

# **UNIVERSITY WAY APARTMENTS** 5247 UNIVERSITY WAY NE SDCI Project #3021406

Recommendation Meeting Northeast Design Review Board July 10th, 2017



# **TABLEOFCONTENTS**

Site Information	2
Context Analysis	3-4
Zoning Data	5
EDG Summary	6
EDG Response	7-9
Site Plan	10
Floor Plans	11-16
Landscape Plans	17-19
Elevations	20-23
Material & Color	24
Adjacent Context	25
Renderings	26-30
Lighting Concept	31-37
Signage Concept	38
Sections	39-41
Departures	42
Supplemental Information	43-47

# **PROJECT TEAM**

OWNER G&K BROTHERS INC. 425-999-5472

ARCHITECT Studio 19 Architects 207<sup>1/2</sup> ]<sup>st</sup> Ave S.

Suite 300 Seattle, WA 98104 206.466.1225

LANDSCAPE AHBL, JASON MORSE 2215 NORTH 30TH STREET SUITE 300 TACOMA, WA 98403. 206-267-2425

# THIS PAGE WAS INTENTIONALLY LEFT BLANK

### SITE INFORMATION

Project Location: 5247 University WAy Apartments

**Parcel #:** 8816400730

Lot Size: 7,440 SF

#### FAR Allowed:

- 4.75 for mixed use (7,440 SF x 4.75 = 35,340 SF allowed)
- Residential FAR may not exceed 4.25 (31,620 SF)

Base Zone:

NC3P-65

#### Overlay Zones:

University District NW Urban Center Village Designated Principal Pedestrian Street Frequent Transit Corridor

#### Design Guidelines:

University Neighborhood Design Guidelines City of Seattle Comprehensive Plan Guidelines

### **PROPOSAL SUMMARY**

Total Gross Floor Area: **33,028 SF (FAR=4.44)** Total Residential Floor Area: **31,600 SF (FAR=4.25)** Total Commercial Floor Area: **1,488 SF** Building Height: **65 FT** 

Number of Residential Units: Number of Live Work Units: **NONE** Number and Location of Parking Stalls: Number of Bike Stalls:

#### Departures:

SMC 23.47A.005.C.1 Residential uses may occupy, in the aggregate, no more than 20% of street level facade facing principal pedestrian street. SMC 23.47A.005.D.1 Retail/Restaurant/Drinking establishment uses are required along 80% of street level facade facing principal pedestrian street.

### PROJECT DESCRIPTION

The proposal is to construct a new mixed-use apartment building. Commercial retail space and a residential lobby will be located at the ground level on University Way NE. The building consists of one floor of underground parking, and 6 floors of apartments above, specifically 59 units and 15 parking stalls. RECOMMENDATION PROPOSAL PACKET



# **CONTEXT ANALYSIS** SURROUNDING STRUCTURES





# 1- 5611 PARK MODERN UNIVERSITY WAY NE | MIXED-USE

- Boutique condominium project in Northeast Seattle
- 12 condominiums with retail space on the •
- ground floor Sleek modern design in the area that has a nice articulation of massing and exterior material selection.



# 2- VEGAN HAVEN 5270 UNIVERSITY WAY NE | GROCERY STORE

- Vegan grocery at the corner of University and 55th
- Unique to the neighborhood, this grocery store sets a funky tone with its vibrant colors and handcrafted signage. We look to local, well-loved establishments like this for • the feel and vibe of our retail spaces.



4- 5260 UNIVERSITY APARTMENTS 5260 UNIVERSITY WAY NE | MIXED-USE

- 7-story apartment building across University Way NE
- •
- Construction to begin Spring 2016 This is a good example of a new building in the neighborhood with ground level retail and apartments above. This project • will be a similar use.



5- MURIELS LANDING APTS 5240 UNIVERSITY WAY NE | MIXED-USE

- 5 story apartment building directly across University Way NE from our site
- Similar scale and use to our project (ground floor retail with residential above)
- Directly across the street from our site, Muriels Landing is a newer apartment building in the area with retail below.



# 3-WAYWARD VEGAN CAFE 5251 UNIVERSITY WAY NE | RESTAURANT

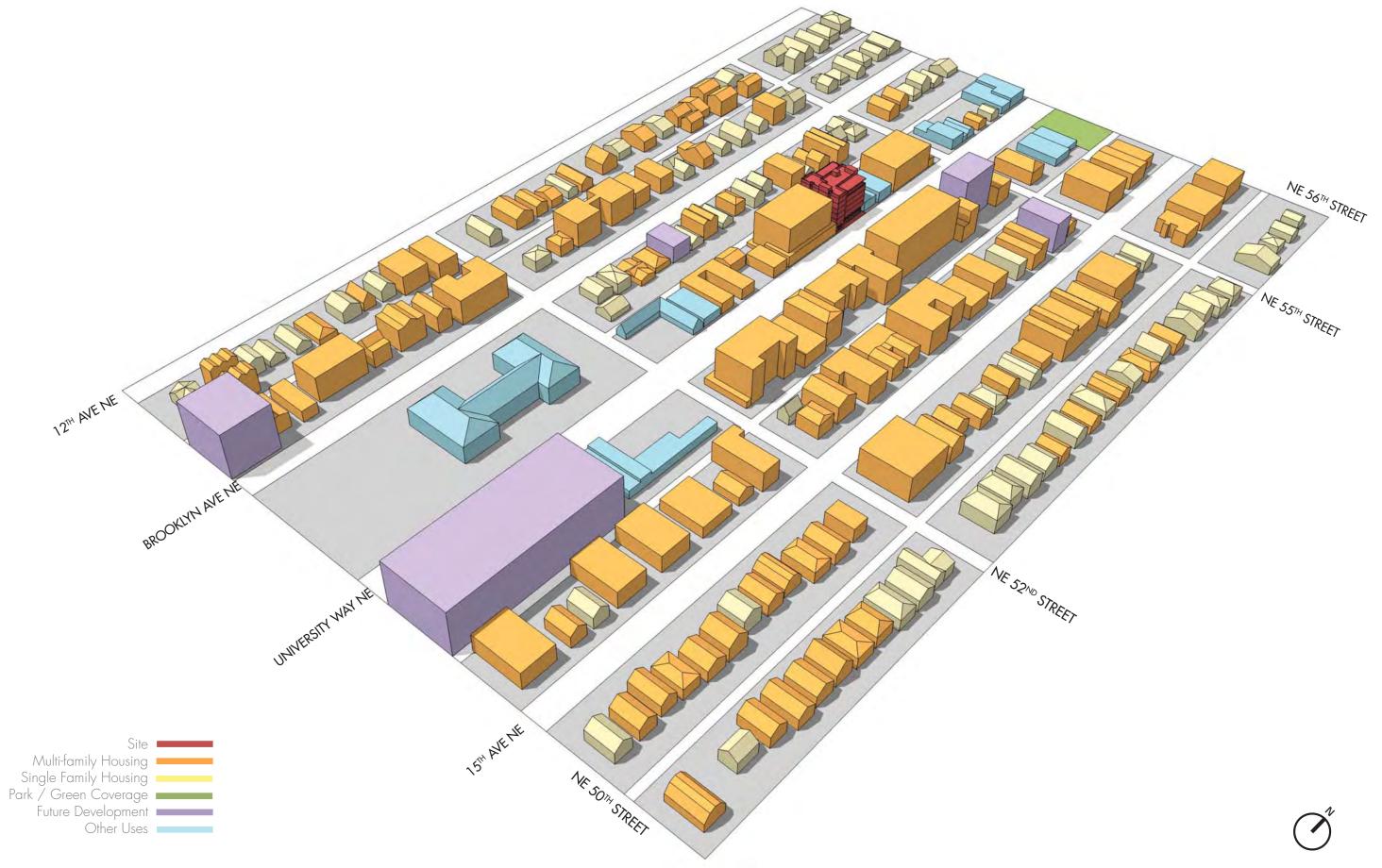
- Vegan restaurant located at our north property boundarySince Wayward Cafe and other
- establishments to our north are single-story retail establishments, we seek to align the massing of our retail level to this datum line, creating a continuous pedestrian street edge.



# 6- 5237 UNIVERSITY APARTMENTS 5237 UNIVERSITY WAY NE | MIXED-USE

- 5 story apartment building at our south property boundary
- Similar scale and use to our project • (ground floor retail with residential above)
- We looked to this building for inspiration on how to address the alley and zoning change to our west. This building steps back above the first floor along the alley, responding to the single-story garages across the alley and reduced massing.

# CONTEXT ANALYSIS SURROUNDING USES



### ZONING DATA

The proposal meets all the zoning requirements except as listed in the Departure Requests section of this packet.

Street-Level Uses 23.47A.004

Drinking establishment, office, 35,000 SF MAX; restaurant, retail, live-work; residential

#### Street-Level Development Standards 23.47A.008

A.2.b Blank segments of the street-facing façade between 2 feet and 8 feet above the sidewalk may not exceed 20 feet in width.

**A.2.c** The total of all blank façade segments may not exceed forty 40% of the width of the façade of the structure along the street.

**A.3.** Street-level street-facing façade segments shall be located within ten (10) feet of the street lot line, unless wider sidewalks, plazas, or other approved landscaped or open spaces are provided. **B.2.a** Transparency: Sixty percent of street-facing façade between two 2 feet and 8 feet above the sidewalk shall be transparent.

**B.3** Height and depth provisions for new structures where nonresidential uses shall extend an average depth of at least 30ft. and a minimum depth of 15 ft from the street-level street-facing facade. Nonresidential uses at street level shall have a floor-to-floor height of at least 13 ft.

#### Structure Height 23.47A.012

A 65 feet max height per Land Use Map, Ch. 23.32.

#### Floor Area Ratio 23.47A.013

 ${\sf A}$  Floor area ratio (FAR) limits apply to all structures and lots in all NC and C zones.

**A.1** All gross floor area not exempt under subsection D of this Section is counted against the maximum gross floor area allowed by the permitted FAR.

D.1. Gross floor area below grade is not counted toward FAR.

#### Setback Requirements 23.47A.014

North, South and East lot lines. O Setback required when abutting commercial zones. **B.3** For a structure containing a residential use, a setback is required along any side or rear lot line that abuts a lot in a residential zone or that is across an alley from a lot in a residential zone, as follows: for portions of structure 13'-40' in height, 15'. For portions of structure above 40' in height, additional setback of 2' every 10'

#### Landscaping and Screening Standards 23.47A.016

A.2 Green Factor Requirement: .30 or greater per the procedures in Section 23.86.019.

#### Residential Amenity Areas 23.47A.024

A Residential amenity areas, including but not limited to decks, balconies, terraces, roof gardens, plazas, courtyards, play areas, or sport courts, are required in an amount equal to 5% of the total gross floor area in residential use, except as otherwise specifically provided in this chapter. Gross floor area, for the purposes of this subsection, excludes areas used for mechanical equipment and accessory parking.

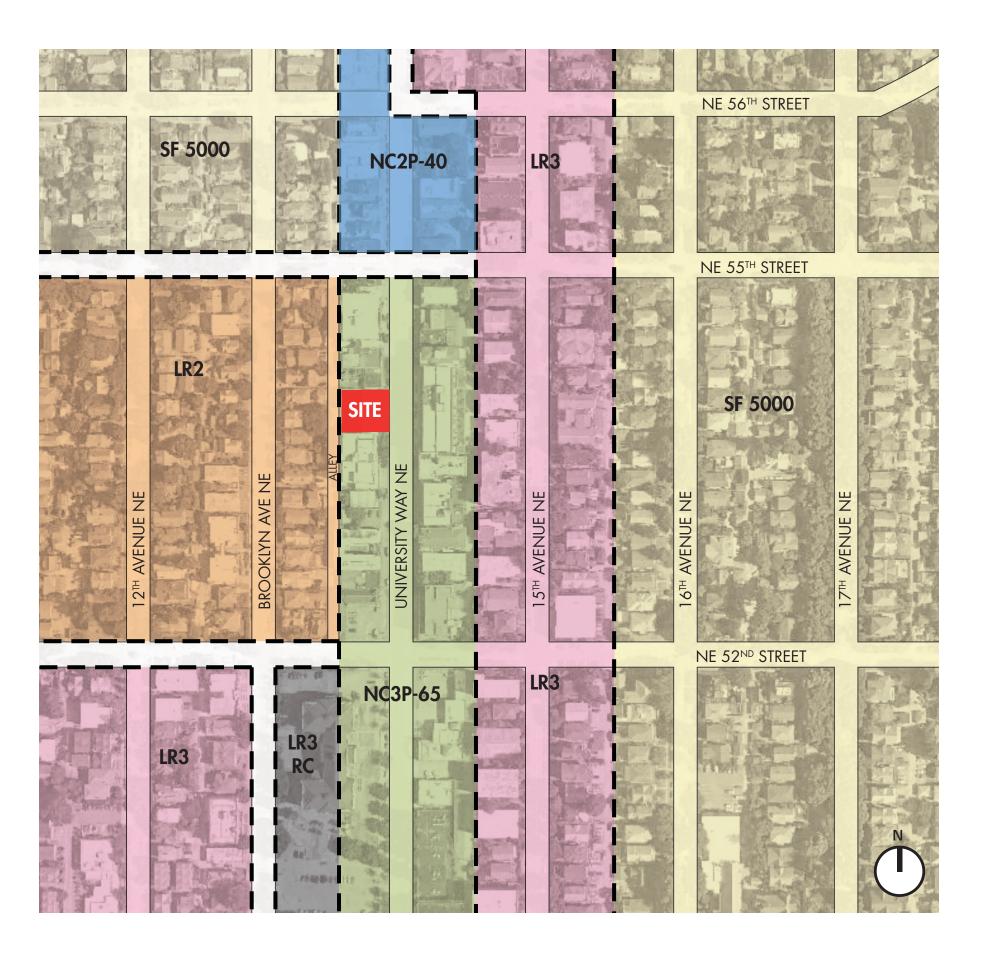
B.4 Common amenity areas-minimum horizontal dimension 10', min. Area 250 SF

#### Required parking 23.54.015

6

D.1 No minimum parking is required.

K Bicycle parking. See Table E. Requirements are based on gross floor area of uses.



# **EDG SUMMARY** MASSING OPTIONS

**OPTION 1** 



#### SUMMARY:

- Unit count: 60 units + amenity space
- Parking: 18 stalls
- Retail Space: 1,560 SF

#### PROS:

- Residential lobby clearly articulated at the southeast corner
- One large retail space is more flexible and can be rented to a higher volume tenant
- Simple massing provides clarity in design
- Steps back at upper levels and alley to reduce perceived mass

#### CONS:

- Pushing building to designated setbacks and egress requirements at east and west property edge provides few opportunites for ground floor landscaping
- Limited glazing opportunities at north and south interior property lines

#### **DEPARTURES**:

• SMC 23.47A.005: Residential uses shall not occupy more than 20% of street-level, street-facing facade along designated principal pedestrian streets.  $[80' \times 20\% = 16' \text{ allowed}]$ 



#### SUMMARY:

- Unit count: 59
- Parking: 13 stalls
- Retail Space: 1,488 SF

#### PROS

- Massing creates strong character and identity
- Largest total retail square footage
- Retail entry in the center allows both site corners to have a strong retail edge, with glazing opportunities on two sides of each retail space
- Pushing the massing closer to the east property line at upper levels allows for larger units

#### CONS

- Massing is larger at upper levels
- Divided retail spaces

#### **DEPARTURES**:

• None requested

**OPTION 3** 

#### SUMMARY:

- Parking: 18 stalls

#### PROS

- Dedicated private outdoor space for individual units and community outdoor space for all units

#### CONS

#### **DEPARTURES**:



• Unit Count:60 units + amenity space • Retail Space: 1,460 SFSF

• Strong street-level connection for the retail spaces

- Residential lobby clearly articulated at the southeast corner
- Simple massing provides clarity in design
- Amenity space provided on 6th floor
- Additional glazing opportunites at North property line

#### • Smallest retail square footage of all 3 concepts

• SMC 23.47A.005: Residential uses shall not occupy more than 20% of street-level, street-facing facade along designated principal pedestrian streets.  $[80' \times 20\% = 16' \text{ allowed}]$ 

5247 UNIVERSITY WAY NE, SEATTLE WA | STUDIO19 ARCHITECTS 7

## EDG RESPONSE

#### **Board Recommendations & Responses:**

#### 1. MASSING AND CONTEXT RESPONSE

The Board deliberated the merits of the second and

third massing options and ultimately preferred massing Option Two with consolidated retailand asymmetrical massing which has the most potential to create interesting and well-proportioned facades. The Board directed the applicant to proceed with this modified version of Option 2. (DC2-A, DC2-B)

a. a. While rearranging the street level uses to consolidate the retail, the Board recommended studying moving the elevator south to provide a better connection to the residential lobby. (PL3-A)

RESPONSE: We have moved the elevator south right next to the lobby area in order to create a more coherent residential circulation.

b. Recognizing that the retail trash will be carried through the elevator down to the garage, the Board agreed that the trash storage location should be better resolved to avoid the elevator used by residents. (DC1-A, DC1-C-4)

RESPONSE: This has been further addressed with a trash chute system an a dedicated trash room at the parking level right next to the elevator.

c. The Board was concerned with the north exit pathway and recommended pulling the hallway forward or providing a gate to avoid a blind corner. The Board requested more detail about access and steps taken to address safety at the next meeting. (PL2-B, PL3-A-1, PL3-A-4, PL3-C-1, DC3-A-1)

RESPONSE: The north exit hallway now extends out to street to avoid the blind corner issue. Further steps have also been taken in order to address safety concerns on pathways and exits.

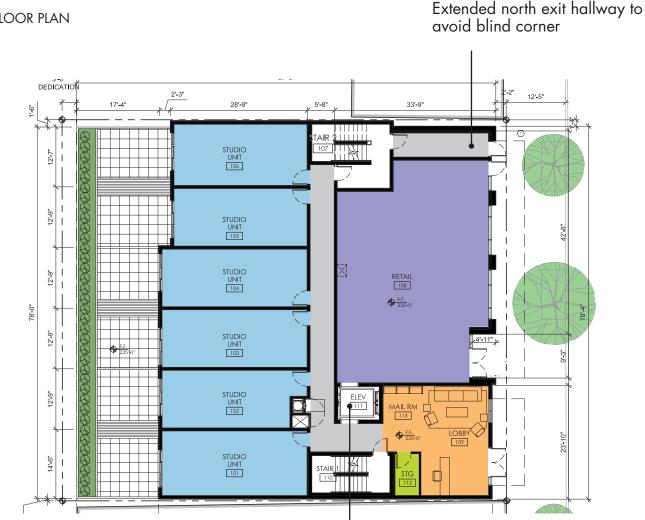
d. The Board encouraged additional amenity space and suggested providing the space on the second level where the massing shift occurs. (DC1-A-2, DC3)

RESPONSE: We have placed a new amenity space at the northeast corner of the 3rd level, where the shift in massing occurs in order to create a more significant space that could help to communicate the design move.

e. The Board supported the separated bike storage, as long as circulation for the bicyclist was further developed with safe and convenient access points. (PL4-A, PL4-B)

RESPONSE: We decided to move the bike storage closer to the elevator to create a more conveniet circulation for residents.

#### **GROUND FLOOR PLAN**







Dedicated trash room to be located next to the elevator at the parking level

More convenient bike storage location

New elevator position to provide better connection with residential lobby



# EDG RESPONSE

#### **2.** Respect for adjacent sites

The Board gave the following guidance related to the zone transition.

a. The Board supported the stepped setback in response to the zone transition along the alley frontage. (CS2-D-3, CS2-D-4, CS2-D-5)

b. The Board agreed that individual decks would minimize disrupting the privacy of residents in the adjacent properties, compared to one common deck which would likely generate noise. (CS2-D-3, CS2-D-5)

c. For the screen walls between the individual decks, the Board supported screening composed from materials rather than a landscaped buffer which relies on maintenance. (DC4-A)

RESPONSE: We have taken into consideration the comments made by the board to devel-op the design further in this area. There are now individual decks to minimize disruption of privacy separated by wood screens that relate with the overall material palette and minimize maintenance.

#### **3.** STREETSCAPE & LANDSCAPE

The Board stressed the importance of the streetscape design especially since a departure is being requested.

a. The Board agreed the current rationale for the departure request to expand the amount of residential frontage from 16' to 20' does not provide a strong enough case for betting meeting the guidelines. The Board also indicated being open to a departure request as long as there is a benefit to the streetscape. Acknowledging the floor plans do not show the location of a leasing office or mailboxes, the Board requested more detailed floor plans of the lobby for the next meeting. (PL3-A, PL3-B)

RESPONSE: The requested frontage for residential lobby is necessary in order to create a welcoming and functional residential lobby. This helps to add character to the streetscape and provide security and safety for the area.

b. The Board agreed that the canopies should be located at the same height to provide a well-proportioned, consistent expression. (DC2-B-1, DC2-D))

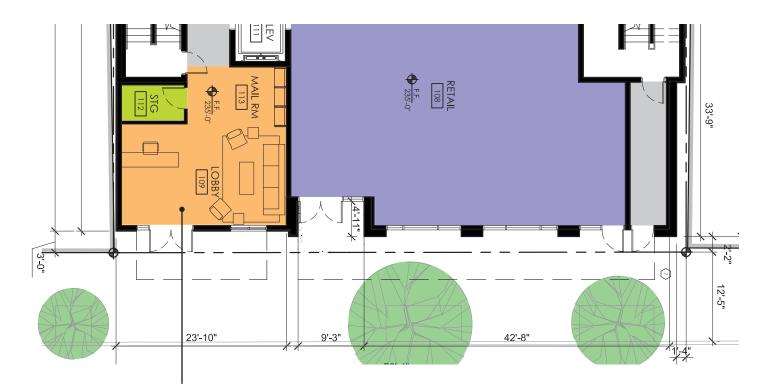
RESPONSE: This has been further developed and complies with the Board recommendation

c. The Board supported the proposed three street trees along the right of way and recommended focusing planting under the street trees instead of underneath overhead canopies. (ČS<sup>2</sup>-B-3, ĎC4-D)

RESPONSE: This has been further developed and complies with the Board recommendation



BIRDS EYE VIEW FROM ALLEY LOOKING SOUTH



New detailed floor plan showing residentail. usage at ground level.

**GROUND FLOOR PLAN** 

Private balconies for ground level units

# EDG RESPONSE

#### 4. DETAILING AND MATERIALS

The Board strongly recommended keeping the materials and detailing pure to express the strong massing gesture. (Guidelines DC2-B-2, DC2-D)

a. The Board recommended thoughtfully considering durability, detailing and potentially boldly contrasting colors, consistent with the architectural expression. When further developing the design, the Board recommended reflecting on the different expressions a parapet versus rail would have. (DC2-B-1, DC2-C, DC4-A-1)

RESPONSE: We have developed the design further and made some design moves that we think help to emphasize the strong massing gesture. Highly constrasting materials also aid to communicate the design intention.

b. The Board indicated that higher quality fiber cement board is acceptable for the upper massing, provided that reveals articulate how it is put together and concealed fasteners are provided. The Board also encouraged consideration of higher quality materials such as Ceraclad. (DC4-A)

RESPONSE: Asides from fiber cement panels we have chosen some higher quality materials specially for the areas that need to display strong gestures like Glulam veneer with a vibrant finish for the area along the massing shift at the lower levels and at the small contrasting massing, a high wuality material (equitone) is proposed.

c. The Board supported the proposed storefront for the street level. The Board indicated fiber cement board is unacceptable for the street level and agreed that a material comparable to storefront should be provided for the entire level to address durability and maintenance. (DC4-A-1)

RESPONSE: We have changed the fiber cement board to be high quality material (equitone) at the street level to comply with board recommendation.

Graphic Film on glass canopy

Higher quality Equitone linea – panels

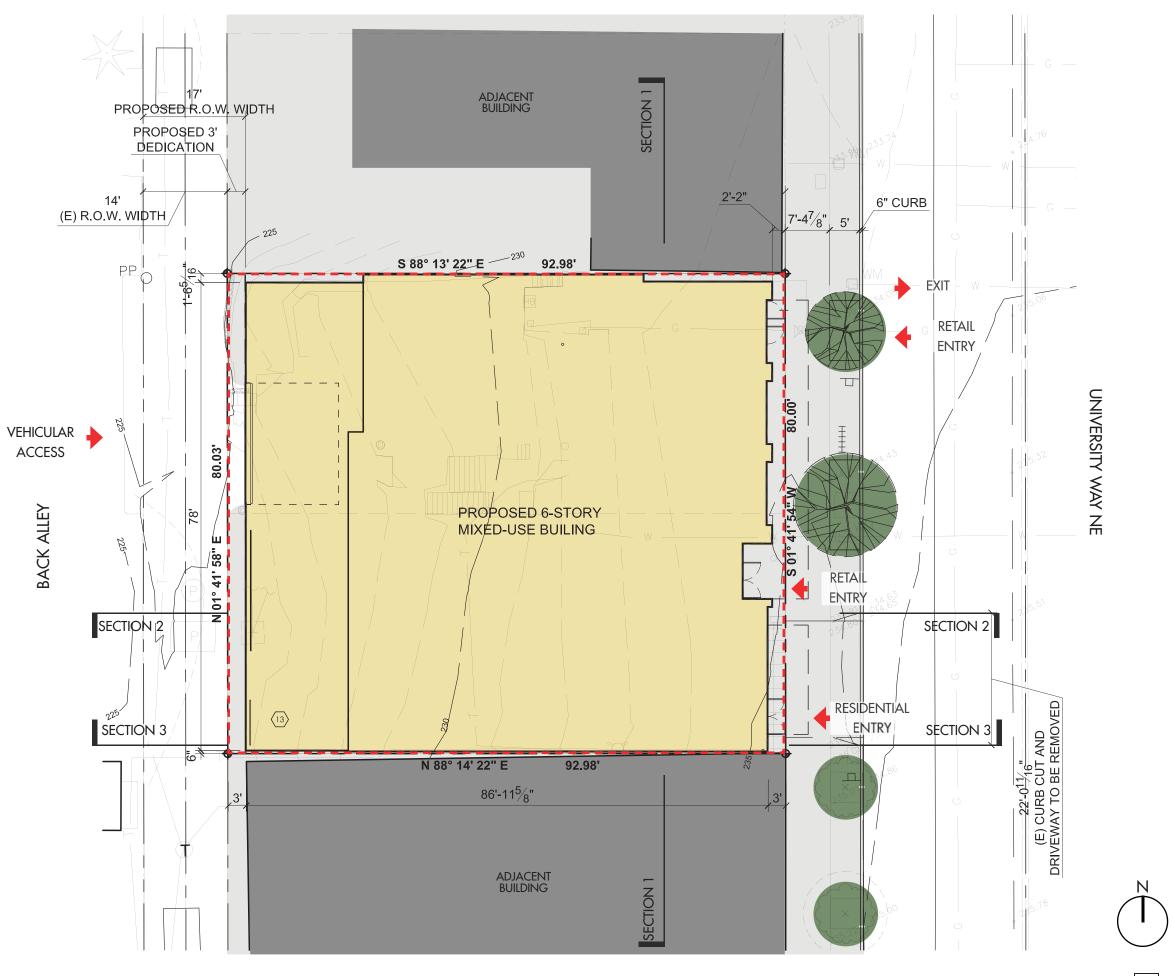


GROUND VIEW LOOKING SOUTH ALONG UNIVERSITY WAY



GROUND LEVEL PERSPECTIVE LOOKING AT STOREFONT

SITE PLAN



5247 UNIVERSITY WAY NE, SEATTLE WA | STUDIO19 ARCHITECTS 11

# FLOOR PLAN PARKING LEVEL 1

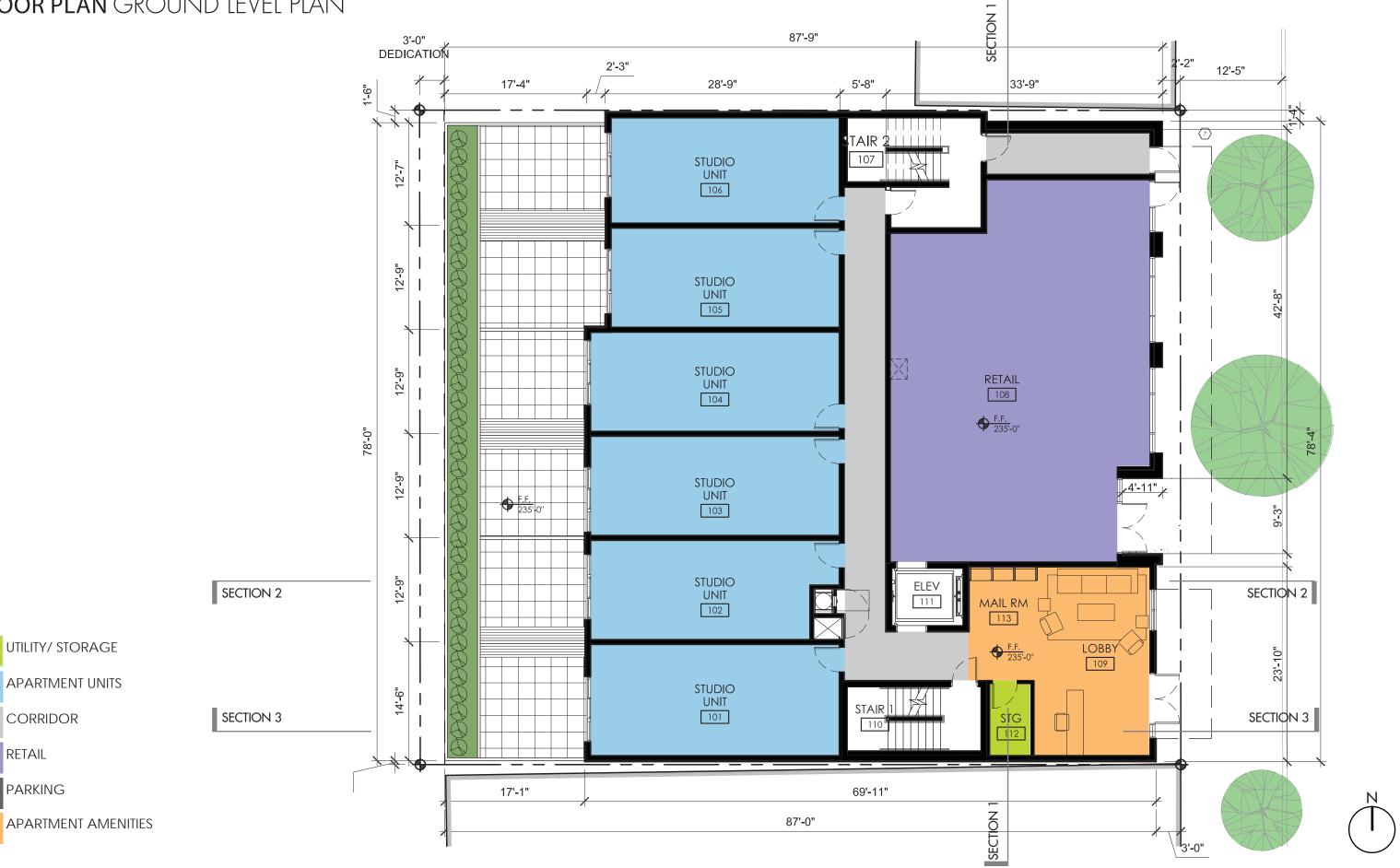


CORRIDOR

RETAIL

PARKING

# FLOOR PLAN GROUND LEVEL PLAN

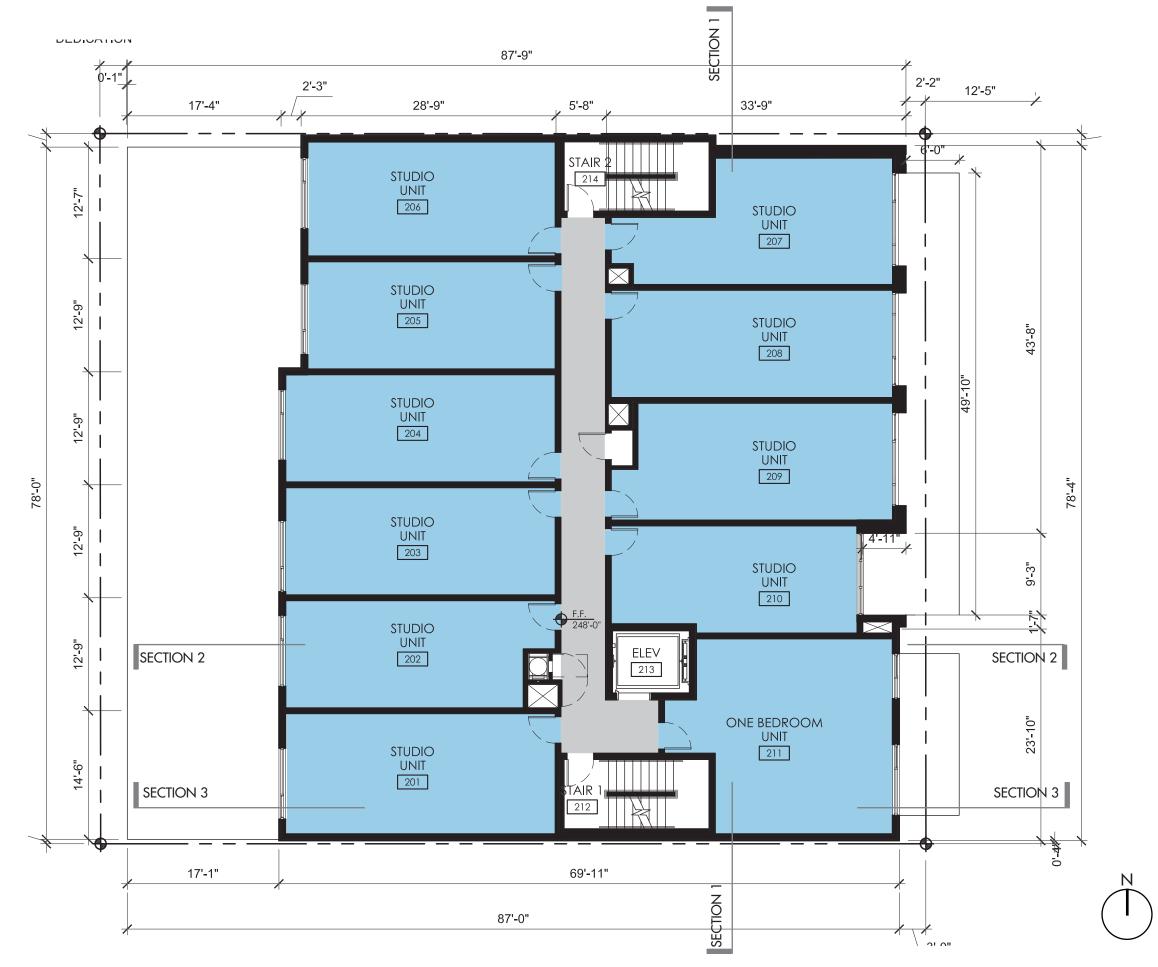


RETAIL

PARKING

5247 UNIVERSITY WAY NE, SEATTLE WA | STUDIO19 ARCHITECTS 13

# FLOOR PLAN LEVEL TWO PLAN





CORRIDOR

RETAIL

PARKING

APARTMENT AMENITIES

# FLOOR PLAN LEVEL THREE PLAN





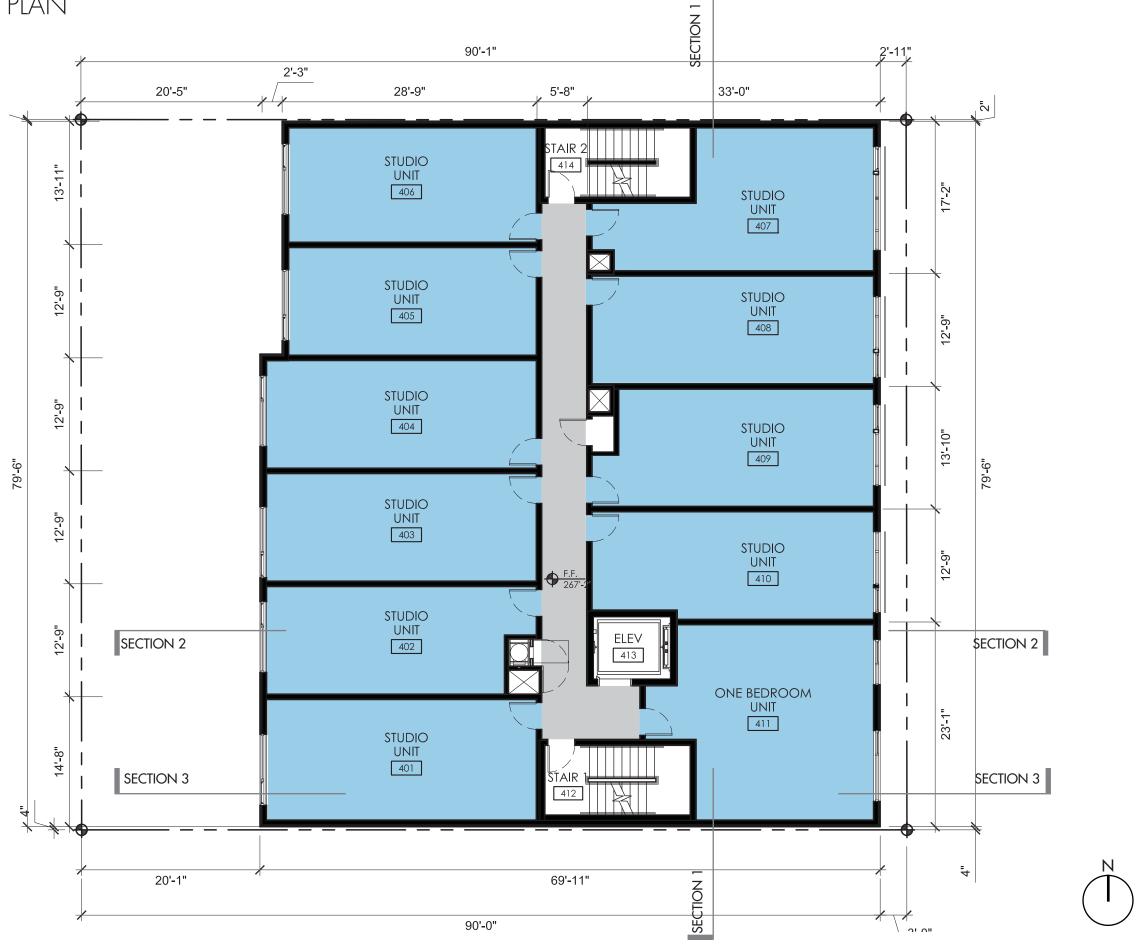
RETAIL

PARKING

APARTMENT AMENITIES

5247 UNIVERSITY WAY NE, SEATTLE WA | STUDIO19 ARCHITECTS 15

# FLOOR PLAN LEVEL FOUTH - SIXTTH PLAN

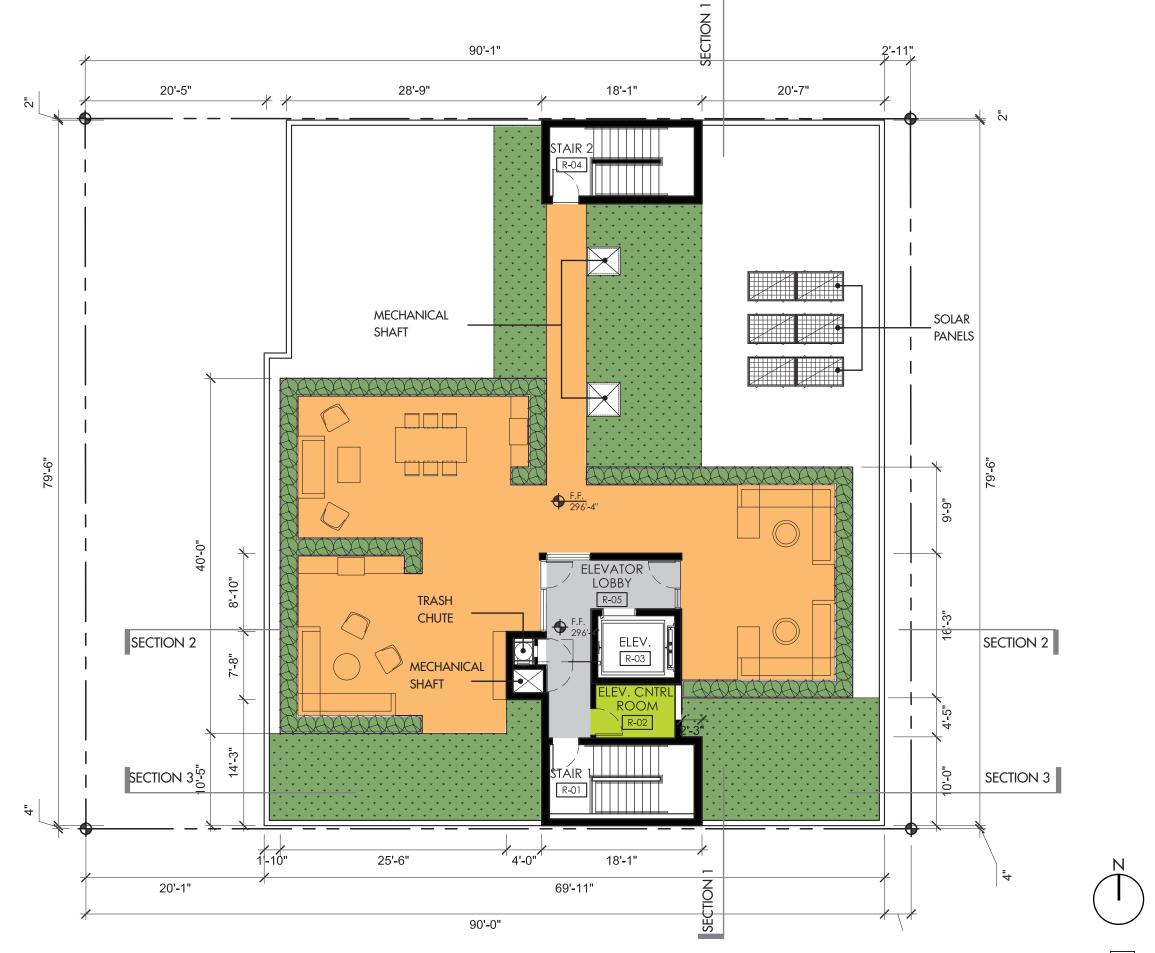




PARKING

APARTMENT AMENITIES

# FLOOR PLAN ROOF PLAN

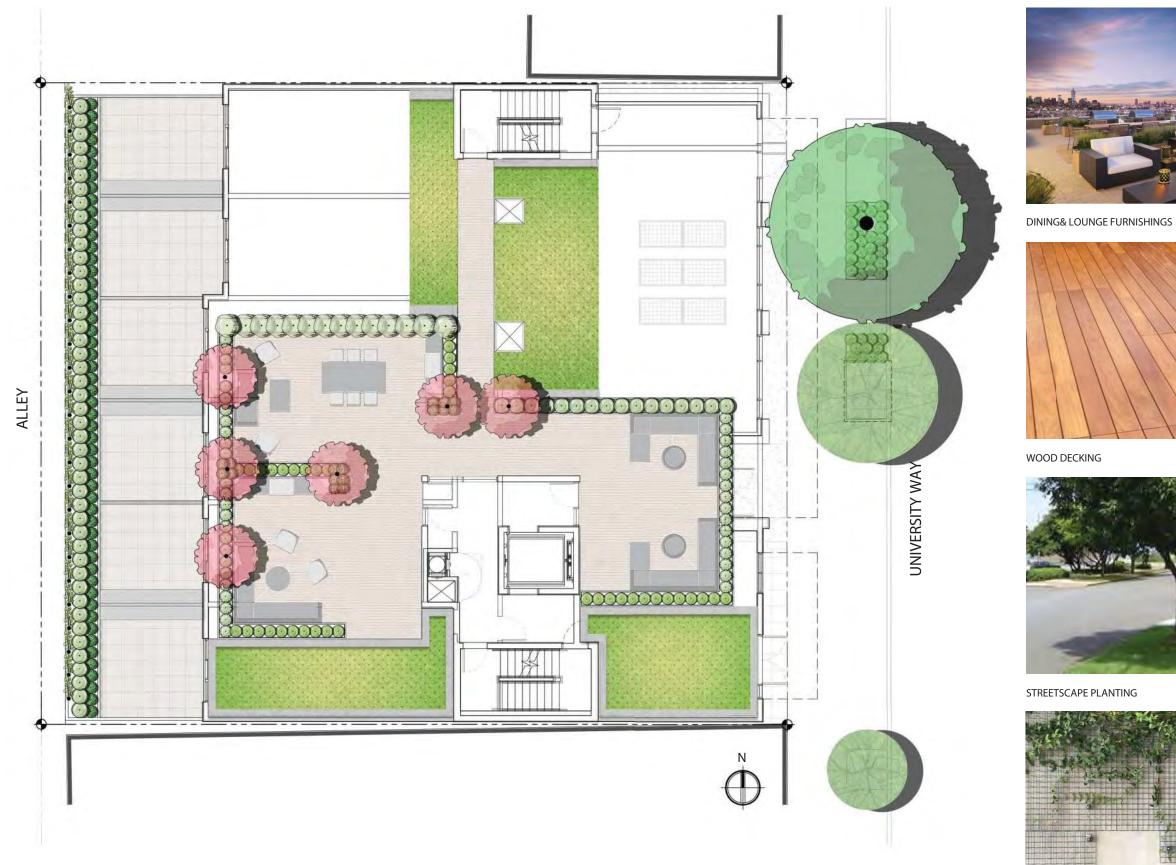




APARTMENT AMENITIES

5247 UNIVERSITY WAY NE, SEATTLE WA | STUDIO19 ARCHITECTS 17

### DESIGN CONCEPT PLAN



HANGING LANDSCAPE / GREENWALL SYSTEM







**GREEN ROOF** 



RAISED METAL PLANTERS

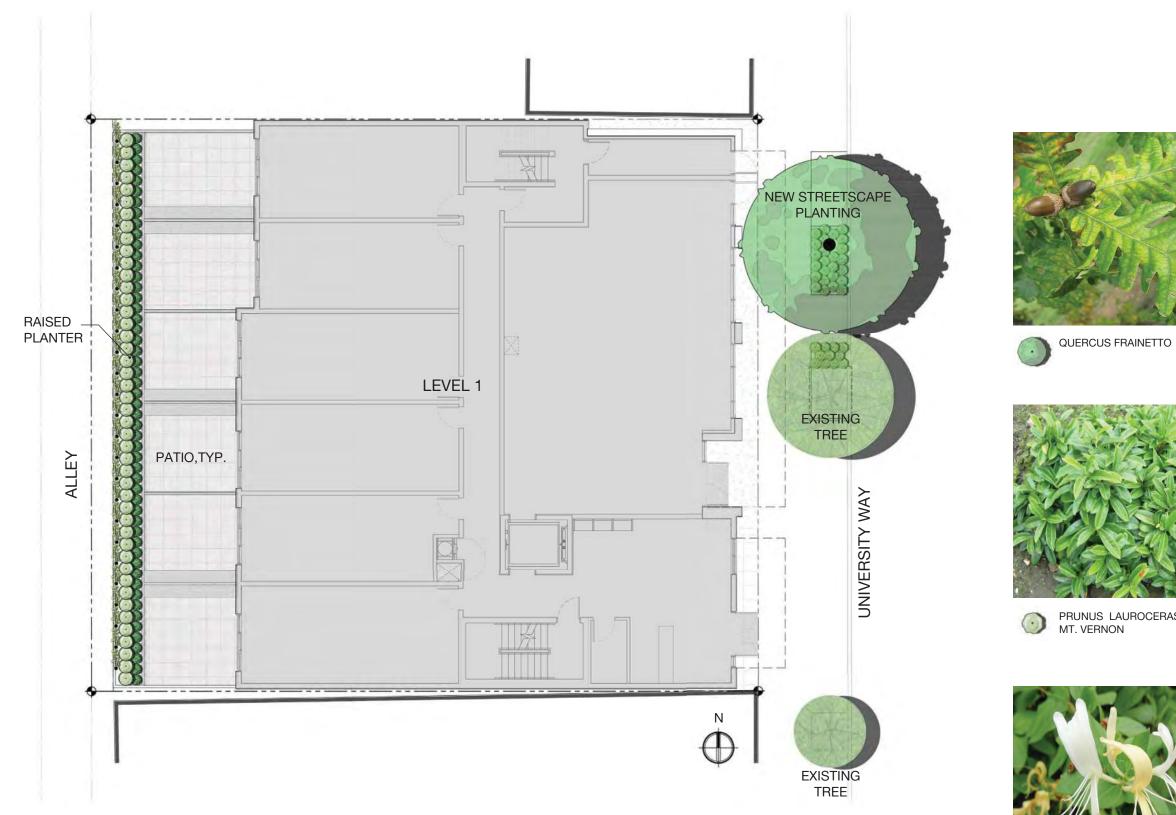






PATIO

# LANDSCAPE GROUND FLOOR PLAN



LONICERA JAPONICA 'HALLIANA'















ROSMARINUS OFFICINALIS `TUSCAN BLUE`



 $\odot$ 

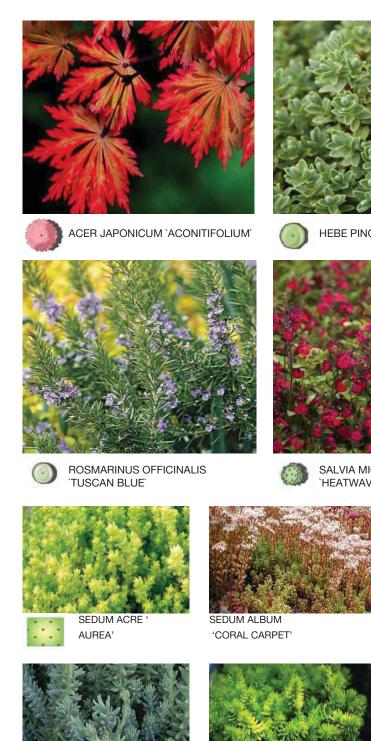
BUXUS SERMPERVIRENS `SUFFRUTICOSA`





# LANDSCAPE ROOF PLAN













20

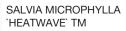


HEBE PINGUIFOLIA `SUTHERLANDII`



NASSELLA TENUISSIMA









TAXUS X MEDIA `HICKSII`





SEDUM KAMTSCHATICUM WEIHENSTEPHANER GOLD'





SEDUM SPURIUM 'JOHN CREECH'



SEDUM KAMTSCHATICUM 'VARIEGATUM'



SEDUM SPURIUM 'RED CARPET'

# **ELEVATIONS** EAST



RECOMMENDATION PROPOSAL PACKET

 $\langle 1 \rangle$ 

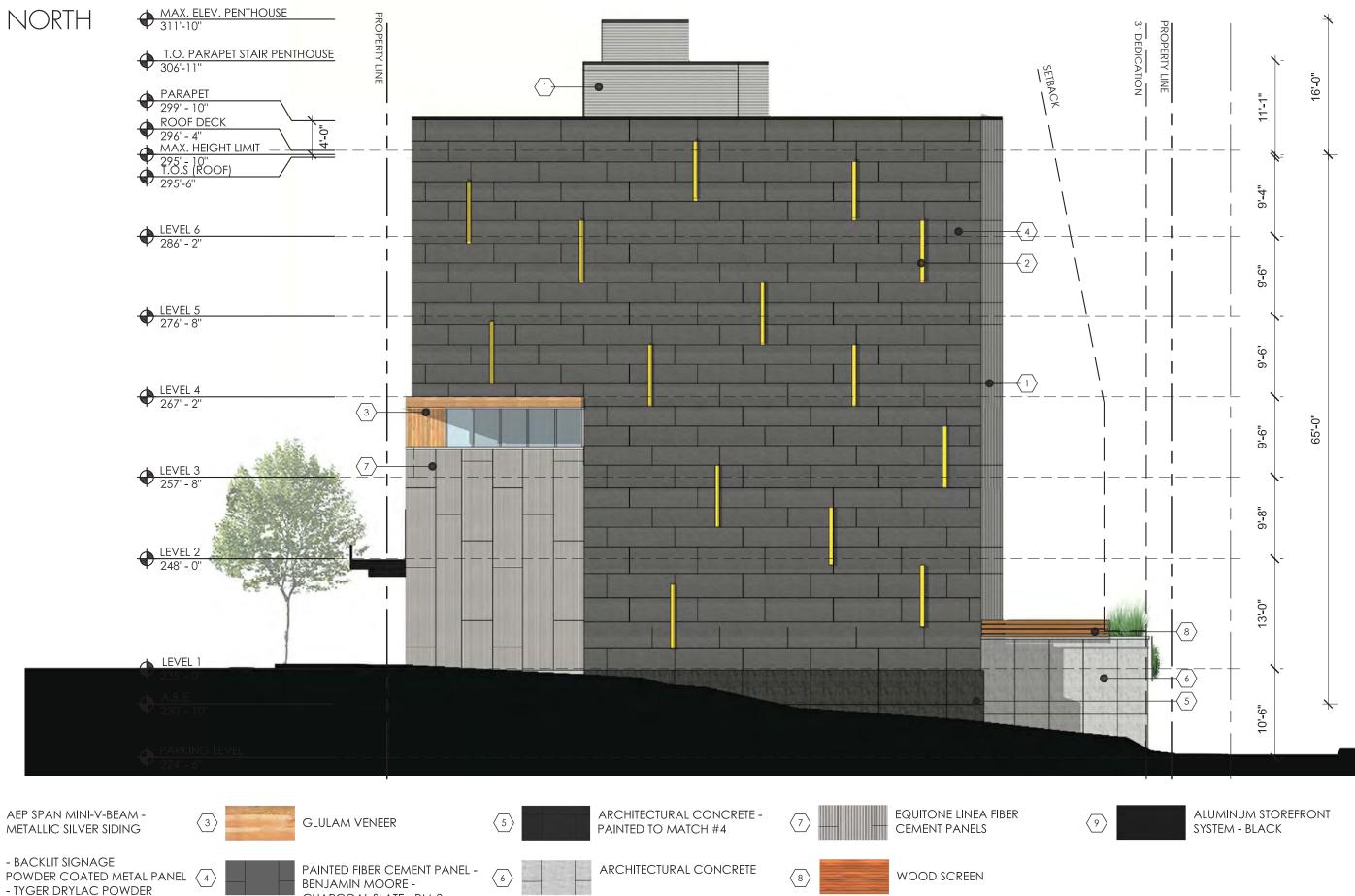
 $\langle 2 \rangle$ 

5247 UNIVERSITY WAY NE, SEATTLE WA | STUDIO19 ARCHITECTS | 21



 $\langle 1 \rangle$ 

 $\langle 2 \rangle$ 



COATINGS - 049/22280

CHARCOAL SLATE - PM-8

# **ELEVATIONS** WEST

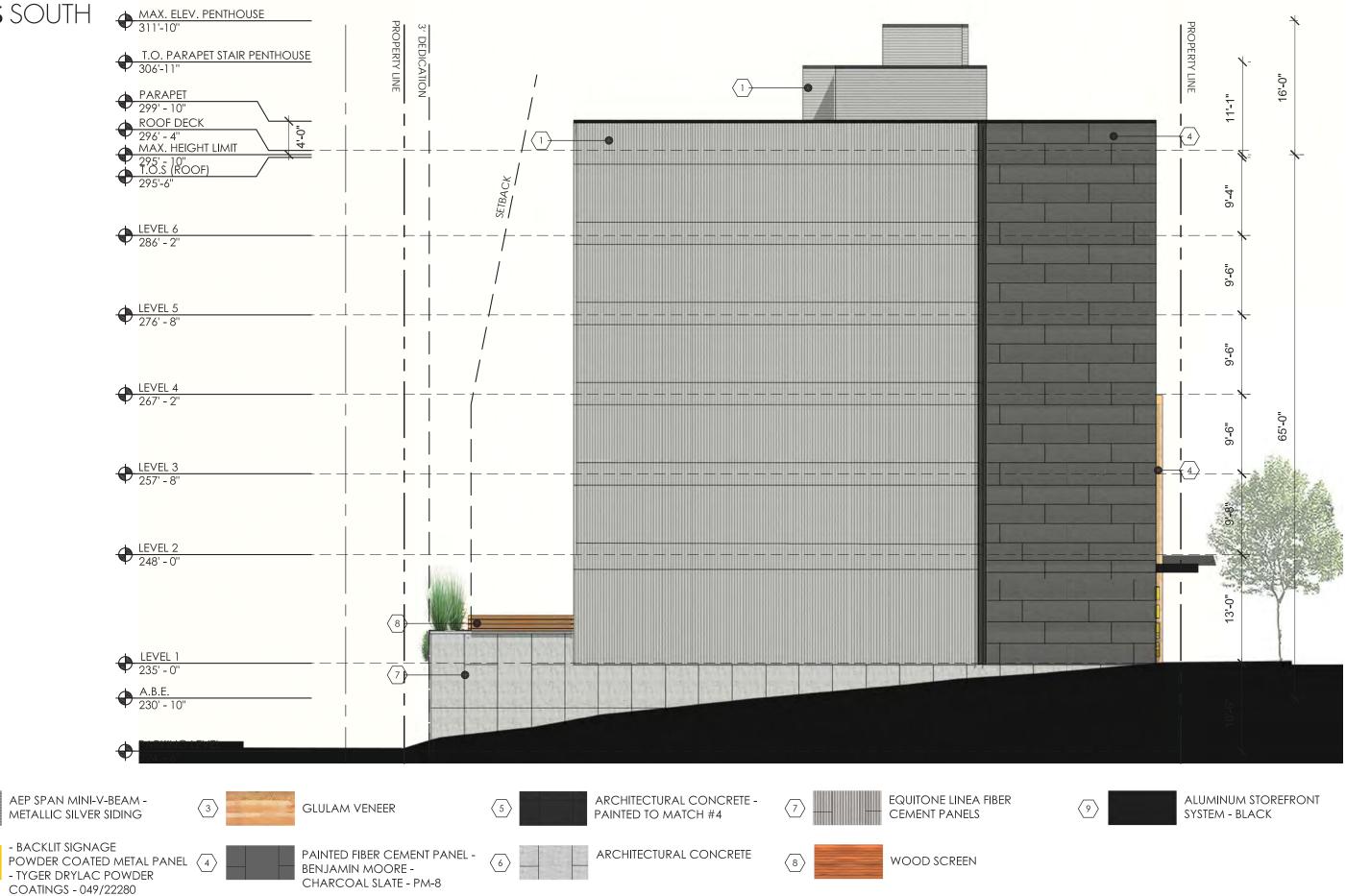


- BACKLIT SIGNAGE

 $\langle 1 \rangle$ 

 $\langle 2 \rangle$ 





 $\langle 1 \rangle$ 

 $\langle 2 \rangle$ 

24

### MATERIAL AND COLOR PALETTE

#### NOTE: THE MATERIAL BOARD WILL BE PRESENTED AT THE MEETING



5247 UNIVERSITY WAY NE, SEATTLE WA | STUDIO19 ARCHITECTS 25

# ADJACENT CONTEXT UNIVERSITY WAY NE



26 5247 UNIVERSITY WAY NE, SEATTLE WA | STUDIO19 ARCHITECTS



PROJECT SITE

WAYWARD VEGAN CAFE

5247 UNIVERSITY WAY NE, SEATTLE WA | STUDIO19 ARCHITECTS 27

# ADJACENT CONTEXT ALLEY



WAYWARD VEGAN CAFE

PROJECT SITE



5237 UNIVERSITY APART-MENTS

5247 UNIVERSITY WAY NE, SEATTLE WA | STUDIO19 ARCHITECTS 29



GROUND VIEW LOOKING SOUTH ALONG UNIVERSITY WAY



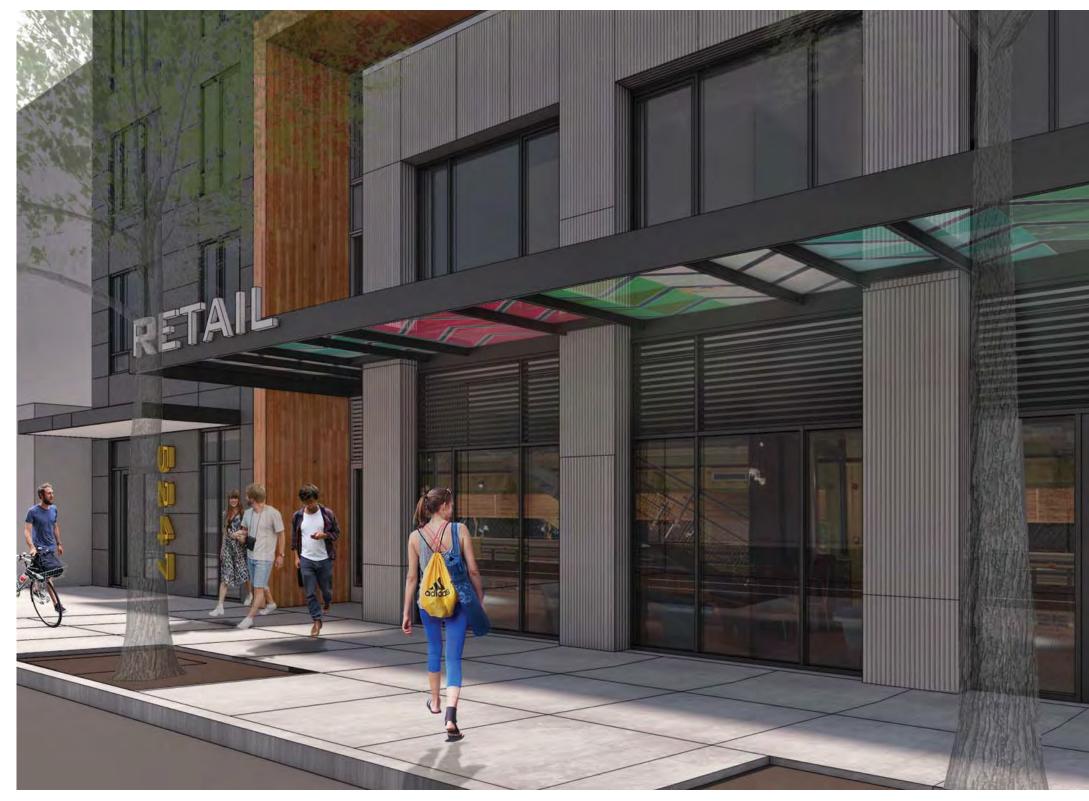
VIEW LOOKING NORTH ALONG UNIVERSITY WAY



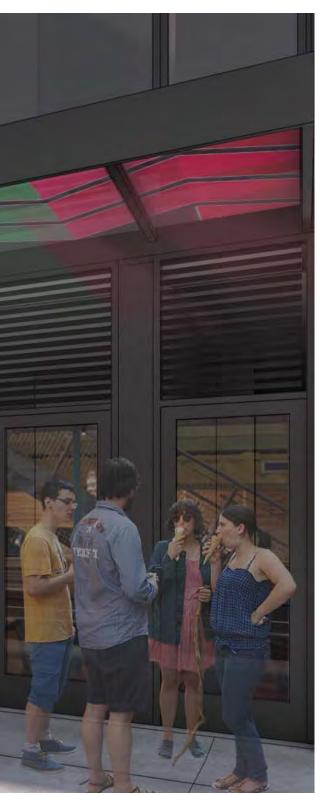
VIEW FROM BACK ALLEY LOOKING SOUTH



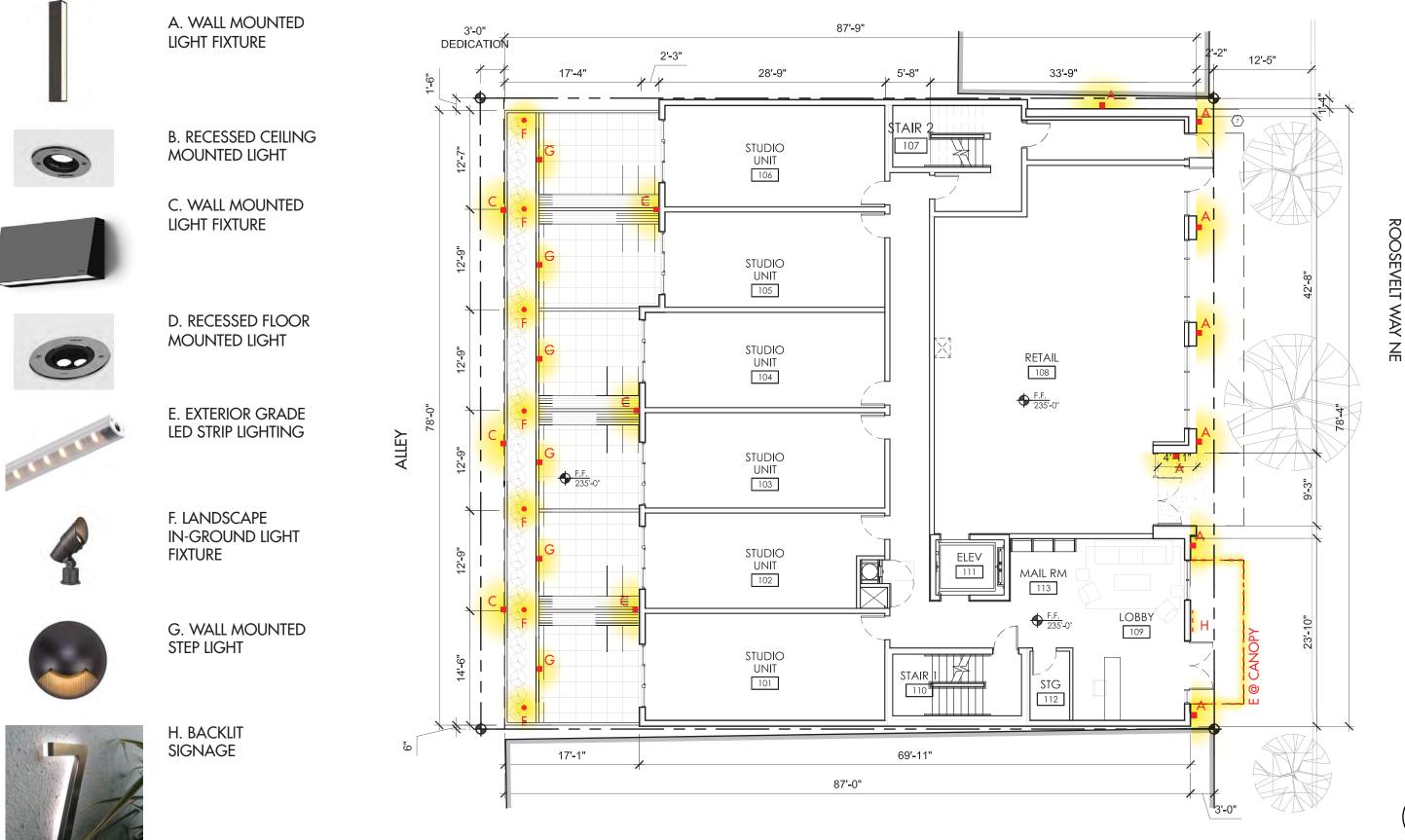
STREET VIEW FROM UNIVERSITY WAY



STREET VIEW FROM UNIVERSITY WAY



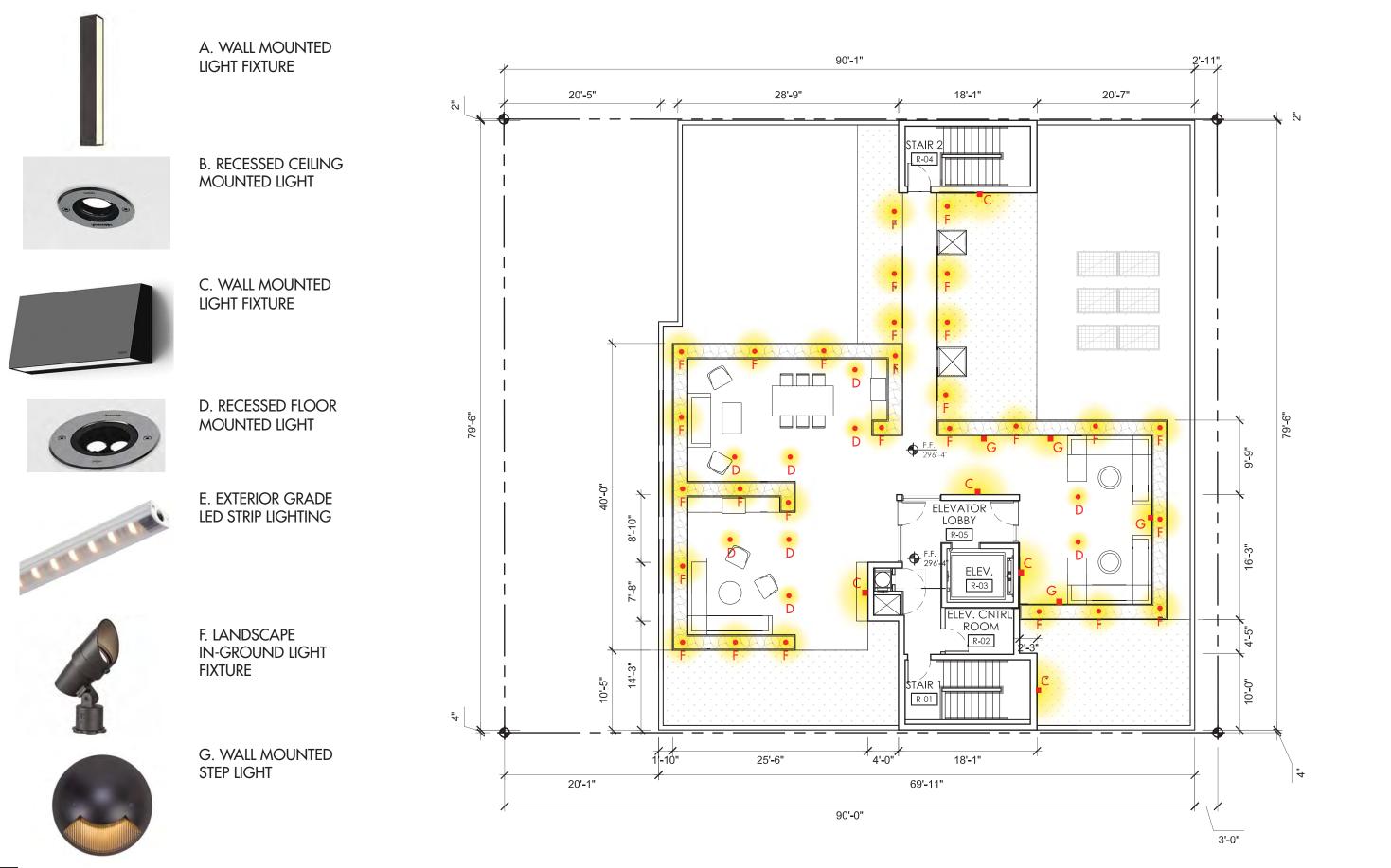
# LIGHTING GROUND FLOOR PLAN

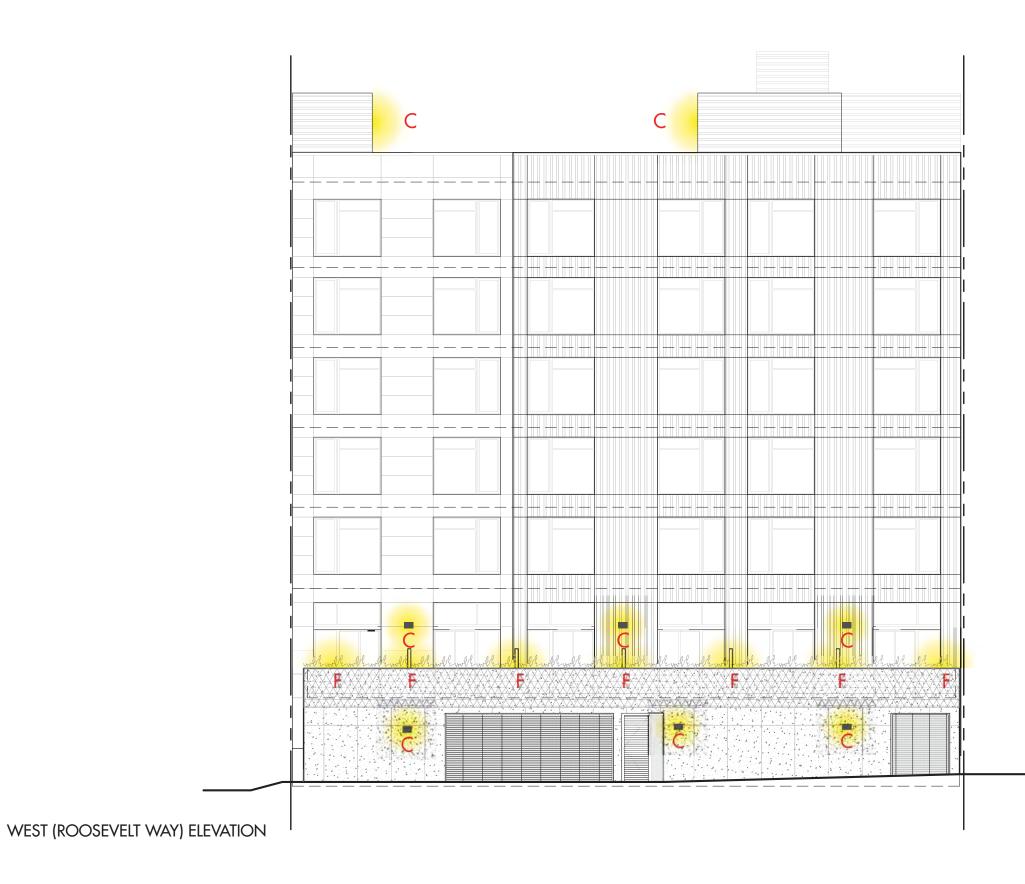


RECOMMENDATION PROPOSAL PACKET

5247 UNIVERSITY WAY NE, SEATTLE WA | STUDIO19 ARCHITECTS 35

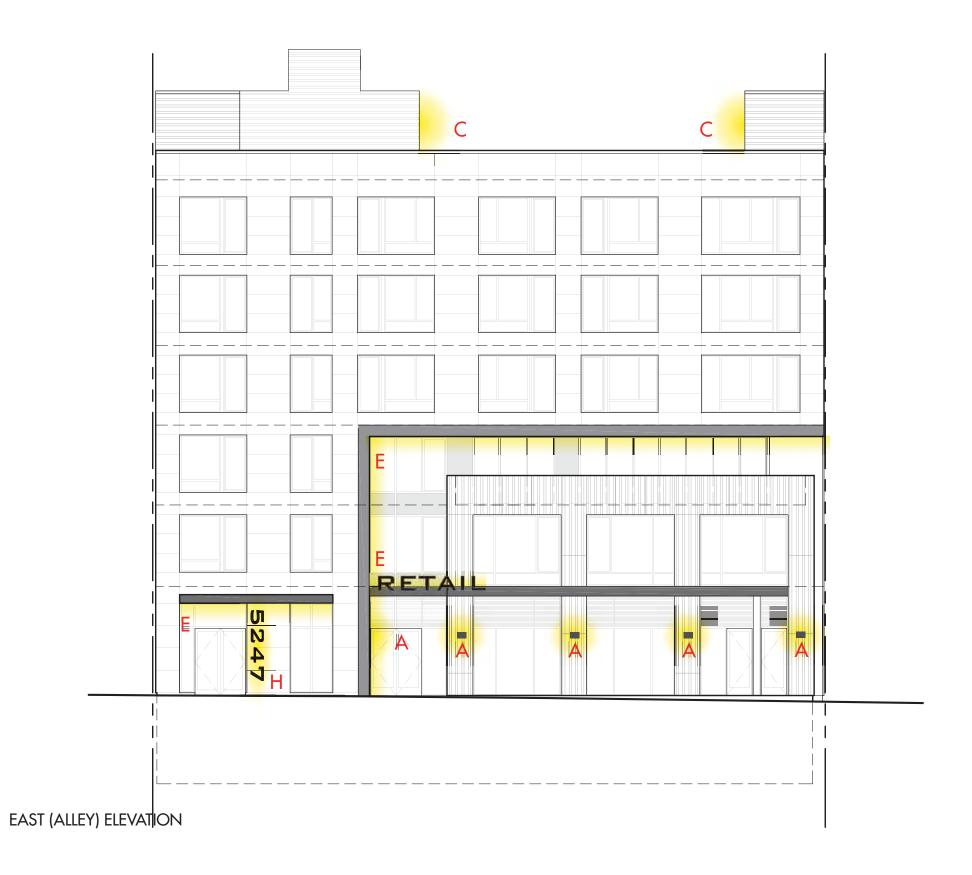
# **LIGHTING** ROOF PLAN

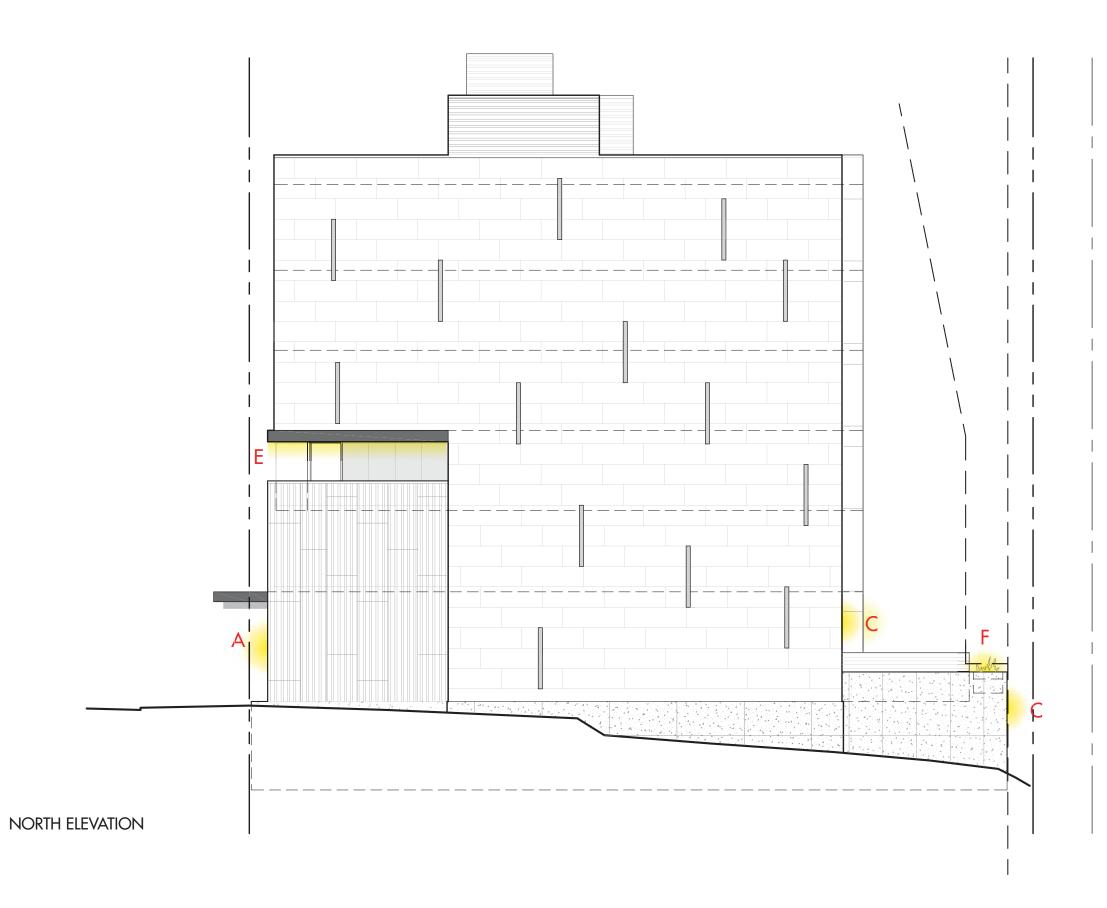


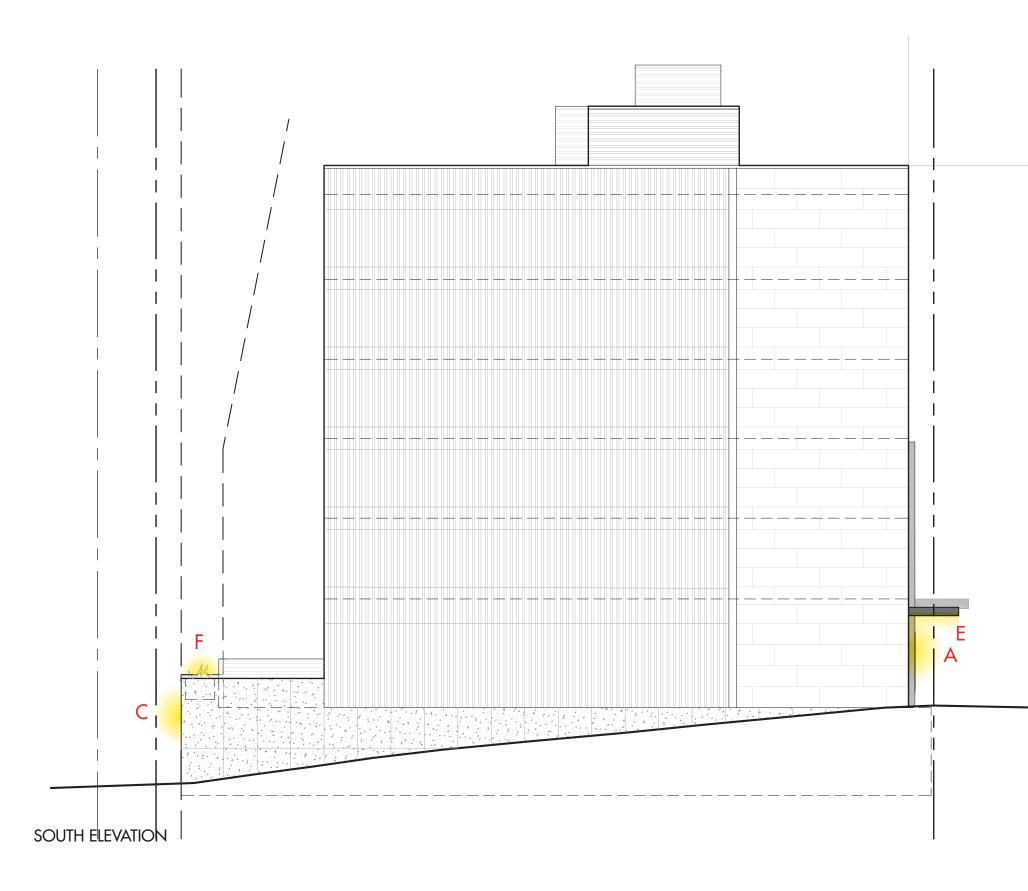


RECOMMENDATION PROPOSAL PACKET

5247 UNIVERSITY WAY NE, SEATTLE WA | STUDIO19 ARCHITECTS 37







## LIGHTING VISUALS



PRODUCT RENDERING DOUBLE-SIDED VERTICAL WALL MOUNTED SCONCE (C)



INSPIRATION IMAGE PLANTER MOUNTED STEP LIGHT GRAZING THE WALKWAY



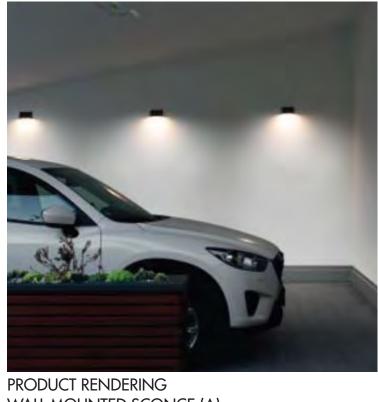
INSPIRATION IMAGE DECK MOUNTED LIGHTING



INSPIRATION IMAGE IN-PLANTER LIGHTING



INSPIRATION IMAGE LINEAR LED STRIP AT CANOPY & SIGNAGE



WALL MOUNTED SCONCE (A)



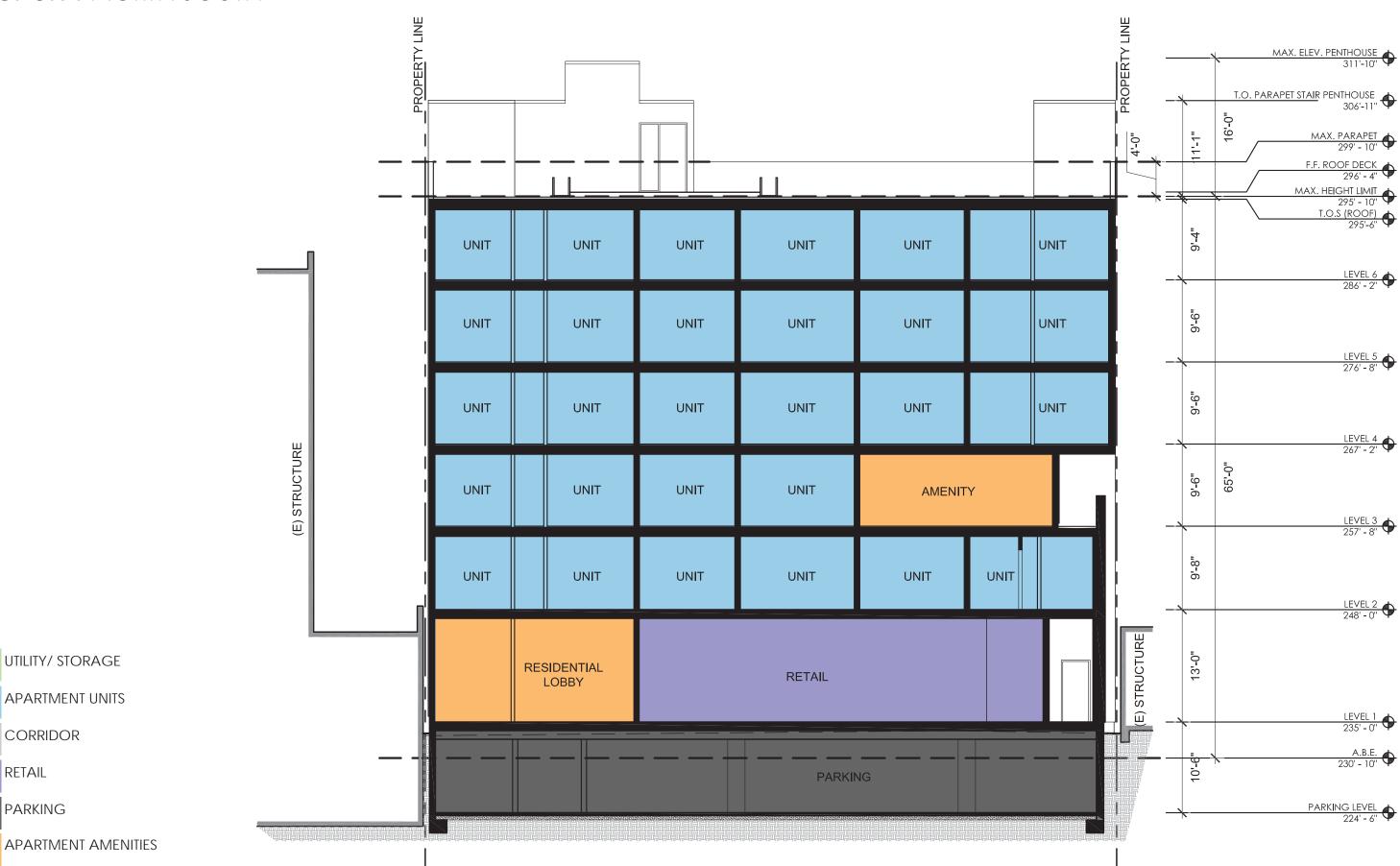
## SIGNAGE CONCEPT



WALL MOUNTED ADDRESS SIGNAGE WITH LED BACKLIGHT

CANOPY MOUNTED RETAIL SIGN

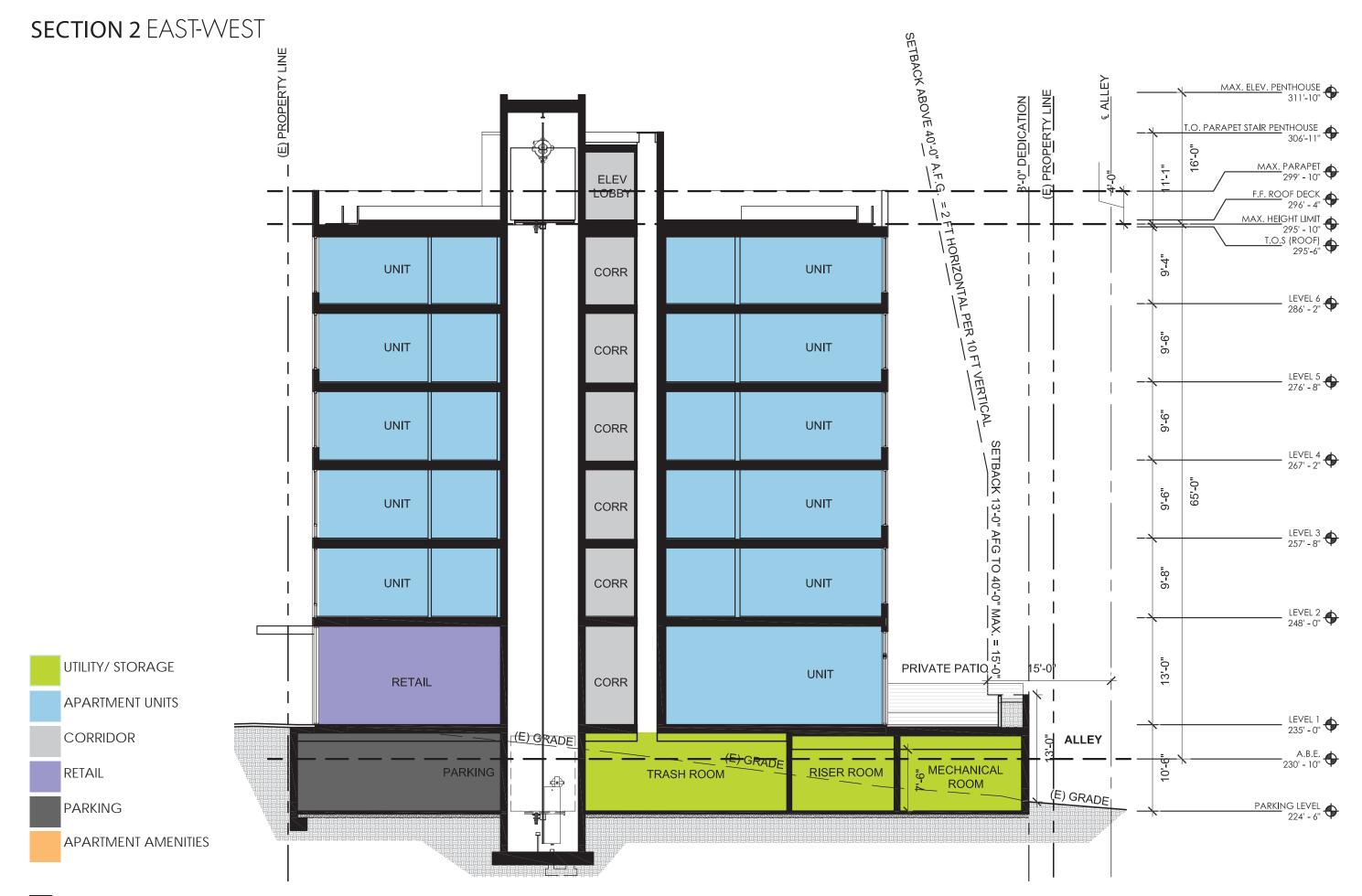
# SECTION 1 NORTH-SOUTH



CORRIDOR

RETAIL

PARKING



5247 UNIVERSITY WAY NE, SEATTLE WA | STUDIO19 ARCHITECTS

44



**SECTION 3** EAST-WEST



RETAIL

5247 UNIVERSITY WAY NE, SEATTLE WA | STUDIO19 ARCHITECTS 45

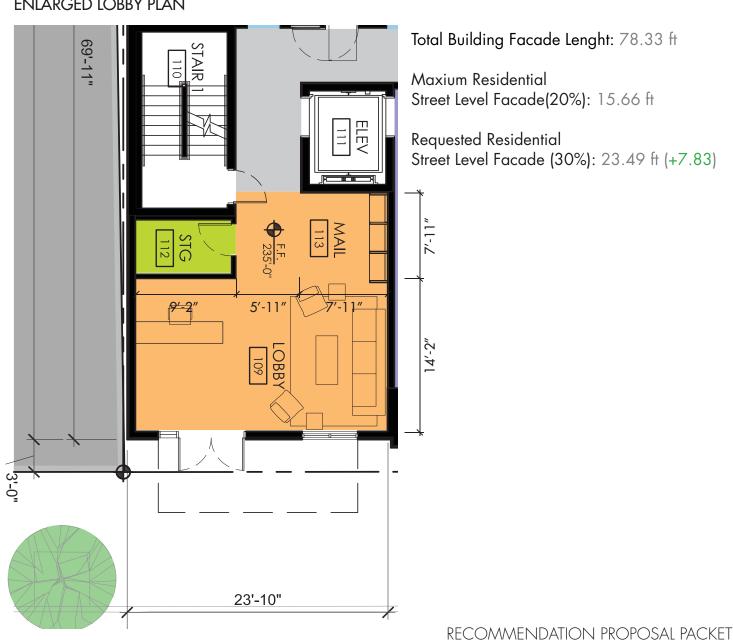
## **DEPARTURE REQUEST 1**

DEPARTURE NUMBER	REQUIRED	REQUEST	JUSTIFICATION
DI	SMC 23.47A.005.C.1 Residential uses may occupy, in the aggregate, no more than 20% of street level facade facing principal pedestrian street. SMC 23.47A.005.D.1 retail/restaurant/drin- gking establishment uses are required along 80& of street level facade facing principal pedestrian street.	Requesting an increase of the maximum residentail use percentage permitted along principal pedestrian street facade from 20% to 30%	A departure from this code section is size for the apartment lobby, conside ment. The lot is only 80 feet wide an for the lobby, by code, would only be area will need to have a gathering a lobby, etc. In order to make this space perience, we ask for a departure to a of the street front facing facade (an a

#### **GROUND FLOOR PLAN**

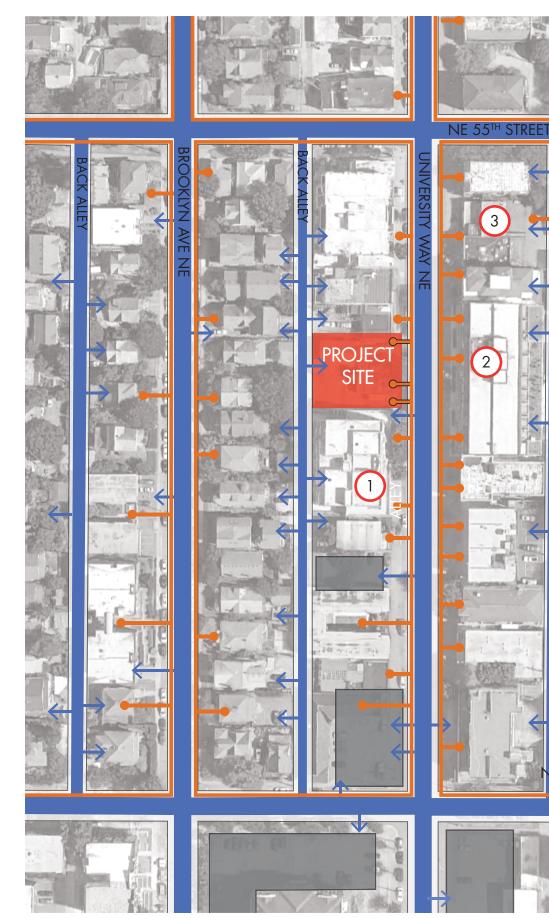






46 5247 UNIVERSITY WAY NE, SEATTLE WA | STUDIO19 ARCHITECTS n is being requested in order to allow for a functional sidering the relatively small lot size of the develop-and is a mid-block development so the maxium width y be 16 feet. This is very narrow considering that this g area, leasing area, mail area, storage, elevator pace work more efficiently and to provide a better ex-to allow the lobby to be 23'-10" wide, which is 30% an additional 10%)

## **SUPPLEMENTALINFORMATION**SURROUNDINGCIRCULATION/ENTRIES



52ND STREET

### VEHICULAR/PEDESTRIAN ENTRY POINTS

The primary means of circulation on University Way NE is by vehicle. A public sidewalk exists on both NE is by vehicle. A public sidewalk exists on both sides of the street, and some of the buildings along University are designed for a pedestrian experi-ence. By studying the entry points of the vehicular and pedestrian circulation, we discovered that the majority of the pedestrian entry-ways are located on the major streets, and most vehicular entries are off of arterials or alley-ways. Below are three examples of pedestrian entries in our vicinity which helped to inform our design concepts.

#### SURROUNDING PEDESTRIAN ENTRANCES



1- 5237 UNIVERSITY APARTMENTS 5237 UNIVERSITY WAY NE | MIXED-USE

This 5 story building adjacent to our site has a very discrete pedestrian entry with dominant retail access. It connects with the vehicular routes with an entrance along the back alley.



2- MURIELS LANDING APTS 5240 UNIVERSITY WAY NE | MIXED-USE Muriel's landing apartments ground level is also composed of a dominant storefront presence. It continues the vibrant pedestrian experience of University Way with ongoin retail and

secluded/discrete residential entry.

### PEDESTRIAN/VEHICULAR CIRCULATION ENTRIES LEGEND





3- 5260 UNIVERSITY APARTMENTS 5260 UNIVERSITY WAY NE | MIXED-USE

This new apartment building will also continue the retail presence on University Way and it will relate to the scale of other apartment buildings in the area. Unlike the others though this one has a seclude resident entry along the back alley.

## SITE CONTEXT STREETSCAPE PHOTOMONTAGE



5247 SITE



#### UNIVERSITY WAY NE

A - View along University Way NE facing West

## SITE CONTEXT STREETSCAPE PHOTOMONTAGE



NE 55<sup>™</sup> ST SITE JNIVERSITY WAY NE BROOKIYN AVE NE AVE NE 5247 SITE **—** 15<sup>TH</sup> NE 52ND ST

ALLEY C - View along Alley facing West

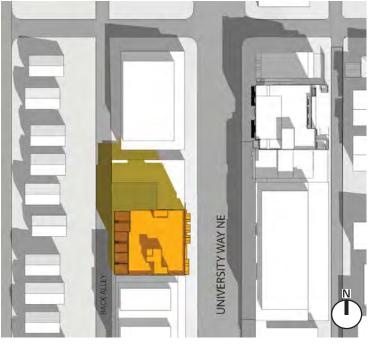


ALLEY D - View along Alley facing East

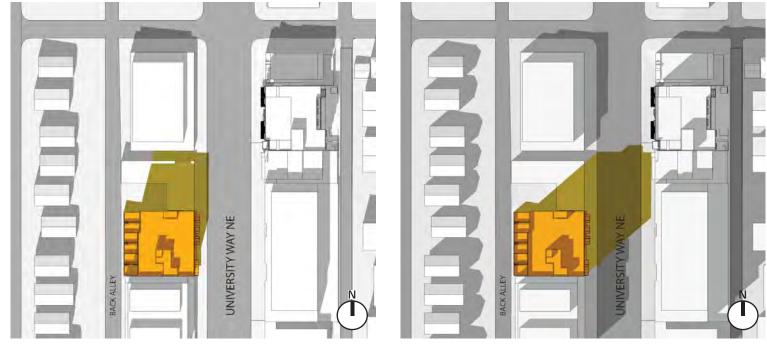
## SUPPLEMENTAL INFORMATION SHADOW ANALYSIS



**10 AM - SPRING EQUINOX** March 20, 2017



12 PM - SPRING EQUINOX March 20, 2017

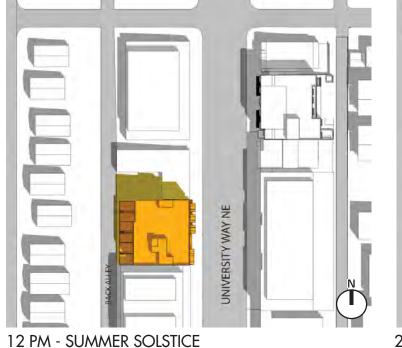


£

2 PM - SPRING EQUINOX March 20, 2017



10 AM - SUMMER SOLSTICE June 21st, 2017

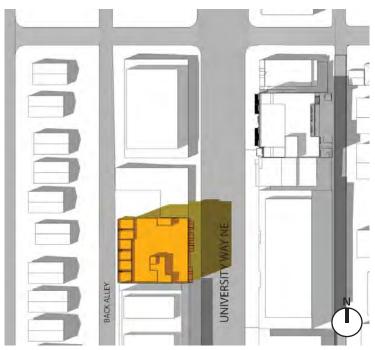


12 PM - SUMMER SOLSTICE June 21st, 2017

2 PM - SUMMER SOLSTICE

June 21st, 2017

4 PM - SPRING EQUINOX March 20, 2017



**4 PM - SUMMER SOLSTICE** June 21st, 2017

## SUPPLEMENTAL INFORMATION SHADOW ANALYSIS

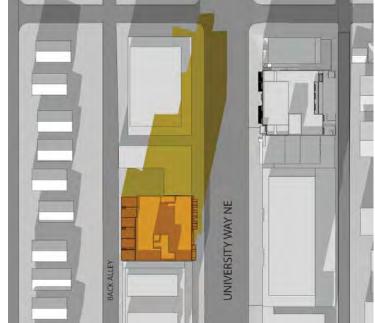




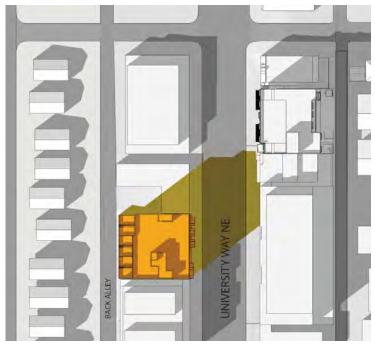
**10 AM | WINTER SOLSTICE** December 21st, 2017



**12 PM | WINTER SOLSTICE** December 21st, 2017



**2 PM | WINTER SOLSTICE** December 21st, 2017



**4 PM | AUTUMN EQUINOX** September 23, 2017



**4 PM | WINTER SOLSTICE** December 21st, 2017