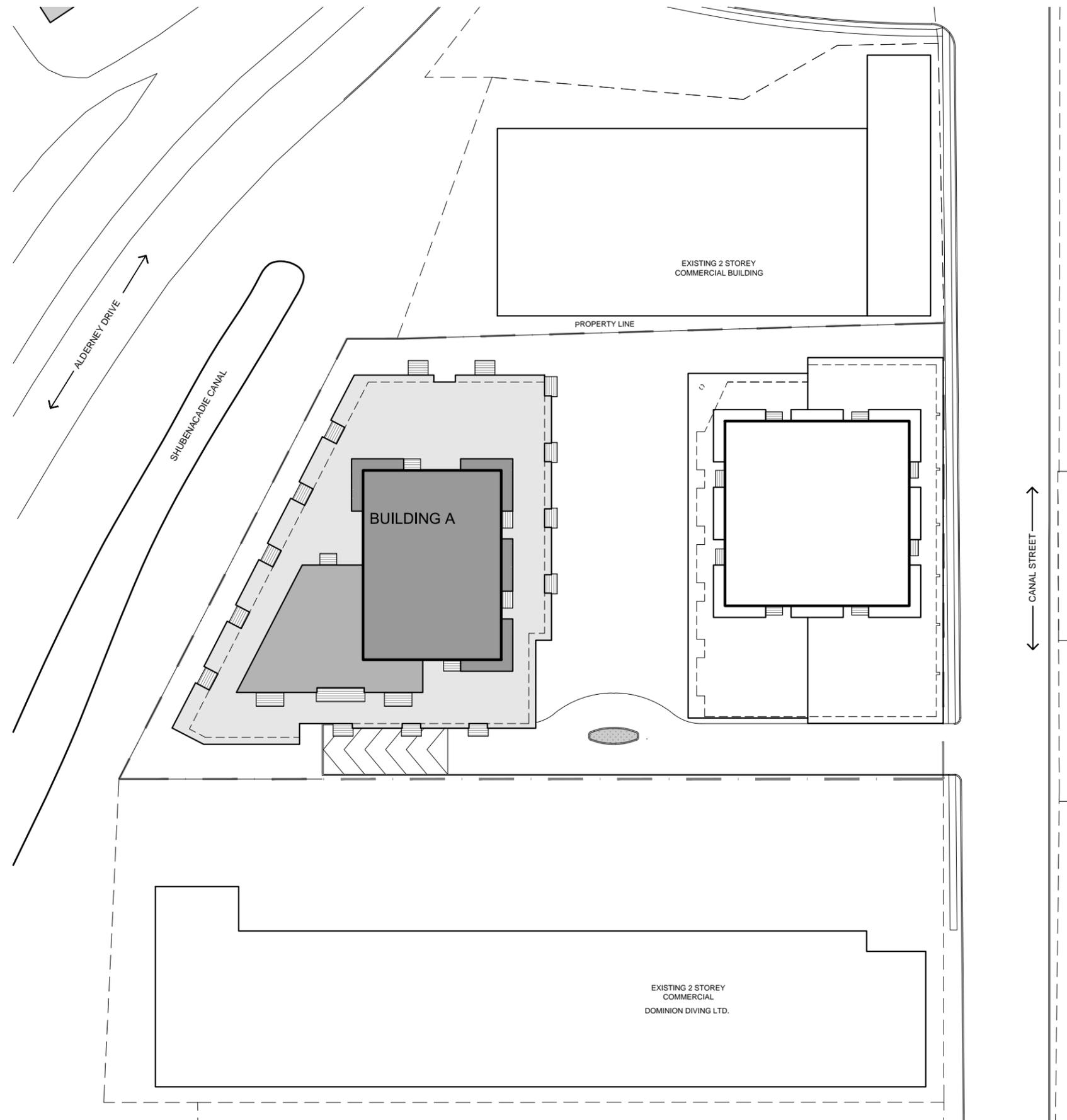
Project No.: P2015.23
Scale: 1" = 30'-0"
Date: 12 Sep 2016



WM FARES
ARCHITECTS

LA01

FLOW TOWERS (22 September 2016)				
BUILDING A				
LEVEL	1 BR	1 BR + DEN	2 BR	TOTALS
GROUND	1	-	9	10
2-4	-	3	36	39
5	1	2	2	5
6, 10, 14	3	9	9	21
7, 11, 15	9	6	6	21
8, 12, 16	9	3	9	21
9, 13	2	4	8	14
17-18	-	6	2	8
TOTALS:	25 (18%)	33 (24%)	81 (58%)	139
DENSITY				
1 BR UNITS	58 x 2 ppl			116
2 BR UNITS	81 x 2.25 ppl			183
TOTAL				299
PROPERTY AREA				±59,608 SF
LOT COVERAGE				±16,983 SF (29%)
INDOOR AMENITY SPACE AREA (LEVEL 5):				±1,868 SF
OUTDOOR AMENITY SPACE AREA (LEVELS 5, 6):				±3,711 SF
LANDSCAPE OPEN SPACE AT GRADE				±10,504 SF



FLOW TOWERS

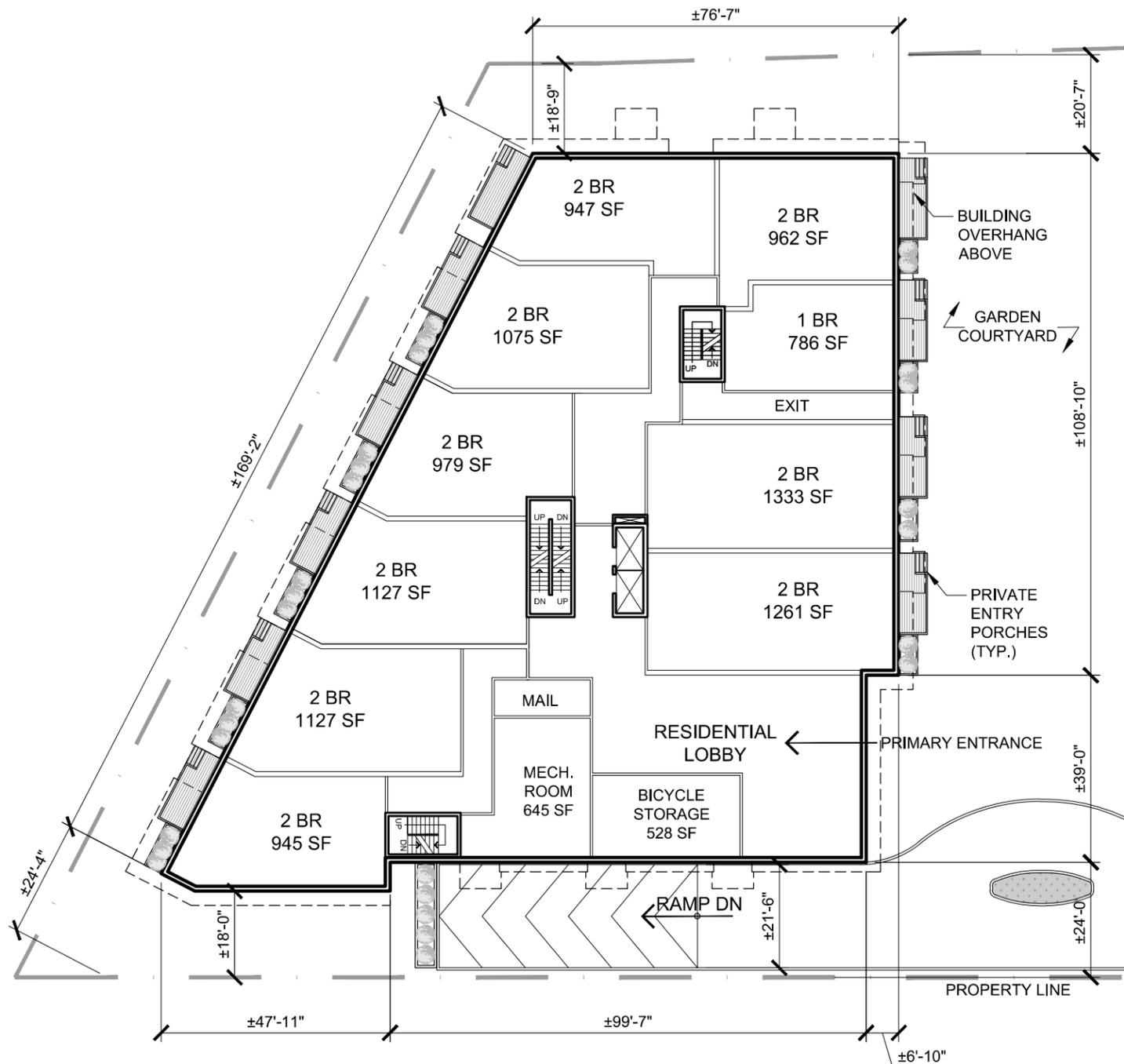
11-15 CANAL STREET, DARTMOUTH COVE, NS

**BUILDING A
KEY PLAN**

Project No.: P2015.23
 Scale: 1"=50'-0"
 Date: 22 Sep 2016

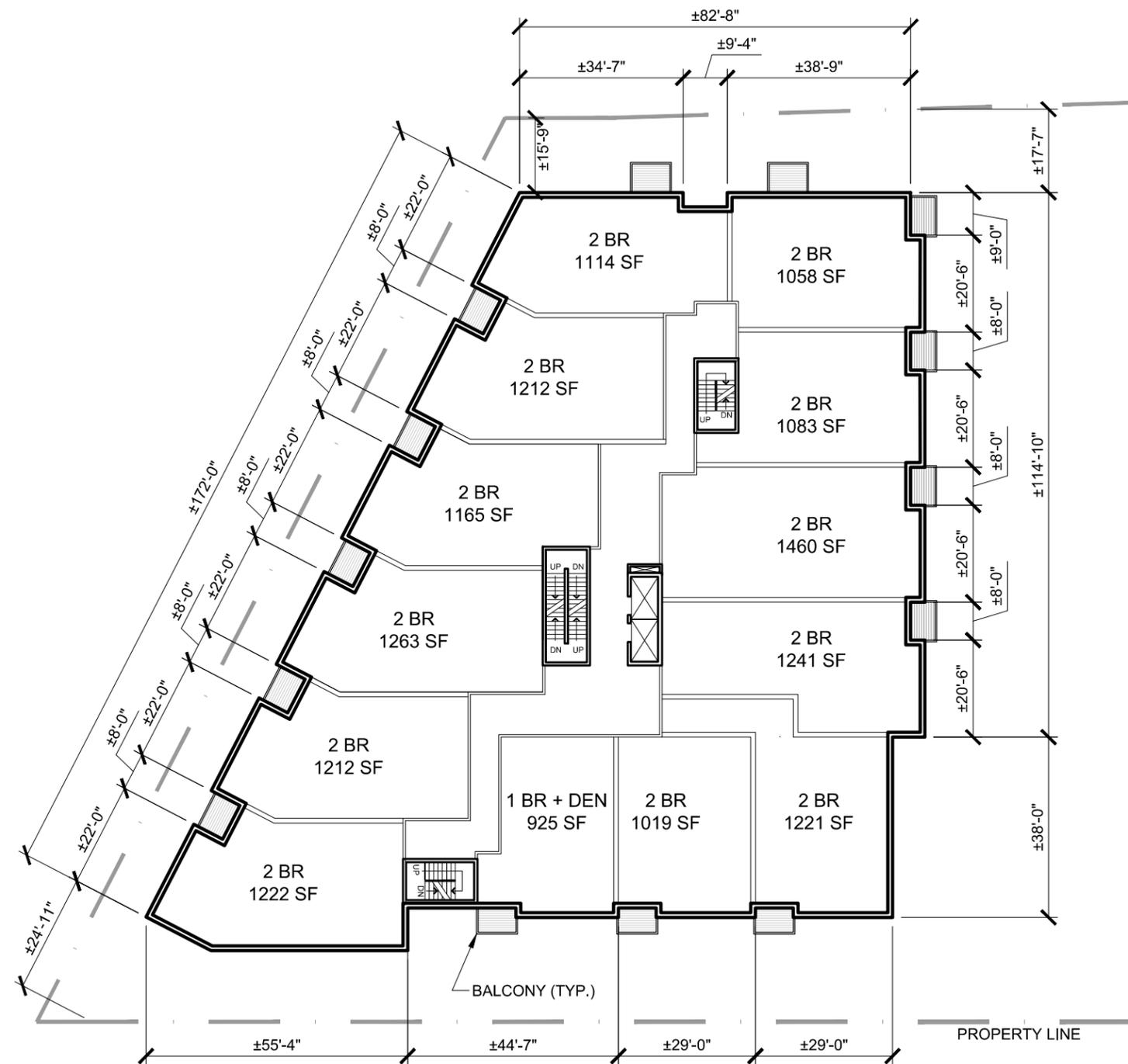


A00



1 GROUND FLOOR
A01 SCALE: 1" = 30'=0"

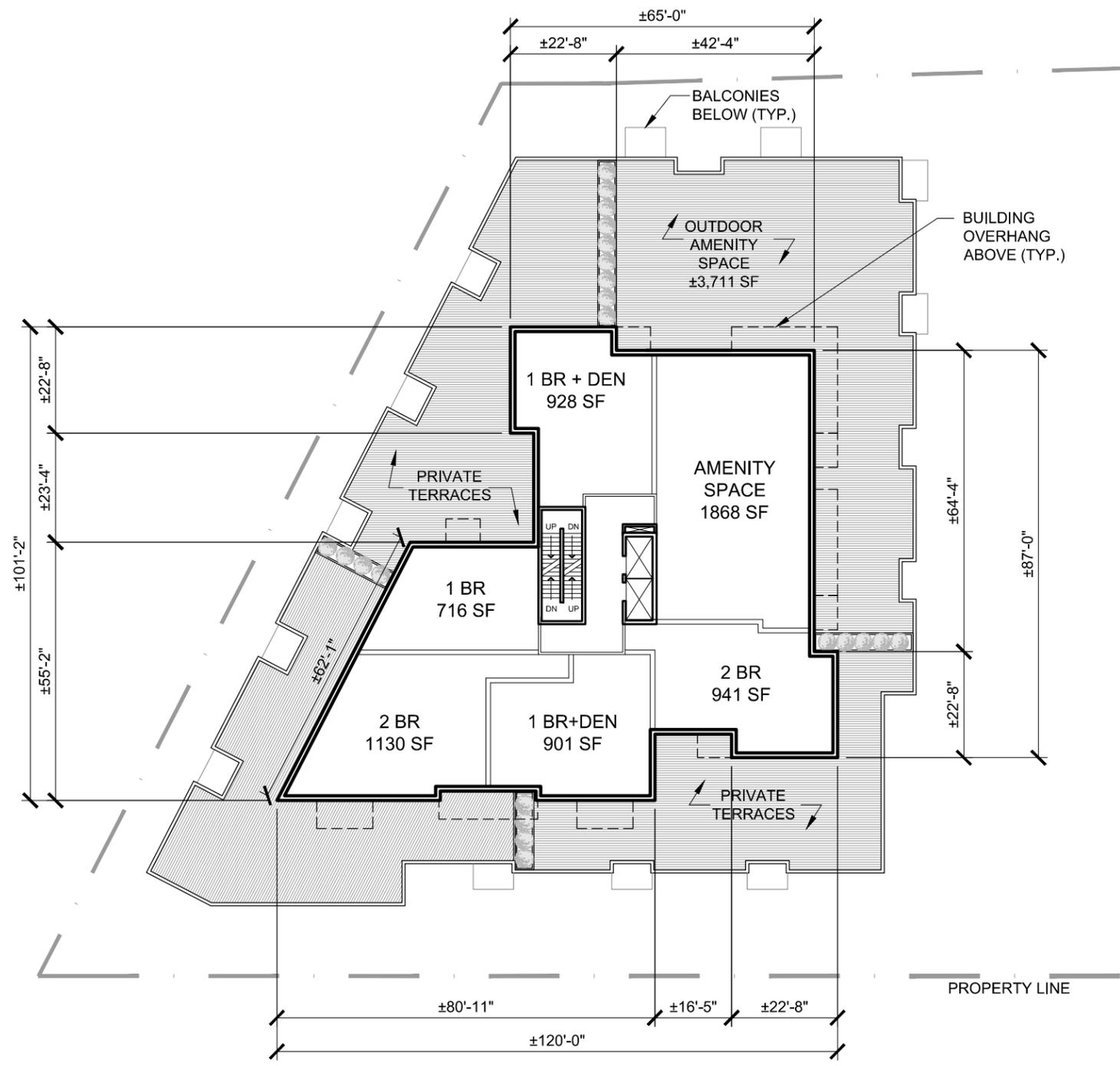
GFA: 16,983 SF



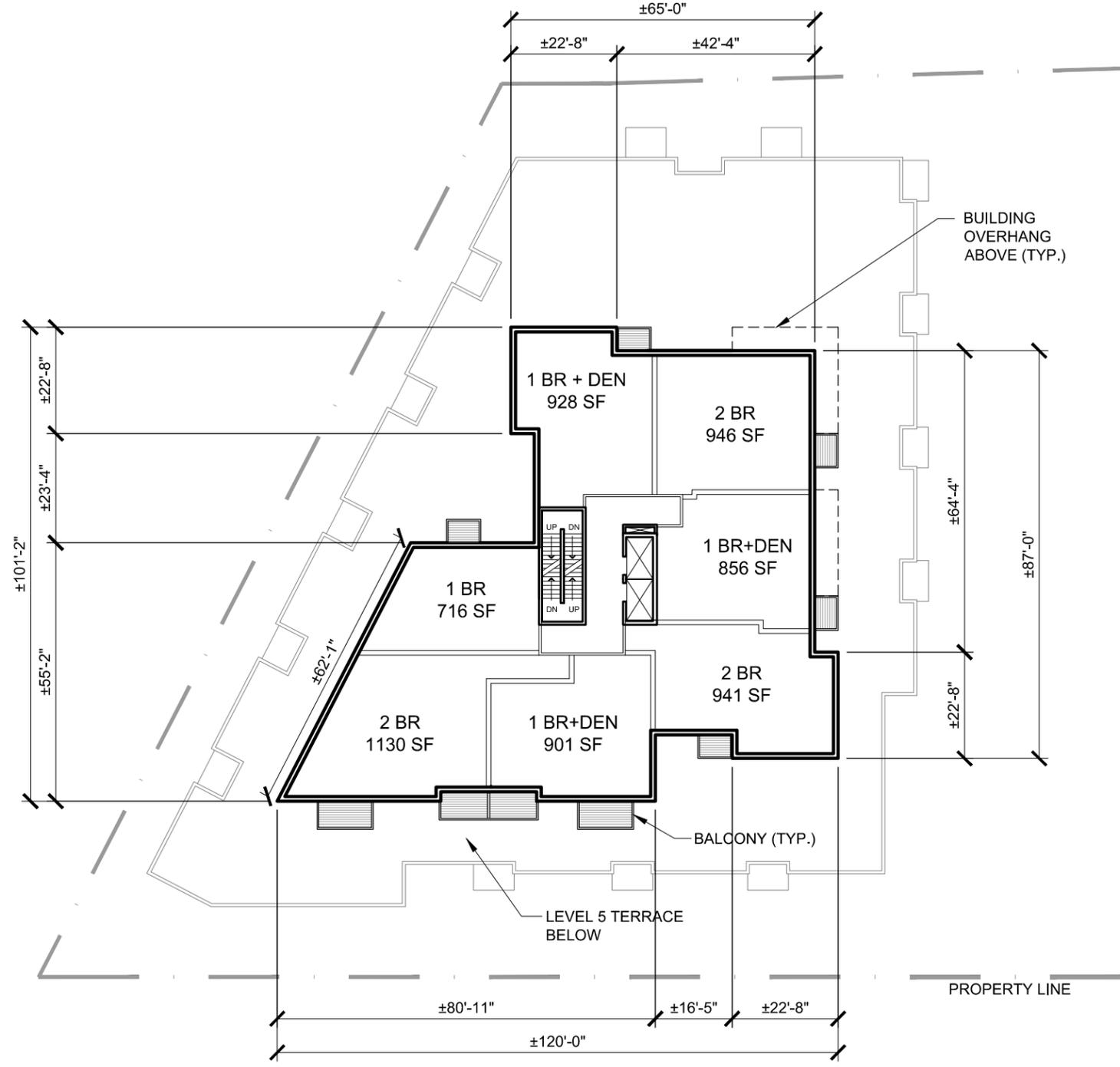
2 LEVELS 2-4
A01 SCALE: 1" = 30'=0"

GFA: 18,746 SF



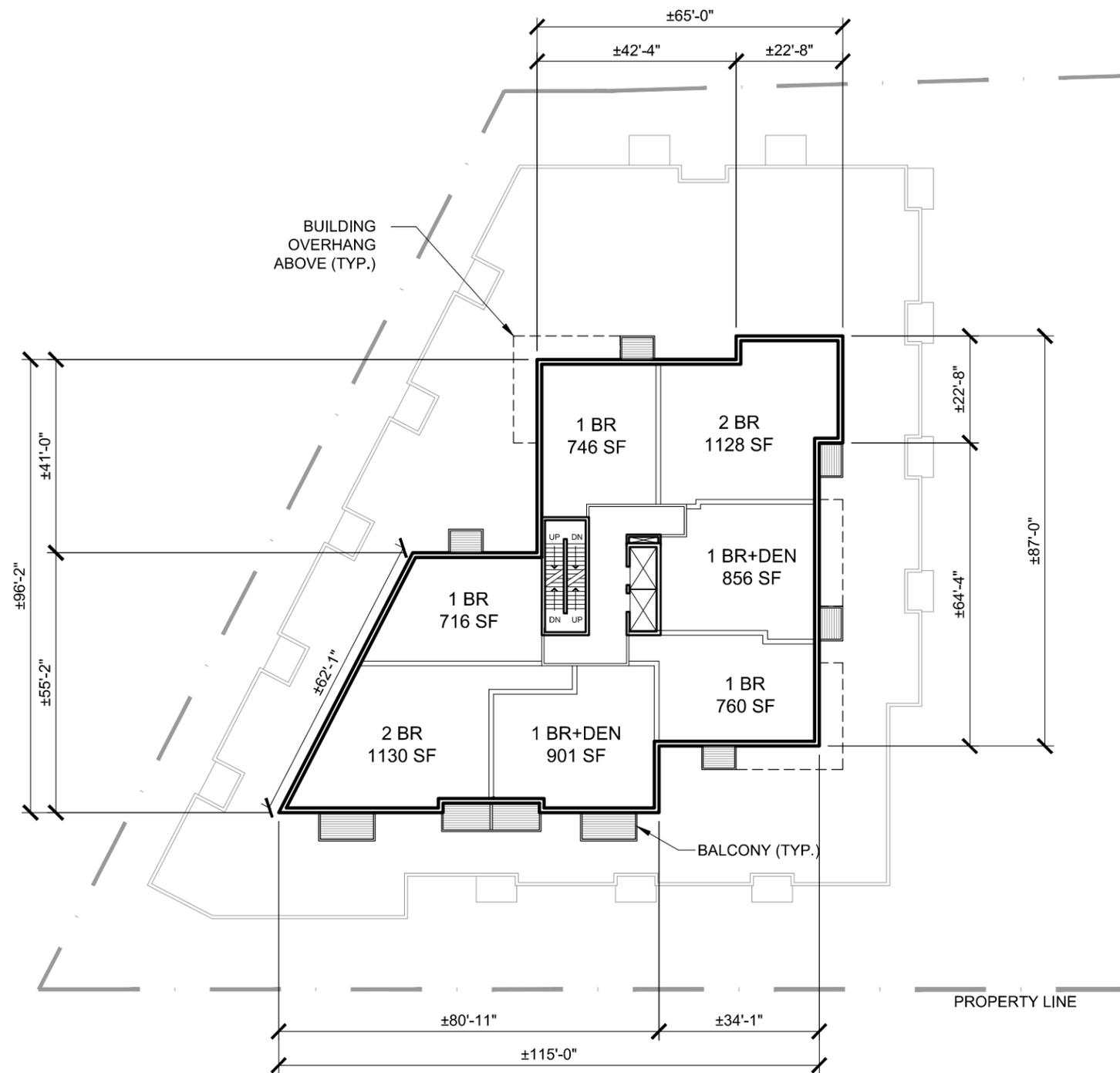


1 LEVEL 5
 A02 SCALE: 1" = 30'=0"
 TOWER GFA: 7,893 SF



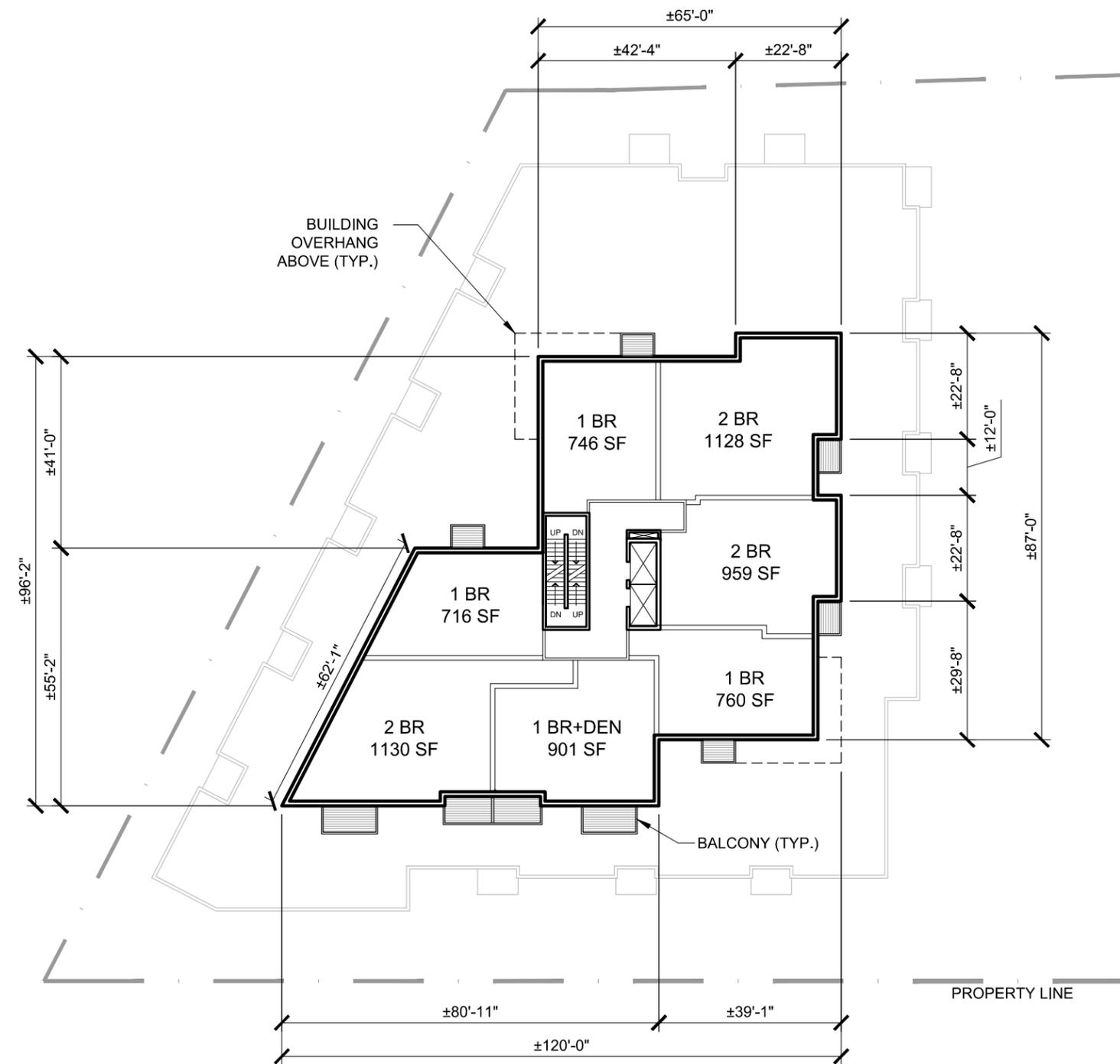
2 LEVELS 6, 10, 14
 A02 SCALE: 1" = 30'=0"
 TOWER GFA: 7,893 SF





1 LEVELS 7, 11, 15
A03 SCALE: 1" = 30'=0"

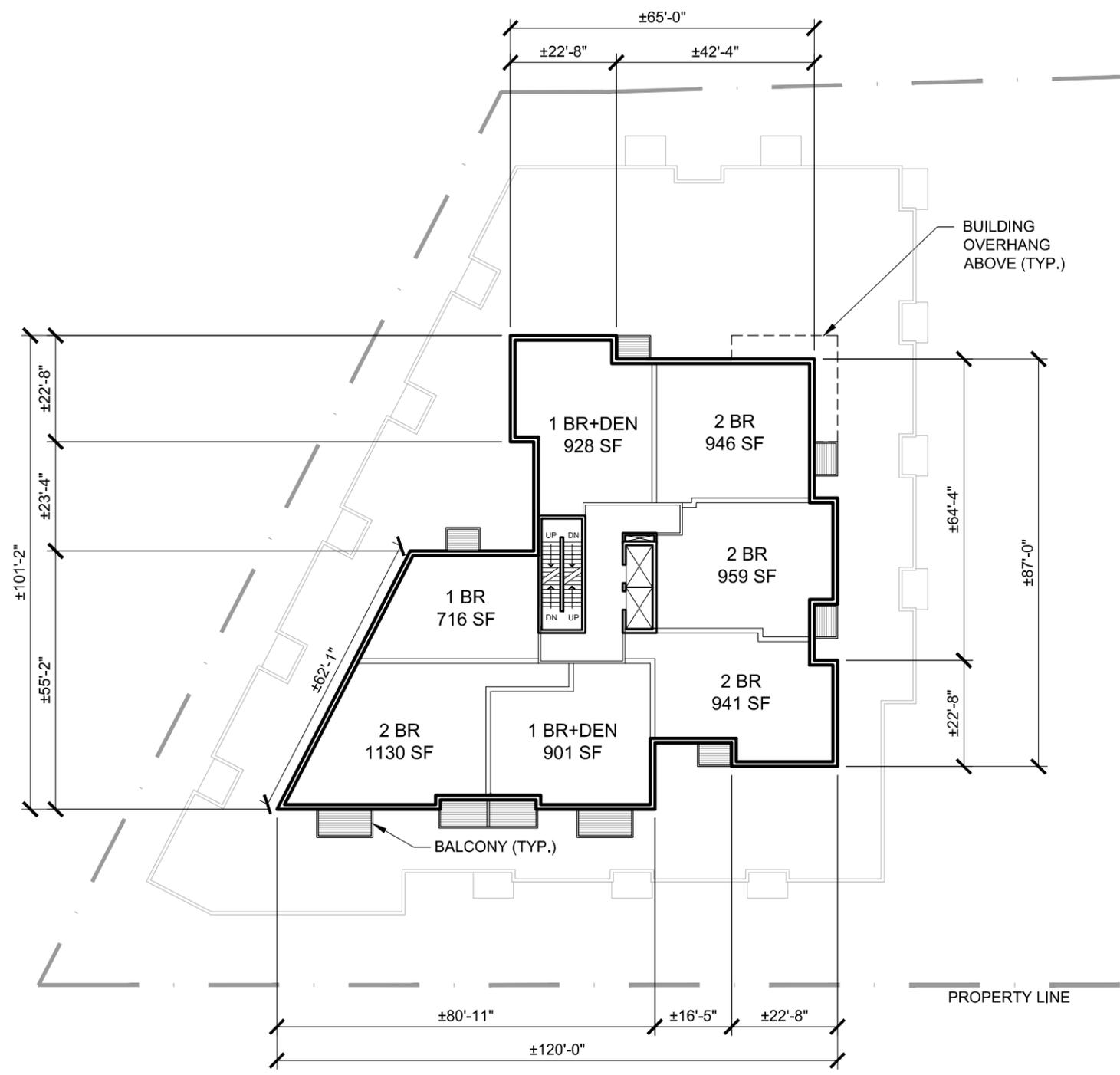
TOWER GFA: 7,692 SF



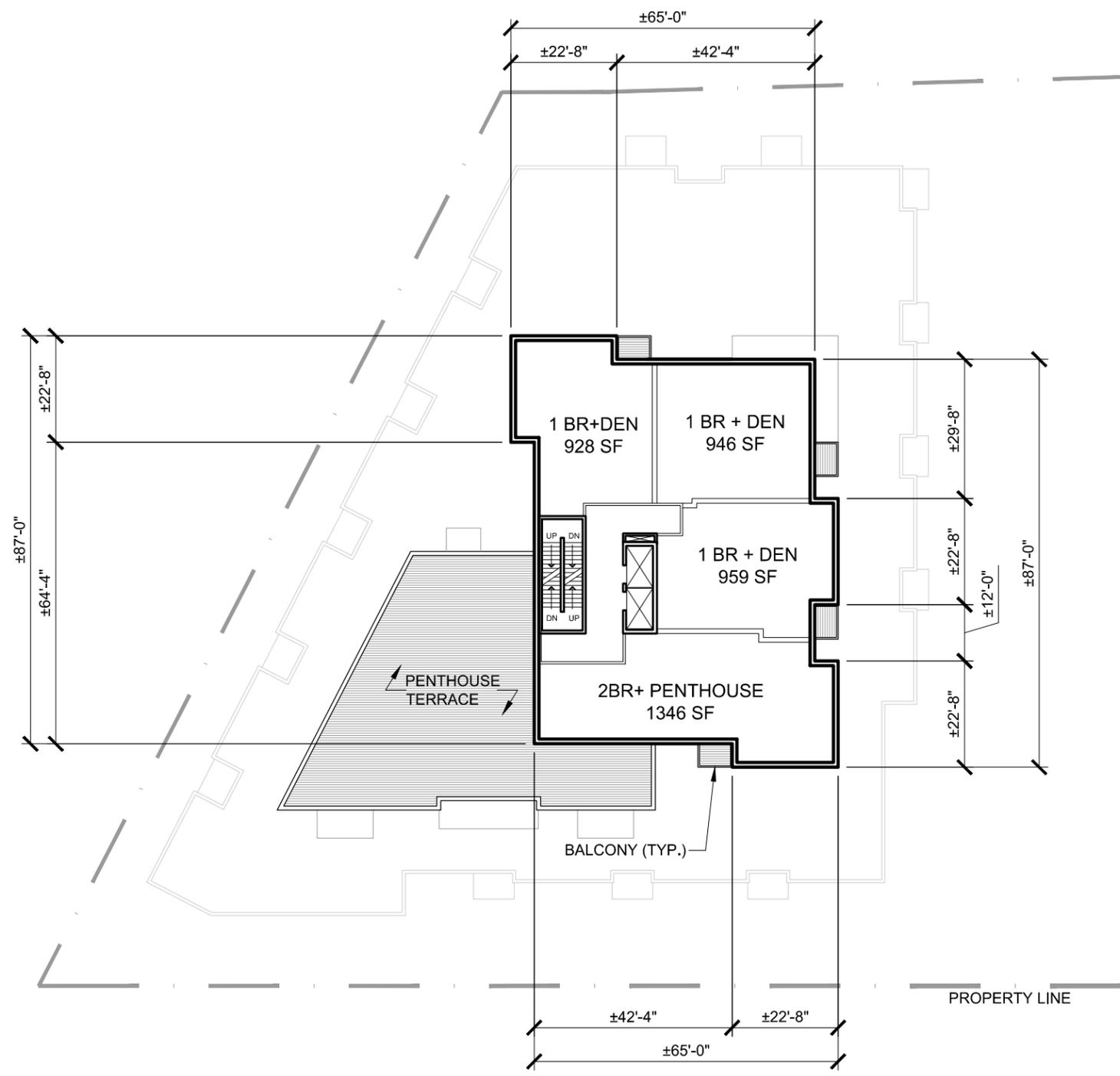
2 LEVELS 8, 12, 16
A03 SCALE: 1" = 30'=0"

TOWER GFA: 7,805 SF



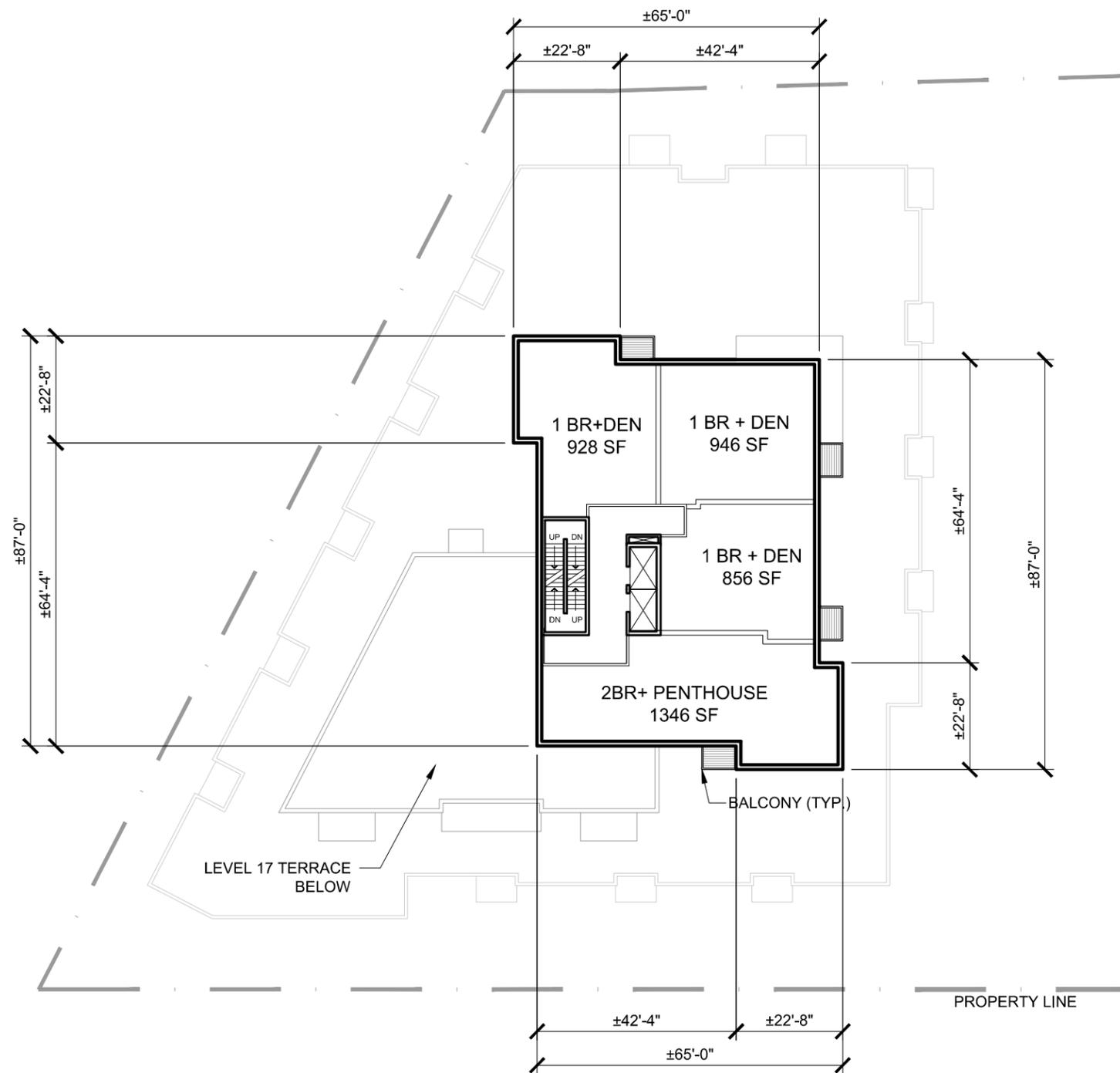


1 LEVELS 9, 13
A04 SCALE: 1" = 30'=0"
TOWER GFA: 8,000 SF



2 LEVEL 17
A04 SCALE: 1" = 30'=0"
TOWER GFA: 5,437 SF





1 LEVEL 18
 A05 SCALE: 1" = 30'-0"
 TOWER GFA: 5,323 SF

FLOW TOWERS

11-15 CANAL STREET, DARTMOUTH COVE, NS

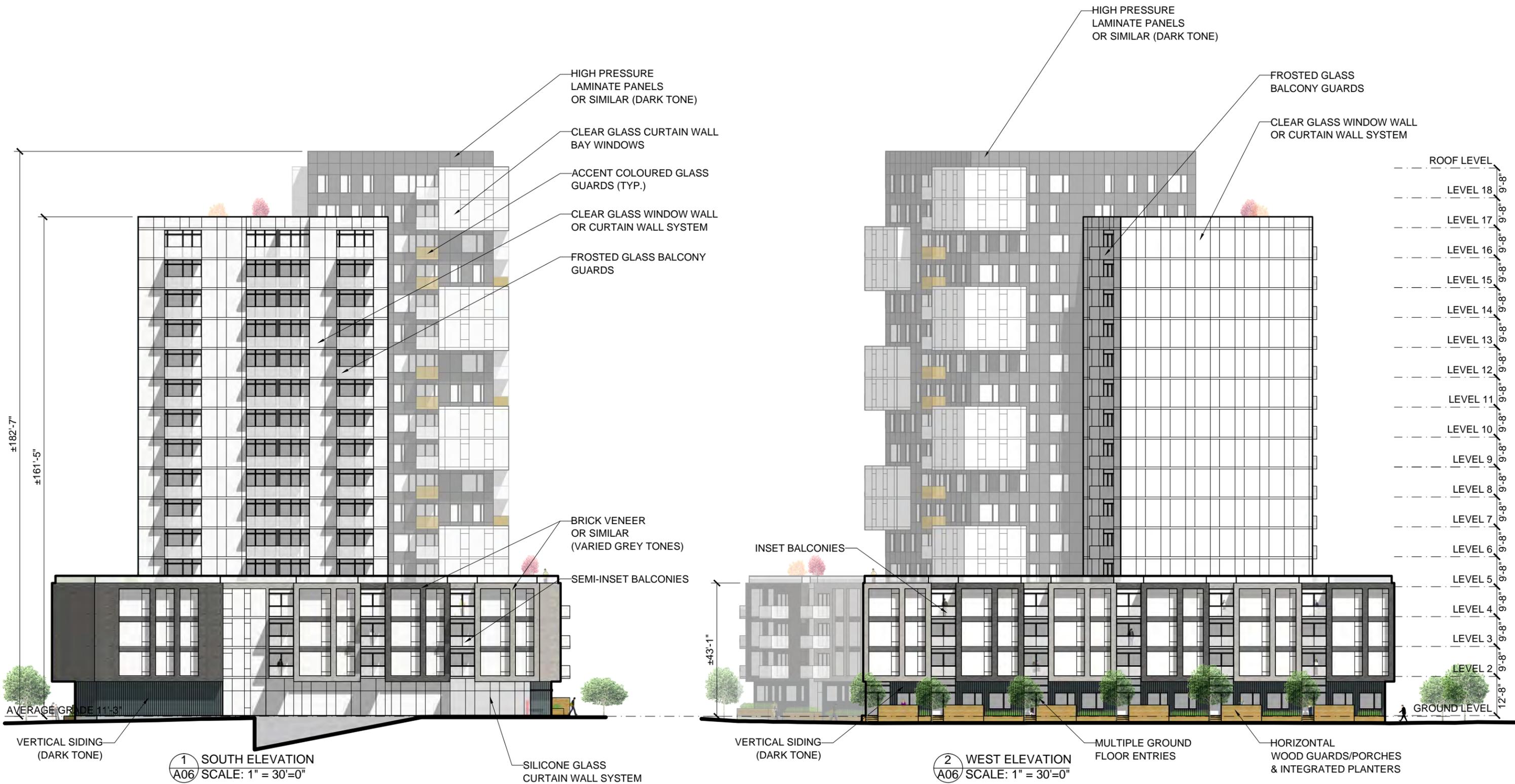
BUILDING A FLOOR PLANS

Project No.: 2015.23
 Scale: AS NOTED
 Date: 22 Sep 2016



WM FARES
 ARCHITECTS

A05



FLOW TOWERS

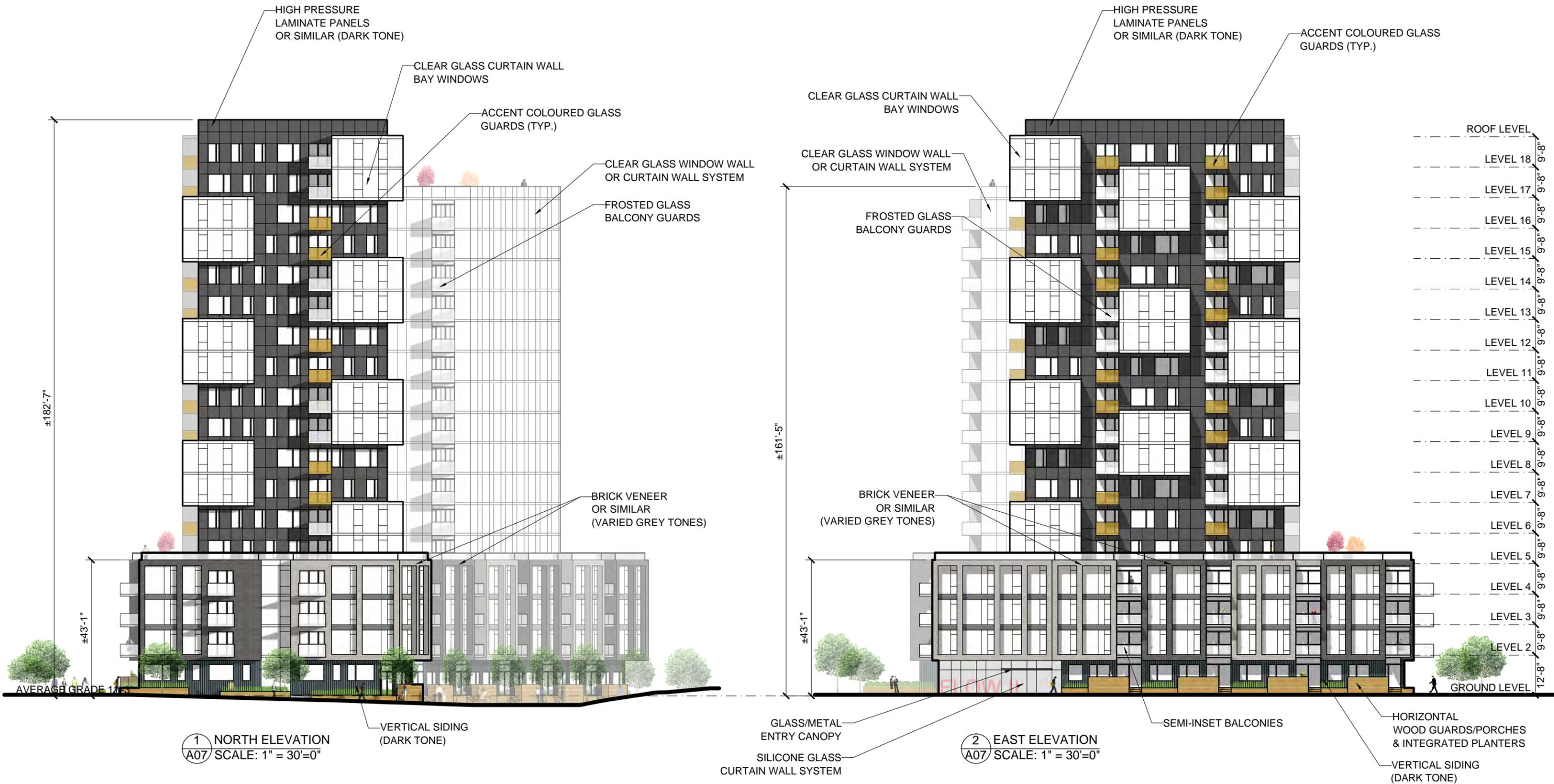
11-15 CANAL STREET, DARTMOUTH COVE, NS

BUILDING A ELEVATIONS

Project No.: P2015.23
 Scale: AS NOTED
 Date: 20 Sep 2016



A06



FLOW TOWERS - BUILDING A
 11-15 CANAL STREET, DARTMOUTH COVE, NS

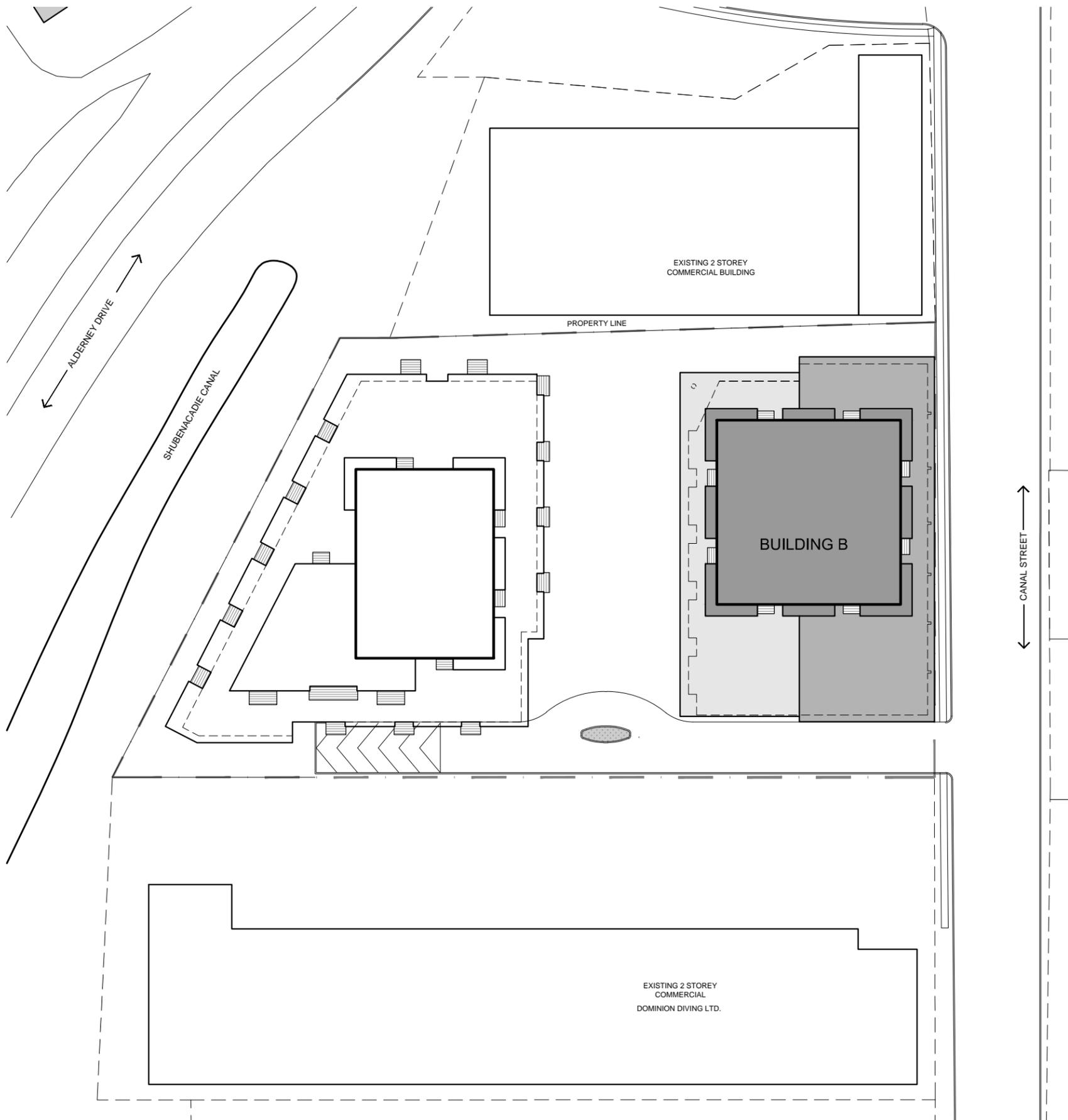
BUILDING A ELEVATIONS

Project No.: P2015.23
 Scale: AS NOTED
 Date: 20 Sep 2016



A07

FLOW TOWERS (22 September 2016)				
BUILDING B				
LEVEL	1 BR	1 BR + DEN	2 BR	TOTALS
GROUND	1	-	3	4
2-4	3	12	24	39
5	-	4	5	9
6	1	2	1	4
7, 11, 15, 19	8	-	16	24
8, 12, 16, 20	8	-	16	24
9, 13, 17, 21	8	8	8	24
10, 14, 18	6	6	6	18
	35 (24%)	32 (22%)	79 (54%)	146
DENSITY				
1 BR UNITS	67 x 2 ppl			134
2 BR UNITS	79 x 2.25 ppl			178
TOTAL				312
PROPERTY AREA				±59,608 SF
LOT COVERAGE				±15,176 SF (26%)
INDOOR AMENITY SPACE AREA (LEVEL 6):				±1,769 SF
GROUND FLOOR COMMERCIAL RETAIL AREA:				±6,915 SF
OUTDOOR AMENITY SPACE AREA (LEVEL 6):				±3,416 SF
LANDSCAPE OPEN SPACE AT GRADE:				±10,504 SF



FLOW TOWERS

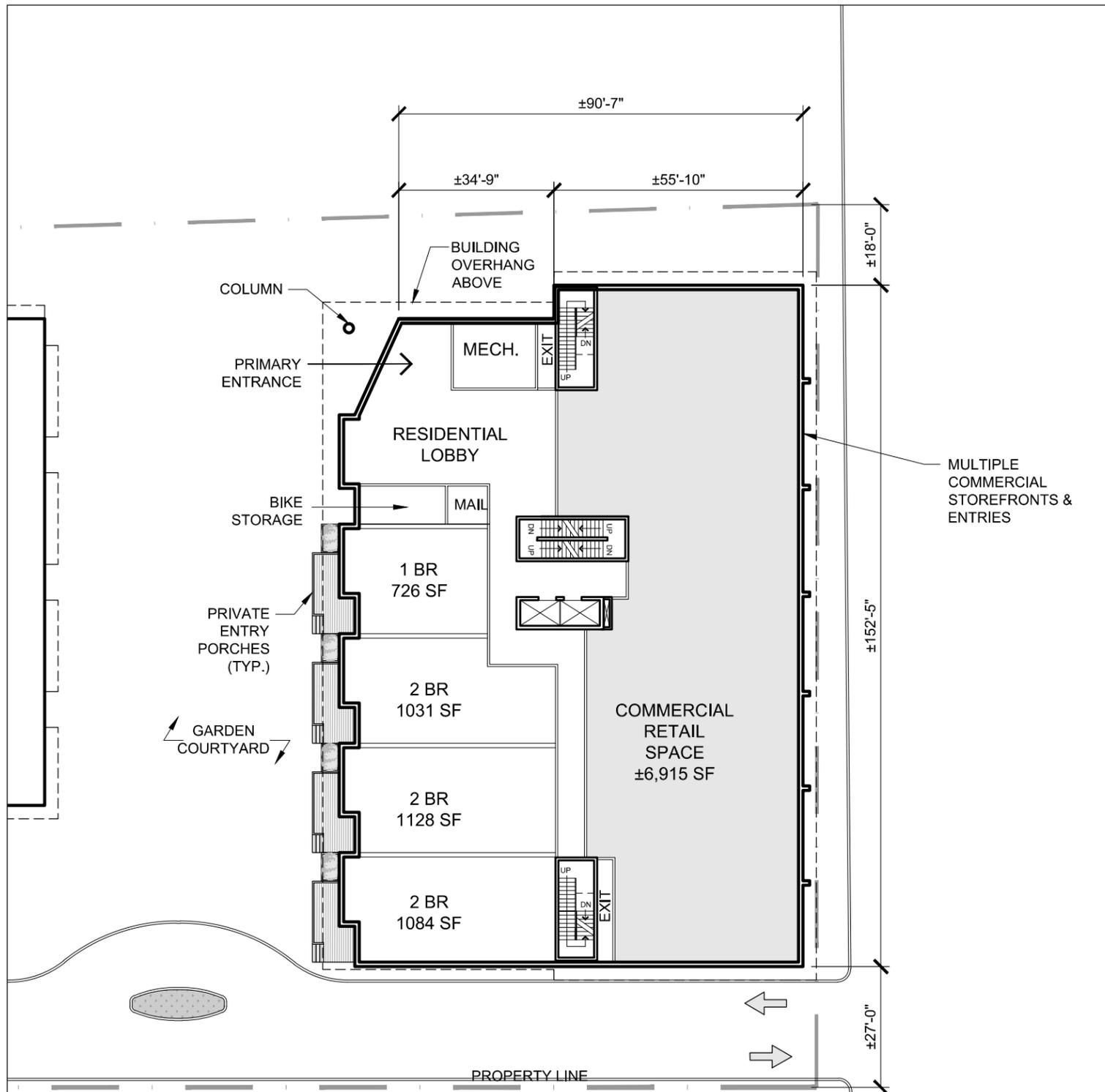
11-15 CANAL STREET, DARTMOUTH COVE, NS

**BUILDING B
KEY PLAN**

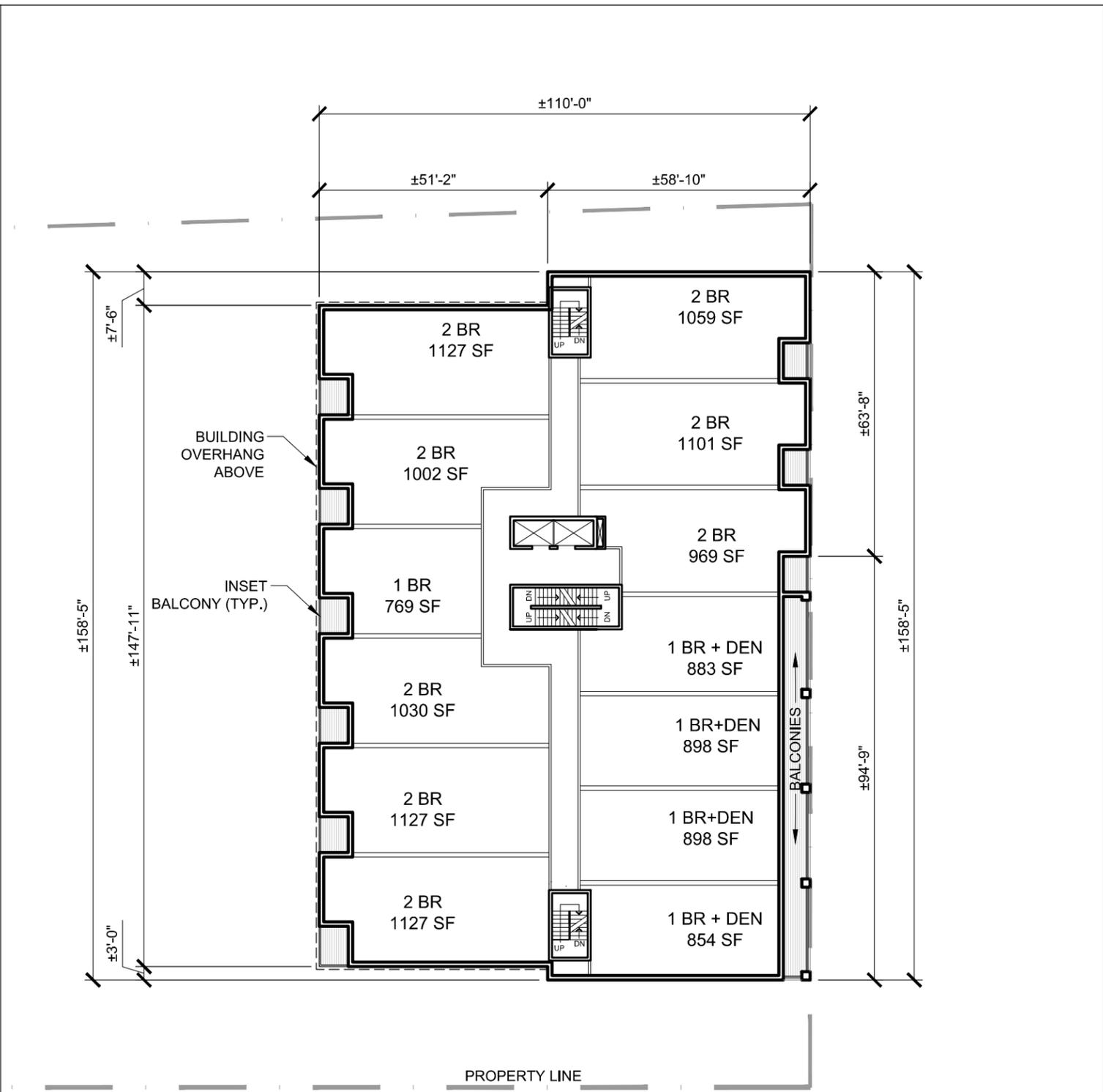
Project No.: P2015.23
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 Date: 22 Sep 2016



B00

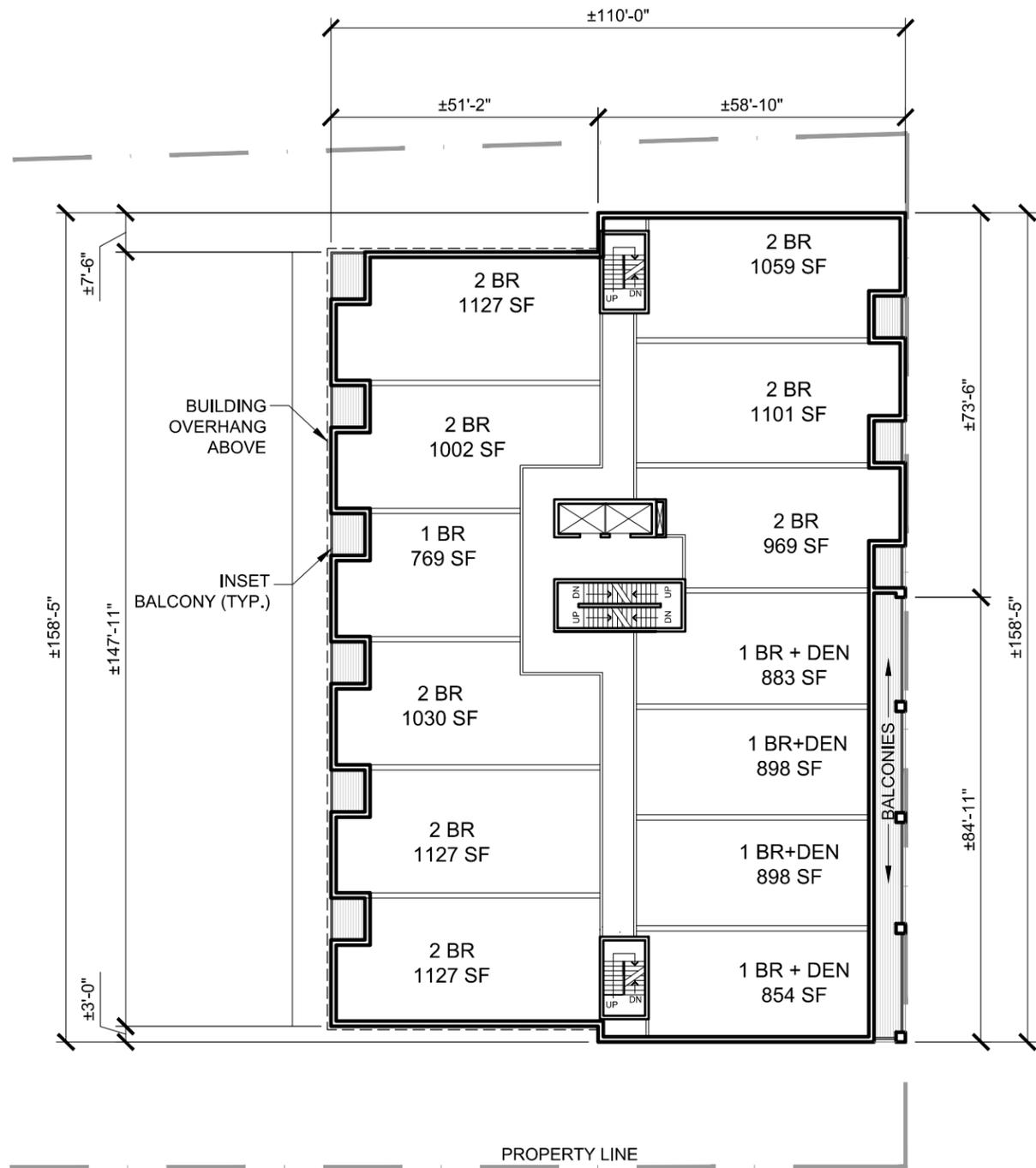


1 GROUND FLOOR
 B01 SCALE: 1" = 30'=0"
 GFA: 15,176 SF

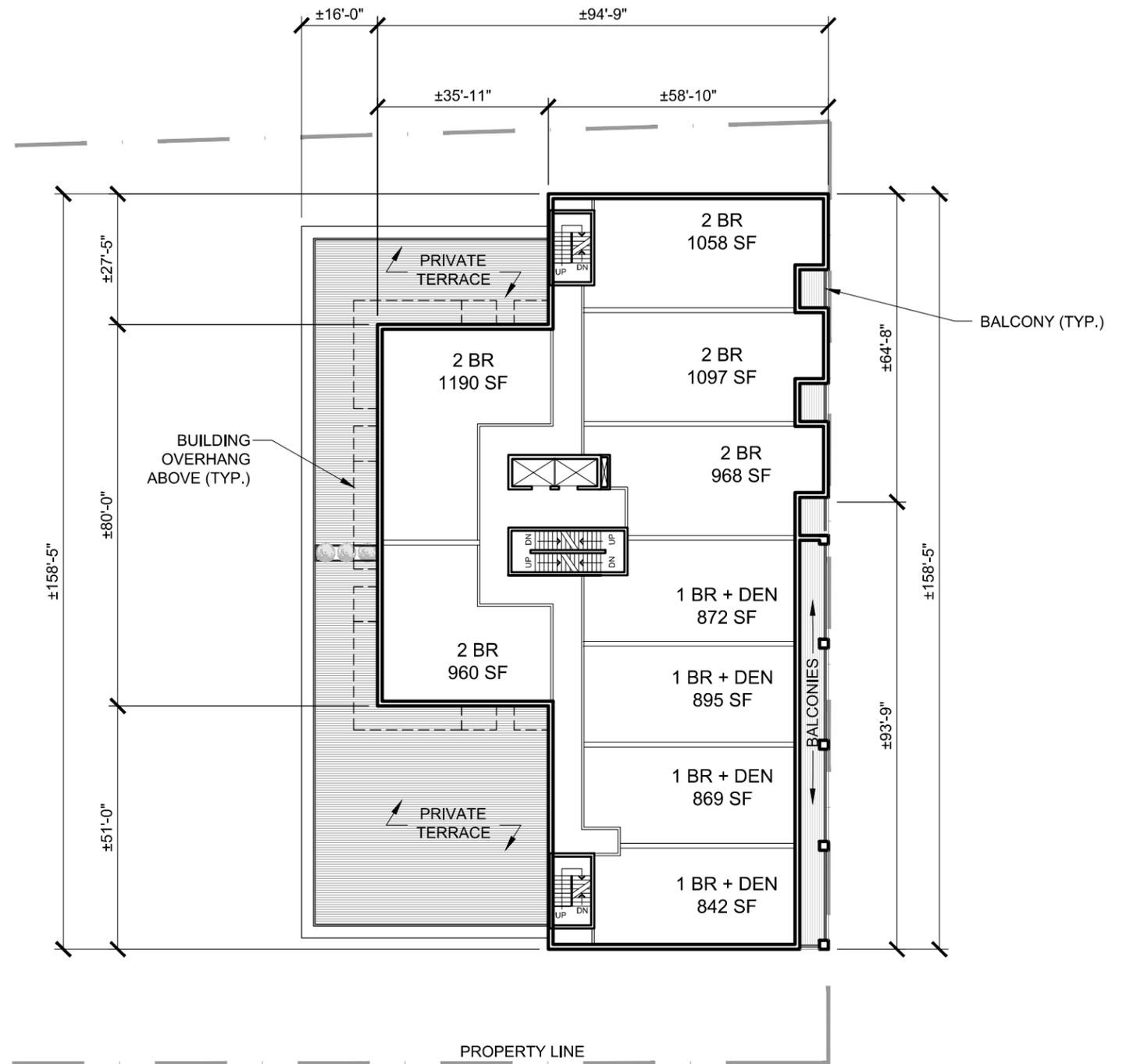


2 LEVELS 2, 4
 B01 SCALE: 1" = 30'=0"
 GFA: 15,907 SF

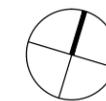


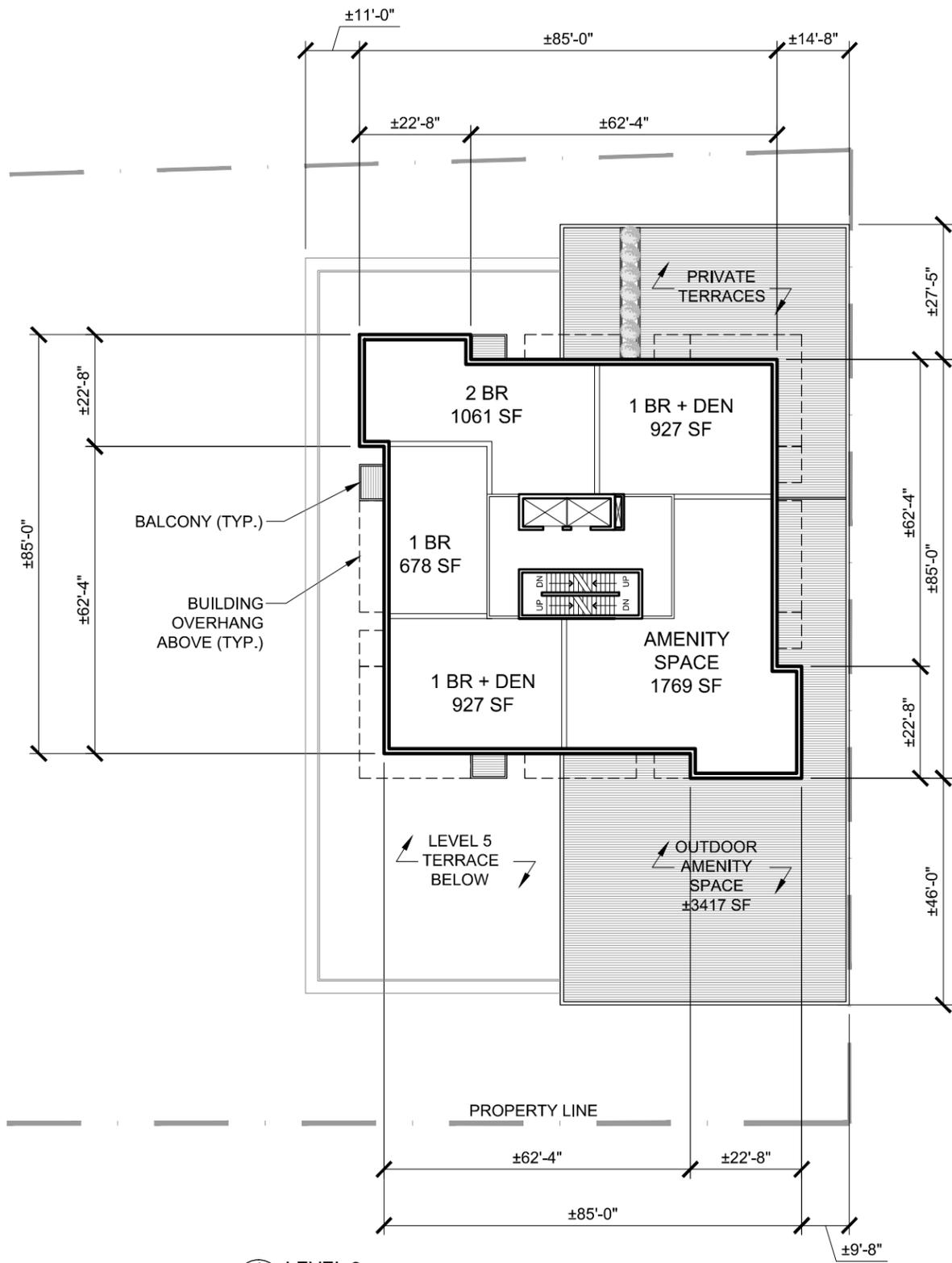


1 LEVEL 3
B02 SCALE: 1" = 30'=0"
GFA: 15,909 SF



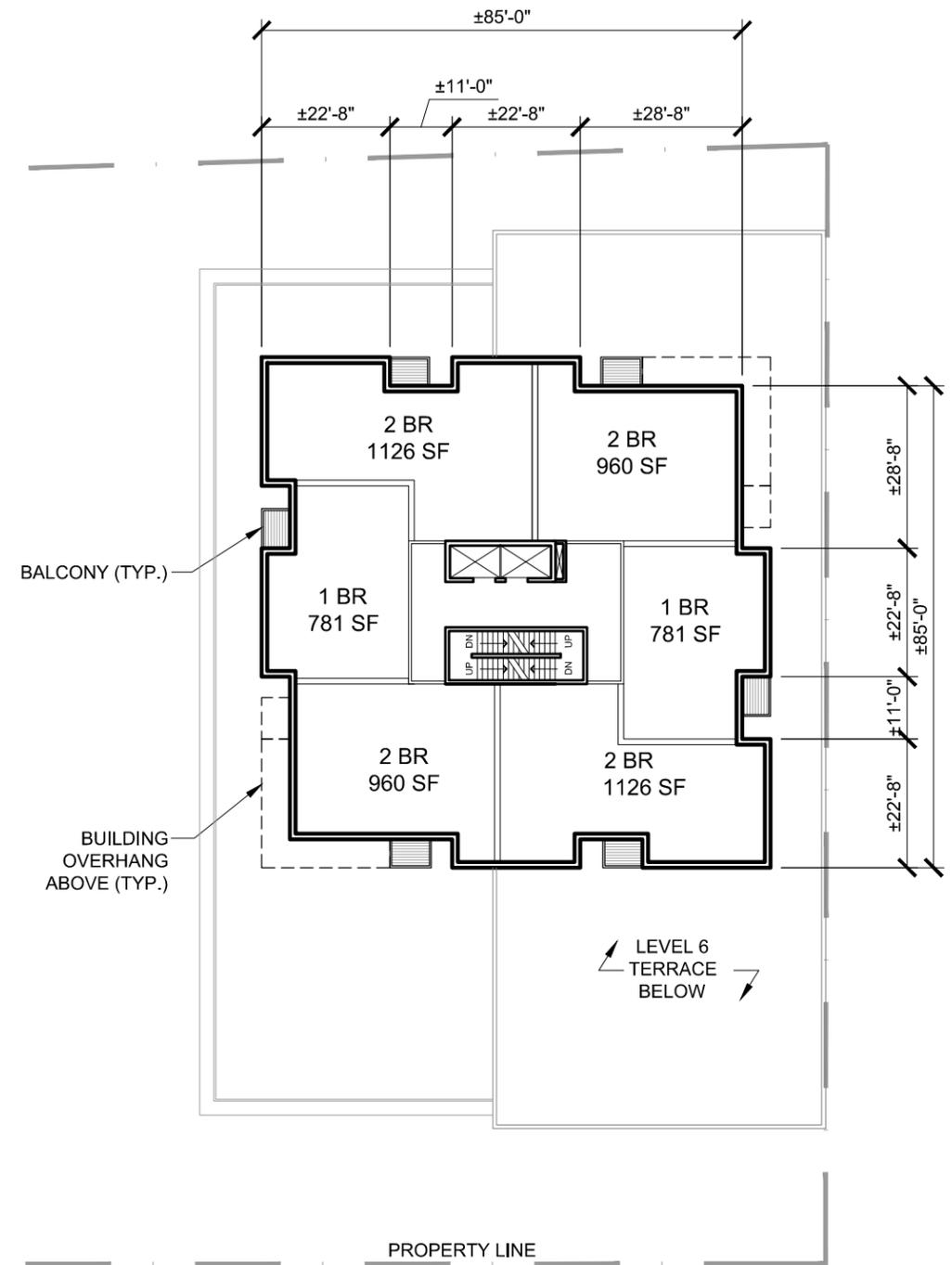
2 LEVEL 5
B02 SCALE: 1" = 30'=0"
GFA: 11,523 SF





1 LEVEL 6
B03 SCALE: 1" = 30'=0"

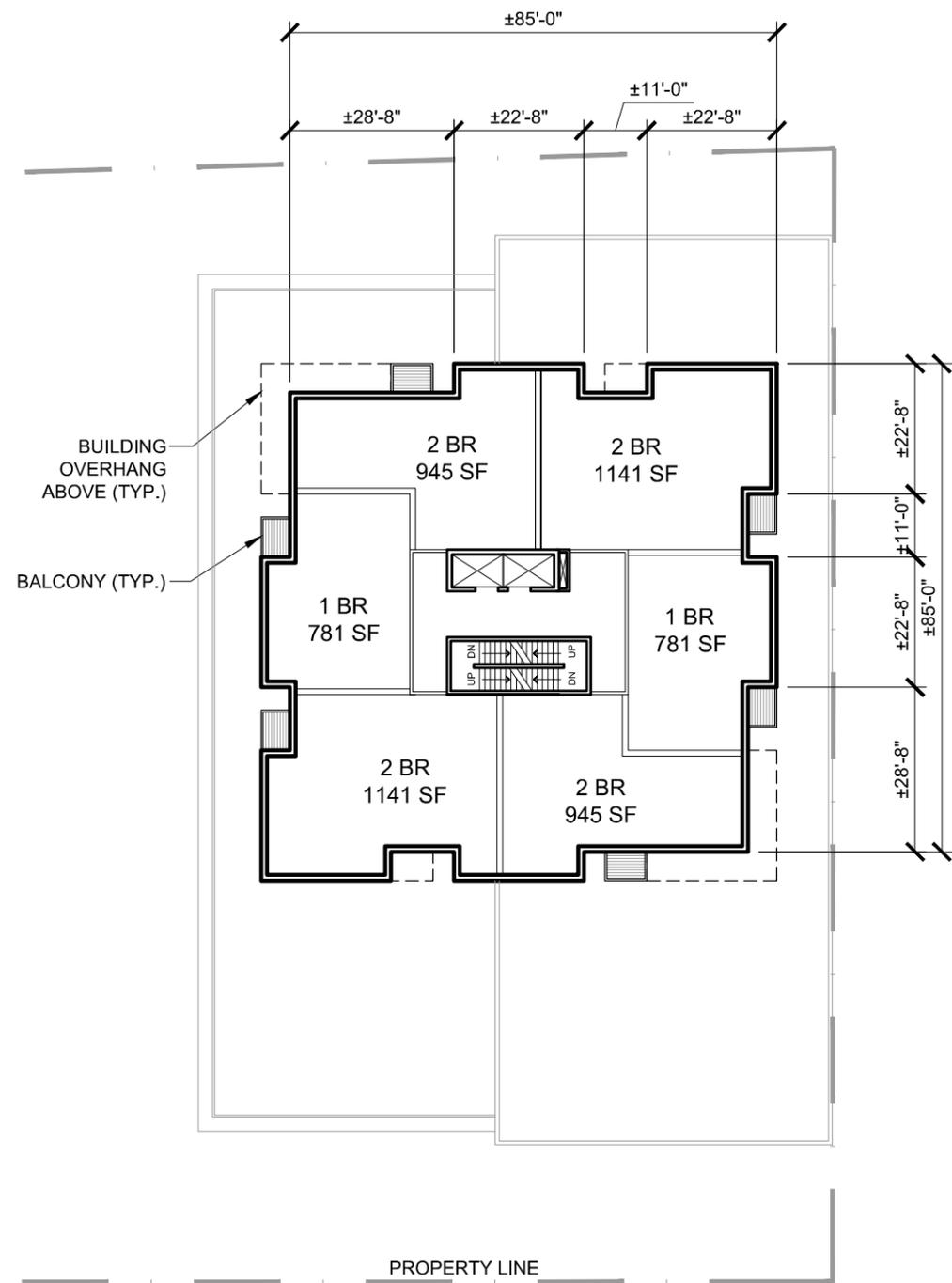
TOWER GFA: 6,803 SF



2 LEVELS 7, 11, 15, 19
B03 SCALE: 1" = 30'=0"

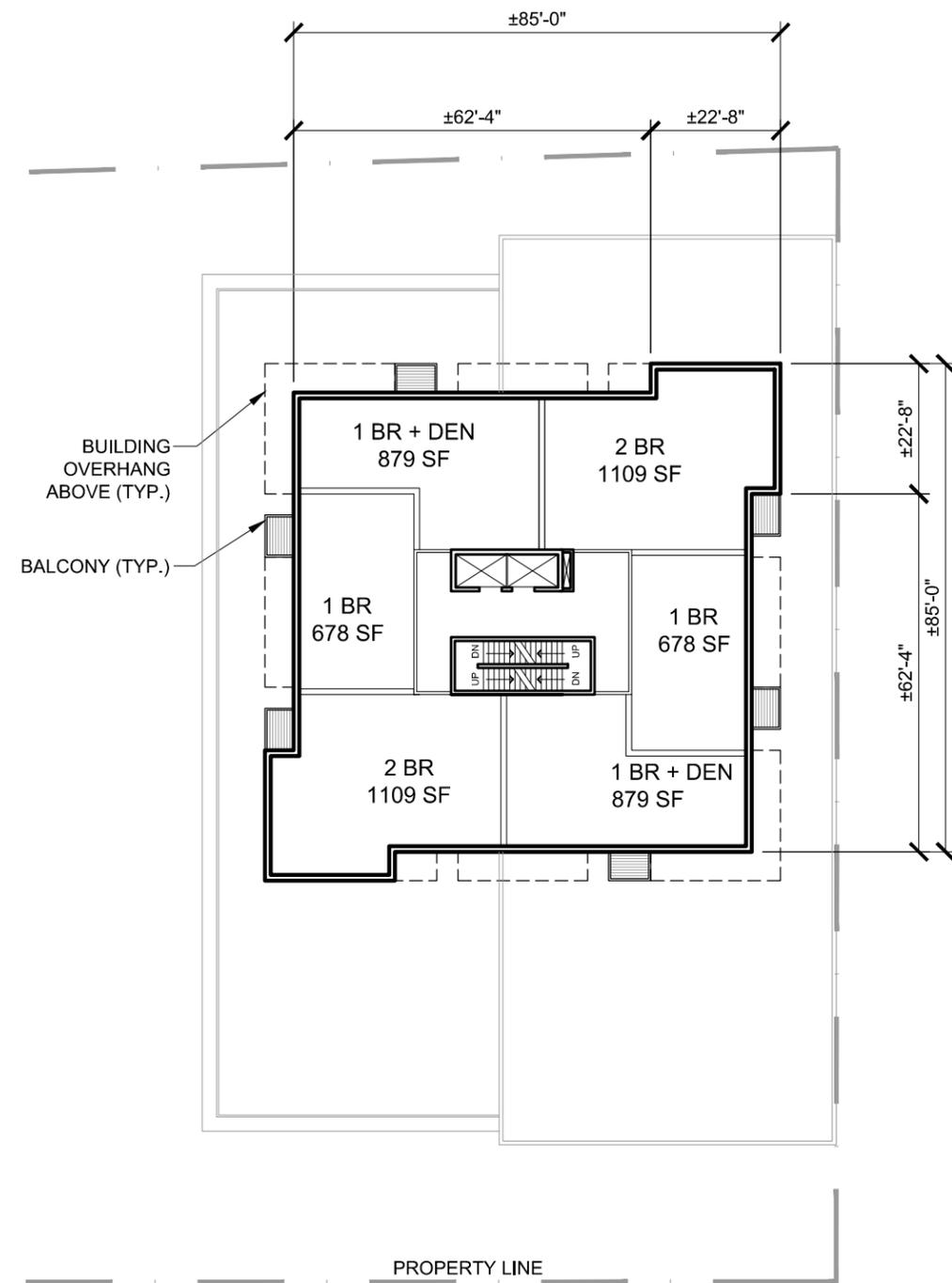
TOWER GFA: 7,257 SF





1 LEVELS 8, 12, 16, 20
 B04 SCALE: 1" = 30'=0"

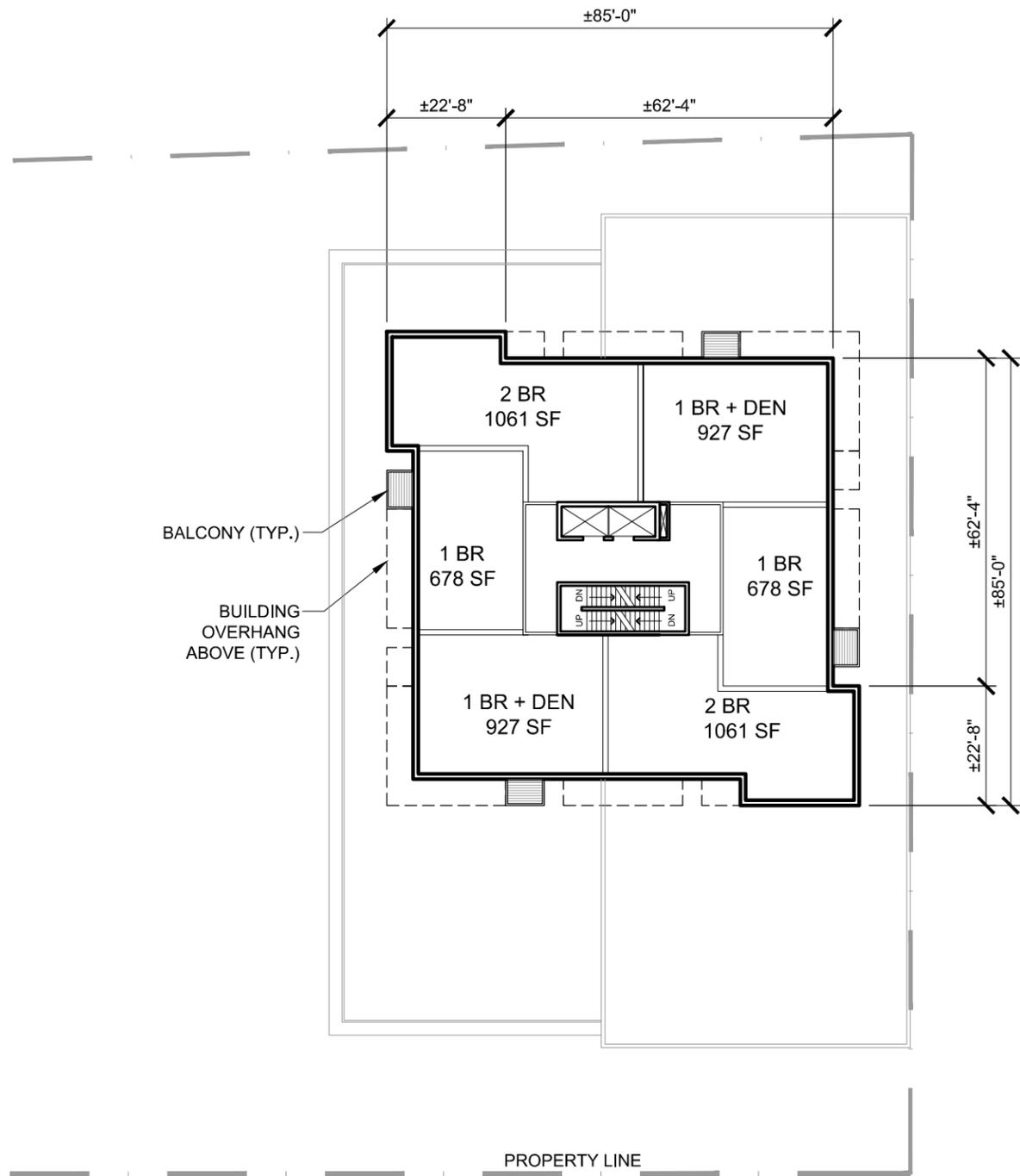
TOWER GFA: 7,257 SF



2 LEVELS 9, 13, 17, 21
 B04 SCALE: 1" = 30'=0"

TOWER GFA: 6,803 SF





1 LEVELS 10, 14, 18
B05 SCALE: 1" = 30'-0"

GFA: 6,803 SF

FLOW TOWERS

11-15 CANAL STREET, DARTMOUTH COVE, NS

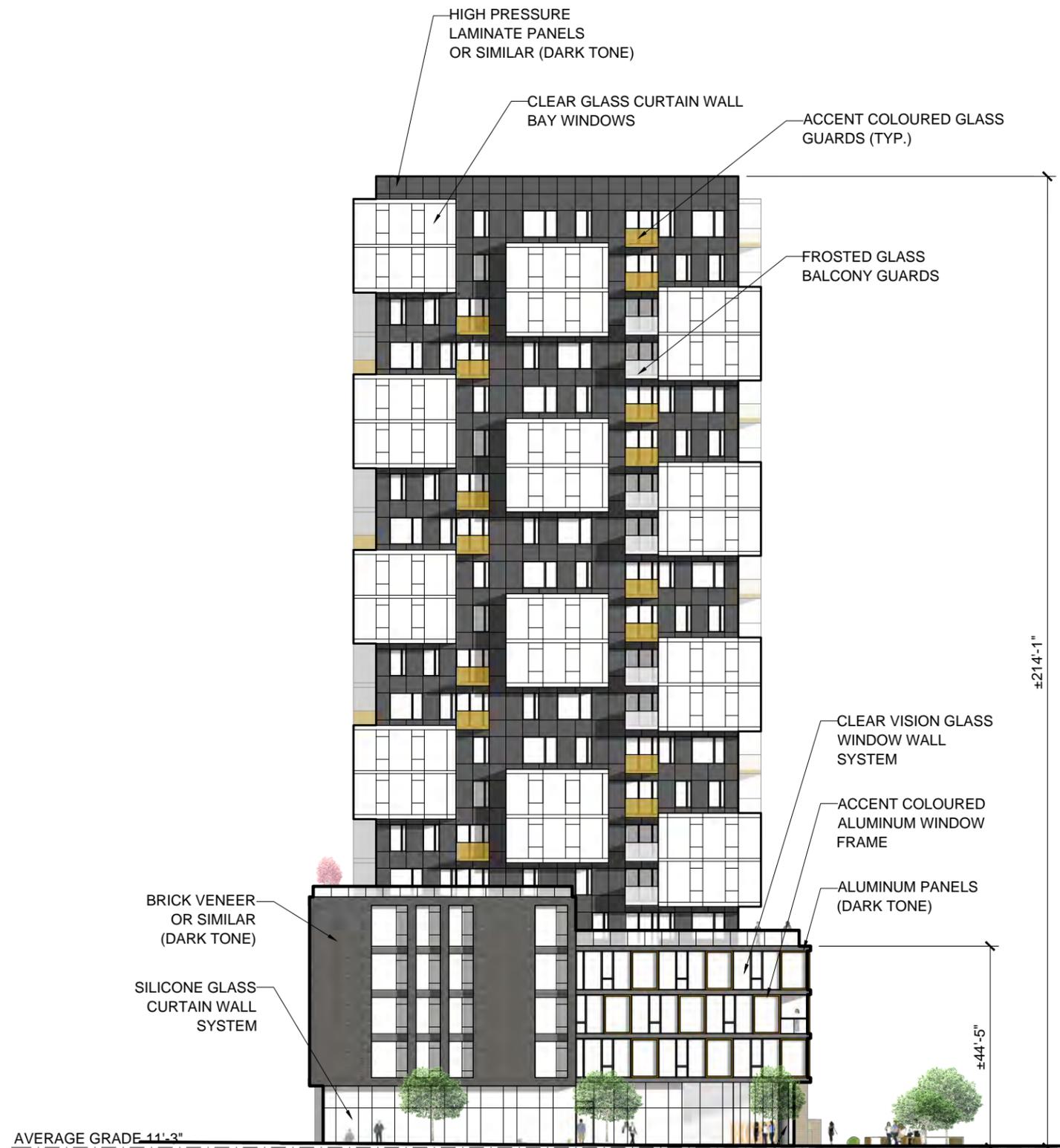
BUILDING B FLOOR PLANS

Project No.: 2015.23
Scale: AS NOTED
Date: 22 Sep 2016

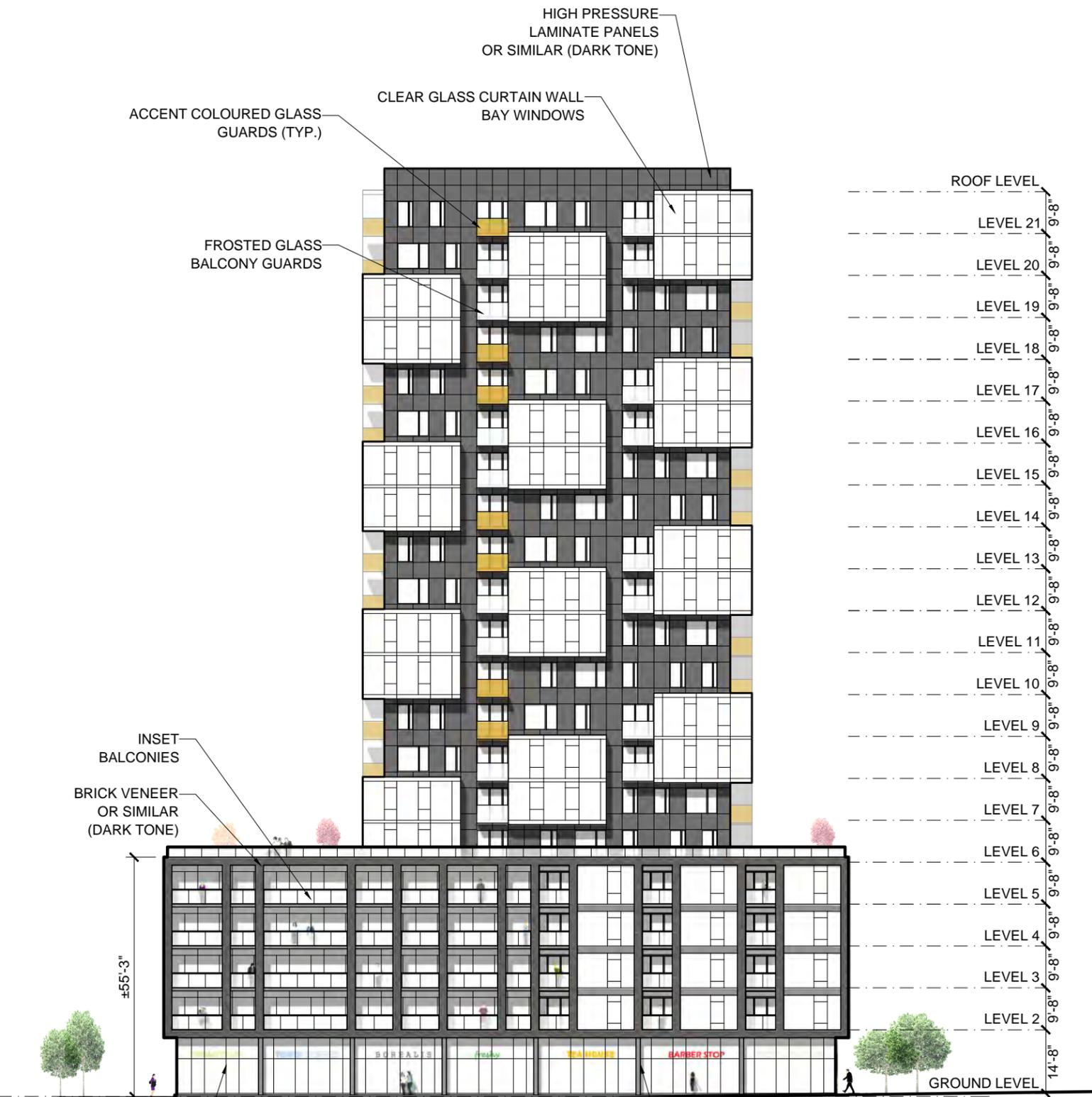


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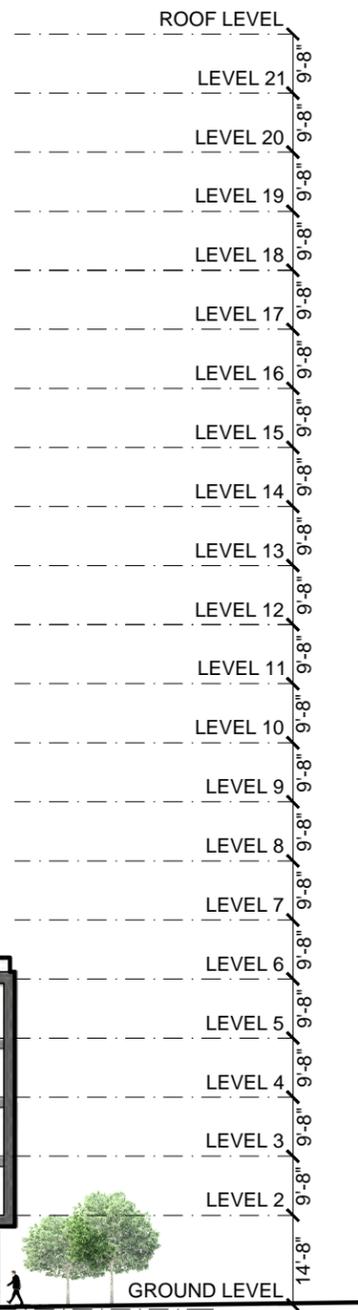
B05

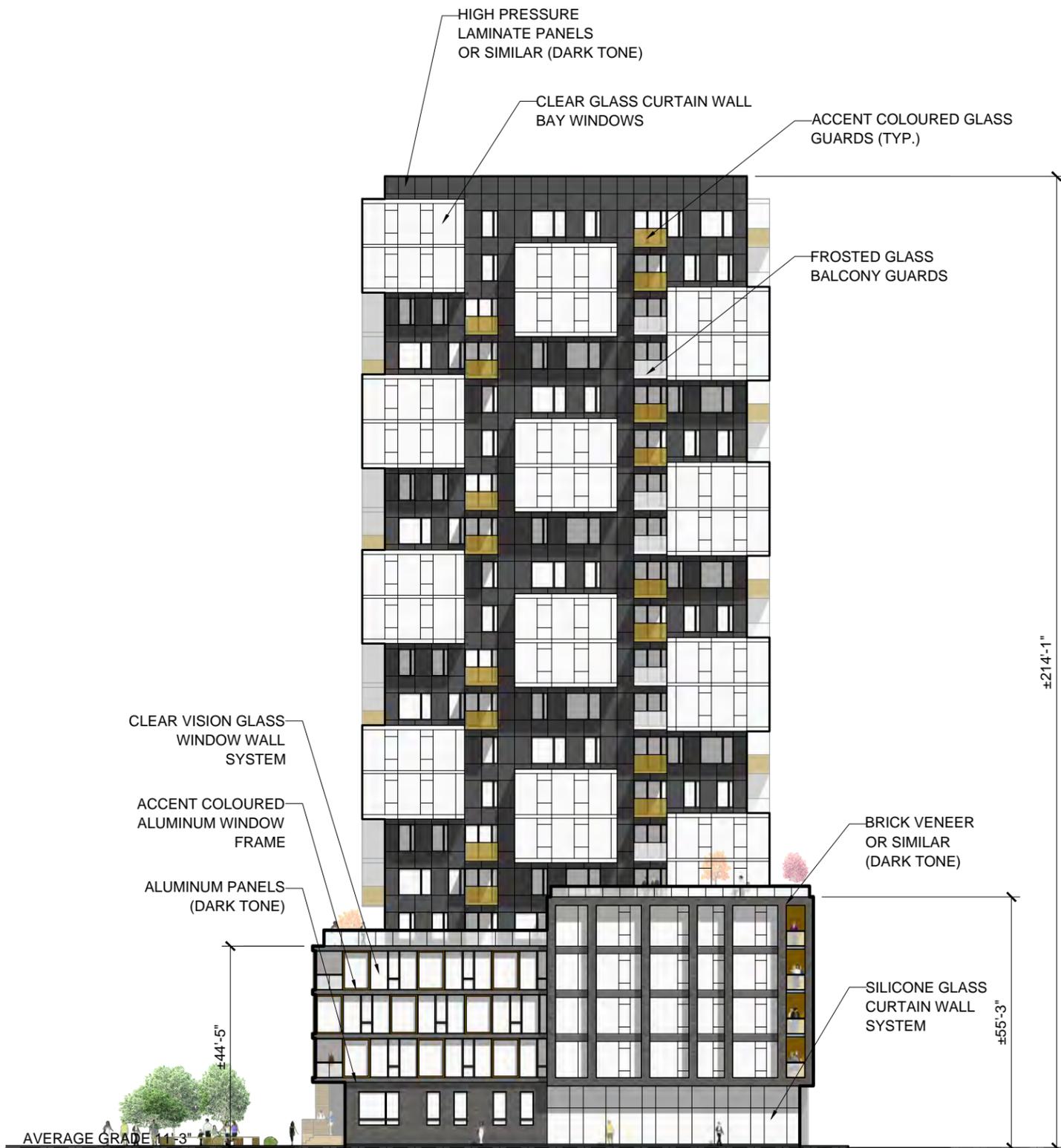


1 NORTH ELEVATION
B06 SCALE: 1" = 30'=0"

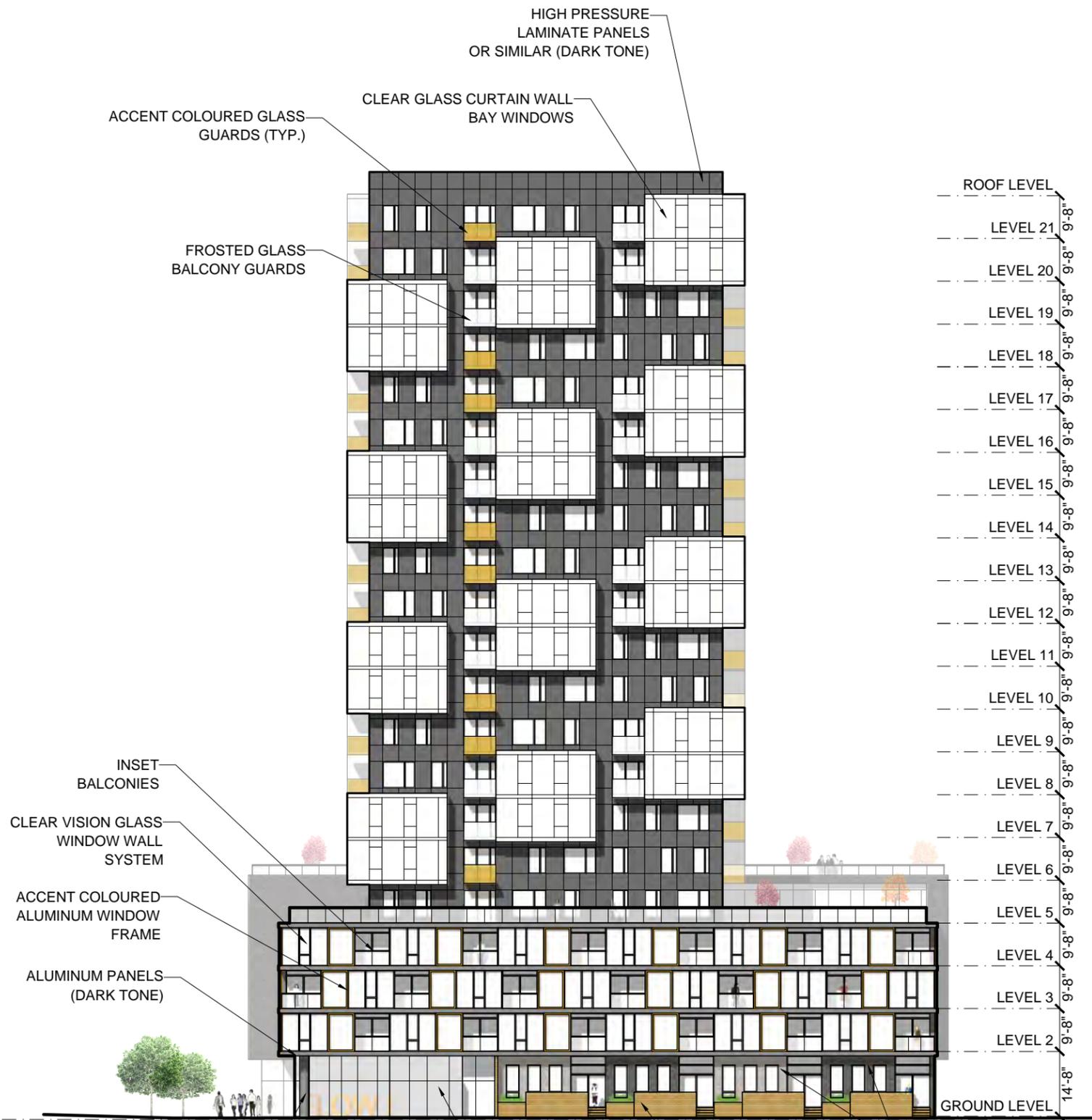


2 EAST ELEVATION
B06 SCALE: 1" = 30'=0"

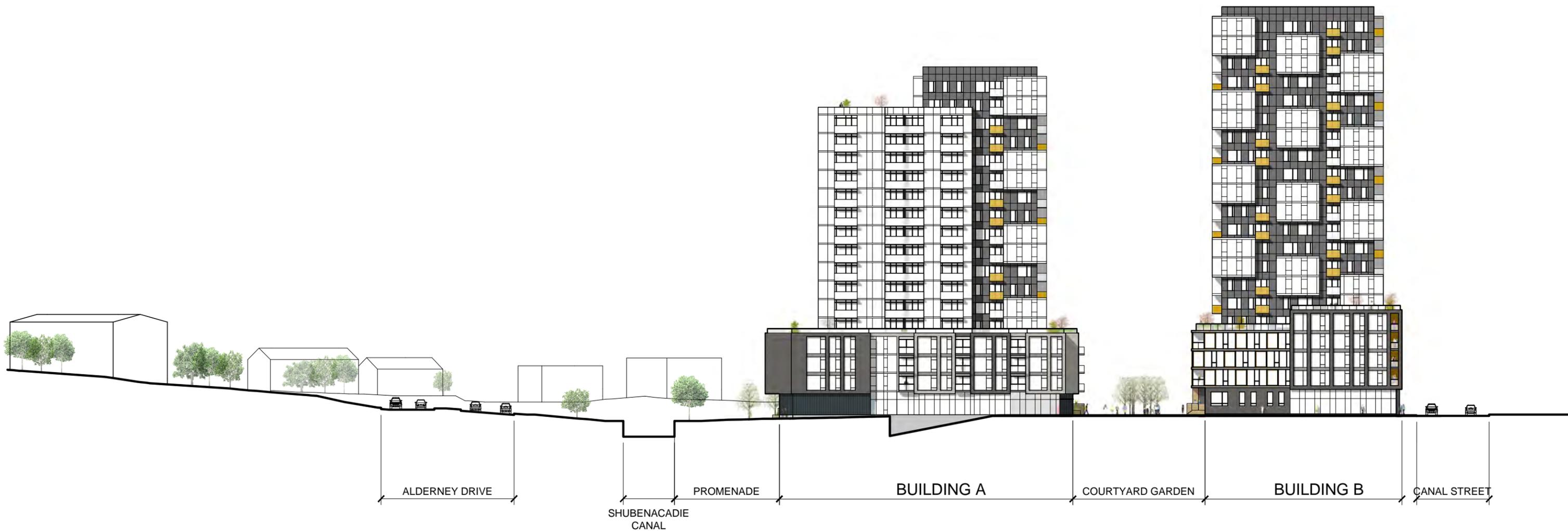




1 SOUTH ELEVATION
B07 SCALE: 1" = 30'=0"



2 WEST ELEVATION
B07 SCALE: 1" = 30'=0"



FLOW TOWERS

11-15 CANAL STREET, DARTMOUTH COVE, NS

SITE SECTION

Project No.: P2015.23

Scale: 1" = 50'-0"

Date: 20 Sep 2016





FLOW TOWERS
DARTMOUTH COVE, NS

NORTHEAST
PERSPECTIVE VIEW

Project No.: 2015.23
Scale: NTS
Date: 3 AUG 2016

WM FARES
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SK2



FLOW TOWERS
DARTMOUTH COVE, NS

NORTHWEST
PERSPECTIVE VIEW

Project No.: 2015.23
Scale: NTS
Date: 3 AUG 2016

WM FARES
ARCHITECTS

SK3



FLOW TOWERS
DARTMOUTH COVE, NS

SOUTHWEST
PERSPECTIVE VIEW

Project No.: 2015.23
Scale: NTS
Date: 3 AUG 2016

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ARCHITECTS

SK4



FLOW TOWERS
DARTMOUTH COVE, NS

SOUTH
PERSPECTIVE VIEW

Project No.: 2015.23
Scale: NTS
Date: 3 AUG 2016

WM FARES
ARCHITECTS

SK5



FLOW TOWERS
DARTMOUTH COVE, NS

SOUTHEAST
PERSPECTIVE VIEW

Project No.: 2015.23
Scale: NTS
Date: 3 AUG 2016

WM FARES
ARCHITECTS

SK6



FLOW TOWERS
DARTMOUTH COVE, NS

CANAL ST. INBOUND
PERSPECTIVE VIEW

Project No.: 2015.23
Scale: NTS
Date: 3 AUG 2016

WM FARES
ARCHITECTS

SK7



FLOW TOWERS
DARTMOUTH COVE, NS

SHUBIE CANAL PROMENADE
PERSPECTIVE VIEW

Project No.: 2015.23
Scale: NTS
Date: 3 AUG 2016

WM FARES
ARCHITECTS

SK8



FLOW TOWERS
DARTMOUTH COVE, NS

ALDERNEY DR. OUTBOUND
PERSPECTIVE VIEW

Project No.: 2015.23
Scale: NTS
Date: 3 AUG 2016

WM FARES
ARCHITECTS

SK9



FLOW TOWERS
DARTMOUTH COVE, NS

COURTYARD GARDEN
PERSPECTIVE VIEW

Project No.: 2015.23
Scale: NTS
Date: 3 AUG 2016

WM FARES
ARCHITECTS

SK10



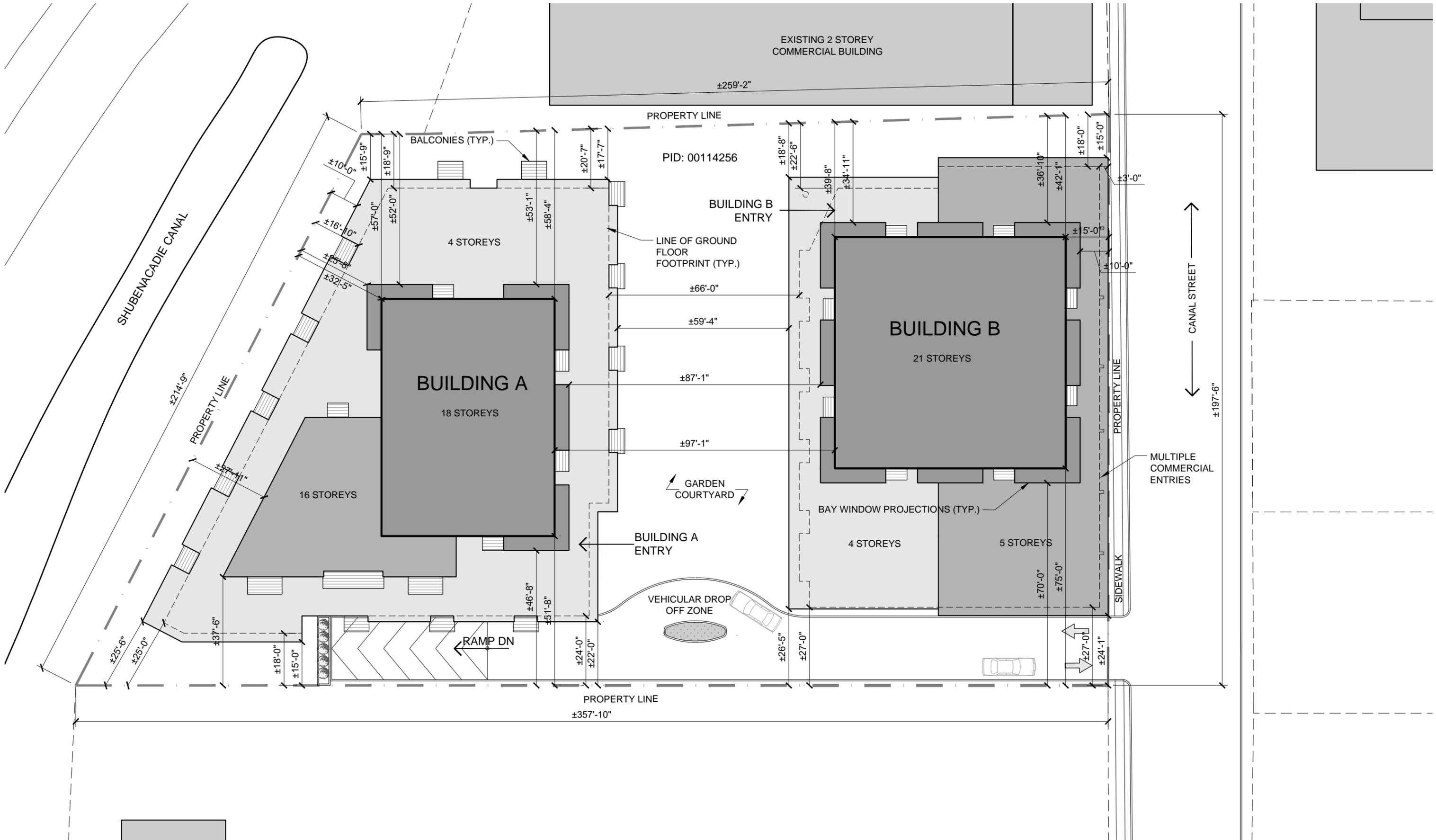
FLOW TOWERS
DARTMOUTH COVE, NS

PLAZA LOOKING NORTHEAST
PERSPECTIVE VIEW

Project No.: 2015.23
Scale: NTS
Date: 3 AUG 2016

WM FARES
ARCHITECTS

SK11



FLOW TOWERS
11-15 CANAL STREET, DARTMOUTH COVE, NS

**ROOF/SETBACK
SITE PLAN**

Project No.: P2015.23
Scale: 1" = 30'-0"
Date: 26 Sep 2016



WM FARES
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SP02



Ref. No. 161-04044 Task 4

August 18, 2016

Ms. Ashley Blissett, P. Eng.
Senior Development Engineer
Halifax Regional Municipality
PO Box 1749
HALIFAX NS B3J 3A5

RE: Traffic Impact Statement, Proposed Flow Towers Multi-Tenant Residential Buildings with Ground Floor Commercial Space, Canal Street, Dartmouth

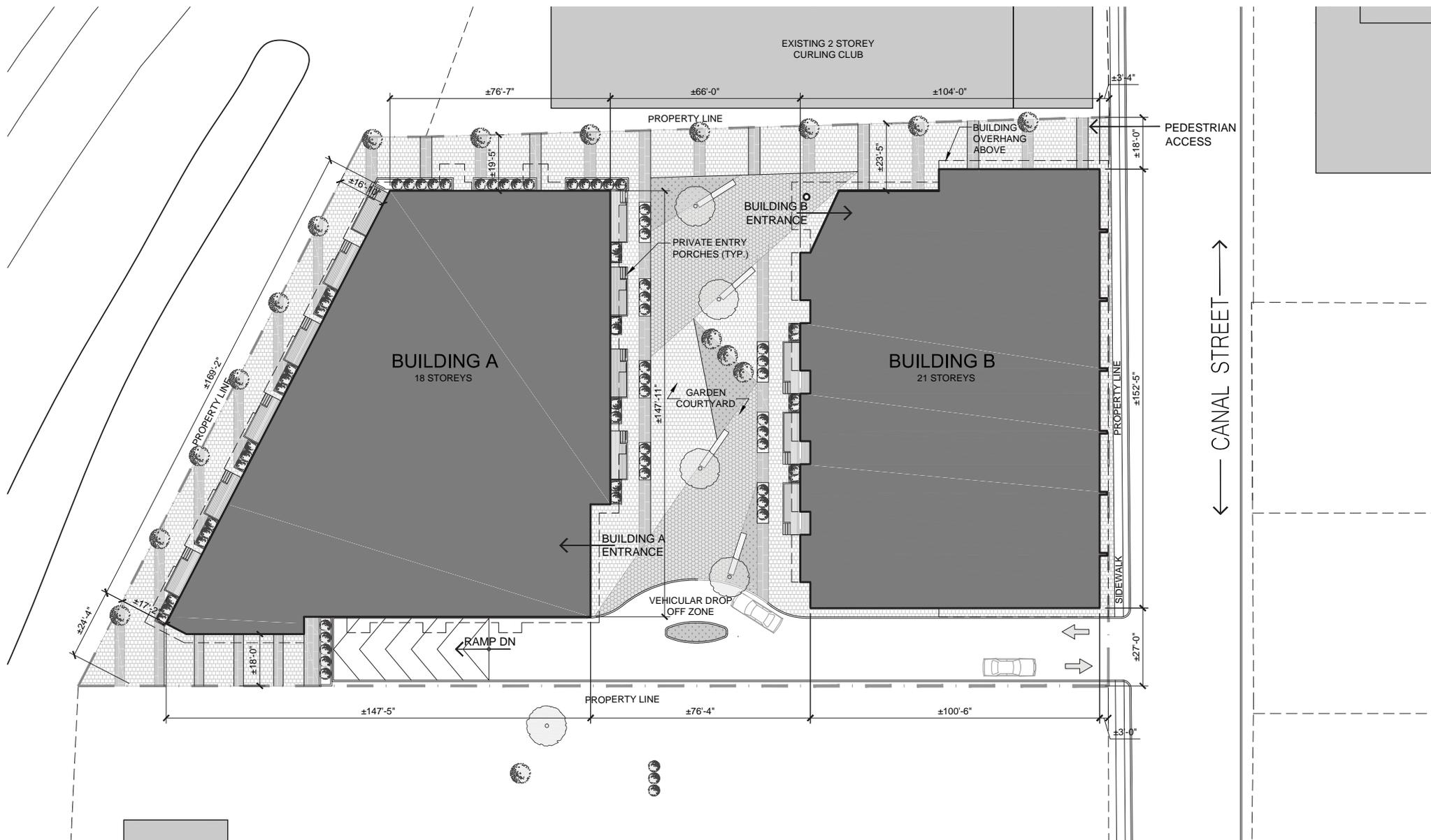
Dear Ms. Blissett:

W M Fares Group is preparing plans for the proposed Flow Towers development on a vacant lot on the west side of Canal Street, Dartmouth (Figure 1). The development will include two multi-unit residential buildings, with ground floor commercial space in one of the buildings. The proposed development (Figure 2) will include approximately 285 apartment units, 6,915 square feet of neighbourhood oriented commercial space, and approximately 292 underground parking spaces. This is the Traffic Impact Statement (TIS) required to accompany the development application.

Description of Development Location - The proposed development site (Figure 1) which is in the Dartmouth Cove area is bounded by Dartmouth Curling Club to the north, Canal Street to the east, Dominion Diving Limited to the south and the Shubenacadie Canal Trail and Alderney Drive to the west. While the existing area east and south of the site includes mostly vacant land or industrial uses, HRM has initiated a planning process that envisions significant residential and commercial development during the next 10 to 20 years.



Figure 1 - Location plan showing approximate siting of the two proposed Flow Towers buildings.



FLOW TOWERS

DARTMOUTH COVE, NS

SITE PLAN
SITE / LANDSCAPE PLAN

Figure 2

Project No.: P2015.23
Scale: 1" = 30'-0"
Date: 3 Aug 2016



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SP01

Description of Site Access - Pedestrian access to the site will be from Canal Street at the north site boundary and vehicle access will be a driveway on Canal Street at the south site boundary (Figure 2). Access to the regional street system (Figure 1) will be by way of a two-way access at the Alderney Drive / Mill Lane intersection and right-in / right-out movements at the Portland Street / Canal Street intersection. Existing traffic to and from adjacent sites also access Maitland Street through the parking lot opposite Mill Lane and across a gravel site just north of the Trans Canada Trail (Figure 1).

Canal Street is a north-south local street approximately 250 m long between Portland Street in the north and the Trans Canada Trail in the south. The street has two travel lanes with sidewalks on both sides. Parking is permitted (2 HOURS MON - FRI) on the west side of the street and except for a short NO PARKING section on the east side, parking is permitted without time restrictions. There is good visibility on both Canal Street approaches to the proposed site driveway (Photos 1 and 2).



Photo 1 - Looking north on Canal Street towards Mill Lane and Portland Street from the proposed site driveway at the south site boundary.

Traffic Volumes - The following 2012 peak hourly traffic volume data were obtained from HRM:

- Alderney Drive (between Mill Lane and Portland Street) - AM 900 vph; PM 1020 vph
- Portland Street (between Alderney Drive and Canal Street) - AM 1180 vph; PM 1340 vph
- Portland Street (between Canal Street and Maitland Street) - AM 1160 vph; PM 1270 vph.



Photo 2 - Looking south on Canal Street towards the Trans Canada Trail from the proposed site driveway at the south site boundary.

Transit and Active Transportation (AT) - The site is well served by transit with at least seven Halifax Transit routes serving Portland Street and Alderney Drive with connections to Penhorn Terminal to the east and Alderney Ferry Terminal to the west. The Trans Canada Trail which is just south of the site also provides a convenient pedestrian and bicycle connection to Kings Wharf and the Ferry Terminal.

Trip Generation - Trip generation estimates for the proposed development, prepared using published trip generation rates from *Trip Generation, 9th Edition* (Institute of Transportation Engineers (ITE), 2012), are included in Table 1. Using published trip rates, it is estimated that the proposed development will generate about 94 two-way vehicle trips (26 entering and 68 exiting) during the AM peak hour and 119 two-way vehicle trips (69 entering and 50 exiting) during the PM peak hour.

The appropriate percentage of non-vehicle trips for the Dartmouth Cove development area was discussed with Paul Burgess, M.Eng, P. Eng., on August 8, 2016. It was determined that, since significant numbers of the site generated trips are expected to be by made by transit, bicycle or walking modes, 50% of the site generated trips estimated using ITE published trip generation rates would be considered non-vehicle trips. When 50% non-vehicle trips are considered, it is estimated that the development will generate 47 two-way vehicle trips (13 entering and 34 exiting) during the AM peak hour and 59 two-way vehicle trips (34 entering and 25 exiting) during the PM peak hour.

Table 1 - Trip Generation Estimates for Proposed Development									
Land Use ¹	Units ²	Trip Generation Rates ³				Trips Generated ³			
		AM Peak		PM Peak		AM Peak		PM Peak	
		In	Out	In	Out	In	Out	In	Out
High-Rise Apartment (Land Use 222)	285 units	0.075	0.225	0.214	0.136	21	64	61	39
Specialty Retail (Use Code 826) ⁴	6,915 KGLA	0.76	0.60	1.19	1.52	5	4	8	11
Unadjusted vehicle trip generation estimates for proposed development						26	68	69	50
50% reduction in vehicle trips to account for high transit and AT use ⁵						13	34	35	25
Adjusted vehicle trip generation estimates for proposed development						13	34	34	25

NOTES: 1. Rates are for the indicated Land Use Codes, *Trip Generation, 9th Edition*, Institute of Transportation Engineers, 2012.
 2. Number of apartment units; KGLA is 'Gross Leasable Area x 1000 square feet'.
 3. Rates are 'vehicles per hour per unit'; trips generated are 'vehicles per hour for peak hours'.
 4. The Speciality Retail (Land Use 826) rate for 'Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 PM' has been used. Since there is no published rate for the AM peak hour of adjacent street for this Land Use, and since AM peak hour trips to Speciality Retail are generally low, AM trip rates have been assumed to be 50% of the PM rate with reversal of the directional split.
 5. Following discussions with Paul Burgess, M.Eng, P. Eng., on August 8, 2016, it was determined that, since significant numbers of the site generated trips are expected to be by made by transit, bicycle or walking modes, 50% of the site generated trips estimated using ITE published trip generation rates would be considered non-vehicle trips.

Summary -

1. The proposed development will include approximately 285 apartment units, 6,915 square feet of neighbourhood oriented commercial space, and approximately 292 underground parking spaces.
2. Pedestrian access to the site will be from Canal Street at the north site boundary and vehicle access will be a driveway on Canal Street at the south site boundary. Visibility is good on both Canal Street approaches to the driveway.
3. Using published trip rates, it is estimated that the proposed development will generate about 94 two-way vehicle trips (26 entering and 68 exiting) during the AM peak hour and 119 two-way vehicle trips (69 entering and 50 exiting) during the PM peak hour. However, when 50% non-vehicle trips are considered, it is estimated that the development will generate 47 two-way vehicle trips (13 entering and 34 exiting) during the AM peak hour and 59 two-way vehicle trips (34 entering and 25 exiting) during the PM peak hour.
4. The site is well served by transit with at least seven Halifax Transit routes serving Portland Street and Alderney Drive with connections to Penhorn Terminal to the east and Alderney Ferry Terminal to the west. The Trans Canada Trail which is just south of the site also provides a convenient pedestrian and bicycle connection to Kings Wharf and the Ferry Terminal.
5. While traffic volumes are high on Portland Street and Alderney Drive, existing volumes on Canal Street are expected to be low to moderate.

Conclusion -

6. While peak hourly volumes are high on regional streets near the site, the low to moderate numbers of site generated vehicle trips are not expected to have any significant impact to the level of performance of adjacent streets and intersections, or the regional street network.

Recommendation -

7. While visibility is good on both Canal Street approaches to the site driveway, the final site design must ensure that the building adjacent to Canal Street and site vegetation do not block the line of sight between drivers exiting the site and the expected high numbers of pedestrians using the sidewalk.

If you have any questions or comments, please contact me by Email to ken.obrien@wspgroup.com or telephone 902-443-7747.

Sincerely:

Original Signed

Ken O'Brien, P. Eng.
Senior Traffic Engineer
WSP Canada Inc.



Original Signed

PROJECT BRIEF



FLOW TOWERS

11-15 Canal Street, Downtown Dartmouth NS

Purpose of Submission

WMFARES Architects is pleased to make an application on behalf of Mosaik Properties for a Site Specific Plan Amendment to the Downtown Dartmouth Secondary Planning Strategy (DDSPS) and Land Use By-Law to enable a Development Agreement for two mixed-use building. We have enclosed the following information for review as part of the application process:

1. Signed Application and Fee Payment
2. Site Context Plan, Setback Plan, and Landscape Plan
3. Development Data
4. Multi-Unit Residential Building Drawings
5. Schedule 'A' Legal Description
6. Traffic Impact Statement
7. Site Servicing Schematic & Sanitary Report

Context, Zoning & Existing Planning Designations

The subject property is a 1.4-acre empty lot fronting Canal Street and zoned Marine Business within the existing LUB and designated as Waterfront Land under the DDSPS. The lot is bordered on the north by the Dartmouth Curling Club, on the east by Canal Street, on the south by Dominion Diving Limited, and on the west by the Shubenacadie Canal Trail. The site is predominately surrounded by low-rise marine industrial and commercial use, yet subject to change as part of the Pending Dartmouth Cove Comprehensive Plan (2012) designating the immediate area as new mixed-use and public waterfront development.

The surrounding context bordering Dartmouth Cove is a mix of varied neighbourhoods and building types. To the east is the Hazelhurst neighbourhood and to the north is the Prince Albert neighbourhood, both comprised largely of semi-detached or single family homes, low-rise apartment buildings, and some mid- to high-rise apartment buildings. To the west is the Downtown Business District with mostly low- to mid-rise commercial development, but notably some high-rise development including an office tower and adjacent government tower on the corner of Ochterloney Street and Alderney Drive, a residential tower on the corner of Portland and Dundas Streets, and the Kings Wharf development on the waterfront.

The DDSPS encourages high-density residential development within the business district and waterfront areas, citing repopulation of the downtown core as essential for supporting the growth of Downtown Dartmouth's commercial sector. According to the Secondary Planning Strategy, the 1991 Dartmouth Waterfront Plan further encouraged "high end" residential development specifically within the Waterfront areas of Downtown Dartmouth. In 2011, Regional Council directed changes to the DDSPS to inform recent Regional Plan visions to encourage and outline

growth within Downtown Dartmouth. That has resulted in public consultations and drafts outlining new precincts and distinct precinct goals, character, and vision for Downtown Dartmouth. The subject parcel (PID 00114256) falls within Precinct 6 (Dartmouth Cove) with cited visionary goals as outlined in recent staff summaries, drafts, and documents:

- Mixed-use pedestrian orientated community with excellent trail and bike linkages
- Public access to much of waterfront
- Some continued marine related business uses
- Taller buildings designated to mitigate wind impacts on pedestrians
- View corridors to enhance harbour

In recent years, the amendments to the DDSPS as initiation by Regional Council in 2011 have been adopted within the new Centre Plan umbrella and awaiting approval as part of the Centre Plan Process.

Project Description + Design Strategies

The project is comprised of two separate buildings with a shared below grade parking podium. Building A that fronts the Shubienacadie Canal is 18 storeys in height and houses residential suites with ground floor units having direct access at grade. Building B is a 21 storey residential building with a commercial component at grade fronting Canal Street. The space between the buildings has been designed as an active landscaped garden courtyard with built-in planters, pavers, and outdoor furniture. Lobbies of both buildings are located off the central courtyard garden to activate and engage open public space. The courtyard garden can be accessed by foot from the north end of the site via Canal Street, and by vehicle from the south end of the site via a driveway on Canal Street.

The architecture and urban design for the subject land has focused on key principles that generally conform to standards outlined by the draft Downtown Dartmouth Design Guidelines (schedule E) as well as the Dartmouth Cove Comprehensive Plan Guiding Plan (2012). In particular, the proposed development includes some of the following attributes and Architectural Design Strategies:

- Building mass in the form of a 4 to 5 storey streetwall with upperstorey tower stepbacks greater than 10 feet.
- Building A Streetwall taking on the form of distinct vertical townhouse-style volumes with varied brick tones.
- Building B streetwall taking on a more solid but highly articulated form through delineation of structural bays (5 storeys fronting Canal) as well as a more animated coloured window wall treatment (4 storeys facing the courtyard garden).
- Inset and semi-inset balconies within streetwall masses.
- Mixed Use Programming – multiple commercial entries and defined bays fronting Canal Street.
- Gross Tower GFA under 8000 SF within a point-style form, and tower separation over 80 feet.
- No onsite parking (all below grade)

- Protected street view planes to harbour.
- Use of high quality building materials such as stone, glass, brick, aluminum and HPL (high pressured laminate)
- Variety of unit types designed with a ‘democratic’ approach that allows all types of units to have unobstructed views to the harbour.
- Outdoor Amenity space in the form of landscaped terraces.
- A development that promotes and focuses on walkability and pedestrian activity through an integrated ground floor Landscape Design including:
 - Promenade facing historic Shubie Canal
 - Central courtyard garden
 - High quality paving / pavers and landscaping
 - Protected overhangs and canopies at entries and commercial bays.
 - Integrated wood planters and entry porches
 - Multiple residential suite entries at grade
 - Architectural delineation and variety within streetwall to animate and compliment landscaped open space.

Conclusion

Thank you for considering our application. We are strong believers that design excellence can serve as a catalyst for urban revitalization, and we strive for our work to serve as an example of how Downtown Dartmouth can grow as an economic and residential centre of the walkable city. We look forward to working together with staff in pursuing these unique opportunities.

Sincerely,

Original Signed



Jacob JeBailey, Architect
RAIC, NSAA, OAA, M.Arch, BEDS

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August 29, 2016

Halifax Water
c/o Steve Skinner
450 Cowie Hill Road
Halifax, NS

From: Logan McDowell, P.Eng.

File No. 1-7-23 (32022)

Re: **Flow Towers, 4256 Canal Street, Dartmouth, NS – Sanitary Lateral Size Confirmation**

Project Summary:

	Commercial/Retail	Residential
Building	6,915 ft ² = 642m ²	285 Units
*From W.M. Fares Group.		

References:

- Halifax Water (HW) Design & Construction Specifications (2016 Edition), Section 5.2.1:
 - $Q = [1.25 \times (a \times M)] + b$ Where;
 - $Q =$ Sanitary sewer flow.
 - 1.25 = Safety Factor.
 - $a =$ Average dry weather flow.
 - $M =$ Peaking factor using Harmon Formula; $M = 1 + [14 / (4 + P^{0.5})]$
 - $b =$ Long-term infiltration/inflow allowance.
 - $P =$ Population in thousands
 - Residential Average Dry Weather Flow: 300 L/day per person
 - Multi-Unit Dwelling Population: 2.25 people per unit
 - Infiltration allowance: 0.28 L/ha_{gross}/s
- Atlantic Canada Wastewater Guidelines (AWG) Manual (2006 Edition), Section 2.3:
 - Table 2.1: Average Daily Flows based on establishment type
 - o Commercial & Office/Retail Space: 6 L/day per m²
 - Section 2.3.4.2 Population Estimates:
 - o 85 people per ha_{gross}

Calculation Summary:Population Estimate (P)

Reference:

P₁: AWG Section 2.3.4.2 Commercial/Retail: 85 people per haP₂: HW Section 5.2.1 Residential: 2.25 people per unit

$$P = P_1 + P_2$$

$$P_1 = 85 \times 642 \text{ m}^2 \times (1 \text{ ha}/10,000 \text{ m}^2) = 6 \text{ people}$$

$$P_2 = 2.25 \text{ people per unit} \times 285 \text{ Units} = 642 \text{ people}$$

$$P = 6 \text{ people} + 642 \text{ people} = \mathbf{648 \text{ people (or 0.648)}}$$

Dry Weather Flow (a)

Reference:

a₁: AWG Table 2.1: Commercial/Retail: 6 L/day per m²a₂: HW Section 5.2.1: Residential: 300 L/day per person

$$a = a_1 + a_2$$

$$a_1 = 6 \text{ L/day per m}^2 \times 642 \text{ m}^2 = 3,852 \text{ L/day}$$

$$a_2 = 300 \text{ L/day per person} \times 648 \text{ people} = 194,400 \text{ L/day}$$

$$a = 3,852 \text{ L/day} + 194,400 \text{ L/day} = \mathbf{198,252 \text{ L/day (or 1.98 L/s)}}$$

Infiltration (b)

Reference:

HW Section 5.2.1: Infiltration allowance: 0.28 L/ha_{gross}/sLot Area = 59,608 ft² = 0.554 ha

$$b: \quad 0.28 \text{ L/ha}_{\text{gross}}/\text{s} \times 0.554 \text{ ha} = \mathbf{0.155 \text{ L/s}}$$

Peaking Factor (M)

$$M = 1 + [14 / (4 + P^{0.5})]$$

$$M = 1 + [14 / (4 + (0.648)^{0.5})] = \mathbf{3.91}$$

Sanitary Sewer Flow (Q)

$$Q = [1.25 \times (a \times M)] + b$$

$$Q = [1.25 \times (1.98 \text{ L/s} \times 3.91)] + 0.155 \text{ L/s} = \mathbf{9.83 \text{ L/s}}$$

Sanitary Lateral Size Confirmation:

An 8" (200 mm) PVC lateral at 0.60% slope has a capacity of 33.0 L/s. With Q = 9.83 L/s, the depth of flow will be 75 mm with an average flow velocity of 0.92 m/s. Based on these values, the proposed lateral will have sufficient flow capacity while meeting the minimum and maximum flow velocity requirements. For additional information or discussion regarding these findings please contact the undersigned.

Regards,

Servant, Dunbrack, McKenzie & MacDonald Ltd.

Original Signed

 Logan McDowell, P.Eng.

Jr. Project Engineer

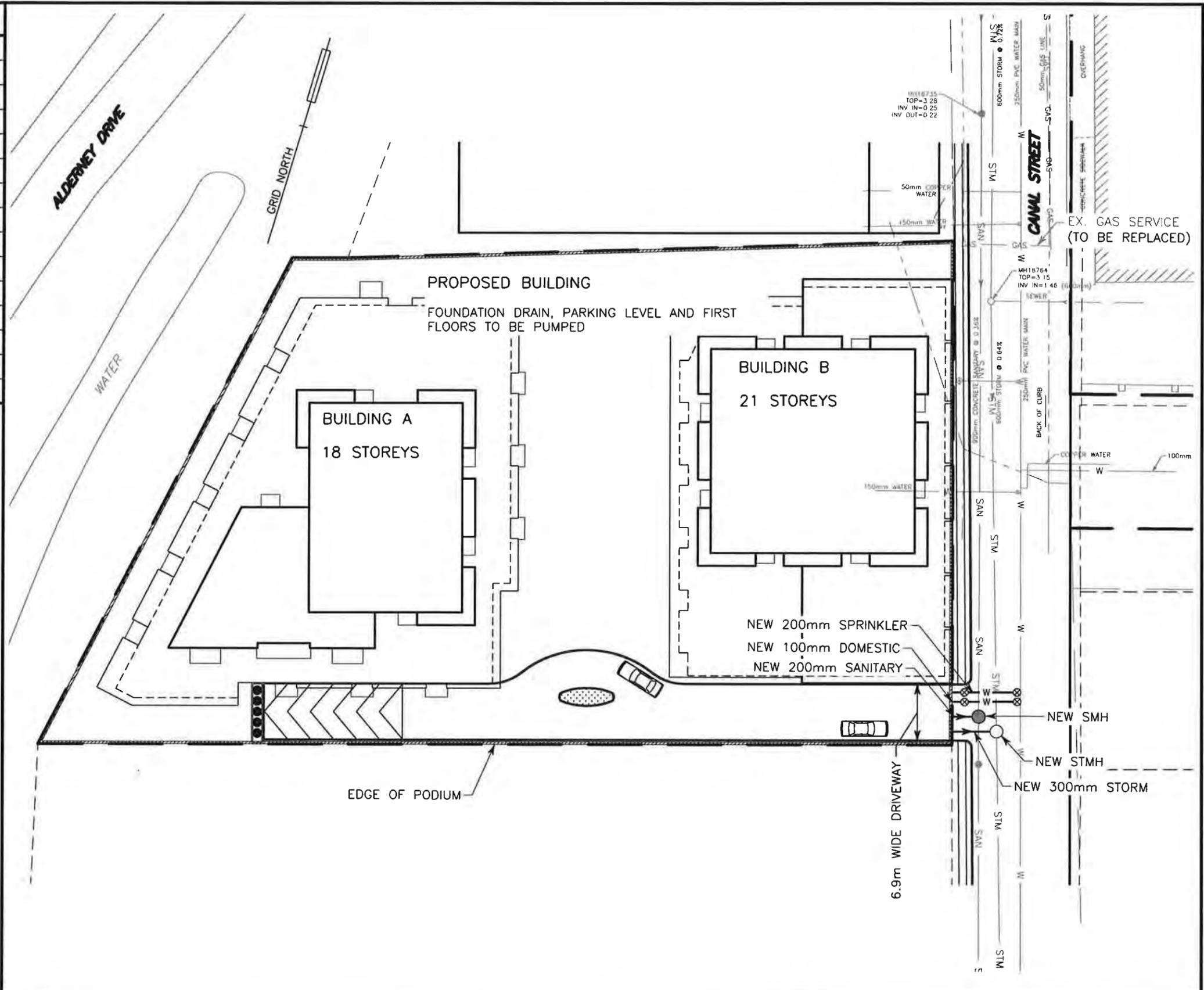
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LEGEND

EXISTING		PROPOSED
	CURB STOP/GATE/BUTTERFLY VALVE	
	FIRE HYDRANT	
	SIAMESE SPRINKLER CONNECTION	
	CATCH BASIN/PIT	
	POWER POLE/LIGHT POLE	
	TREE	
	STREET SIGN	
	GAS LINE	
	WATER MAIN/SERVICE	
	SANITARY MANHOLE & PIPE	
	STORM MANHOLE & PIPE	
	COMBINED SEWER	
	PROPERTY LINE/BOUNDARY	
	BUILDING	

NOTES

1. EXISTING WATER, STORM & SANITARY SEWER, AND GAS UNDERGROUND PIPING BASED ON HW & HERITAGE GAS GIS DATA AND RECORDS. CONTRACTOR TO VERIFY EXACT LOCATIONS AND ELEVATIONS IN THE FIELD.
2. PROPERTY BOUNDARIES HAVE BEEN COMPILED FROM VARIOUS SOURCES AND ARE SUBJECT TO SURVEY.
3. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH NOVA SCOTIA REGULATIONS AND HRM BY-LAWS, HALIFAX WATER DESIGN AND CONSTRUCTION SPECIFICATIONS (LATEST EDITION) AND HRM MUNICIPAL SERVICE SYSTEM GUIDELINES "RED BOOK" (LATEST EDITION).
4. CONTRACTOR TO HAVE SERVICES LOCATED IN THE FIELD PRIOR TO DIGGING.



36 OLAND CRESCENT
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SERVICING SCHEMATIC
 FLOW TOWERS, 4256 CANAL STREET

Project No.: 1-1-142 (32022)
 Scale: 1:500
 Date: 6 Sep 2016



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