



**F. ADAB ARCHITECTS INC.**

#130-1000 ROOSEVELT CRESCENT  
NORTH VANCOUVER, BC V7P 3R4  
TEL: (604) 987-3003 FAX: (604) 987-3033  
E-MAIL: mfa@multigonfadb.com

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3	APR-22	ISSUED FOR DP
2	SEP-21	ISSUED FOR CITY REVIEW
1	AUG-21	ISSUED FOR PRE-CONSULTATION
NO.	DATE	REVISION / ISSUED

PROJECT TITLE:  
**FOURPLEX DEVELOPMENT**  
467 EAST 2ND  
NORTH VANCOUVER, BC

FOR:  
**WESWOOD CA DEVELOPMENT CORP.**

DRAWING TITLE:  
**PROJECT INDEX CONTACT LIST**

DATE:	APRIL 2022	SHEET NO:
SCALE:	NTS	<b>A-1.0</b>
DESIGN:	P,P	
DRAWN:	P,P	
PROJECT NO:	-	



**LIST OF DRAWINGS**

- A-1.0 PROJECT INDEX - CONTACTS LIST
- A-1.1 PROJECT STATISTICS
- A-1.2 CONTEXT PLAN - AERIAL MAP
- A-1.3 CONTEXT PHOTOS
- A-1.4 SURVEY PLAN
- A-1.5 SITE PLAN
- A-1.6 DESIGN RATIONALE
- A-1.7 PERSPECTIVE VIEWS
- A-1.8 COLOR ELEVATIONS
- A-1.9 MATERIALS
- A-1.10 SHADOW ANALYSIS MARCH
  
- A-2.1 FLOOR PLAN - BASEMENT AND 1ST FLOOR
- A-2.2 FLOOR PLAN - 2ND FLOOR AND ROOF
- A-2.3 GROSS FLOOR AREA OVERLAY PLAN
  
- A-3.1 SOUTH AND EAST ELEVATIONS
- A-3.2 NORTH AND WEST ELEVATIONS
- A-3.3 UNPROTECTED OPENING AREA
  
- A-4.1 SECTIONS A-A , B-B
  
- L001 LANDSCAPE PLAN
- L002 LANDSCAPE COMPONENTS

**CONTACT LIST:**

**OWNER:**

**WESWOOD CA DEVELOPMENT CORP.**  
#209 - 15292 Croydon Dr, South Surrey, BC  
Gurk Sidhu Cell:778-823 2324

**ARCHITECT :**

**F. ADAB ARCHITECTS INC.**  
130 - 1000 ROOSEVELT CRESCENT  
NORTH VANCOUVER, B.C. V7P 3R4  
TEL : 604 987 3003

**CIVIL ENGINEER :**

CREUS ENGINEERING.  
221 Esplanade West - Unit 610 East Tower  
North Vancouver, BC V7M 3J3  
TEL: 604 987-9070

**LANDSCAPE ARCHITECT:**

**ROD MARUYAMA AND ASSOCIATES INC.**  
680 Leg in Boot Square  
Vancouver, BC V5Z 4B4  
TEL : 604 874-9967

**MECHANICAL CONSULTANT:**

**AME CONSULTING GROUP**  
200-638 Smith Street  
Vancouver, B.C.  
TEL : 604 684 5995

**SURVEYOR:**

**GREWAL & ASSOCIATES PEOFFSSIONAL LAND SURVEYORS**  
204 - 15299 68th AVENUE , SURREY , BC V3S 2C1  
TEL: 604 597-8567



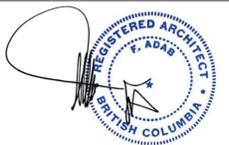
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DRAWING TITLE:  
**STATISTICS**

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**PROJECT STATISTICS**

467, East 2nd Street, City of North Vancouver	
Project Description / use	4 units Residential Town house + 4 Lock-off suits
Legal Description	LOT 14, BLOCK 152 DISTRICT LOT 274 PLAN 878
Civic Address present	467, East 2nd Street, North Vancouver, BC
Civic Address Future	TBD
Lot Area	5988 Sqft
OCP / Area Design Guideline	Moodyville Development Guideline
Zoning & Development Permit	RG-3
Proposed Number of Units	4

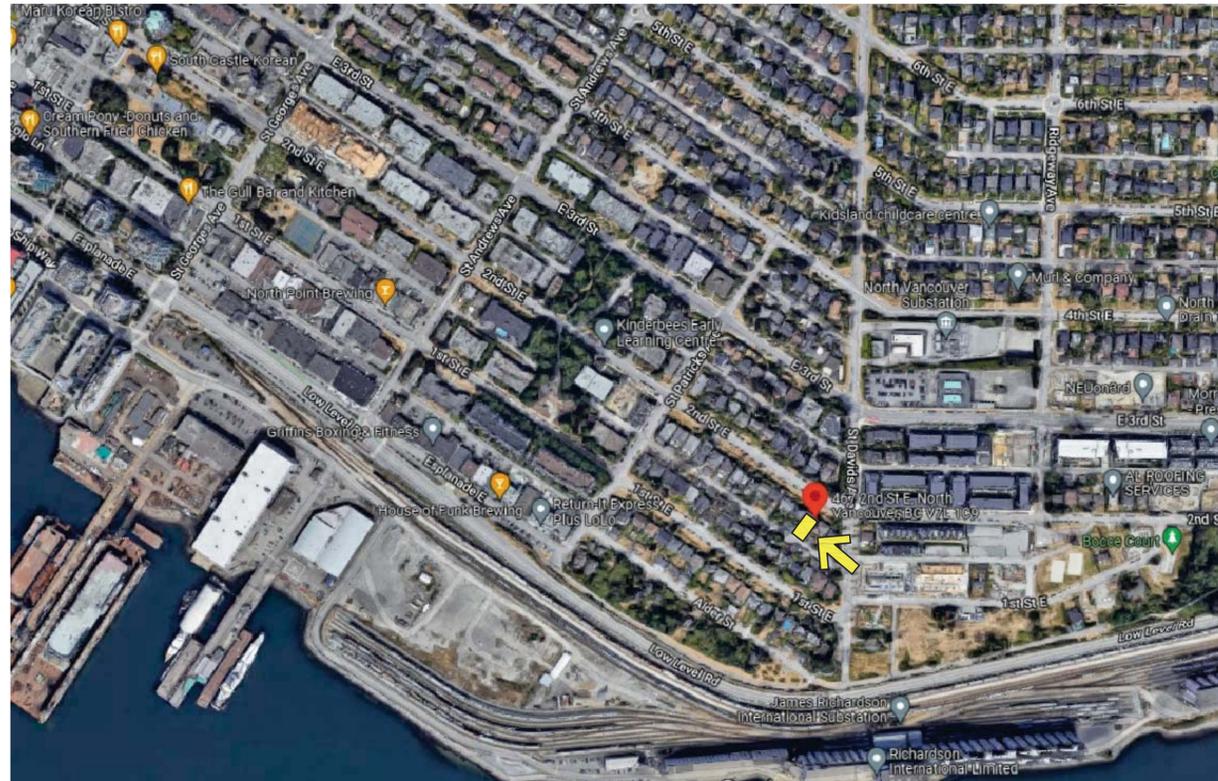
	Required/ Allowed	Proposed	Notes
FAR	1	0.99	
GFA	5988	5958	
Building Height			
South/lane	29.5'	29.5'	As per Moodyville Guideline (roof Structure excluded)
North/East 2nd St.	29.5'	26.5'	
Number of Storey	3	3	
Site Coverage	60%	58%	
Building Set back			
North/East 2nd St.	9.8'	9.8'	
East	7.9'	7.9'	
West	7.9'	7.9'	
South/Lane	5.2'	21.8'	
Minimum Dwelling Size	400	1521	
Minimum Dwelling Size - Lock Off Suits	285	367	
Parking	4	4	1.05/unit
Bike	6	8	1.5/unit

**UNIT MIX**

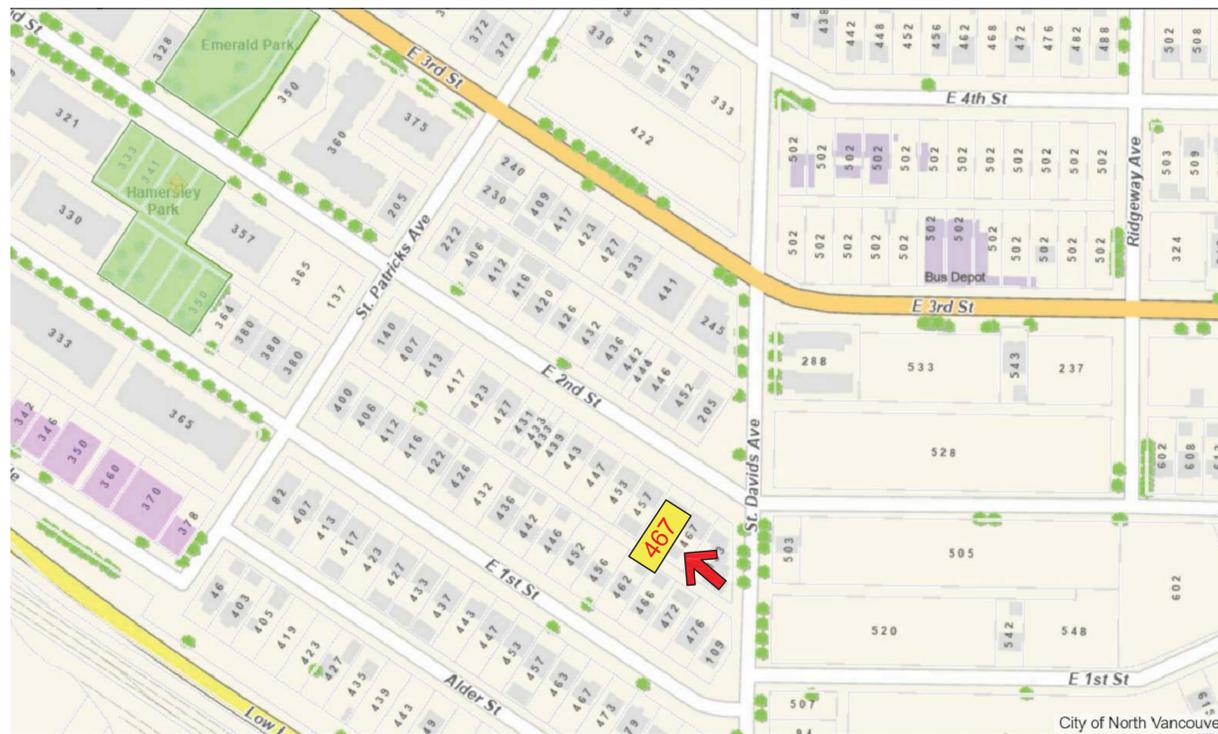
Unit Mixed				
Unit Type	#	with Lock-off suit	Accessbile Lock-off suit (Level 2)	Area (sqft)
A	2	✓		1998.2
B	2	✓	✓	1889.8
<b>Total</b>	<b>4</b>	<b>4</b>	<b>2</b>	<b>7776</b>

**AREA CALCULATION SUMMARY**

	A	B	C	D	E	F	G	H	I=B+C+D+F+G+H	J=A+B+C+D+E+H	K=J-I
	Residential sqft	Mechanical/ Electrical (sqft)	Bike sqft	Garbage sqft	Cellar sqft	Area exclusion for Lock-off Suits 150.7 sqft /lock-off unit (sqft)	Area exclusion for Accessible Lock-off suit 107.6 sqft /accessible lock-off unit (sqft)	Garage sqft	Total exclusions sqft	Total Area sqft	Total Gross Area GFA (sqft)
Basement	2204.2	167.5	198.7	118.3	1000.2	602.8	215.28	470.3	2773.08	3159	385.92
Level 1	2816									2816	2816
Level 2	2755.8									2755.8	2755.8
<b>Total</b>	<b>7776</b>	<b>167.5</b>	<b>198.7</b>	<b>118.3</b>	<b>1000.2</b>	<b>602.8</b>	<b>215.28</b>	<b>470.3</b>	<b>2773.08</b>	<b>8730.8</b>	<b>5957.72</b>
											<b>FAR: 0.99</b>



AERIAL MAP



CONTEXT MAP



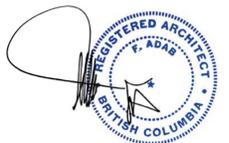
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FOR:  
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DRAWING TITLE:  
**CONTEXT PLAN  
AERIAL MAP**

DATE:	APRIL 2022	SHEET NO.:	<b>A-1.2</b>
SCALE:	1/8" = 1'-0"		
DESIGN:	P.P		
DRAWN:	P.P		
PROJECT NO.:	-		

1



2



3



4



CONTEXT PHOTOS



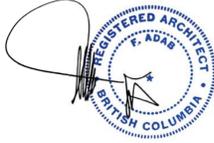
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FOR: WESWOOD CA DEVELOPMENT CORP.

DRAWING TITLE: CONTEXT PHOTO

DATE:	APRIL 2022	SHEET NO:	A-1.3
SCALE:	1/8" = 1'-0"		
DESIGN:	P.P		
DRAWN:	P.P		
PROJECT NO:	-		



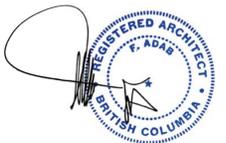
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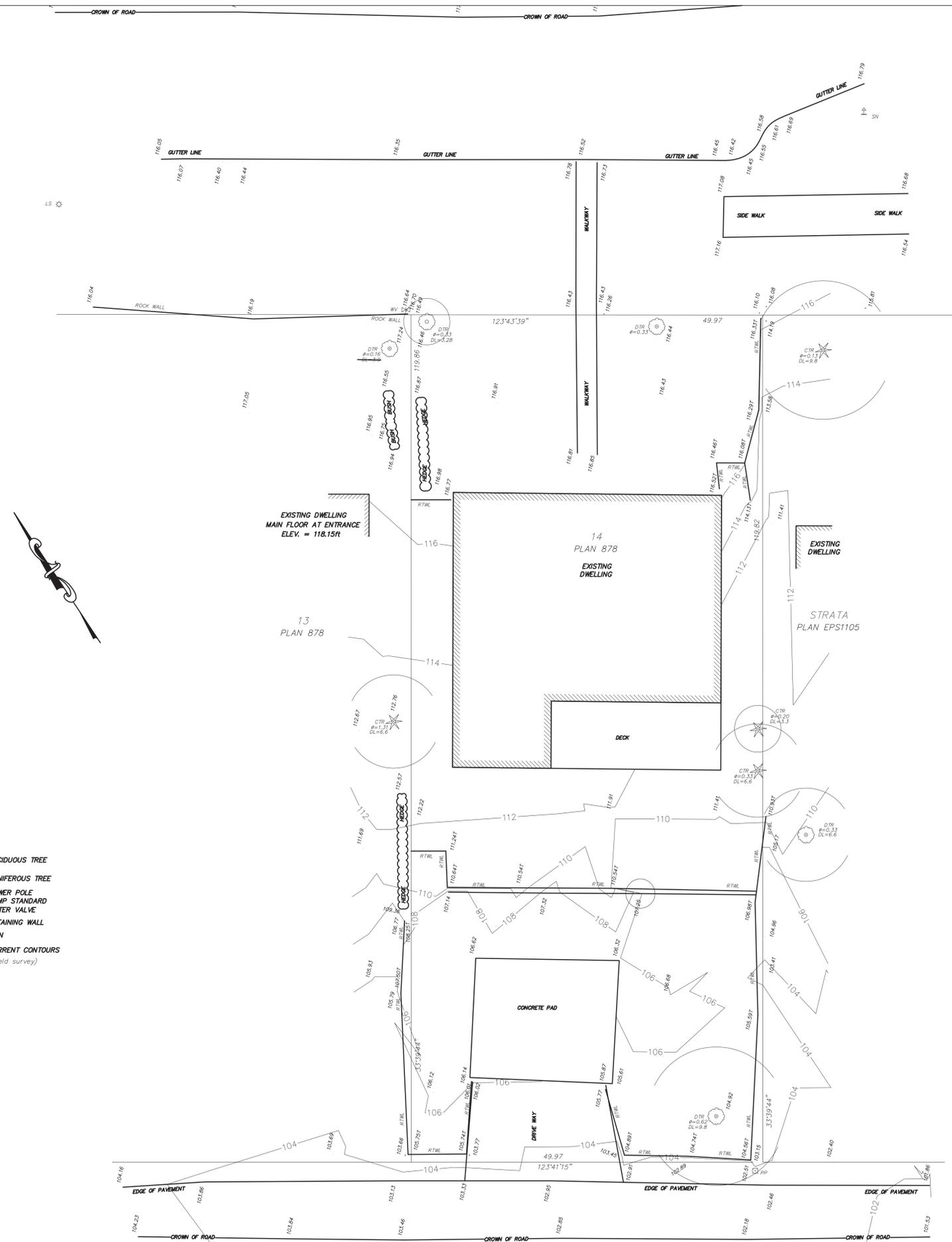
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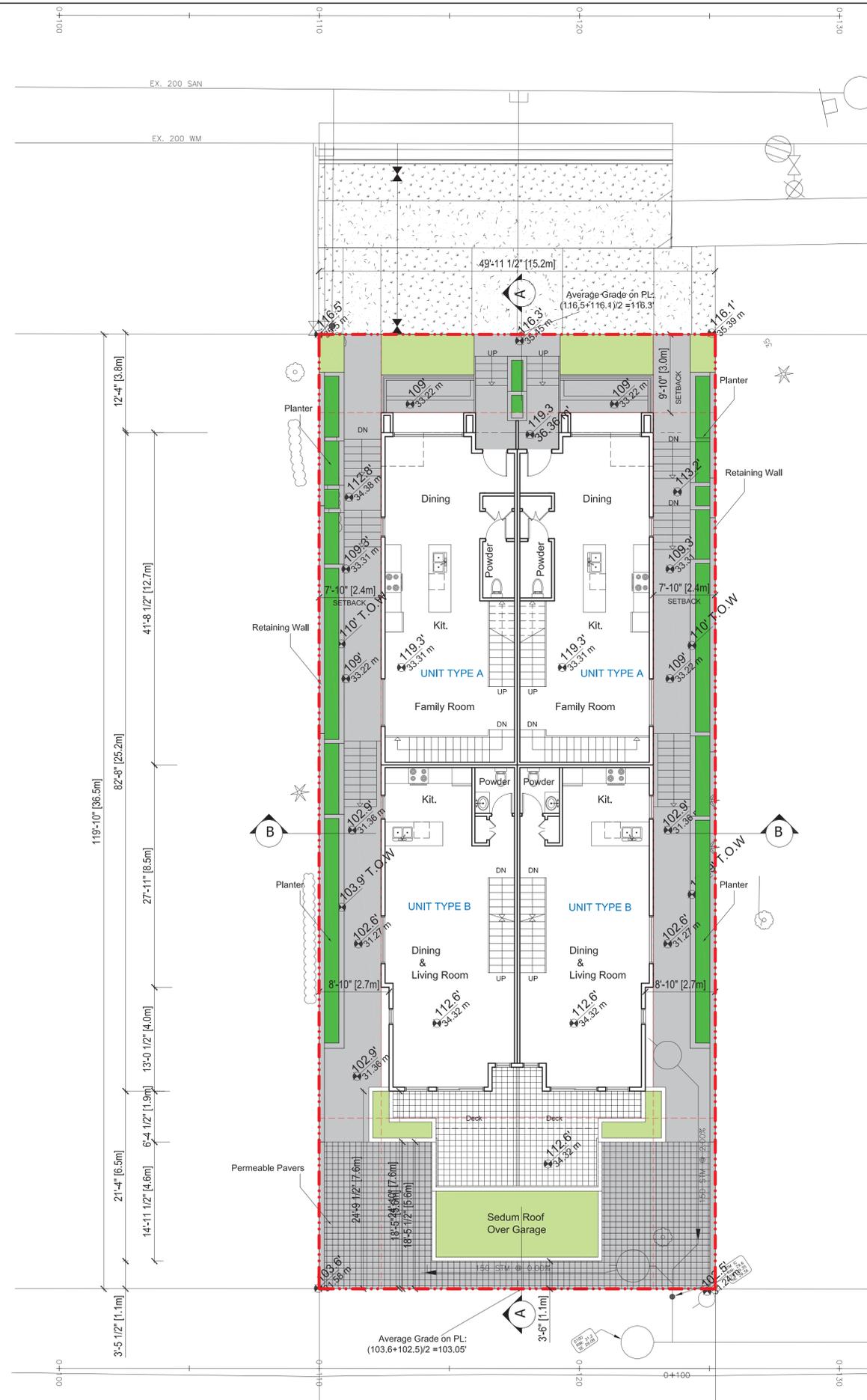
FOR:  
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CORP.**

DRAWING TITLE:  
**SURVEY PLAN**

DATE:	APRIL 2022	SHEET NO.:	<b>A-1.4</b>	
SCALE:	1/8" = 1'-0"	DESIGN:		P.P
DRAWN:	P.P	PROJECT NO.:		-



- LEGEND :**
- DTR DENOTES DECIDUOUS TREE
  - CTR DENOTES CONIFEROUS TREE
  - PP DENOTES POWER POLE
  - LS DENOTES LAMP STANDARD
  - WV DENOTES WATER VALVE
  - RTWL DENOTES RETAINING WALL
  - SN DENOTES SIGN
  - DENOTES CURRENT CONTOURS  
(based on field survey)



**SITE PLAN** 



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DRAWING TITLE:  
**SITE PLAN**

DATE:	APRIL 2022	SHEET NO.:
SCALE:	1/8" = 1'-0"	<b>A-1.5</b>
DESIGN:	P.P	
DRAWN:	P.P	
PROJECT NO.:	-	

**DESIGN RATIONALE**

**Introduction**

This Design Rationale is to be read as part of a development application for a 4-unit townhouse development plus 4 lock off suites in Moodyville Development Area. For detailed information refer to the architectural, landscape, civil drawings, rendering and other related documents.

**The Site**

The total lot area is 5988 sqft. and is located at 467 East 2nd Street. There is a 6 meter lane to the south. Presently the site is occupied by an old two storey single family house. The grade differences between the street and the lane is approximately 4.0 m. This steep sloped site posed some design challenges in siting and orientation that resulted in stepping down the building from north to south.

**Proposed Development**

This application proposes 4 - unit townhouse complex each with one lock-off suites at the lower floor. Two of the lock-off suites are designed as accessible units.

The building orientation considers and responds to view, sun, exposure and neighbouring properties as well as addressing the street and lane characters.

The location is accessible by transit, bicycle routs and walkable sidewalk providing opportunities for alternate method of movements.

The proposed development seeks rezoning from RS to RG3. Floor Space Ratio "FSR" is proposed at 0.99 equal to gross floor area of 5988 sqft. The average size of the townhouses is approximately 1,900 sqft including the lock off suites.

Townhouses along E. 2nd have direct access to the street and the townhouses at rear have access through the paved side yard.

Parking is located at the rear of the site and is accessed from the lane. Each unit has one garage and one carport.

**Massing, Architectural Form and Character**

The proposed development and its character is consistent with the recent developments in the neighbour and responds to the vision anticipated for this area.

The orientation and design takes the advantages of grade changes and ocean view.

Ground floor units along the street are raised to allow for light for the lock off suites at basement and also provide spatial separation between the public and private yards.

Massing is broken into two buildings and stepped down at lower levels softening the mass of the building and respecting the neighbouring single family houses.

Each unit has a safe pedestrian pathway toward the street and side walks and is located in close proximity to the transit and amenities.

The building orientation responds to the site setting by facing E. 2nd Street and the lane.

From architectural point of view facades are designed to create a visually appealing structure. The architectural language demonstrates a modern contemporary character with set coast traditional impression. The modern design concept along with contrast in material and colour creates lively appealing interest and articulation.



**Exterior Finishes and Colour**

The selection of the exterior finishes has been based on enhanced durability / longevity of the construction materials as part of a sustainable approach.

A variety of high quality building materials have been selected with emphasis on prefabricated cement board and stucco for non-combustibility and longevity.

The colours are selected with emphasis on creating contrast by using a combination of grey and white cement boards. Widows, privacy screens and railings are black.

The same high quality material used in front continue around the remaining sides.

Windows frames are black from outside and white from inside and all railings also have black frame and clear glass.

**Privacy and Interface with Neighbours**

The openings at east and west facades are calculated to confirm to BCBC unprotected opening ratio. Where there is a possibility of direct overlook to adjacent buildings, frosted opaque glass will be used for windows. Some of the windows are also set at 5.6" height from the floor in order to avoid direct overlook.

Privacy at roof Decks are provided by orienting the decks toward south. This significantly reduces the potential negative impact on adjacent houses. If necessary, a 5.6" obscure glass privacy screen will be installed on the east and west sides of the roof.

**Livability, Energy Saving and Green Measures**

Many green building strategies have been incorporated into the project design including the following items:

- The energy efficiency target is to achieve step 4 code requirements.
- The building envelope, glazing, and mechanical system will be designed based on the 2018 code and in compliance with ASHRE 90, 2010
- Selection of the material is based on the use of low / non-toxic, low-maintenance, durable and sustainable products. Low emission adhesives paint and flooring will also be used throughout the units
- Water efficient fixtures, energy efficient appliances and drought tolerance plants will be used to minimize the use of potable water
- All units have private patios at grade and also decks on the 2nd floor contributing to livability of the units and creating a family oriented environment
- Mechanical system is equipped with heat pump system providing both cool and hot air as well as heat recovery system "HRV" for recycling the heat energy.
- Replacing a one dwelling unit with 4 and providing 4 lock off suites with high affordability measure.
- Provision of full electric vehicle chargers for all units. residential suites.
- Provision of green roof reduces the solar intensity and provides increased insulation. This also reduces the rate of storm water run-off from the site.

**Crime Prevention Through Environmental Design. "CPTED"**

The building has been designed keeping safety in mind. The newly constructed residential developments along E2nd, E3rd and E4th keep the area active, lively with numerous eyes on the street and lane.

The rationale behind the CPTED strategy takes into account the standard measures as well as items specifically related to this proposal. These provisions are aimed to enhance safety and strengthen the perception of security.

The proposed CPTED measure fall into the following categories:

- Identifiable entries to the units with direct access to the street along with identifiable private patios creates a clear definition of hierarchy of space, a sense of territorial identity and sense of ownership
- The windows, patios and terraces ensure the outdoor presence of the people, which provide "eyes on the street" and security for the private and public spaces
- Lights would be installed on both sides of the townhouse entries and garage doors illuminating the entire buildings and internal pathways.
- The access control is achieved by ensuring visible entrances overlooked by windows and balconies as well as defining the entrance ways and controlling the point of access to the site
- Gates and fences will be provided along the street and lane as well as on property lines to secure the site.
- Trees, shrubs and hedges are designed in a manner to increase visibility and avoid creating hidden spaces.

**Affordability**

Housing affordability is a social and economical shortcoming in BC. The development and construction industry has tried for many years to overcome this problem. City of Vancouver has initiated the concept of lock off suites and coach houses encouraging and promoting affordability by means of smaller units for younger generation. Converting a single family house into 4 townhouse units results in offering more economical accommodation and takes step in providing affordable dwelling.

By accommodating four families in a single lot the land cost which is a major component of every development will be divided into four. Also by proposing 4 lock off suite a further consideration is given to providing affordable accommodation as a mortgage helper for buyers.

Also, the variety in type, unit size and number of bedrooms will result in more options for couples and young families looking for more affordable housing.

**Garbage Disposal**

Two dedicated enclosed garbage disposal storage has been provided at grade adjacent to the parking spaces. The garbage will be picked up at lane on designated dates.

**Landscaping:**

The Landscape Design for 467 East 2nd Street residential development is intended to esthetically enhance the overall project site. The landscape has been designed with two planting features within the front yard that establishes a sense of welcome and arrival to the front access to the building. The side yard areas have been planted with a variety of low growing and shade tolerant species to establish a landscape buffer between the new development and existing adjacent properties.

Permeable paving utilized in the rear yard parking areas contribute to storm water retention requirements of the project. The private roof top landscape is comprised of a mixture of ornamental grasses, shrubs and colorful perennials creating a visually pleasing buffer between each of the units. In summary the overall landscape design objective is to create an esthetic and functional landscape that will become an integral part of the community within North Vancouver.



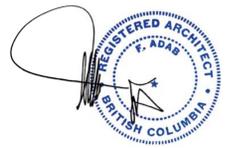
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PERSPECTIVE VIEW FROM E 2ND STREET



PERSPECTIVE VIEW FROM LANE



BIRD'S EYE VIEW FROM E 2ND STREET



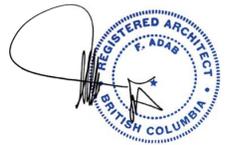
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**PERSPECTIVE VIEWS**

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WEST ELEVATION



EAST ELEVATION



SOUTH ELEVATION



NORTH ELEVATION



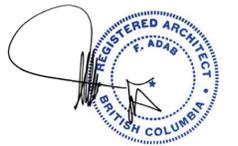
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3	APR-22	ISSUED FOR DP
2	SEP-21	ISSUED FOR CITY REVIEW
1	AUG-21	ISSUED FOR PRE-CONSULTATION

PROJECT TITLE:  
**FOURPLEX DEVELOPMENT**  
467 EAST 2ND  
NORTH VANCOUVER, BC

FOR:  
**WESWOOD CA DEVELOPMENT CORP.**

DRAWING TITLE:  
**COLOR ELEVATIONS**

DATE:	APRIL 2022	SHEET NO:	<b>A-1.8</b>
SCALE:	NTS		
DESIGN:	P.P		
DRAWN:	P.P		
PROJECT NO:	-		



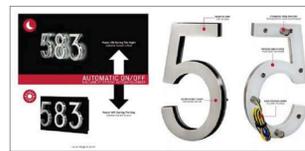
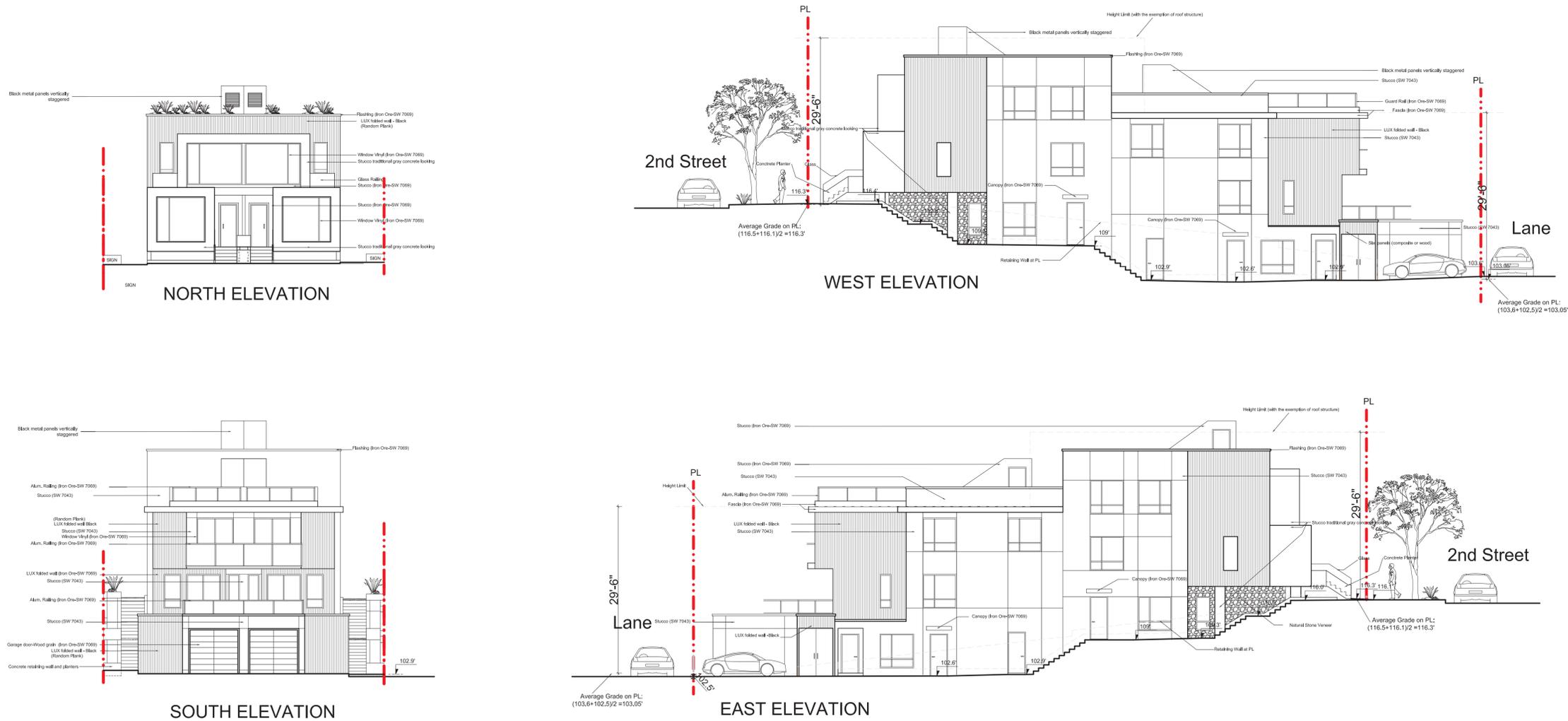
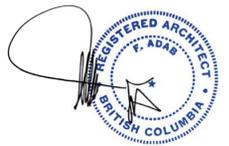


**F. ADAB  
ARCHITECTS  
INC.**

#130-1000 ROOSEVELT CRESCENT  
NORTH VANCOUVER, BC V7P 3R4  
TEL: (604) 987-3003 FAX: (604) 987-3033  
E-MAIL: mfa@multigonfadb.com

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SIGN



Stucco (Traditional concrete look)



LUX folded wall - Black



Fascia (SW 7043)



Stucco (SW 7043)



Natural Stone Veneer

PROJECT TITLE:  
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467 EAST 2ND  
NORTH VANCOUVER, BC

FOR:  
**WESWOOD CA DEVELOPMENT CORP.**

DRAWING TITLE:  
**MATERIALS**

DATE:	AUG. 2020	SHEET NO.:	<b>A-1.10</b>
SCALE:	NTS		
DESIGN:	P,P		
DRAWN:	P,P		
PROJECT NO.:	-		



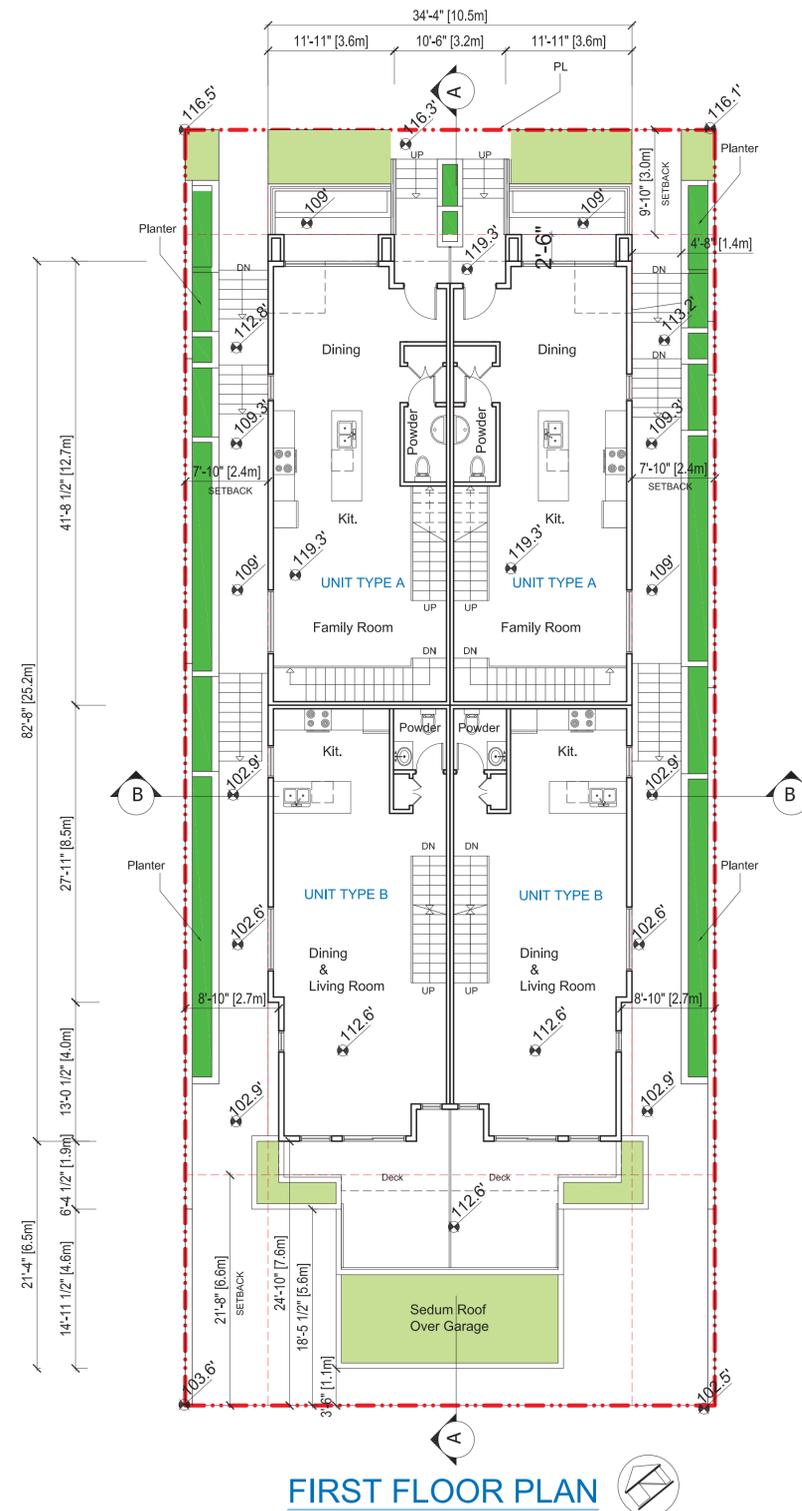
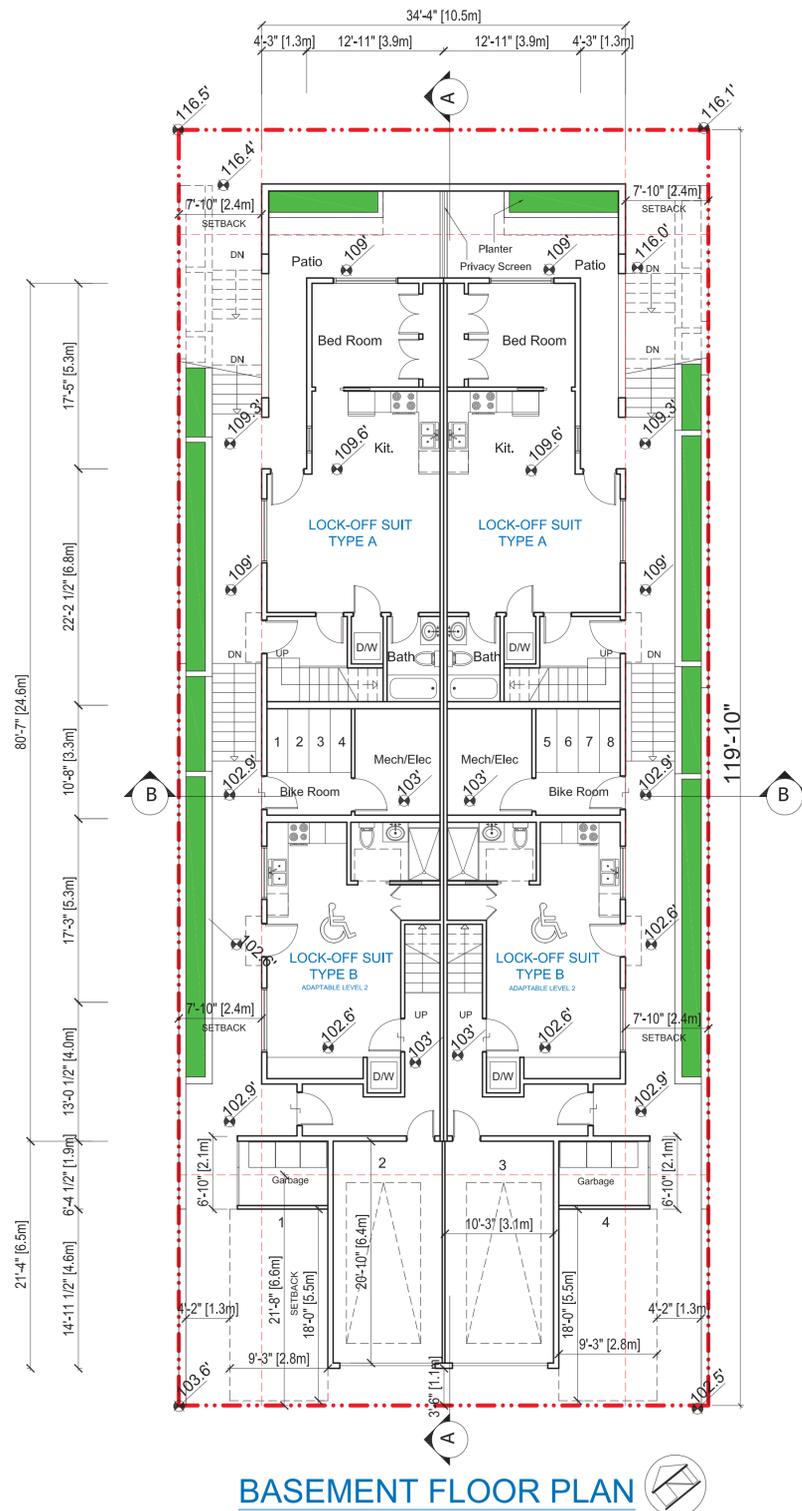
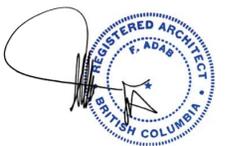
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PROJECT TITLE:  
**FOURPLEX DEVELOPMENT**  
467 EAST 2ND  
NORTH VANCOUVER, BC

FOR:  
**WESWOOD CA DEVELOPMENT CORP.**

DRAWING TITLE:  
**BASEMENT AND FIRST FLOOR PLANS**

DATE:	AUG. 2020	SHEET NO.:	<b>A-2.1</b>
SCALE:	1/8" = 1'-0"		
DESIGN:	P.P		
DRAWN:	P.P		
PROJECT NO.:	-		



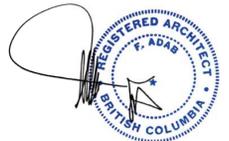
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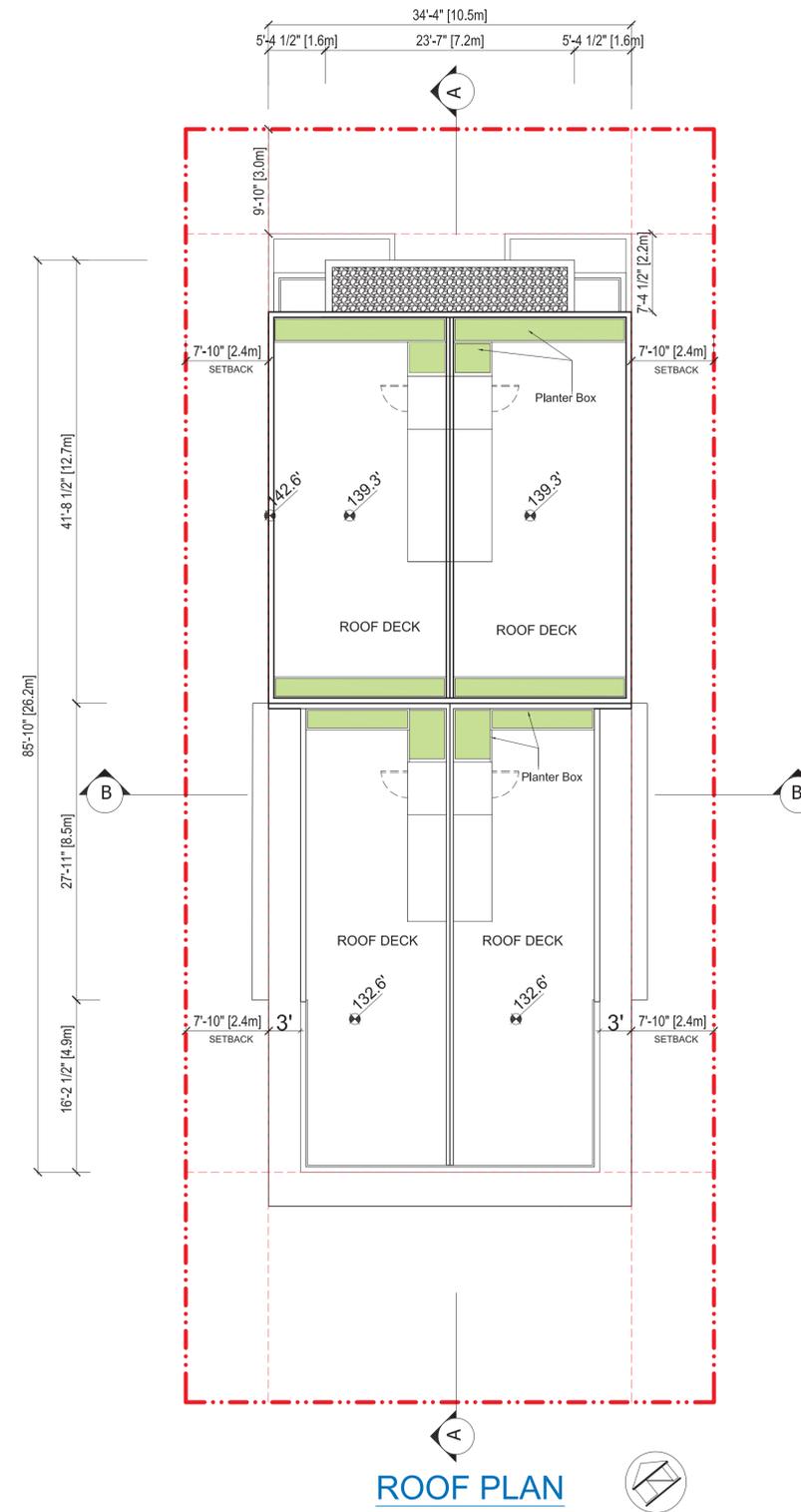
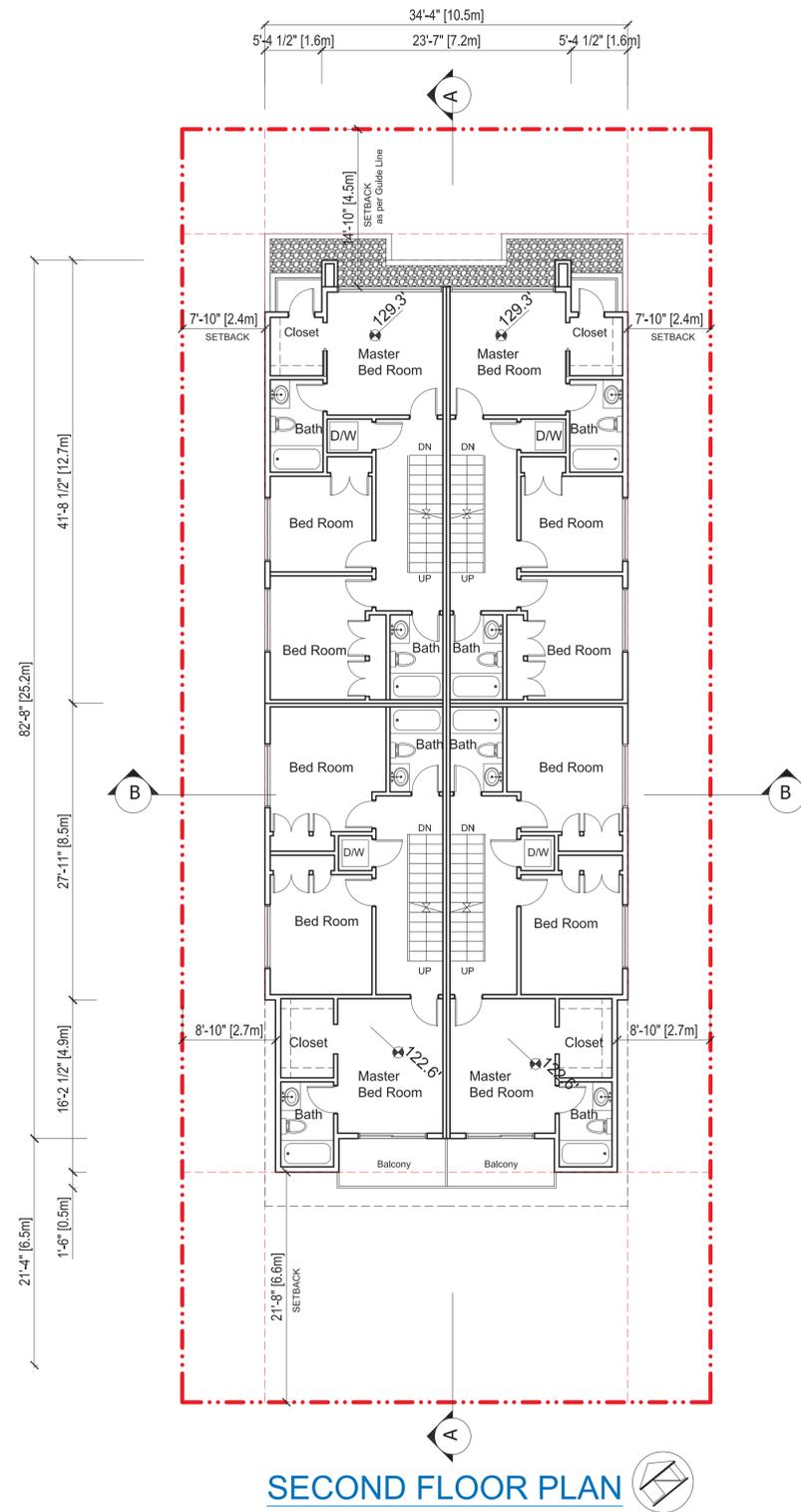
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1	AUG-21	ISSUED FOR PRE-CONSULTATION

PROJECT TITLE:  
**FOURPLEX DEVELOPMENT**  
467 EAST 2ND  
NORTH VANCOUVER, BC

FOR:  
**WESWOOD CA DEVELOPMENT  
CORP.**

DRAWING TITLE:  
**SECOND AND ROOF  
FLOOR PLANS**

DATE:	AUG. 2020	SHEET NO.:	<b>A-2.2</b>
SCALE:	1/8" = 1'-0"		
DESIGN:	P.P		
DRAWN:	P.P		
PROJECT NO.:	-		





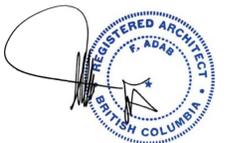
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#130-1000 ROOSEVELT CRESCENT  
NORTH VANCOUVER, BC V7P 3R4  
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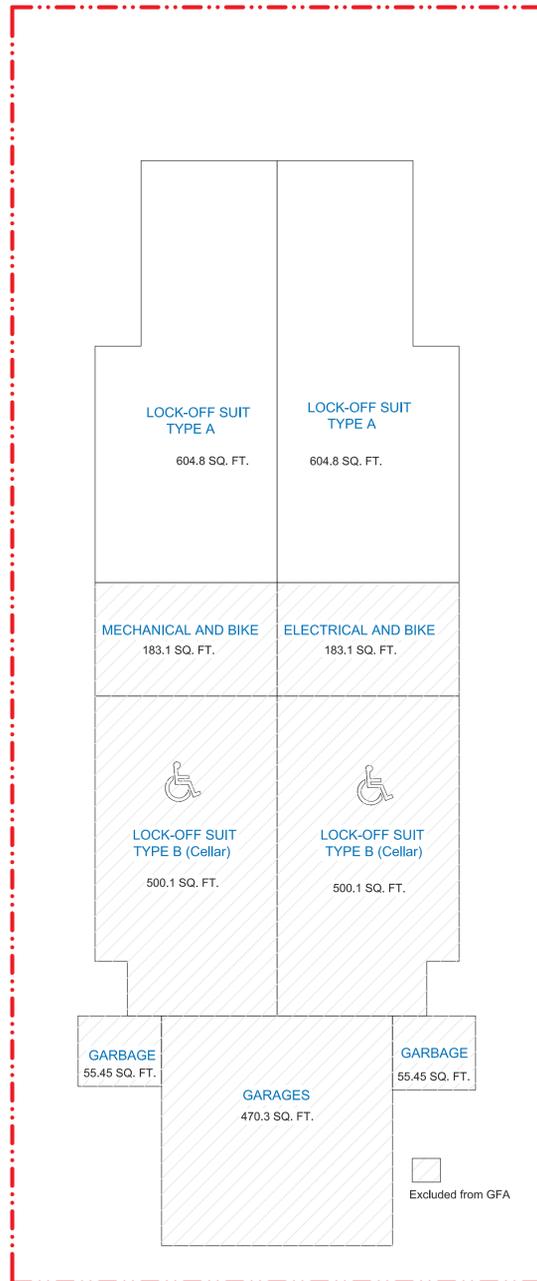
NO.	DATE	REVISION / ISSUED
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PROJECT TITLE:  
**FOURPLEX DEVELOPMENT**  
467 EAST 2ND  
NORTH VANCOUVER, BC

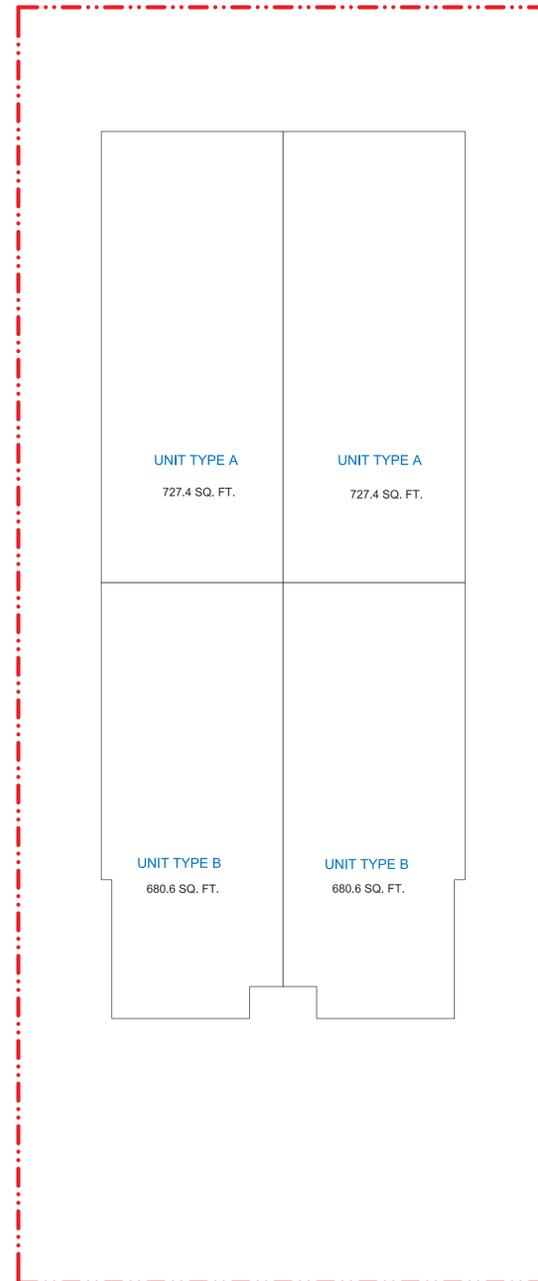
FOR:  
**WESWOOD CA DEVELOPMENT CORP.**

DRAWING TITLE:  
**SPATIAL SEPERATION**

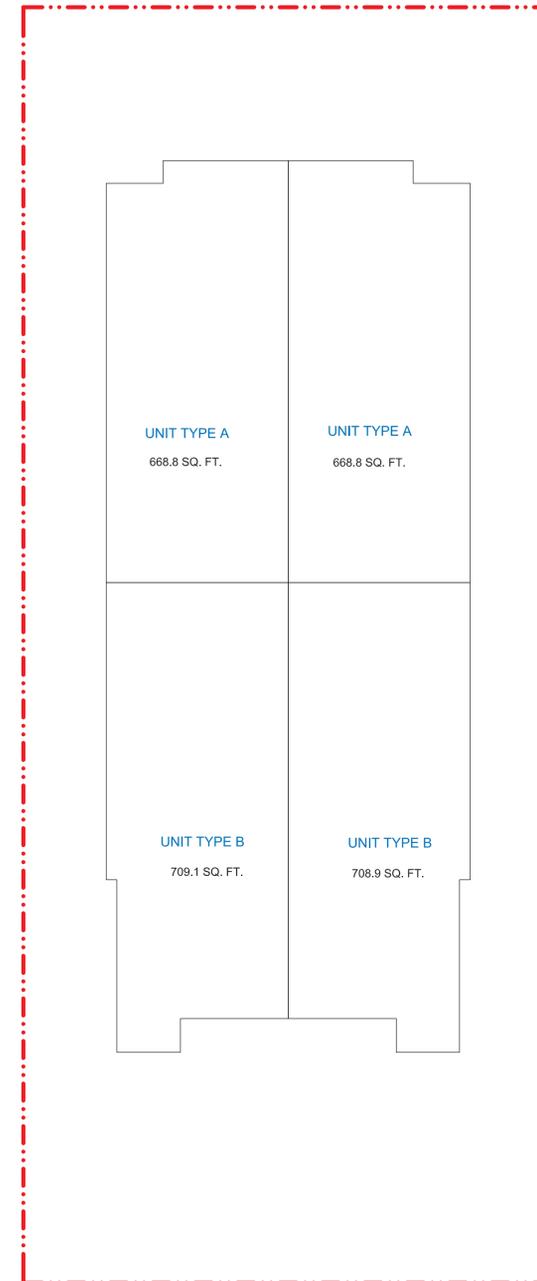
DATE:	AUG. 2020	SHEET NO:	<b>A-2.3</b>
SCALE:	1/16" = 1'-0"		
DESIGN:	P.P		
DRAWN:	P.P		
PROJECT NO:	-		



**Basement Plan**



**First Floor Plan**



**Second Floor Plan**

	A	B	C	D	E	F	G	H	I=B+C+D+F+G+H	J=A+B+C+D+E+H	K=J-I
	Residential sqft	Mechanical/ Electrical (sqft)	Bike sqft	Garbage sqft	Cellar sqft	Area exclusion for Lock-off Suits 150.7 sqft /lock-off unit (sqft)	Area exclusion for Accessible Lock-off suit 107.6 sqft /accessible lock-off unit (sqft)	Garage sqft	Total exclusions sqft	Total Area sqft	Total Gross Area GFA (sqft)
Basement	2204.2	167.5	198.7	118.3	1000.2	602.8	215.28	470.3	2773.08	3159	385.92
Level 1	2816									2816	2816
Level 2	2755.8									2755.8	2755.8
<b>Total</b>	<b>7776</b>	<b>167.5</b>	<b>198.7</b>	<b>118.3</b>	<b>1000.2</b>	<b>602.8</b>	<b>215.28</b>	<b>470.3</b>	<b>2773.08</b>	<b>8730.8</b>	<b>5957.72</b>
											<b>FAR: 0.99</b>



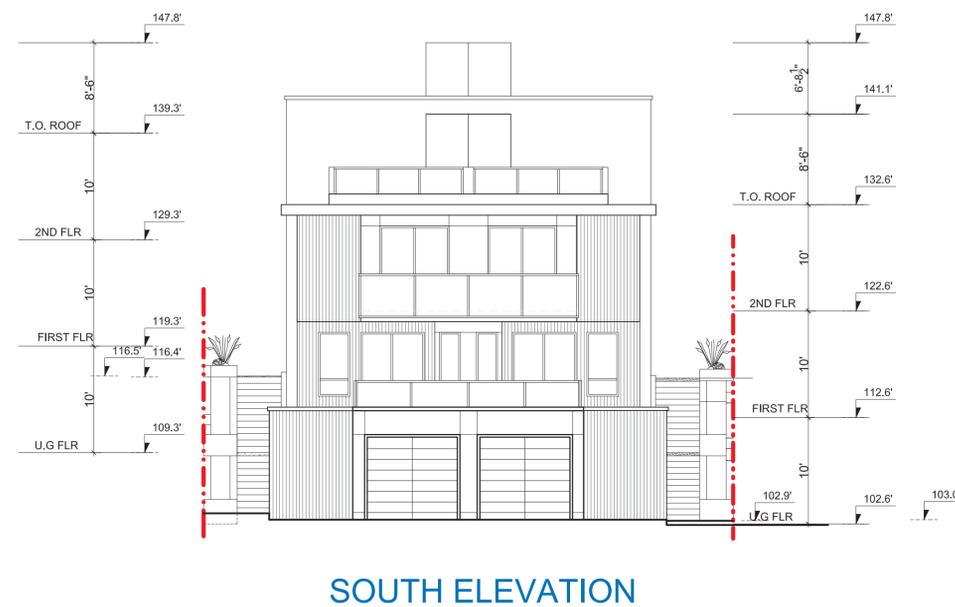
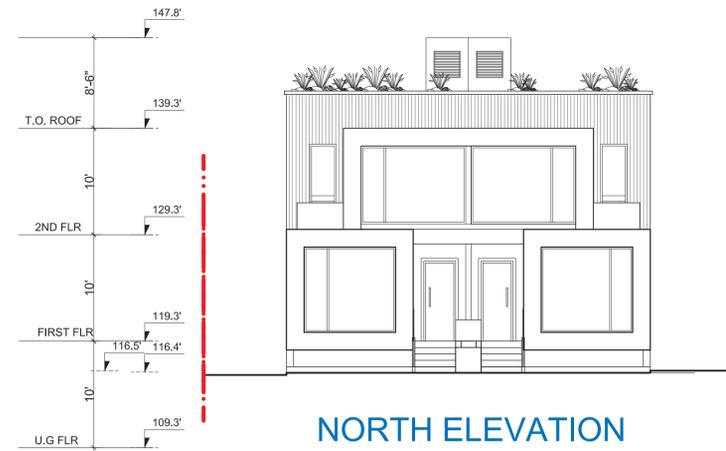
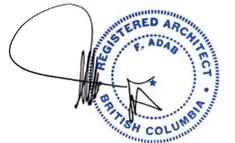
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NORTH VANCOUVER, BC V7P 3R4  
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467 EAST 2ND  
NORTH VANCOUVER, BC

FOR:  
**WESWOOD CA DEVELOPMENT  
CORP.**

DRAWING TITLE:  
**NORTH AND  
SOUTH ELEVATIONS**

DATE:	AUG. 2020	SHEET NO:
SCALE:	1/8" = 1'-0"	<b>A-3.1</b>
DESIGN:	P,P	
DRAWN:	P,P	
PROJECT NO:	-	



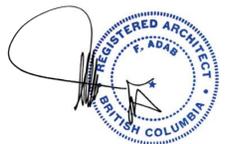
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**WEST ELEVATION**



**EAST ELEVATION**

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**FOURPLEX DEVELOPMENT**  
467 EAST 2ND  
NORTH VANCOUVER, BC

FOR:  
**WESWOOD CA DEVELOPMENT  
CORP.**

DRAWING TITLE:  
**EAST AND  
WEST ELEVATIONS**

DATE:	AUG. 2020	SHEET NO.:
SCALE:	1/8" = 1'-0"	<b>A-3.2</b>
DESIGN:	P.P	
DRAWN:	P.P	
PROJECT NO.:	-	

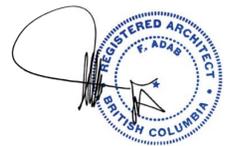


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#130-1000 ROOSEVELT CRESCENT  
NORTH VANCOUVER, BC V7P 3R4  
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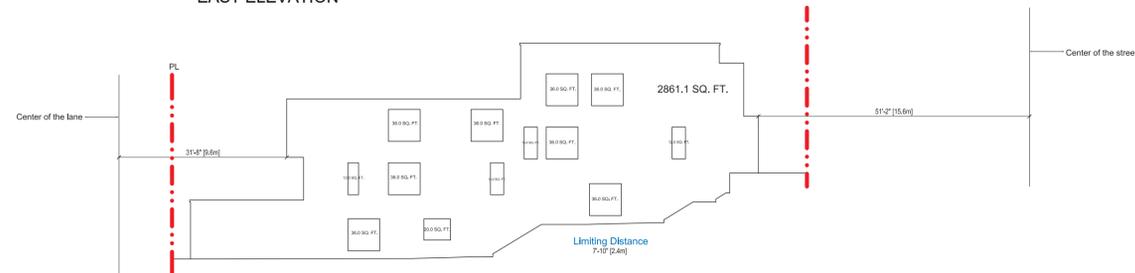
FOR:  
**WESWOOD CA DEVELOPMENT CORP.**

DRAWING TITLE:  
**SPATIAL SEPERATION**

DATE:	AUG. 2020	SHEET NO:
SCALE:	1/16" = 1'-0"	<b>A-3.3</b>
DESIGN:	P.P	
DRAWN:	P.P	
PROJECT NO:	-	



**EAST ELEVATION**

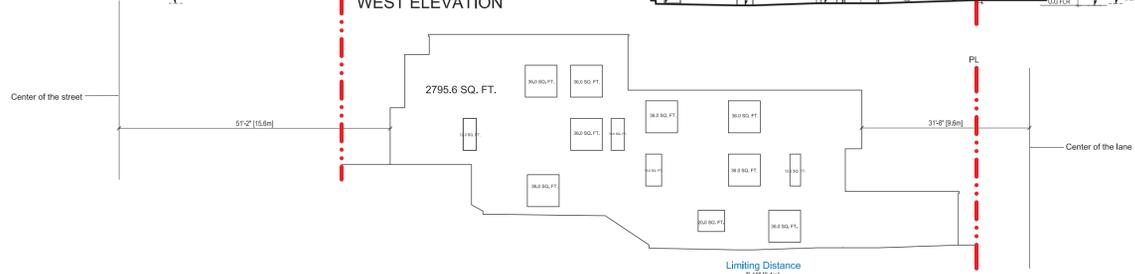


Unprotected Opening:	370 sqft	
Exposed Building Face:	2860 sqft	
Unprotected Opening Area (%)	Allowable	Provided
Limiting Distance= 51'-2" (15.6m)	20%	13%

\* As per table 3.2.3.1.-D, BCBC 2018

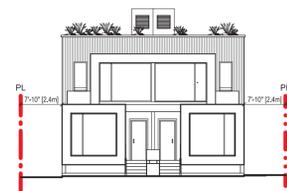


**WEST ELEVATION**

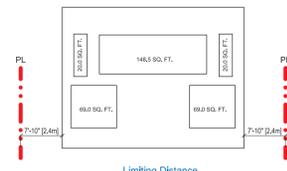


Unprotected Opening:	370 sqft	
Exposed Building Face:	2860 sqft	
Unprotected Opening Area (%)	Allowable	Provided
Limiting Distance= 51'-2" (15.6m)	20%	13%

\* As per table 3.2.3.1.-D, BCBC 2018



**NORTH ELEVATION**

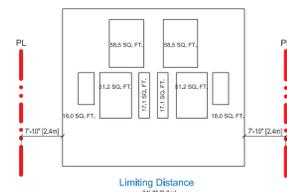


Unprotected Opening:	327 sqft	
Exposed Building Face:	908 sqft	
Unprotected Opening Area	Allowable	Provided
Limiting Distance= 51'-2" (15.6m)	100 %	36%

\* As per table 3.2.3.1.-D, BCBC 2018



**SOUTH ELEVATION**



Unprotected Opening:	290 sqft	
Exposed Building Face:	1011 sqft	
Unprotected Opening Area	Allowable	Provided
Limiting Distance= 31'-8" (9.6m)	38 %	29%

\* As per table 3.2.3.1.-D, BCBC 2018



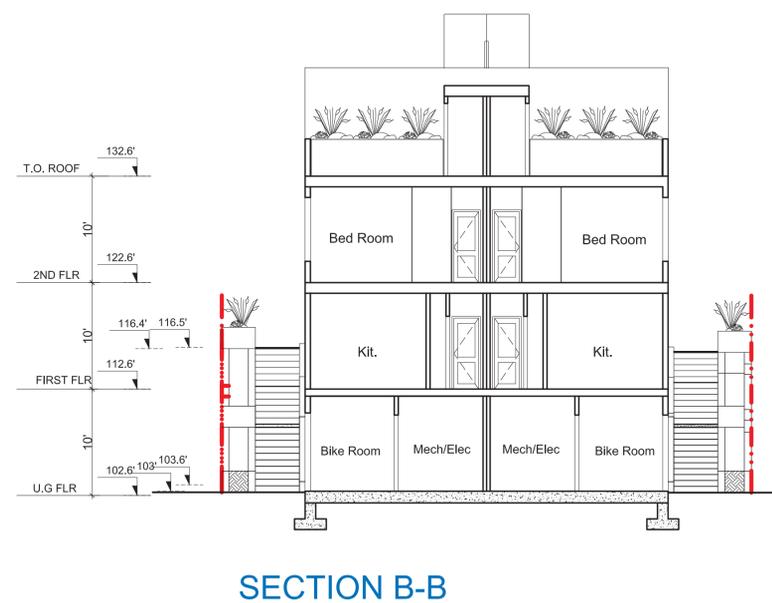
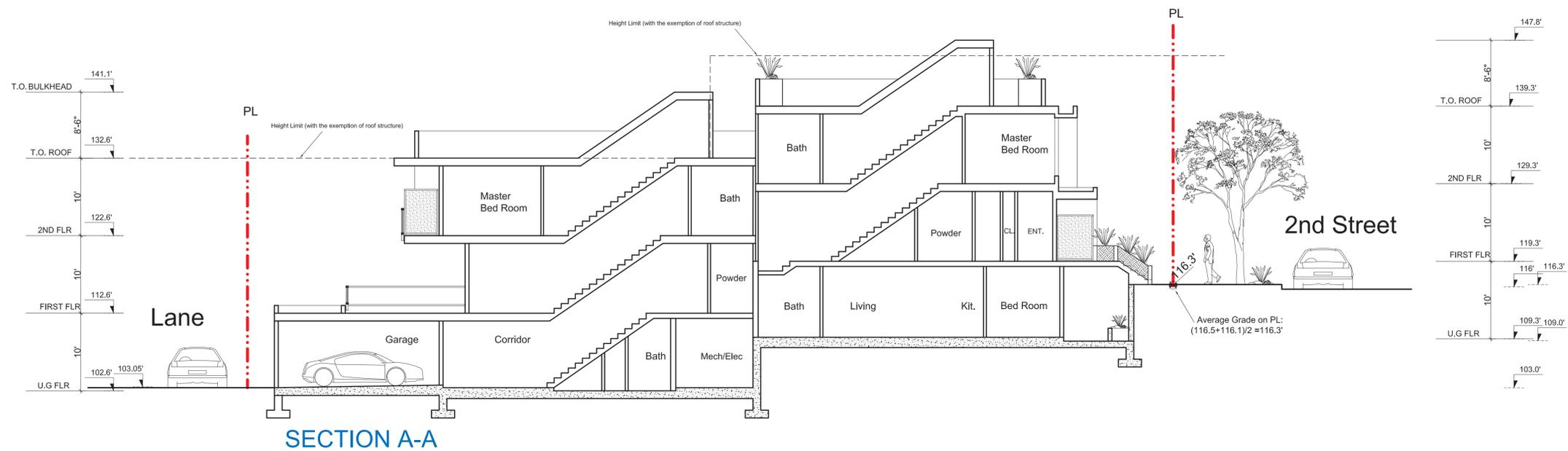
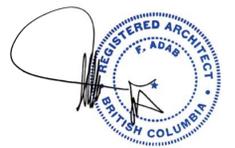
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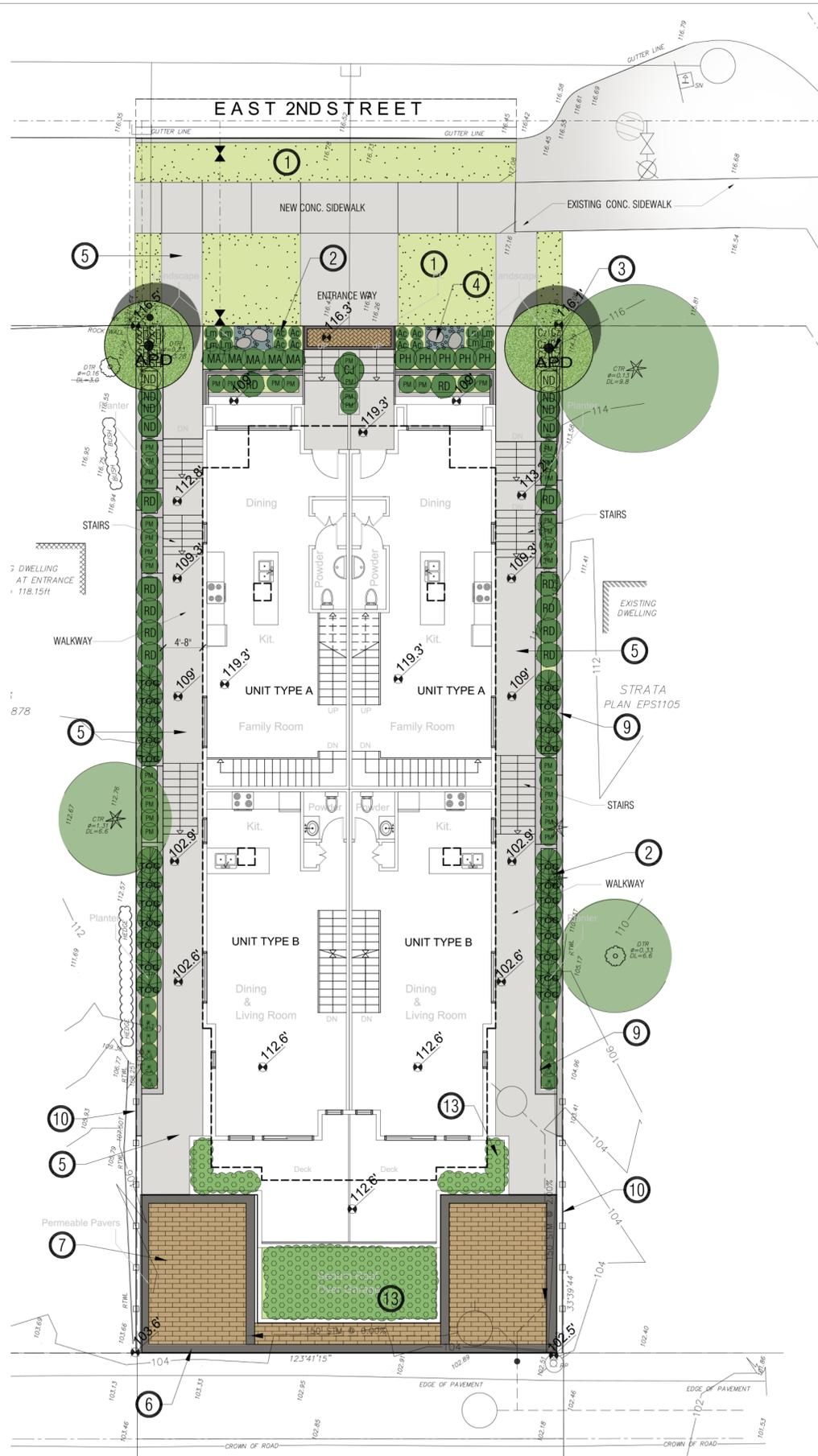
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NORTH VANCOUVER, BC

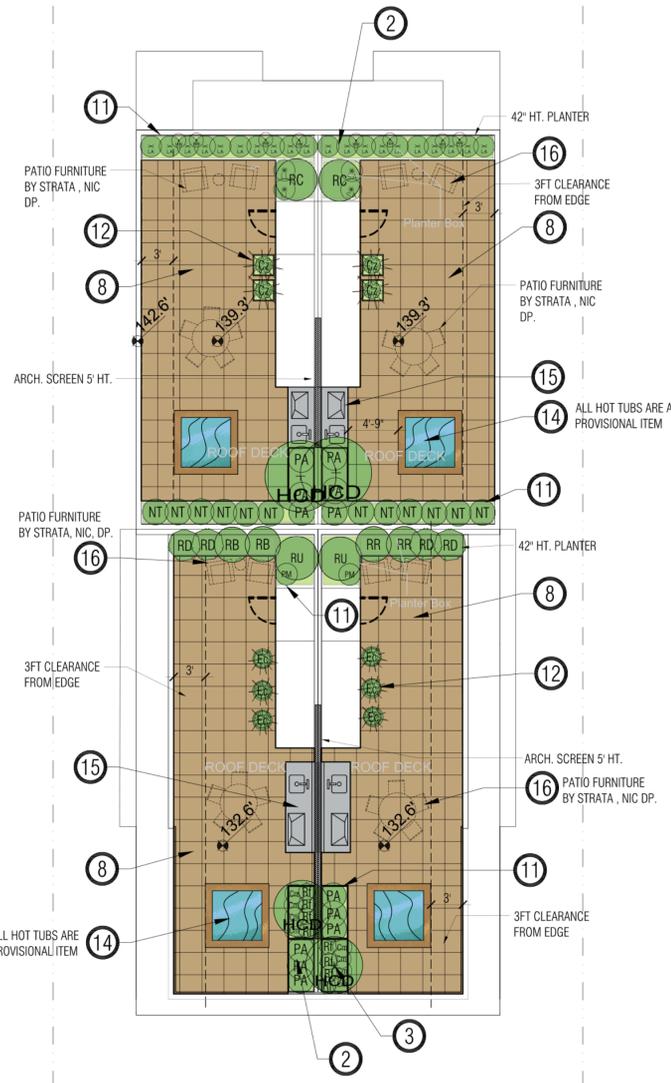
FOR:  
**WESWOOD CA DEVELOPMENT  
CORP.**

DRAWING TITLE:  
**SECTION AA, BB**

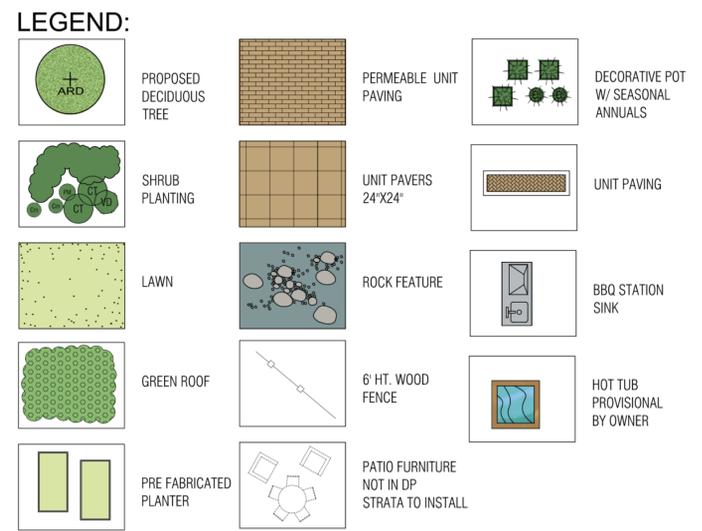
DATE:	AUG. 2020	SHEET NO.:	<b>A-4.1</b>
SCALE:	1/8" = 1'-0"		
DESIGN:	P,P		
DRAWN:	P,P		
PROJECT NO.:	-		



**1 LANDSCAPE - FIRST FLOOR PLAN**  
SCALE: 1/8" = 1'-0"



**2 LANDSCAPE - ROOF PLAN**  
SCALE: 1/8" = 1'-0"



- NOTES:**
- ALL PLANT MATERIAL SHALL MEET OR EXCEED STANDARDS REQUIRED BY BCNTA OR BCSLA GUIDELINES.
  - REFER TO ARBORIST REPORT AND DRAWINGS PREPARED BY ACER TREE SERVICES FOR ALL RELATED TREE REMOVAL AND TREE RETENTION REQUIREMENTS.
  - TOPSOIL SUPPLIED SHALL BE FROM A REPUTABLE SOURCE. A FULL ANALYSIS OF THE TOPSOIL WILL BE REQUIRED AT THE CONTRACTOR'S EXPENSE. SUBMIT TO LANDSCAPE CONSULTANT FOR APPROVAL.
  - AMMEND TOPSOIL PER SOIL ANALYSIS RECOMMENDATIONS PRIOR TO SPREADING ON SITE. REJECTED TOPSOIL SHALL BE REMOVED OFF SITE IMMEDIATELY AT THE LANDSCAPE CONTRACTORS EXPENSE.
  - TOPSOIL DEPTHS FOR PLANTING AS FOLLOWS:
    - A. GRASSED AREAS: 350MM
    - B. GROUND COVERS: 450MM
    - C. SHRUBS: 450MM
    - D. TREE PITS: 100U METERS PER TREE PIT - ALSO SEE LANDSCAPE DRAWING L-8 (SOIL VOLUMES)
  - LAWN AREAS SHALL BE SODDED WITH #1 PREMIUM RESIDENTIAL SOD, NON NETTED.
  - ALL SHRUB PLANTING AREAS SHALL HAVE GROUND COVERS 14" O.C.
  - 2" DEPTH OF 1" MINUS COMPOST MULCH TO BE INSTALLED IN ALL SHRUB PLANTING AREAS.
  - IRRIGATION SYSTEM - (AUTOMATIC) SHALL BE DESIGN BUILT TO BE COORDINATED BY GENERAL CONTRACTOR. IRRIGATION TO BE PROVIDED FOR ALL PLANTING BEDS INCLUSIVE OF GREEN ROOF.
  - ROCK AND BOULDER MATERIALS
    - ALL BOULDERS SHALL BE SMOOTH FINISH SOURCED FROM RIVER OR FIELD. DO NOT SUPPLY STRAIGHT OR SPLIT FACED STONE. THEY WILL BE REJECTED. PROVIDE .JPEG PHOTO OF STONE TO LANDSCAPE ARCHITECT FOR APPROVAL. BOULDERS TO BE EMBEDDED INTO GRADE DO NOT REST ON SURFACE.
    - SIZES: A: 2'-0" TO 2'-6" DIAMETER
    - B: 1'-0" TO 2'-0" DIAMETER
  - PAVING TYPES AND MATERIALS AS FOLLOWS:
    - OFF SITE SIDEWALKS, CAST IN PLACE CONCRETE W/BROOM FINISH, INSTALL SAW CUT CONTROL JOINT EVERY 8'. ISOLATION JOINT EVERY 28'.
    - PARKING AREA PERMEABLE UNIT PAVERS
    - SIDEYARDS: STANDARD CONCRETE PAVING WITH BROOM FINISH NO TROWELED EDGES. SAW CUT EVERY 8'
    - ROOF LEVEL PRIVATE PATIOS: 2X2 CONC. UNIT PAVERS W/ PLASTIC PEDESTALS. ABBOTSFORD CONCRETE PRODUCT OR EQUIVALENT, MODEL: SATURNA. COLOR: CHARCOAL
  - SITE GRADING: REFER TO ARCHITECTURAL AND CIVIL ENGINEERING DWGS FOR SITE GRADING OF ROADS, AND RETAINING WALLS. AREA DRAINS AND SUB-SURFACE PIPING TO BE COORDINATED WITH CIVIL GRADING FOR ALL LANDSCAPED AREAS TO ENSURE POSITIVE DRAINAGE. NO PONDING OF STORM WATER ALLOWED ON SITE.
  - STORM WATER MANAGEMENT BY CIVIL ENGINEERING.
  - REFER TO ARBORIST'S REPORT FOR ALL MATTERS RELATED TO TREE PROTECTION, TREE ASSESSMENT AND TREE MANAGEMENT PROCEDURES.
  - ROOF TOP PATIO PLANTERS TO BE PRE-MANUFACTURED, ALUMINUM, GALVANIZED METAL OR FIBERGLASS. COMPLETE WITH DRAIN HOLE.

**PLANT LIST:**

KEY	QTY.	BOTANICAL NAME	COMMON NAME	SIZE	COND.
APD	2	ACER PALMATUM	JAPANESE MAPLE	2.75M HT.	B & B
HCD	4	HIBISCUS COELESTIS	SHRUBBY ALTHEA	2.5 M HT.	B & B
TOC	24	TAXUS MEDIA HICKSII	HICKS YEW	1.75 M HT.	B & B
CJ	1	CAMELLIA JAPONICA MOSHO FLAME	JAPANESE CAMELLIA	#5	ON STANDARD
LM	8	LIRIOPE MUSCARI - BIG BLUE	BIG BLUE LILY TURF	#1	CONTAINER
MA	5	MAHONIA AQUIFOLIUM	OREGON GRAPE	#3	CONTAINER
ND	8	NANDINA DOMESTICA	HEAVENLY BAMBOO	#3	CONTAINER
NT	12	NASELLA TENUISSIMA	MEXICAN FEATHER GRASS	#3	CONTAINER
PM	40	POLYSTICHUM MUNIEM	WESTERN SWORD FERN	#3	CONTAINER
PH	5	PHORMIUM TENAX ATROPURPUREUM	NEWZEALAND FLAX	#3	CONTAINER
RC	2	RHODODENDRON CHEER	CHEER RHODO.	#3	CONTAINER
RD	16	RHODODENDRON DORA AMETEIS	DORA AMETEIS RHODO.	#3	CONTAINER
RB	2	RHODODENDRON BOW BELLS	BOW BELLS RHODO.	#3	CONTAINER
RR	2	RHODODENDRON ROYAL PINK	ROYAL PINK RHODO.	#3	CONTAINER
RU	2	RHODODENDRON UNIQUE	UNIQUE RHODO.	#3	CONTAINER
SH	8	SARCOCOCOA HOOKERIANA HUMILIS	HIMALAYAN SWEET BOX	#3	CONTAINER
PA	12	PENISSETUM ALLOPECUROIDES 'HAMELIN'	DWARF FOUNTAIN GRASS	#3	CONTAINER
AC	8	ASTILBE CHINENSIS 'VISIONS'	ASTILBE	#1	CONTAINER
CM	8	COREOPSIS VERTICILLATA MOONBEAM	MOONBEAM TICKSEED	#1	CONTAINER
CZ	12	COREOPSIS VERTICILLATA ZAGREB	ZAGREB TICKSEED	#1	CONTAINER
EC	6	ECHINACEA PURPUREA 'MAGNUS'	MAGNUS CONEFLOWER	#1	CONTAINER
LA	20	LAVANDULA ANGUSTIFOLIA	LAVANDULA ANGUSTIFOLIA	#2	CONTAINER
RF	8	RUDBECKIA FULGIDA var 'GOLDSTRUM'	BLACK EYED SUSAN	#1	CONTAINER
LL	8	LIGULARIA LITTLE ROCKET	RAYFLOWER LITTLE ROCKET	#1	CONTAINER
SA	8	SALVIA SENSATION ROSE PINK	DWARF PINK SALVIA	#1	CONTAINER
HH	8	HEDERA COLHICA DENATO VARIEGATA	VERIAGATED PERSIAN IVY	#1	CONTAINER

- KEY:**
- 1 LAWN - OPEN SPACE
  - 2 PLANTING BED
  - 3 PROPOSED DECIDUOUS TREE
  - 4 BOULDER & ROCK BED FEATURE
  - 5 CONCRETE PAVING BROOM FINISH
  - 6 EXP. AGG. CONCRETE BAND
  - 7 UNIT PAVERS - PERMEABLE
  - 8 2 X 2 CONCRETE UNIT PAVERS PERMEABLE
  - 9 RAISED CONC. PLANTER WALL
  - 10 6' HT. WOOD FENCE/SCREEN
  - 11 PLANTER - PRE FABRICATED
  - 12 DECORATIVE POTS
  - 13 GREEN ROOF - SEDUM OVER GARAGE
  - 14 HOT TUB 6' X 6' PROVISIONAL
  - 15 BBQ - STATION
  - 16 PATIO FURNITURE - NOT IN DP. PROVIDED BY STRATA CORP.

**REVISIONS/ISSUED**  
 1. DEC. 14/2021 - ISSUED FOR ARCH. REVIEW.  
 2. JAN. 25/2022 - ISSUED TO ARCH. & CLIENT FOR REVIEW.  
 3. FEB. 2/2022 - ISSUED FOR DP.



**PROJECT**  
**MULTI UNIT RESIDENTIAL DEVELOPMENT**  
 467 EAST 2ND STREET NORTH VANCOUVER, B.C.

DEVELOPER: JASR HOMES LTD.  
 ARCHITECT: F. ADAB ARCHITECTS INC.  
 ROD MARIYAMA & ASSOCIATES: 680 C. LEG. IN BOOT SQUARE, VANCOUVER, B.C. V6Z 3B4. PH: (604) 974-9887 FX: (604) 974-9831 EM: mmaruyama@rodalis.net



DATE: NOV. 28, 2020  
 DESIGN: JZ, RMM  
 DRAWN: RMM  
 CHECKED: RMM  
 SCALE: AS SHOWN  
 JOB NO.: M2111

SHEET TITLE  
**LANDSCAPE PLAN**  
 SHEET NO.  
**L001**



# CREUS Engineering

Civil Engineers & Project Managers  
#610 EAST TOWER - 221 ESPLANADE WEST, NORTH VANCOUVER BC, V7M3J3  
PH: 604-987-9070 WEBSITE: www.creus.ca

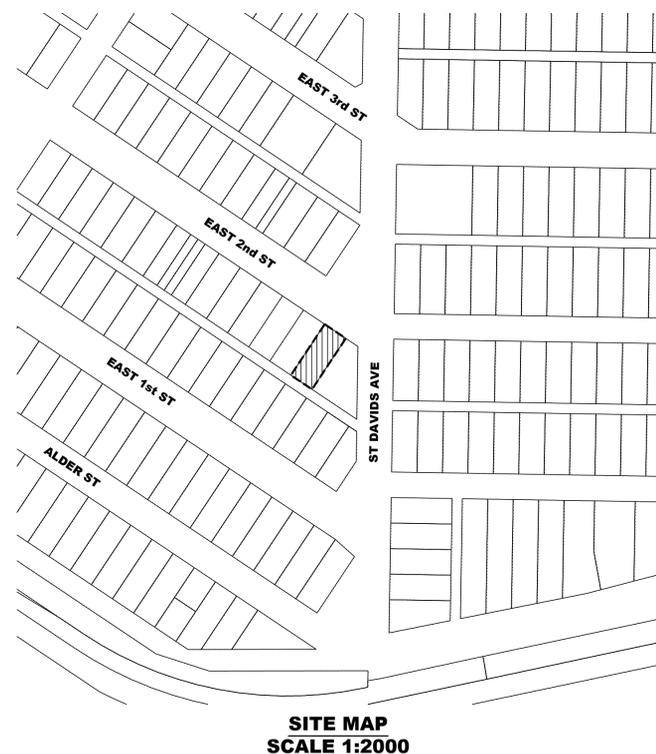
DRAWING LIST		
DWG No.		
KEY	KEY PLAN	
SERV	SERVICING PLAN	
BG	BUILDING GRADES	
SMP-1	STORMWATER MANAGEMENT	

PROJECT:

## 467 E 2nd STREET NORTH VANCOUVER, BC

CLIENT:

## JASR HOMES LTD



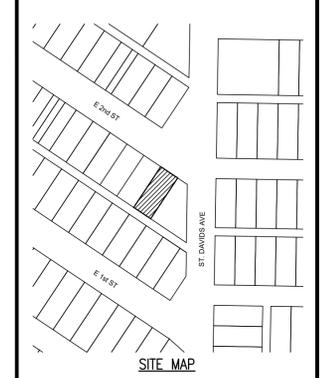
2022-04-12

ISSUED FOR DEVELOPMENT PERMIT

SEE DRAWING KEY FOR GENERAL NOTES  
 SEE DRAWING R-1 FOR ROADWORKS NOTES  
 SEE DRAWING SERV FOR WATERWORKS NOTES  
 SEE DRAWING SERV FOR STORM & SANITARY NOTES

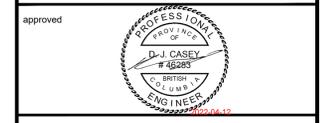
Civil Engineers & Project Managers  
 #610 EAST TOWER - 221 ESPLANADE WEST, NORTH VANCOUVER BC, V7M3J3  
 PH: 604-987-9070 WEBSITE: www.creus.ca

PERMIT TO PRACTICE # 1001543



### DRAWING LEGEND

	EXISTING	PROP.	TO BE REMOVED
LEGAL LINE EASEMENT	---	---	---
WATERMAIN	---	---	---
SANITARY	---	---	---
STORM	---	---	---
HYDRO	---	---	---
TEL	---	---	---
STREETLIGHT	---	---	---
GAS	---	---	---
FIRE HYDRANT	---	---	---
GATE VALVE	---	---	---
AIR VALVE	---	---	---
REDUCER	---	---	---
INSPECTION CHAMBER	---	---	---
CATCHBASIN (STD/SI)	---	---	---
CAP	---	---	---
MANHOLE	---	---	---
POWER POLE	---	---	---
STREETLIGHT	---	---	---



client  
**JASR HOMES LTD**

project  
**467 E 2nd STREET  
 NORTH VANCOUVER, BC**

title  
**KEY PLAN**

1	22/04/12	ISSUED FOR DEVELOPMENT PERMIT	AFG
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no.	(y/m/d)	revision	chn/d
1			

engineer of record	FMC	scales	hor: 1:200	vert:
designed by	AFG	file no.	21337	
drawn by	AFG	drawing no.	KEY	
date	2021-11-04			

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### LEGAL DESCRIPTION

LOT 14; BLOCK 152; DL 274; PLAN 878

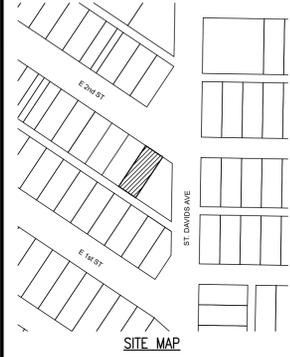
### BENCHMARK INFORMATION

ELEVATIONS ARE METRIC, GEODETIC DATUM, AND DERIVED FROM CONTROL MONUMENT 87H3688  
 EL: 25.41m (83.37')

### GENERAL NOTES

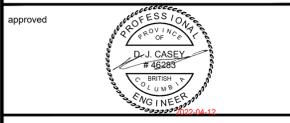
1. THE TERM 'ENGINEER' REFERS TO CREUS ENGINEERING LTD. THEIR CONTACT IS FRED CIAMBRELLI AND CAN BE CONTACTED AT 604-987-9070.
2. ALL CONSTRUCTION WITHIN THE PROPERTY MUST CONFORM TO THE MUNICIPAL STANDARDS, MASTER MUNICIPAL SPECIFICATIONS, CURRENT B.C. BUILDING CODE, & B.C. PLUMBING CODE.
3. THE ENGINEER IS RESPONSIBLE FOR THE IMPLEMENTATION OF THE WORKS. THE CONTRACTOR MUST CONTACT THE ENGINEER FOR ALL DESIGN ENQUIRIES.
4. ALL CONSTRUCTION & TESTING IN CITY OF NORTH VANCOUVER RIGHT OF WAY MUST CONFORM TO THE MASTER MUNICIPAL SPECIFICATIONS AND STANDARD DRAWINGS AS MODIFIED BY THE CITY OF NORTH VANCOUVER CONSTRUCTION SPECIFICATIONS (SCHEDULE C OF BYLAW MMCD 8014) AND STANDARD DRAWINGS AS NECESSARY.
5. NO WARPING OF SIDEWALK ARE ALLOWED IN ROADWAYS, ALL WARPING OF SIDEWALK TO MATCH EXISTING LEVELS SHALL OCCUR WITHIN THE PROPERTY BOUNDARIES.
6. THE CONTRACTOR SHALL ENSURE THAT ALL APPROVALS REQUIRED FOR THE PROPOSED WORK HAVE BEEN OBTAINED PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION.
7. LOCATIONS OF EXISTING UNDERGROUND SERVICES HAVE BEEN DETERMINED FROM UTILITY AS-CONSTRUCTED DRAWINGS AND THIRD PARTY SURVEY. CONTRACTOR TO CONTACT BC ONE CALL AND PROVIDE COPIES TO ENGINEER AND VERIFY THE LOCATION OF ALL EXISTING SERVICES AND TO NOTIFY ENGINEER OF ANY DISCREPANCIES, CONFLICTS OR OMISSIONS PRIOR TO BEGINNING OF CONSTRUCTION.
8. ONSITE SERVICING WORKS TO COMMENCE ONLY AFTER OFFSITE SERVICE CONNECTION HAS BEEN INSTALLED & VERIFIED. CONTRACTOR TO NOTIFY ENGINEER OF ANY DISCREPANCY BETWEEN ENGINEERING DRAWINGS AND EXISTING FIELD CONDITIONS PRIOR TO CONSTRUCTION.
9. THE CONTRACTOR SHALL USE EXTREME CARE WHEN WORKING NEAR EXISTING SERVICES AND ANY SERVICES DISTURBED ARE TO BE REPLACED TO THE SATISFACTION OF THE ENGINEER AND THE CITY.
10. THE CONTRACTOR MUST NOTIFY THE ENGINEER 48 HOURS PRIOR TO STARTING OR RESTARTING CONSTRUCTION TO ESTABLISH AN INSPECTION SCHEDULE. THEY MUST ALSO CONTACT THE ENGINEER 48 HOURS BEFORE ANY REQUIRED INSPECTION.
11. THE ENGINEER MUST NOTIFY THE CITY NOT LESS THAN 24 HOURS BEFORE WORK OUTSIDE THE PROPERTY IS STARTED, RESTARTED OR INSPECTIONS ARE REQUIRED.
12. EXISTING ROADWAY NOT INCLUDED IN THESE PROPOSED WORKS SHALL BE KEPT CLEAN AND CLEAR FOR THE DURATION OF CONSTRUCTION, AND LEFT IN THE SAME CONDITION AS PRIOR TO CONSTRUCTION. SURROUNDING STREETS SHALL BE SWEEP DAILY, IF NECESSARY.
13. EXISTING TREES THAT ARE TO REMAIN SHALL BE PROTECTED BY WAY OF A SOLID FENCE ERECTED OUTSIDE THE DRIPLINE OF THE TREE.
14. TRAFFIC CONTROL PER APPROVED TRAFFIC MANAGEMENT PLAN & THE MINISTRY OF TRANSPORTATION 'TRAFFIC MANUAL FOR WORK ON ROADWAYS' / TRANSPORTATION ASSOCIATION OF CANADA 'MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES'. CONTRACTOR TO INFORM ENGINEER AND CNV IMMEDIATELY OF ANY FORESEEN OR UNFORESEEN CHANGES TO THE SCHEDULE.
15. PEDESTRIANS SHALL BE PROTECTED AT ALL TIMES. ANY CLOSURE OF THE SIDEWALK TO BE COORDINATED WITH THE CITY, AND WITH SURROUNDING AFFECTED PROPERTIES AT LEAST 24 HOURS BEFORE ANY REQUIRED CLOSURE.
16. THE CONTRACTOR TO PREPARE AS-BUILT DRAWINGS AND PROVIDE THEM TO THE ENGINEER. AN ENGINEER SHALL PROVIDE CERTIFIED AS-BUILT RECORD INFORMATION TO THE CITY OF NORTH VANCOUVER ENGINEERING, PARKS AND ENVIRONMENT DEPARTMENT.
17. THE CONTRACTOR IS RESPONSIBLE TO OBSERVE ALL GUIDELINES AND TAKE ALL NECESSARY MEASURES TO PROTECT THE NATURAL ENVIRONMENT SUCH AS PREVENTING PARTICULATE MATTER OF ANY ORIGIN FROM ENTERING THE STORM WATER SYSTEM.
18. EXISTING PARKING CONTROL SIGNS TO BE REPLACED AT LOCATIONS AS DIRECTED BY THE CITY.
19. POLE SLEEVES ARE AVAILABLE FOR PICK-UP AT THE CNV, OPERATIONS DIVISION. TO ARRANGE PICK-UP OF SLEEVES, CONTACT CITY SIDEWALKS FOREMAN AT 987-7155.
20. ALL CONSTRUCTION WITHIN THE PROPERTY MUST CONFORM TO THE MASTER MUNICIPAL SPECIFICATIONS, B.C. BUILDING CODE & B.C. PLUMBING CODE.
21. THE CONTRACTOR WILL CONSTRUCT ALL WORKS TO THE SATISFACTION OF THE INSPECTORS FROM THE ENGINEER AND THE REGULATORY AUTHORITY. IF APPLICABLE ADDITIONALLY, THE TELUS WORKS UNDER THE DIRECTION AND TO THE SATISFACTION OF THE TELUS INSPECTOR, HYDRO WORKS TO SATISFACTION OF THE BC HYDRO INSPECTOR, TERASEN WORKS TO SATISFACTION OF THE TERASEN INSPECTOR, SHAW WORKS TO SATISFACTION OF THE SHAW INSPECTOR. THE CONTRACTOR WILL FORWARD TO THE ENGINEER CERTIFICATION OF ACCEPTANCE OR APPROVAL FROM THE ABOVE NOTED INSPECTORS ON COMPLETION OF THE WORK. ELECTRICAL WORKS, IF APPLICABLE TO ALSO BE UNDER PERMIT WITH BC ELECTRICAL SAFETY BRANCH WITH A COPY OF PERMIT AND SIGN OFF TO BE FORWARDED TO THE ENGINEER BY THE CONTRACTOR. CONTRACTOR TO GIVE MINIMUM 48 HOURS NOTICE TO RELEVANT INSPECTOR TO ALLOW FOR INSPECTION ON WORKS AND UPDATE ENGINEER ON SAME.
22. THE CONTRACTOR WILL PERFORM AT HIS OWN COST ALL TESTING REQUIRED BY THE REGULATORY AUTHORITY, MMCD AND THE ENGINEER. TESTING SHALL BE DONE BY AN INDEPENDENT SPECIALTY TESTING FIRM. CONTRACTOR TO GIVE ENGINEER 48 HOURS' NOTICE ON ALL TESTING. COPIES OF TESTS TO BE FORWARDED DIRECTLY BY THE TESTING FIRM TO ENGINEER AND GEOTECHNICAL ENGINEER BY EMAIL.
23. VEHICULAR ACCESS TO EXISTING DWELLINGS AND BUSINESS' TO BE MAINTAINED BY THE CONTRACTOR FOR THE DURATION OF THE CONTRACT.
24. RESIDENTS AND BUSINESSES DIRECTLY AFFECTED BY CONSTRUCTION OF THIS PROJECT SHALL BE GIVEN 48 HOURS WRITTEN NOTICE OF THE PROPOSED START OF CONSTRUCTION. IF CONSTRUCTION ENTERS ONTO PRIVATE PROPERTY, THE CONTRACTOR OR DEVELOPER'S AGENT WILL REQUIRED WRITTEN AUTHORIZATION FROM THE PRIVATE PROPERTY OWNER. ENGINEER TO BE FORWARDED COPY OF AUTHORIZATION.
25. RETAINING DESIGNATED TREES IS OF PRIME IMPORTANCE. WHEN WORKING IN PROXIMITY TO A DESIGNATED TREE OR WHEN ROOTS ARE ENCOUNTERED, THE CONTRACTOR SHALL CONSULT A CERTIFIED ARBORIST BEFORE PROCEEDING TO PREVENT DAMAGE TO TREES.
26. THE CONTRACTOR SHALL TAKE ALL STEPS NECESSARY TO ENSURE THAT NO SILT IS DISCHARGED TO THE STORM DRAINAGE SYSTEM, ROADWAYS OR ADJACENT PROPERTIES DURING THE COURSE OF CONSTRUCTION IN ACCORDANCE WITH DFO/MOELP'S 'LAND DEVELOPMENT GUIDELINES FOR THE PROTECTION OF AQUATIC HABITAT'. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO INSTALL & MAINTAIN ALL EROSION & SEDIMENT CONTROL WORKS.
27. FOR BC HYDRO, TELUS, AND FORTIS INSTALLATION, SEE APPROPRIATE UTILITY COMPANY DRAWINGS AND SPECIFICATIONS. CONTRACTOR TO NOTIFY ENGINEER IMMEDIATELY SHOULD SITE CONDITIONS BECOME ALTERED FROM EXPECTATION.
28. SEE LANDSCAPE DRAWINGS FOR PLANTING, SOFTSCAPE AND DECORATIVE PAVEMENT DETAILS.
29. SEE ELECTRICAL ENGINEER DRAWINGS FOR STREETLIGHT & TRAFFIC SIGNAL DESIGNS.
30. IT IS THE CONTRACTOR'S RESPONSIBILITY TO INSURE THEY ARE WORKING FROM THE MOST UP TO DATE DESIGN PACKAGE INCLUDING DRAWINGS AND REPORTS.
31. A PORTION OF THE CONTRACT DOCUMENTS IS INCLUDED BY REFERENCE. COPIES OF THESE DOCUMENTS HAVE BEEN REFERENCED IN THE TENDER PACKAGE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT CURRENT RELEVANT COPIES OF ALL DRAWINGS AND CONTRACT DOCUMENTS ARE FORWARDED TO SURVEYORS, TESTING AGENCIES, SUBCONTRACTORS, SUPERINTENDENTS, ESTIMATORS, PROJECT MANAGERS, SITE STAFF AND ANY OTHER RELEVANT PARTIES. CONTRACTOR CONFIRMS THEY HAVE REVIEWED SAME PRIOR TO SUBMITTING TENDER.
32. SUB-CONTRACTORS SHALL NOT COMMUNICATE WITH THE ENGINEERS OR OWNER DIRECTLY ON ANY CONTRACTUAL OR TECHNICAL ISSUE. THEY SHALL DIRECT THEIR ISSUES TO THE CONTRACTOR DIRECTLY WHOSE RESPONSIBILITY IT TO DEAL WITH THESE ISSUES ON THEIR BEHALF WITH THE ENGINEER. REVIEW AND APPROVAL OF ANY CONTRACTUAL MATTER INCLUDING PROGRESS PAYMENT, CHANGE ORDER, PAYMENT OF HOLDBACK, FINAL PAYMENT, INSURANCE AND WARRANTY, ETC. SHALL DIRECTED TO THE ENGINEER. CONTRACTOR MUST ONLY TAKE DIRECTION FROM THE ENGINEER IN REGARDS TO CHANGES TO DESIGN OR EXTRA WORKS.
33. UNLESS OTHERWISE SPECIFIED IN THE CONTRACT DOCUMENTS OR NOTIFIED TO THE CONTRARY BY THE ENGINEER, THE CONTRACTOR IS THE 'PRIME CONTRACTOR' FOR THE PURPOSE OF ALL APPLICABLE LAWS RELATIVE TO OCCUPATIONAL HEALTH AND SAFETY, INCLUDING THE DISCHARGE OF ALL DUTIES OF THE 'PRIME CONTRACTOR' UNDER THE WORKERS COMPENSATION ACT (BRITISH COLUMBIA), NOTWITHSTANDING THAT THE ENGINEER, THE OWNER OR ANOTHER CONTRACTOR MAY PROVIDE FROM TIME TO TIME SOME OF THE SERVICES NORMALLY PROVIDED BY SUCH 'PRIME CONTRACTOR'. IN THIS SECTION 'PRIME CONTRACTOR' MEANS THE CONTRACTOR SO DEFINED UNDER THE WORKERS COMPENSATION ACT (BRITISH COLUMBIA).





### DRAWING LEGEND

	EXISTING	PROP.	TO BE REMOVED
LEGAL LINE	---	---	---
EASEMENT	---	---	---
WATERMAIN	---	---	---
SANITARY	---	---	---
STORM	---	---	---
HYDRO	---	---	---
TEL	---	---	---
STREETLIGHT	---	---	---
GAS	---	---	---
FIRE HYDRANT	---	---	---
GATE VALVE	---	---	---
AIR VALVE	---	---	---
REDUCER	---	---	---
INSPECTION CHAMBER	---	---	---
CATCH BASIN (STD/SI)	---	---	---
CAP	---	---	---
MANHOLE	---	---	---
POWER POLE	---	---	---
STREETLIGHT	---	---	---



client  
**JASR HOMES LTD**

project  
**467 E 2nd STREET  
 NORTH VANCOUVER, BC**

title  
**SERVICING PLAN**

1	22/04/12	ISSUED FOR DEVELOPMENT PERMIT	AFG
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no.	(y/m/d)	revision	chk'd

current rev. #	1
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engineer of record	FMC	scales	hor: 1:100	vert:
designed by	AFG	file no.	21337	
drawn by	AFG	drawing no.	SERV	
date	2021-11-04			

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SEE DRAWING KEY FOR GENERAL NOTES  
 SEE DRAWING R-1 FOR ROADWORKS NOTES  
 SEE DRAWING SERV FOR WATERWORKS NOTES  
 SEE DRAWING SERV FOR STORM & SANITARY NOTES

CONTRACTOR TO VERIFY & LOCATE EXISTING MAINS & SERVICE CONNECTIONS & NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO BEGINNING CONSTRUCTION

### LEGAL DESCRIPTION

LOT 14; BLOCK 152; DL 274; PLAN 878

### BENCHMARK INFORMATION

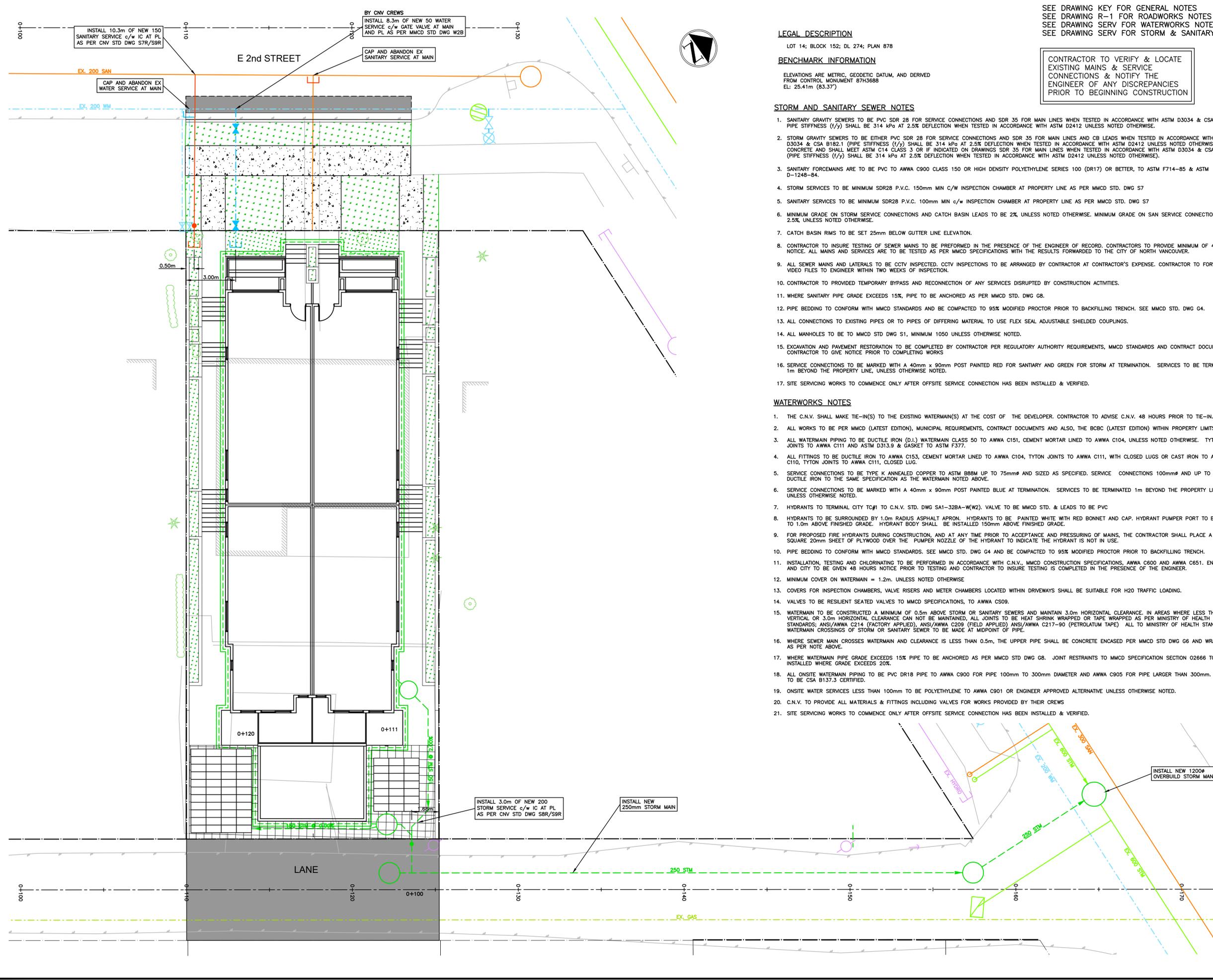
ELEVATIONS ARE METRIC, GEODETIC DATUM, AND DERIVED FROM CONTROL MONUMENT 87H3688  
 EL: 25.41m (83.37')

### STORM AND SANITARY SEWER NOTES

- SANITARY GRAVITY SEWERS TO BE PVC SDR 28 FOR SERVICE CONNECTIONS AND SDR 35 FOR MAIN LINES WHEN TESTED IN ACCORDANCE WITH ASTM D3034 & CSA B182.1. PIPE STIFFNESS (1/y) SHALL BE 314 kPa AT 2.5% DEFLECTION WHEN TESTED IN ACCORDANCE WITH ASTM D2412 UNLESS NOTED OTHERWISE.
- STORM GRAVITY SEWERS TO BE EITHER PVC SDR 28 FOR SERVICE CONNECTIONS AND SDR 35 FOR MAIN LINES AND CB LEADS WHEN TESTED IN ACCORDANCE WITH ASTM D3034 & CSA B182.1 (PIPE STIFFNESS (1/y) SHALL BE 314 kPa AT 2.5% DEFLECTION WHEN TESTED IN ACCORDANCE WITH ASTM D2412 UNLESS NOTED OTHERWISE), OR CONCRETE AND SHALL MEET ASTM C14 CLASS 3 OR IF INDICATED ON DRAWINGS SDR 35 FOR MAIN LINES WHEN TESTED IN ACCORDANCE WITH ASTM D3034 & CSA B182.1 (PIPE STIFFNESS (1/y) SHALL BE 314 kPa AT 2.5% DEFLECTION WHEN TESTED IN ACCORDANCE WITH ASTM D2412 UNLESS NOTED OTHERWISE).
- SANITARY FORCEMAINS ARE TO BE PVC TO AWWA C900 CLASS 150 OR HIGH DENSITY POLYETHYLENE SERIES 100 (DR17) OR BETTER, TO ASTM F714-85 & ASTM D-1248-84.
- STORM SERVICES TO BE MINIMUM SDR28 P.V.C. 150mm MIN C/W INSPECTION CHAMBER AT PROPERTY LINE AS PER MMCD STD. DWG S7
- SANITARY SERVICES TO BE MINIMUM SDR28 P.V.C. 100mm MIN c/w INSPECTION CHAMBER AT PROPERTY LINE AS PER MMCD STD. DWG S7
- MINIMUM GRADE ON STORM SERVICE CONNECTIONS AND CATCH BASIN LEADS TO BE 2%, UNLESS NOTED OTHERWISE. MINIMUM GRADE ON SAN SERVICE CONNECTIONS TO BE 2.5% UNLESS NOTED OTHERWISE.
- CATCH BASIN RIMS TO BE SET 25mm BELOW GUTTER LINE ELEVATION.
- CONTRACTOR TO INSURE TESTING OF SEWER MAINS TO BE PERFORMED IN THE PRESENCE OF THE ENGINEER OF RECORD. CONTRACTORS TO PROVIDE MINIMUM OF 48 HOURS NOTICE. ALL MAINS AND SERVICES ARE TO BE TESTED AS PER MMCD SPECIFICATIONS WITH THE RESULTS FORWARDED TO THE CITY OF NORTH VANCOUVER.
- ALL SEWER MAINS AND LATERALS TO BE CCTV INSPECTED. CCTV INSPECTIONS TO BE ARRANGED BY CONTRACTOR AT CONTRACTOR'S EXPENSE. CONTRACTOR TO FORWARD VIDEO FILES TO ENGINEER WITHIN TWO WEEKS OF INSPECTION.
- CONTRACTOR TO PROVIDED TEMPORARY BYPASS AND RECONNECTION OF ANY SERVICES DISRUPTED BY CONSTRUCTION ACTIVITIES.
- WHERE SANITARY PIPE GRADE EXCEEDS 15%, PIPE TO BE ANCHORED AS PER MMCD STD. DWG G8.
- PIPE BEDDING TO CONFORM WITH MMCD STANDARDS AND BE COMPACTED TO 95% MODIFIED PROCTOR PRIOR TO BACKFILLING TRENCH. SEE MMCD STD. DWG G4.
- ALL CONNECTIONS TO EXISTING PIPES OR TO PIPES OF DIFFERING MATERIAL TO USE FLEX SEAL ADJUSTABLE SHIELDED COUPLINGS.
- ALL MANHOLES TO BE TO MMCD STD DWG S1, MINIMUM 1050 UNLESS OTHERWISE NOTED.
- EXCAVATION AND PAVEMENT RESTORATION TO BE COMPLETED BY CONTRACTOR PER REGULATORY AUTHORITY REQUIREMENTS, MMCD STANDARDS AND CONTRACT DOCUMENTS. CONTRACTOR TO GIVE NOTICE PRIOR TO COMPLETING WORKS
- SERVICE CONNECTIONS TO BE MARKED WITH A 40mm x 90mm POST PAINTED RED FOR SANITARY AND GREEN FOR STORM AT TERMINATION. SERVICES TO BE TERMINATED 1m BEYOND THE PROPERTY LINE, UNLESS OTHERWISE NOTED.
- SITE SERVICING WORKS TO COMMENCE ONLY AFTER OFFSITE SERVICE CONNECTION HAS BEEN INSTALLED & VERIFIED.

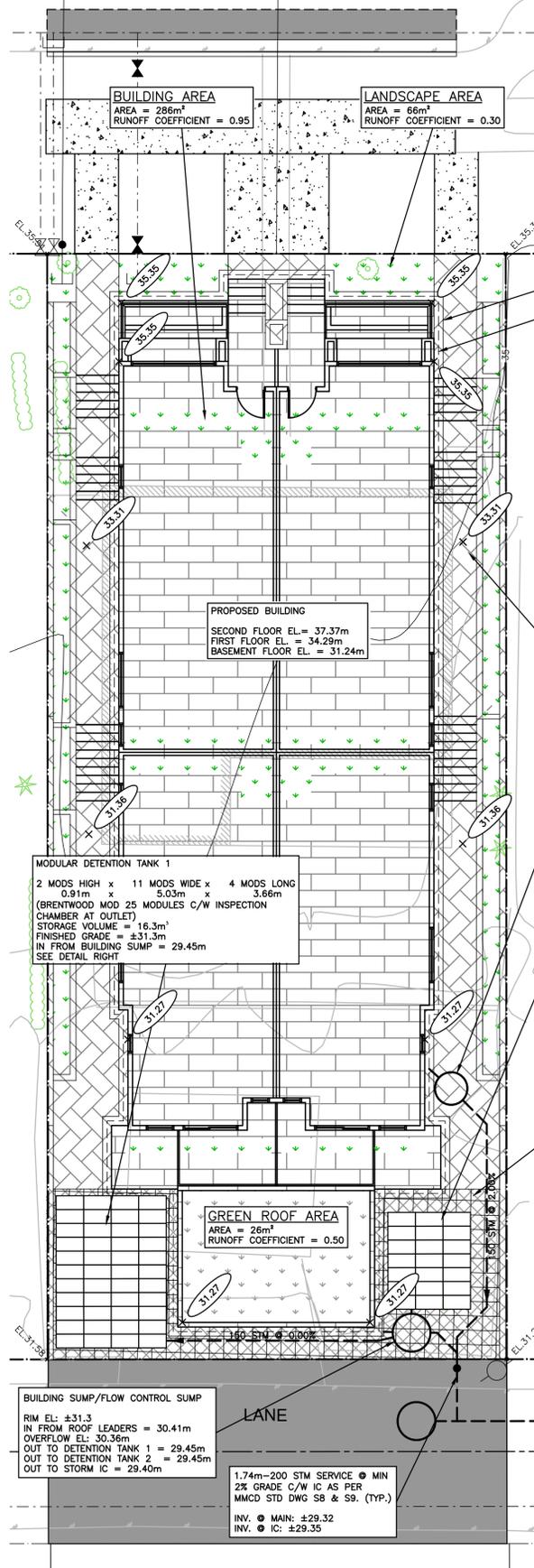
### WATERWORKS NOTES

- THE C.N.V. SHALL MAKE TIE-IN(S) TO THE EXISTING WATERMAIN(S) AT THE COST OF THE DEVELOPER. CONTRACTOR TO ADVISE C.N.V. 48 HOURS PRIOR TO TIE-IN.
- ALL WORKS TO BE PER MMCD (LATEST EDITION), MUNICIPAL REQUIREMENTS, CONTRACT DOCUMENTS AND ALSO, THE BCBC (LATEST EDITION) WITHIN PROPERTY LIMITS.
- ALL WATERMAIN PIPING TO BE DUCTILE IRON (D.I.) WATERMAIN CLASS 50 TO AWWA C151, CEMENT MORTAR LINED TO AWWA C104, UNLESS NOTED OTHERWISE. TYTON JOINTS TO AWWA C111 AND ASTM D313.9 & GASKET TO ASTM F377.
- ALL FITTINGS TO BE DUCTILE IRON TO AWWA C153, CEMENT MORTAR LINED TO AWWA C104, TYTON JOINTS TO AWWA C111, WITH CLOSED LUGS OR CAST IRON TO AWWA C110, TYTON JOINTS TO AWWA C111, CLOSED LUG.
- SERVICE CONNECTIONS TO BE TYPE K ANNEALED COPPER TO ASTM B88M UP TO 75mm $\phi$  AND SIZED AS SPECIFIED. SERVICE CONNECTIONS 100mm $\phi$  AND UP TO BE DUCTILE IRON TO THE SAME SPECIFICATION AS THE WATERMAIN NOTED ABOVE.
- SERVICE CONNECTIONS TO BE MARKED WITH A 40mm x 90mm POST PAINTED BLUE AT TERMINATION. SERVICES TO BE TERMINATED 1m BEYOND THE PROPERTY LINE, UNLESS OTHERWISE NOTED.
- HYDRANTS TO TERMINAL CITY TO C.N.V. STD. DWG SA1-32BA-W(W2). VALVE TO BE MMCD STD. & LEADS TO BE PVC
- HYDRANTS TO BE SURROUNDED BY 1.0m RADIUS ASPHALT APRON. HYDRANTS TO BE PAINTED WHITE WITH RED BONNET AND CAP. HYDRANT PUMPER PORT TO BE 0.5m TO 1.0m ABOVE FINISHED GRADE. HYDRANT BODY SHALL BE INSTALLED 150mm ABOVE FINISHED GRADE.
- FOR PROPOSED FIRE HYDRANTS DURING CONSTRUCTION, AND AT ANY TIME PRIOR TO ACCEPTANCE AND PRESSURING OF MAINS, THE CONTRACTOR SHALL PLACE A 0.3m SQUARE 20mm SHEET OF PLYWOOD OVER THE PUMPER NOZZLE OF THE HYDRANT TO INDICATE THE HYDRANT IS NOT IN USE.
- PIPE BEDDING TO CONFORM WITH MMCD STANDARDS. SEE MMCD STD. DWG G4 AND BE COMPACTED TO 95% MODIFIED PROCTOR PRIOR TO BACKFILLING TRENCH.
- INSTALLATION, TESTING AND CHLORINATING TO BE PERFORMED IN ACCORDANCE WITH C.N.V., MMCD CONSTRUCTION SPECIFICATIONS, AWWA C600 AND AWWA C651. ENGINEER AND CITY TO BE GIVEN 48 HOURS NOTICE PRIOR TO TESTING AND CONTRACTOR TO INSURE TESTING IS COMPLETED IN THE PRESENCE OF THE ENGINEER.
- MINIMUM COVER ON WATERMAIN = 1.2m. UNLESS NOTED OTHERWISE
- COVERS FOR INSPECTION CHAMBERS, VALVE RISERS AND METER CHAMBERS LOCATED WITHIN DRIVEWAYS SHALL BE SUITABLE FOR H2O TRAFFIC LOADING.
- VALVES TO BE RESILIENT SEATED VALVES TO MMCD SPECIFICATIONS, TO AWWA C509.
- WATERMAIN TO BE CONSTRUCTED A MINIMUM OF 0.5m ABOVE STORM OR SANITARY SEWERS AND MAINTAIN 3.0m HORIZONTAL CLEARANCE. IN AREAS WHERE LESS THAN 0.5m VERTICAL OR 3.0m HORIZONTAL CLEARANCE CAN NOT BE MAINTAINED, ALL JOINTS TO BE HEAT SHRINK WRAPPED OR TAPE WRAPPED AS PER MINISTRY OF HEALTH STANDARDS; ANSI/AWWA C214 (FACTORY APPLIED), ANSI/AWWA C209 (FIELD APPLIED) ANSI/AWWA C217-90 (PETROLATUM TAPE) ALL TO MINISTRY OF HEALTH STANDARDS. WATERMAIN CROSSINGS OF STORM OR SANITARY SEWER TO BE MADE AT MIDPOINT OF PIPE.
- WHERE SEWER MAIN CROSSES WATERMAIN AND CLEARANCE IS LESS THAN 0.5m, THE UPPER PIPE SHALL BE CONCRETE ENCASED PER MMCD STD DWG G6 AND WRAPPED AS PER NOTE ABOVE.
- WHERE WATERMAIN PIPE GRADE EXCEEDS 15% PIPE TO BE ANCHORED AS PER MMCD STD DWG G8. JOINT RESTRAINTS TO MMCD SPECIFICATION SECTION O2666 TO BE INSTALLED WHERE GRADE EXCEEDS 20%.
- ALL ONSITE WATERMAIN PIPING TO BE PVC DR18 PIPE TO AWWA C900 FOR PIPE 100mm TO 300mm DIAMETER AND AWWA C905 FOR PIPE LARGER THAN 300mm. ALL PIPE TO BE CSA B137.3 CERTIFIED.
- ONSITE WATER SERVICES LESS THAN 100mm TO BE POLYETHYLENE TO AWWA C901 OR ENGINEER APPROVED ALTERNATIVE UNLESS OTHERWISE NOTED.
- C.N.V. TO PROVIDE ALL MATERIALS & FITTINGS INCLUDING VALVES FOR WORKS PROVIDED BY THEIR CREWS
- SITE SERVICING WORKS TO COMMENCE ONLY AFTER OFFSITE SERVICE CONNECTION HAS BEEN INSTALLED & VERIFIED.

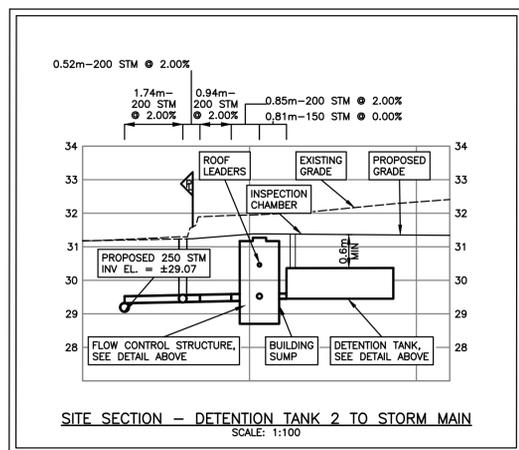
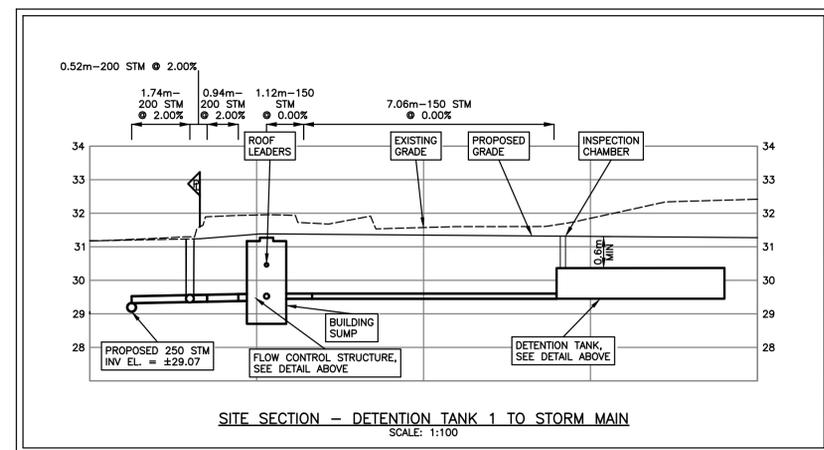
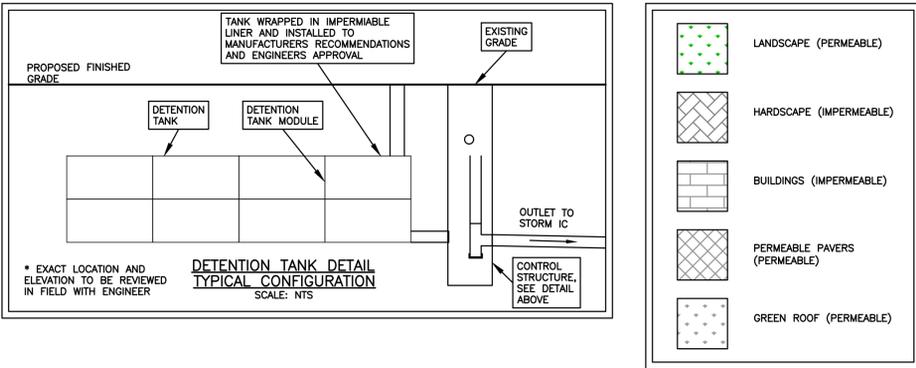
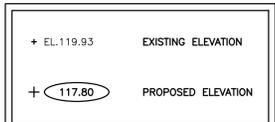
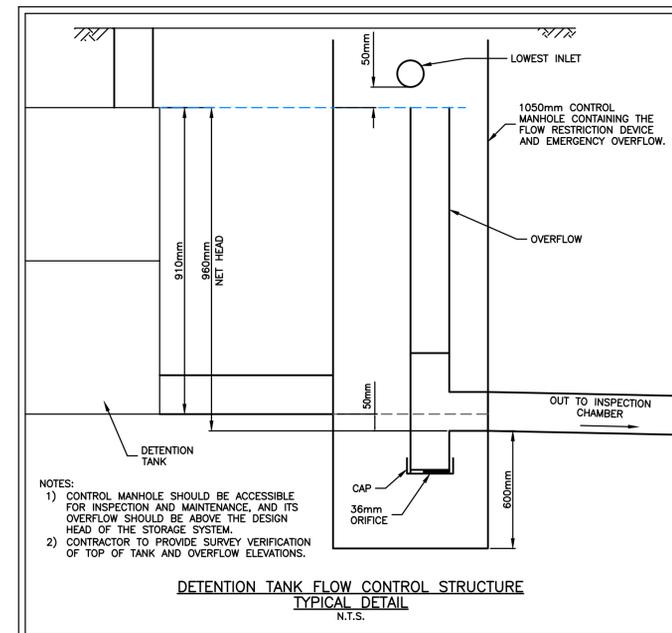
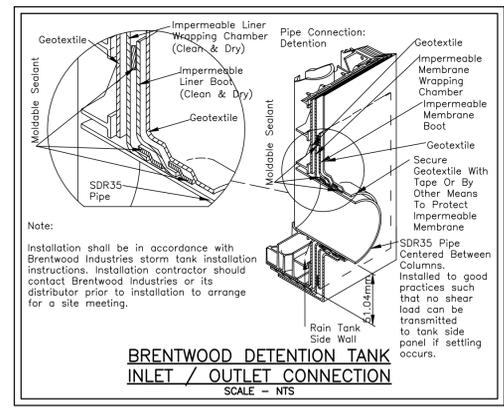




E 2nd STREET



- NOTES:
1. SITE GRADES SHOWN FOR REFERENCE ONLY. DETAILED SITE GRADING BY OTHERS
  2. SITE DRAINAGE SHOWN RELATES TO STORMWATER MANAGEMENT ONLY. CONTRACTOR TO ENSURE ADEQUATE DRAINAGE PROVIDED.
  3. ALL WORKS TO CONFORM TO CURRENT MUNICIPAL AND BC BUILDING & PLUMBING CODE REQUIREMENTS.
  4. INFILTRATION TRENCH LOCATIONS AND EXTENTS TO BE COORDINATED IN FIELD WITH ENGINEER.
  5. MUNICIPAL SERVICE CONNECTION IS TO BE INSTALLED & VERIFIED PRIOR TO THE INSTALLATION OF THE STORMWATER MANAGEMENT SYSTEM.
  6. ONSITE AREA DRAIN LOCATIONS MAY VARY DEPENDING ON SITE CONDITIONS.
  7. ENGINEER TO APPROVE ANY ALTERNATE INFILTRATION/DETENTION TANK PRODUCTS.



**LEGAL DESCRIPTION**

LOT 14; BLOCK 152; DL 274; PLAN 878

**BENCHMARK INFORMATION**

ELEVATIONS ARE METRIC, GEODETIC DATUM, AND DERIVED FROM CONTROL MONUMENT 87H3688  
EL: 25.41m (83.37')

CONTRACTOR TO VERIFY & LOCATE EXISTING MAINS & SERVICE CONNECTIONS & NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO BEGINNING CONSTRUCTION

SEE DRAWING KEY FOR GENERAL NOTES  
SEE DRAWING R-1 FOR ROADWORKS NOTES  
SEE DRAWING SERV FOR WATERWORKS NOTES  
SEE DRAWING SERV FOR STORM & SANITARY NOTES

**CREUS Engineering Ltd**  
Civil Engineers

**Calculations**

Project: 467 E 2nd Street File: 21337  
Subject: Stormwater Management Plan Date: 14-Dec-21  
Section: SMP Source Control Calculations By: BEM

**Objective 1:**  
Capture The Runoff From The Gross Impervious Area During 50% of MAR Storm Event (Volume Control)

**Objective 2:**  
Limit Runoff From The 10-Year Storm Event To Pre Development Levels

Category	Area (m <sup>2</sup> )	Runoff Coefficient	Runoff Volume (m <sup>3</sup> )
Building Area (Impervious)	286	0.95	138
Hardscape Area (Impervious)	123	0.80	62
Permeable Pavers (Pervious)	55	0.50	16
Green Roof (Pervious)	28	0.50	8
Landscape Area (Pervious)	66	0.30	12
<b>Total Catchment Area</b>	<b>556</b>		<b>236</b>
Total Percent Impervious	74%		
<b>Total Catchment Area</b>	<b>556</b>		<b>236</b>

**Objective: Capture The 50% MAR Storm Event**

MAR Rainfall Event: 80 mm  
50% of MAR Rainfall Event: 40 mm  
Total Impervious Area: 409 m<sup>2</sup>  
Rainfall on Area: 22.9 m<sup>3</sup> (As Above)

**Total Rainfall Volume To Be Captured = 22.9 m<sup>3</sup>**

Detention Tank	Depth (m)	Width (m)	Length (m)	Volume (m <sup>3</sup> )
Detention Tank 1	0.91	5.03	3.66	16.3
Detention Tank 2	0.91	3.20	2.74	7.8
<b>Total Detention Tank Volume</b>				<b>24.1</b>

**Runoff During Storm Event = 0 m<sup>3</sup> OKAY**

Category	Area (m <sup>2</sup> )	Runoff Coefficient	Runoff Volume (m <sup>3</sup> )
Pre Development Catchment Area	556		236
Building/Roof Area (Impervious)	167	0.95	80
Hardscape Area (Impervious)	45	0.80	23
Landscape Area (Pervious)	344	0.30	43
Post Development Catchment Area	556		236
Building/Roof Area (Impervious)	286	0.95	138
Hardscape Area (Impervious)	123	0.80	62
Permeable Paver Area (Semi-Pervious)	55	0.50	16
Green Roof (Semi-Pervious)	28	0.50	8
Landscape Area (Pervious)	66	0.30	12
Post Development Percent Impervious	74%		

Category	Area (m <sup>2</sup> )	Runoff Coefficient	Runoff Volume (m <sup>3</sup> )
Pre Development Catchment Area (A)	556		236
Weighted Average From Impervious And Pervious Areas			
Building/Roof Runoff Coefficient	0.95	for	167 m <sup>2</sup>
Hardscape Runoff Coefficient	0.80	for	45 m <sup>2</sup>
Landscape Runoff Coefficient (C)	0.30	for	344 m <sup>2</sup>
Pre Development Runoff Coefficient (C)	0.54	for	556 m <sup>2</sup>
Pre Development TOC	20 min		
From CNV City Hall IDF Curve...	33 mm/hr		
10-yr Rainfall Intensity	3.9 us		
Pre Development Peak Flow (Q-CIA)	2.7 us		

Category	Area (m <sup>2</sup> )	Runoff Coefficient	Runoff Volume (m <sup>3</sup> )
Post Development Catchment Area (A)	556		236
Weighted Average From Impervious And Pervious Areas			
Building/Roof Runoff Coefficient	0.95	for	286 m <sup>2</sup>
Hardscape Runoff Coefficient	0.80	for	123 m <sup>2</sup>
Permeable Paver Runoff Coefficient	0.50	for	55 m <sup>2</sup>
Green Roof Runoff Coefficient	0.50	for	28 m <sup>2</sup>
Landscape Runoff Coefficient	0.30	for	66 m <sup>2</sup>
Post Development Runoff Coefficient (C)	0.77	for	556 m <sup>2</sup>
Pre Development TOC	20 min		
From CNV City Hall IDF Curve...	33 mm/hr		
10-yr Rainfall Intensity	3.9 us		
Post Development Peak Flow (Q-CIA)	3.9 us		

Duration (min)	Intensity (mm/hr)	Peak Flow (l/s)	Release Rate (l/s)	Difference (l/s)	Volume (m <sup>3</sup> )
5	62	7.4	2.7	4.7	0.9
6	57	6.8	2.7	4.1	1.0
7	53	6.3	2.7	3.6	1.1
8	50	5.9	2.7	3.2	1.2
9	47	5.6	2.7	2.9	1.2
10	45	5.4	2.7	2.7	1.3
20	33	3.9	2.7	1.2	1.4
30	27	3.2	2.7	0.5	1.2
60	20	2.4	2.7	-0.3	-0.5
120	14	1.7	2.7	-1.0	-5.0
180	12	1.4	2.7	-1.3	-11.8
240	10	1.2	2.7	-1.4	-18.0

**Peak Storage Requirement**  
Storage Provided = 24.1 > 1.5 m<sup>3</sup> OKAY

**Office Size**  
Net Head = 0.95 m  
Office Size = 36 mm  
Flow Out of System = 2.7 us OKAY

**CREUS Engineering**

Civil Engineers & Project Managers  
#610 EAST TOWER - 221 ESPLANADE WEST, NORTH VANCOUVER, BC, V7M3J3  
PH: 604-987-9070 WEBSITE: www.creus.ca

**PERMIT TO PRACTICE # 1001543**



**DRAWING LEGEND**

Category	Existing	Prop.	To Be Removed
LEGAL LINE	---	---	---
EASEMENT	---	---	---
WATERMAIN	---	---	---
SANITARY	---	---	---
STORM	---	---	---
HYDRO	---	---	---
TEL	---	---	---
STREETLIGHT	---	---	---
GAS	---	---	---
FIRE HYDRANT	---	---	---
GATE VALVE	---	---	---
ARV VALVE	---	---	---
REDUCER	---	---	---
INSPECTION CHAMBER	---	---	---
CATCHBASIN (STD/SI)	---	---	---
CAP	---	---	---
MANHOLE	---	---	---
POWER POLE	---	---	---
STREETLIGHT	---	---	---



JASR HOMES LTD

467 E 2nd STREET  
NORTH VANCOUVER, BC

**STORMWATER MANAGEMENT**

no.	(y/m/d)	revision	chk'd
1	22/04/12	ISSUED FOR DEVELOPMENT PERMIT	BEM

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engineer of record: FMC  
designed by: FMC  
drawn by: BEM  
date: 2021-11-04

file no.: 21337  
drawing no.: SMP-1

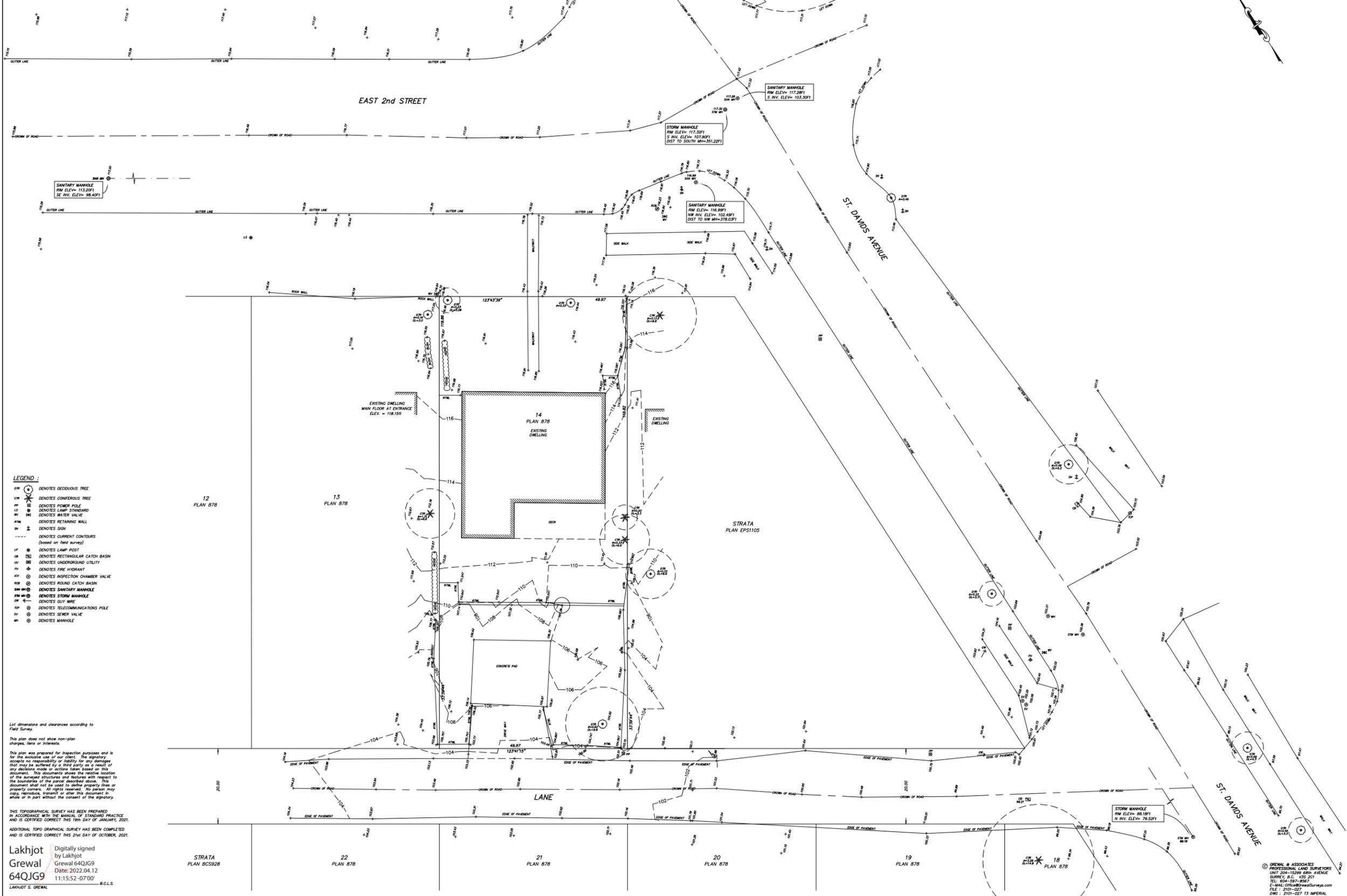
TOPOGRAPHICAL SURVEY PLAN OF LOT 14  
 BLOCK 152 DISTRICT LOT 274  
 PLAN 878

PID: 003-161-129

CIVIC ADDRESS:  
 467 - EAST 2nd STREET  
 NORTH VANCOUVER, B.C.

ELEVATION DERIVATION  
 ELEVATIONS ARE DERIVED FROM  
 CITY OF NORTH VANCOUVER CONTROL MONUMENT  
 N. 87° 30' 00" E. 100.00' TO 83.377' ±  
 DATUM: CYG80/80 2018

SCALE 1"=8feet  
 DISTANCES ARE IN FEET & DECIMAL



- LEGEND:**
- DENOTES DECIDUOUS TREE
  - DENOTES CONIFEROUS TREE
  - DENOTES POWER POLE
  - DENOTES LAMP STANDARD
  - DENOTES WATER VALVE
  - DENOTES RETAINING WALL
  - DENOTES SIGN
  - DENOTES CURRENT CONTOURS (based on field survey)
  - DENOTES LAMP POST
  - DENOTES RECTANGULAR CATCH BASIN
  - DENOTES UNDERGROUND UTILITY
  - DENOTES FIRE HYDRANT
  - DENOTES INSPECTION CHAMBER VALVE
  - DENOTES ROUND CATCH BASIN
  - DENOTES SANITARY MANHOLE
  - DENOTES STORM MANHOLE
  - DENOTES GUY WIRE
  - DENOTES TELECOMMUNICATIONS POLE
  - DENOTES SEWER VALVE
  - DENOTES MANHOLE

Lot dimensions and clearances according to Field Survey.  
 This plan does not show non-plan changes, easements or interests.

This plan was prepared for inspection purposes and is for the exclusive use of our client. The signatory accepts no responsibility or liability for any damages that may be suffered by a third party as a result of any decisions made or actions taken based on this document. This document shows the relative location of the surveyed structures and features with respect to the boundaries of the parcel described above. This document shall not be used to define property lines or property corners. All rights reserved. No person may copy, reproduce, transmit or otherwise use this document in whole or in part without the consent of the signatory.

THIS TOPOGRAPHICAL SURVEY HAS BEEN PREPARED IN ACCORDANCE WITH THE MANUAL OF STANDARD PRACTICE AND IS CERTIFIED CORRECT THIS 15th DAY OF JANUARY, 2021.  
 ADDITIONAL TOPOGRAPHICAL SURVEY HAS BEEN COMPLETED AND IS CERTIFIED CORRECT THIS 2nd DAY OF OCTOBER, 2021.

Lakhjot Digitally signed  
 Grewal by Lakhjot  
 64QJG9 Grewal 64QJG9  
 Date: 2022.04.12  
 11:15:52 -0700  
 B.C.L.S.  
 LAKHJOT S. GREWAL

© GREWAL & ASSOCIATES  
 PROFESSIONAL LAND SURVEYORS  
 UNIT 104-1058 68th AVENUE  
 SURREY, B.C. V3S 2C1  
 TEL: 270-0567  
 E-MAIL: 076@GrewalSurvey.com  
 FAX: 270-0271  
 DWS: 2701-027 73 IMPERIAL