

80 M ST, SE



Columbia
Property Trust

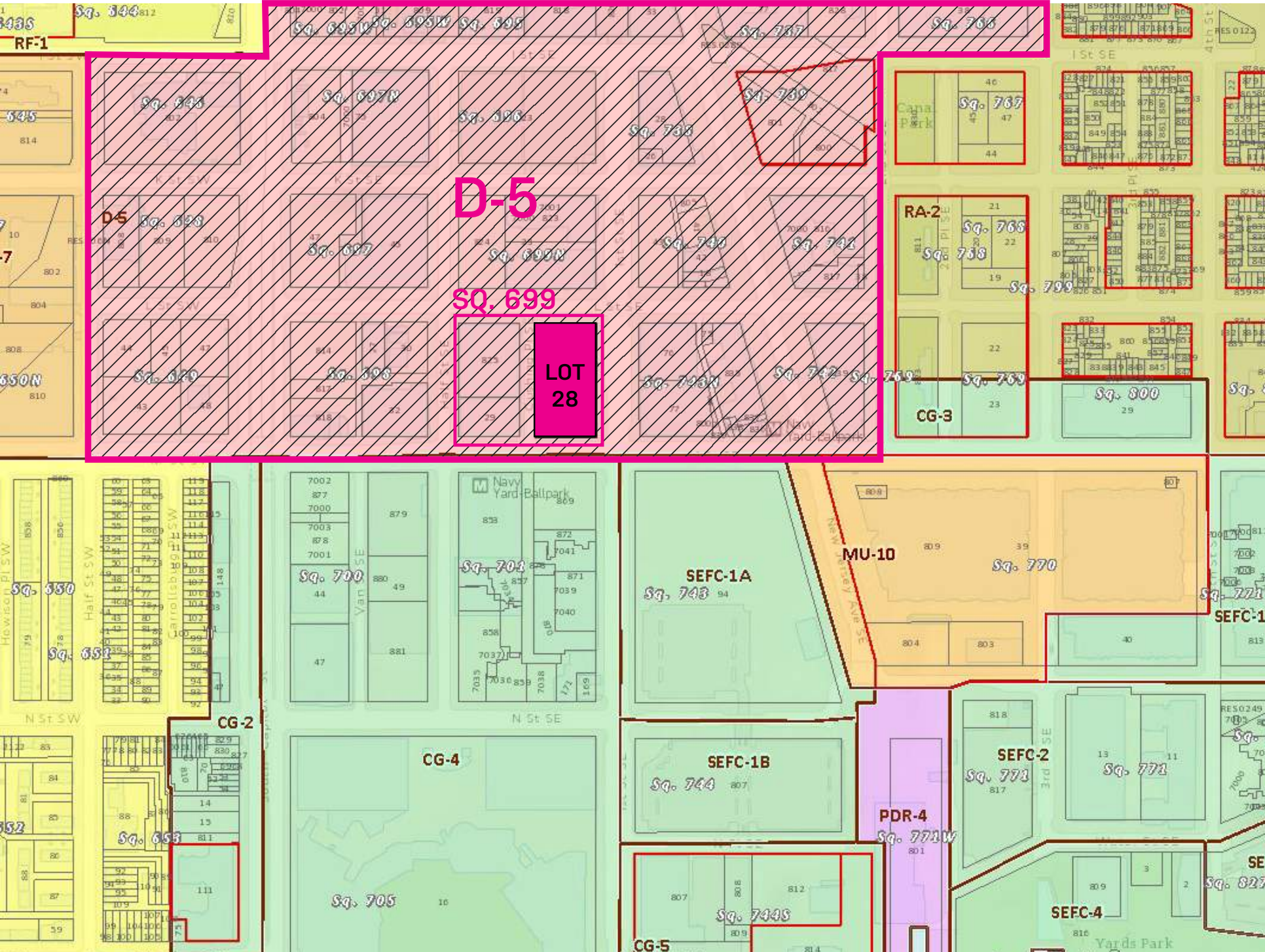


Design Review Package 12.20.2019

ZONING COMMISSION
District of Columbia
CASE NO. 19-23
EXHIBIT NO. 4441

hickok cole

Zoning Map



ZONING ANALYSIS

GENERAL AND ZONING CLASSIFICATIONS

OWNER: COLUMBIA PROPERTY TRUST
 YEAR BUILT: 2000

NO. OF STORIES: 2 STORY ADDITION W/ OCCUPIED PENTHOUSE
 7 STORIES OF EXISTING ABOVE GRADE
 3 STORIES OF EXISTING PARKING BELOW GRADE

ZONE: D5
 SQUARE/LOT: 699/0028
 OVERLAY: SUB-AREA: M and SOUTH CAPITOL STREET
 CREDIT TRADE: CREDIT TRADE AREA 7
 HISTORIC DISTRICT: N/A
 WARD: 6
 ANC: 6D
 PARCEL AREA: 45,117 SF

EXISTING BUILDING INFORMATION

HEIGHT: 89'-9" TO TOP OF PARAPET
 STORIES: 7 ABOVE GRADE, 3 BELOW GRADE
 CURRENT GSF: 290,760 SF
 MEASURING PNT: EL. 27.5' (TOP OF CURB ALONG CUSHING PLACE)
 VEHICLE PARKING: 295 SPACES PROVIDED - 181 STD + 114 TANDEM (162 SPACES REQ'D/ZR1958)
 BICYCLE PARKING: NO LONG TERM PROVIDED/6 SHORT TERM EXISTING
 LOADING: 3 LOADING BERTHS/3 LOADING PLATFORMS/1 DELIVERY SPACE

PROPOSED BUILDING INFORMATION

HEIGHT: 128'-9" (130' MAX HEIGHT ALLOWABLE FROM 1ST ST RIGHT OF WAY) - I-540.1
 STORIES: 9 STORIES W/ HABITABLE PENTHOUSE
 PROPOSED GSF: 378,266 GSF - TOTAL INCLUDES 4,458 GSF OF PENTHOUSE SPACE ABOVE 0.4 FAR PER SECTION C-1503.1(c) - I-539.1(c)
 MEASURING PNT: EL. 23.4' (MEASURED @ TOP OF CURB AT 1ST STREET)
 LOT OCCUPANCY: 100% - I-202.1
 REAR SETBACK: REAR SETBACK NOT PROVIDED AS LOT FRONTS THREE (3) OR MORE STREETS - I-205.2
 FRONT SETBACK: 15'-0" FROM CURB ALONG M STREET PER SECTION I-616.6(b)
 VEHICLE PARKING: 288 SPACES PROVIDED - 175 STD + 113 TANDEM (162 SPACES REQ'D/ZR1958) - C-704.1 & I-212.1
 BICYCLE PARKING: 43 LONG TERM SPACES PROVIDED/6 SHORT TERM TO REMAIN - C-802.5
 LOADING: 3 LOADING BERTHS/3 LOADING PLATFORMS/1 DELIVERY SPACE - C-901.6 & 901.1
 GAR: NA - C-601.3

Site Analysis

RANDALL RECREATION CENTER

NATIONAL MALL

EASTERN MARKET/ CAPITOL HILL

SOUTHWEST WATERFRONT

KING GREENLEAF RECREATION CENTER

80 M STREET SE
DESIGN REVIEW PACKAGE



80 M

SHADOW STUDY VIEW

CANAL PARK

M

M

TINGEY PLAZA

BOILERMAKER SHOPS

NATIONALS PARK

DIAMOND TEAGUE PARK

LUMBER SHED

YARDS PARK

ANACOSTIA RIVER

ANACOSTIA RIVERWALK TRAIL

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S CAPITOL ST SW

NEW JERSEY AVE SE

M STREET SE

EIGHTH STREET

50' ROW

50' ROW

50' ROW

90' ROW

90' ROW

90' ROW

90' ROW

90' ROW

130' ROW

130' ROW

130' ROW

130'

110'

130'

130'

130'

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130'

110'

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110'

130'

110'

110'

110'

130'

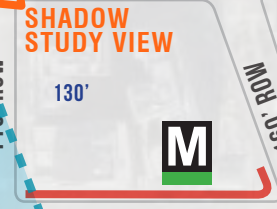
110'

90'

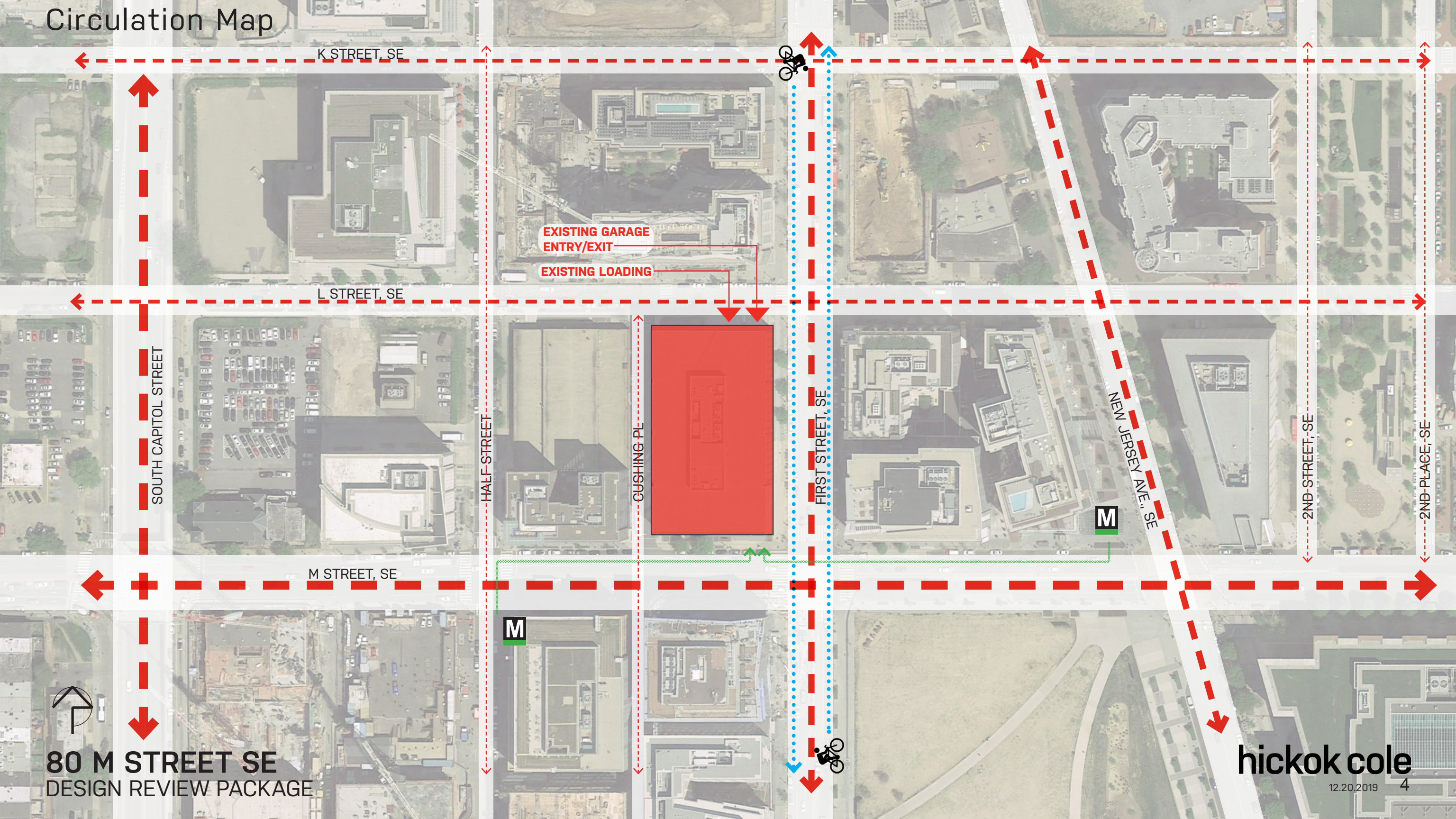
110'

50'

695



Circulation Map



K STREET, SE

L STREET, SE

M STREET, SE

SOUTH CAPITOL STREET

HALF STREET

CUSHING PL

FIRST STREET, SE

NEW JERSEY AVE., SE

2ND STREET, SE

2ND PLACE, SE

EXISTING GARAGE ENTRY/EXIT

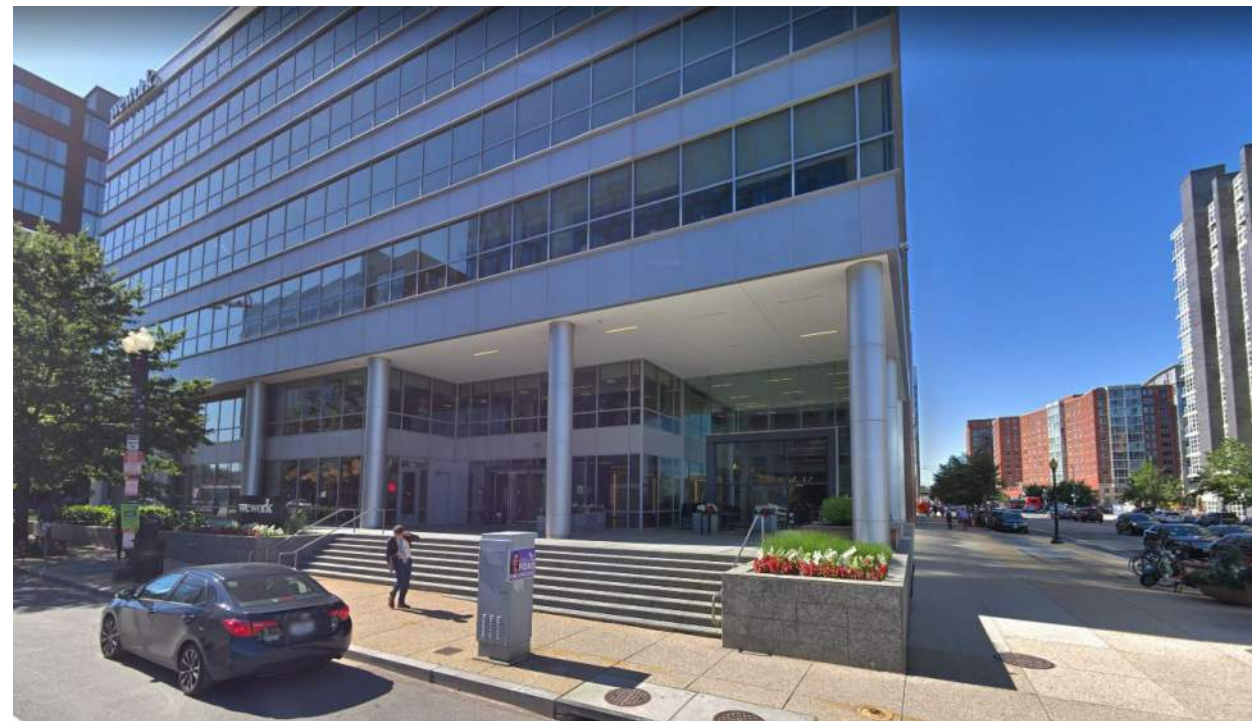
EXISTING LOADING

M

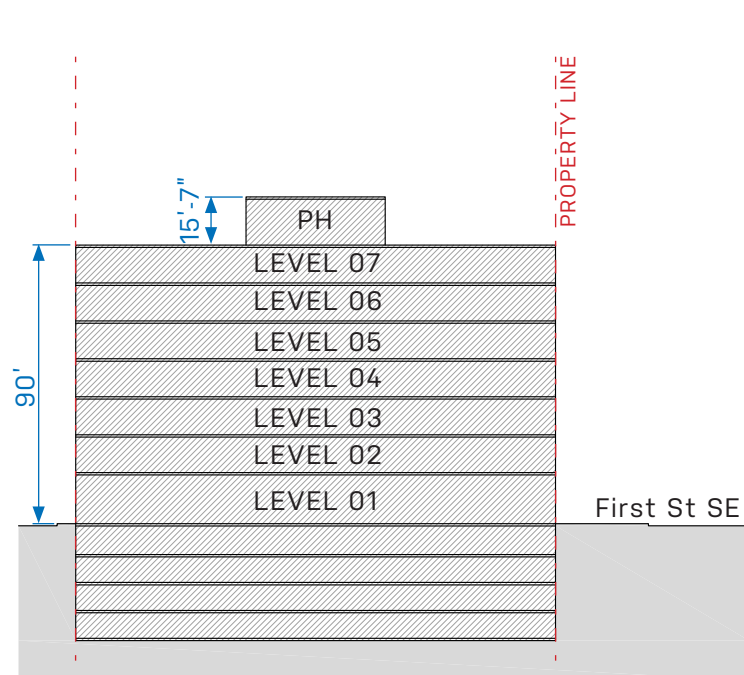
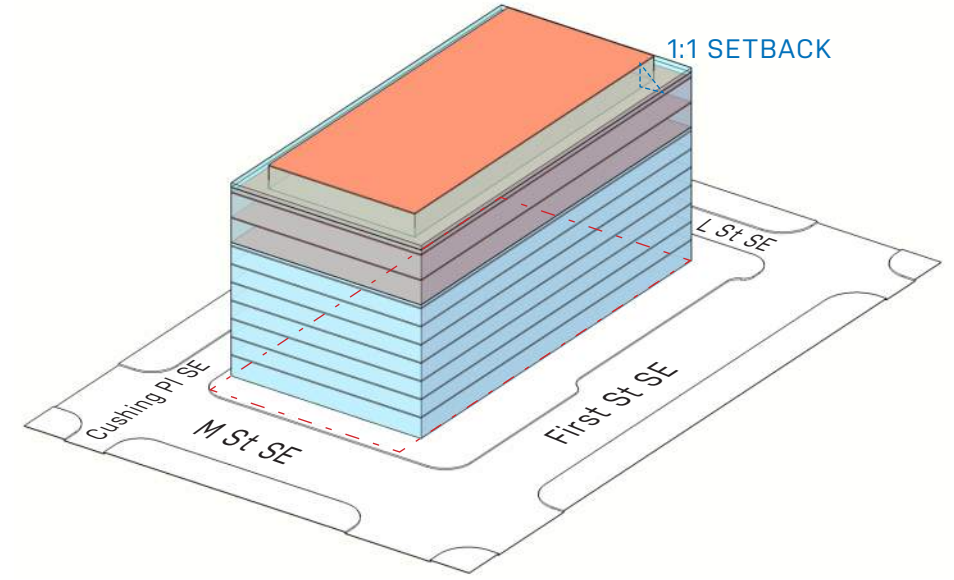
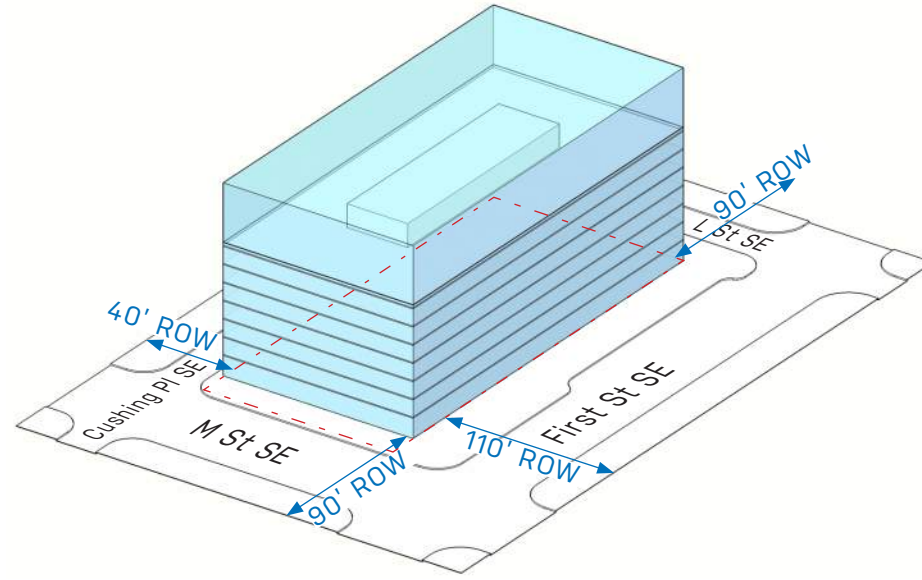
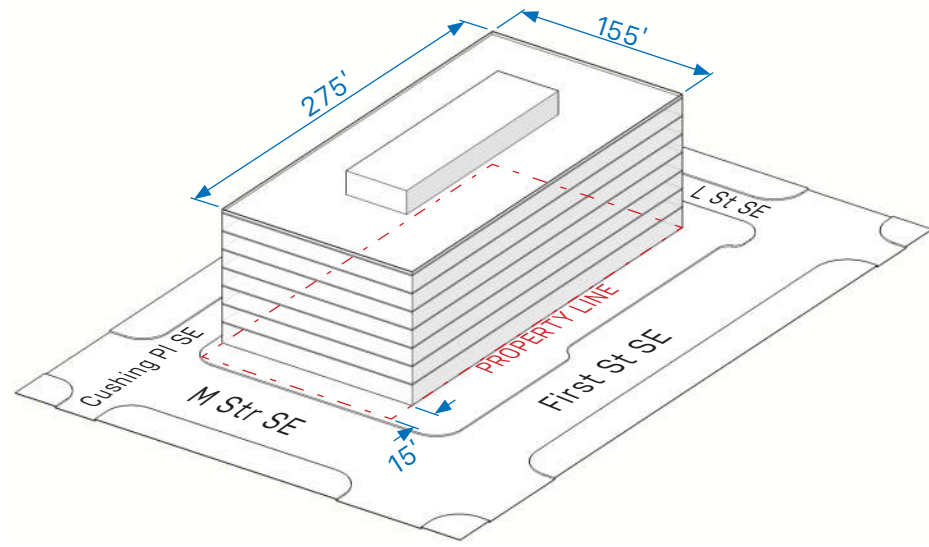
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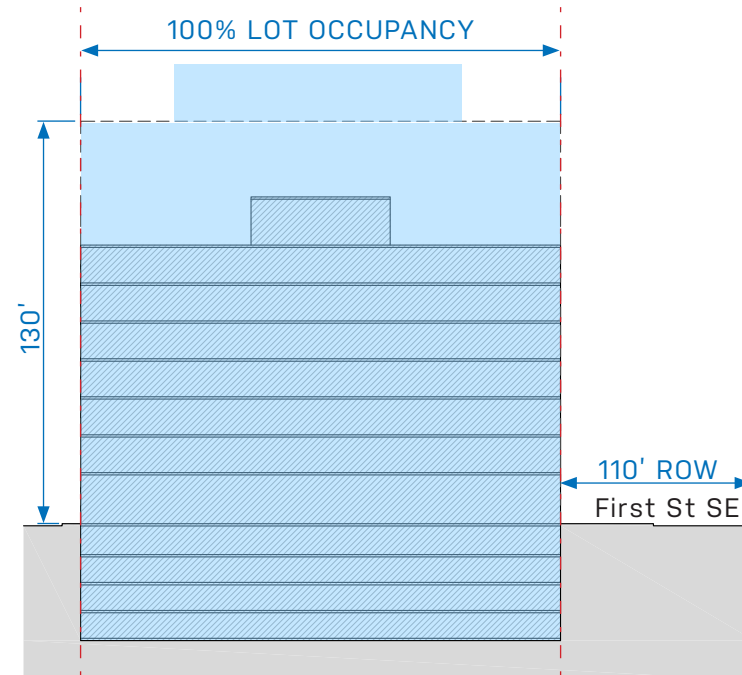
Existing Conditions



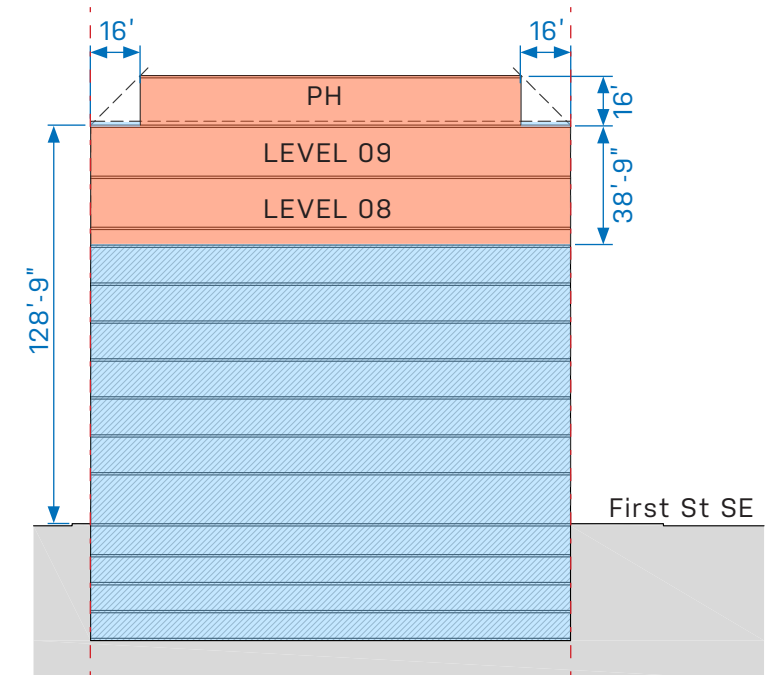
Zoning Diagrams



EXISTING BUILDING

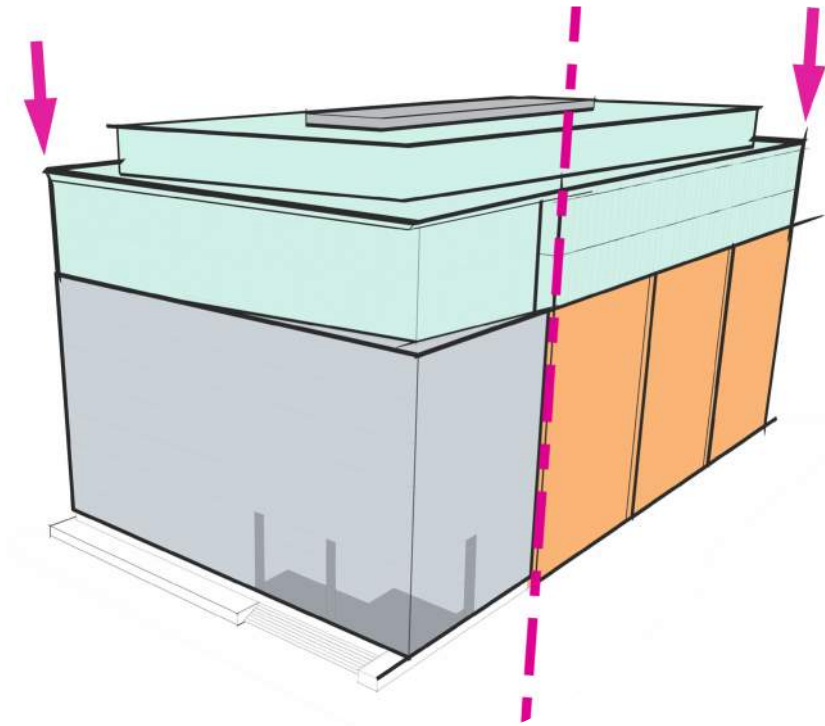


ZONING EXTENTS

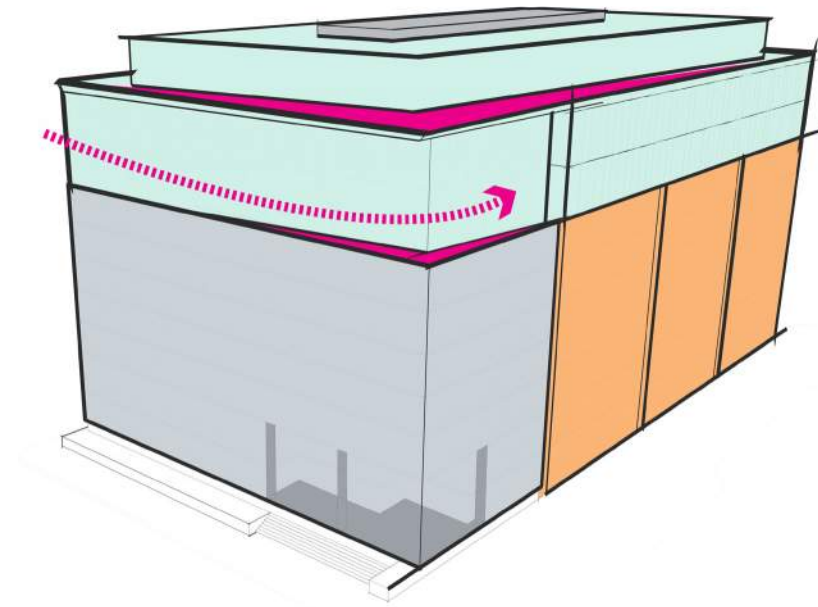


PROPOSED STRUCTURE

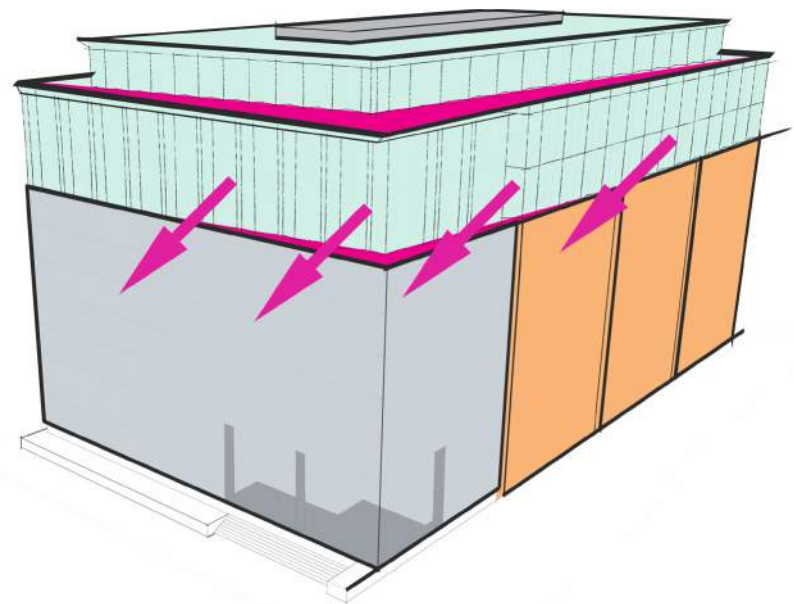
Massing Concepts



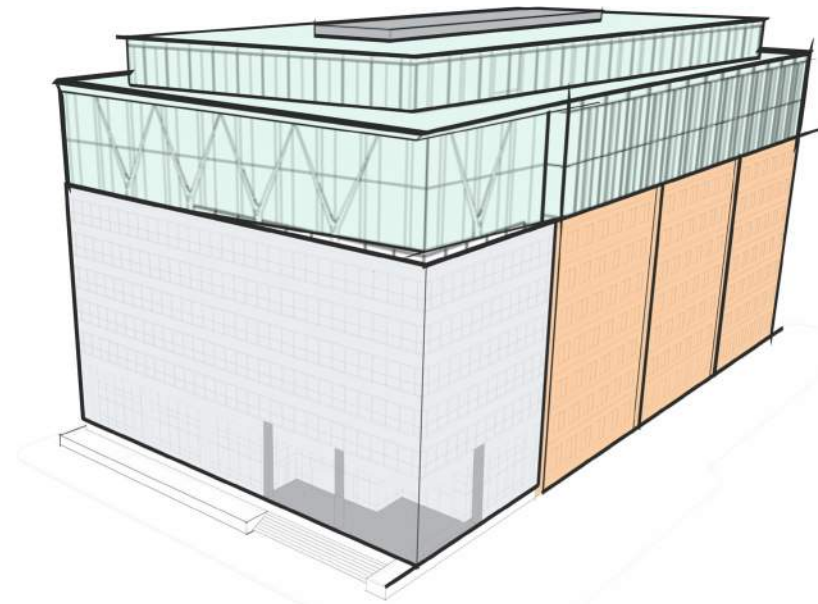
Hold SW & NE Corners



Fold Mass to Highlight Corner



Create Opportunities to Maximize Expansive View



Articulate Mass and Highlight Structure



PARALLEL STRAND LUMBER

Composite of wood strands
The strongest and stiffest
wood product available. It
is the most effective choice for
beams. Unlike other heavy
timbers, PSL is often used in
applications because it can be
easily treated.

Manufacturing Process:
1. Selection of log
2. Peeling
3. Drying into veneers
4. Gluing and clipping
5. Pressing and adhesive application
6. Drying
7. Planing and curing
8. Grading, marking, and packaging

Product Size:
Up to 12" thick x 18" deep x 60' long
Application:
Beams, columns, and trusses

Trees Used:
Douglas-Fir, Larch, Pacific Silver Fir,
Sitka Spruce, Yellow Pine, Western
Hemlock, and Poplar

Fun Fact:
PSL uses waste materials from
plywood manufacturing

NAIL-LAMINATED TIMBER

NLT is created by stacking dimensional
lumber together on its edge and fastening it
together with nails. Plywood sheathing can
be added to one side to allow the product to
be used as a wall panel. It is cheaper than
other heavy timber options and more widely
accepted in building codes because it is
simple to make and simple to understand.

Manufacturing Process:
1. Grading and selection of
dimensional lumber
2. Fastening individual dimensional
lumber, stacked on edge, into
one structural element with nails
3. Installing the plywood sheathing
(optional)
4. Finishing the underside

Product Size:
Up to 12" thick x 12" wide x 100' long,
(width and length of panel only
limited by shipping and erection
constraints)

Application:
Floors, decks, walls, roofs, stair and
elevator shafts

Trees Used:
Spruce-Pine-Fir, Douglas-Fir Larch,
Alaska Yellow Cedar, Port Orford
Cedar, Southern Yellow Pine, and
many other species

Adhesive:
Nails

Fun Fact:
Nail-laminated timber has been
used to build warehouses and
factories for the past 150 years.
It was previously referred to as
heavy timber or mill decking.

GLUE-LAMINATED TIMBER

Glulam is an engineered product made
of two or more layers of lumber glued
together with the grain of all layers running
parallel to the length. Its composition
enables the production of a variety of sizes
and shapes, including curves. Glulam's size
is limited only by the manufacturing and
transportation capabilities. Glulam has
many advantages over sawn lumber, such
as greater size and strength.

Manufacturing Process:
1. Selection of dimensional lumber
2. Splicing and joining with staggered
finger joints
3. Adhesive application
4. Pressing
5. Sanding
6. Cutting, marking, and packaging

Product Size:
Up to 20" thick x 7' wide

Application:
Beams, columns, arches, trusses, and walls

Trees Used:
Douglas-Fir Larch, Southern Yellow Pine,
Hem-Fir, and Spruce-Pine-Fir

Fun Fact:
Glulam's earliest use can be traced to a
bridge built in Bavaria, Germany in the early
1800s. However, it wasn't until World War II
that glulam flourished as a building material
due to developments in waterproof glues
and fabrication technologies.

CROSS-LAMINATED TIMBER

CLT consists of several boards stacked
and glued together. To obtain specific
consecutive layers may be placed in
A typical CLT cross-section contains

Manufacturing Process:
1. Lumber selection (each piece is
2. Lumber grouping and planing
3. Adhesive application
4. Panel lay-out and pressing
5. Cutting, marking, and packaging

Product Size:
Up to 15" thick x 10' wide x 64' long

Application:
Walls, floors, roofs, stair and elevator

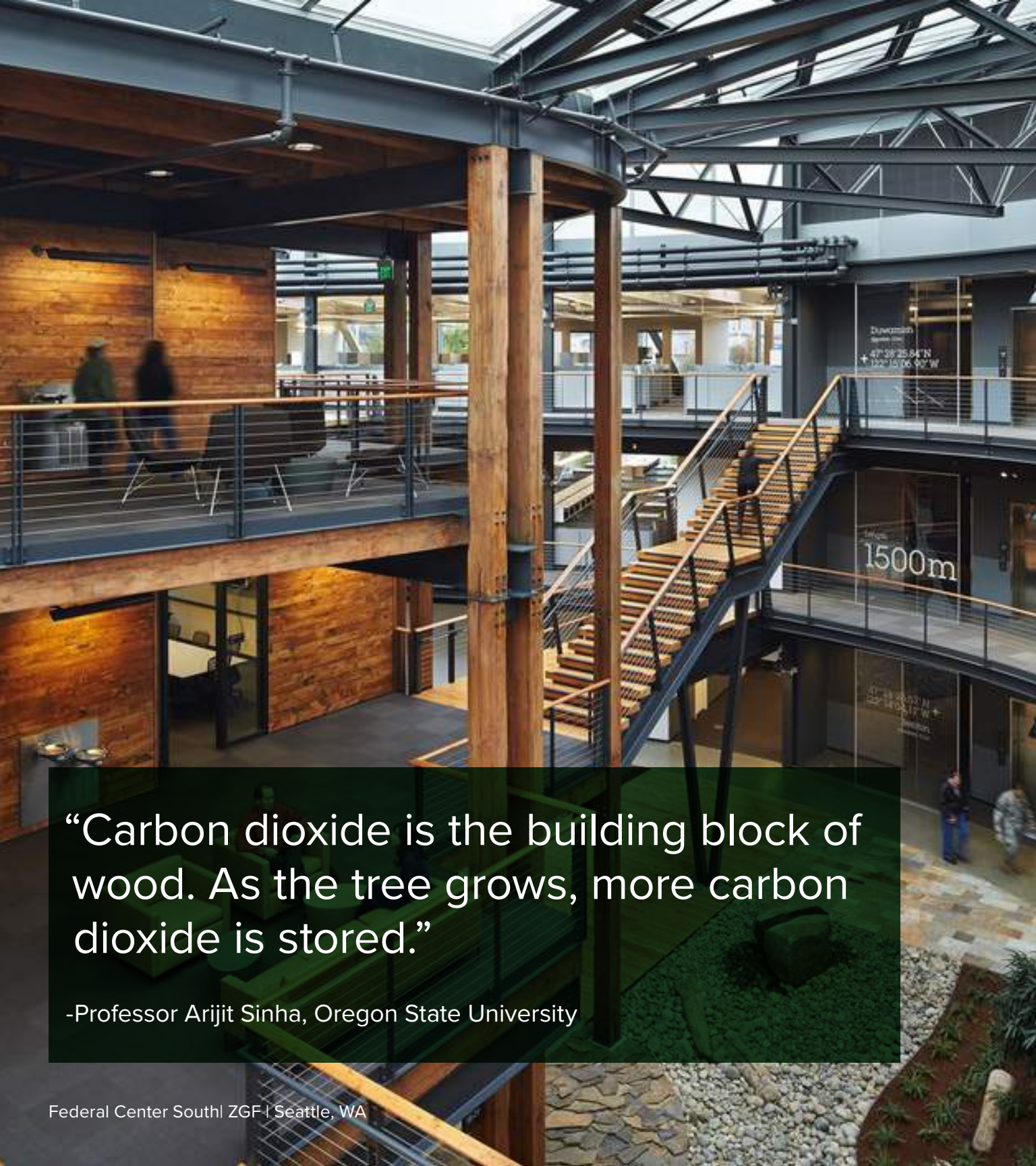
Trees Used:
Douglas-Fir, Spruce-Pine-Fir, South
and Alaska Yellow Cedar

Fun Fact:
To fabricate CLT, some wood manu-
facturers kill the Mountain Pine B

WHAT IS MASS TIMBER?

The term “mass timber construction” is different from light-wood frame, stick-frame or even heavy timber post-and-beam structures. Mass timber usually refers to timber products engineered for loads similar in strength to structural materials like concrete and steel. -USGBC

- **Cross-Laminated Timber (CLT):**
Panels consisting of three, five, or seven layers of lumber oriented at right angles to one another and glued together.
- **Nail-laminated Timber (NLT):**
Panels created by fastening individual layers of lumber, stacked on edge, into one structural element with nails.
- **Glue-Laminated Timber (Glulam):**
Usually beams or columns composed of individual lumber laminations and then glued together.
- **Parallel Strand Lumber (PSL):**
Usually beams or columns manufactured by gluing strands of wood together under pressure.



“Carbon dioxide is the building block of wood. As the tree grows, more carbon dioxide is stored.”

-Professor Arijit Sinha, Oregon State University

BENEFITS OF MASS TIMBER: SUSTAINABILITY

- Wood sequesters carbon for the life-cycle of its usage, especially when harvested from sustainably managed forests
- Mass timber buildings can be 30-40% of the weight of an equally sized concrete structure, which also means:
 - » foundations don't have to be as large,
 - » they require less fuel to get to construction site¹
- 2014 study published in the Journal of Sustainable Forestry, found the ability to reduce global CO₂ emissions by 15-20% if CLT were used instead of steel
- Can have a total carbon footprint a third smaller than similarly sized steel and concrete buildings
- Reduces thermal bridging and performs well as an insulator, R-value = 1.25/inch of thickness (10x concrete, 400x steel)
- Wood from beetle-kill pines can be used in mass timber products

¹ Engadget, 'Timberscrapers' Could Soon Dominate Urban Skylines, <https://www.engadget.com/2017/09/28/timberscrapers-dominate-urban-skylines/>



BENEFITS OF MASS TIMBER: AESTHETICS & WELLNESS

- Use of natural textures and biophilic design can combat absenteeism, presenteeism, information retention, hospital recovery times¹
- Evidence suggests that wood, like other biophilic materials, provide health benefits and reduce stress²
- In a study presence of visual wood surfaces in a room lowered sympathetic nervous system (physiological stress) activation³
- Lower heart rate and blood pressure have been observed in lab settings when the scent of alpha-pinene (pine tree oil) is present⁴
- A 2015 study⁵ of 7,600 workers noted that workers in environments with natural elements reported:
 - » 15% higher level of wellbeing
 - » 6% higher level of productivity
 - » 15% higher levels of creativity

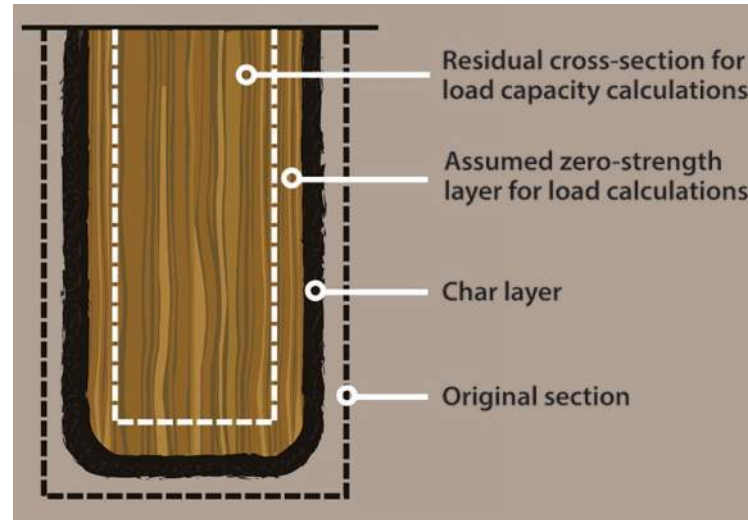
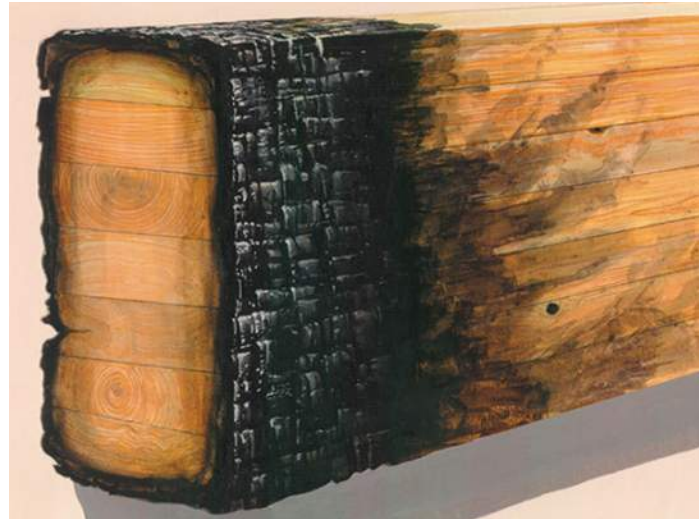
1 2012, The Economics of Biophilia, Terrapin Bright Green

2 2015, Wood as a Restorative Material in Healthcare Environments, FPIInnovations & Design with Science

3 2011, University of British Columbia and FPIInnovations Wood and Human Health study

4 2014, University of Tokyo and Forestry Products Research Institute of Japan

5 2015, Human Spaces: The Global Impact of Biophilic Design in the Workplace, Interface



BENEFITS OF MASS TIMBER: STRUCTURAL STRENGTH AND FIRE SAFETY

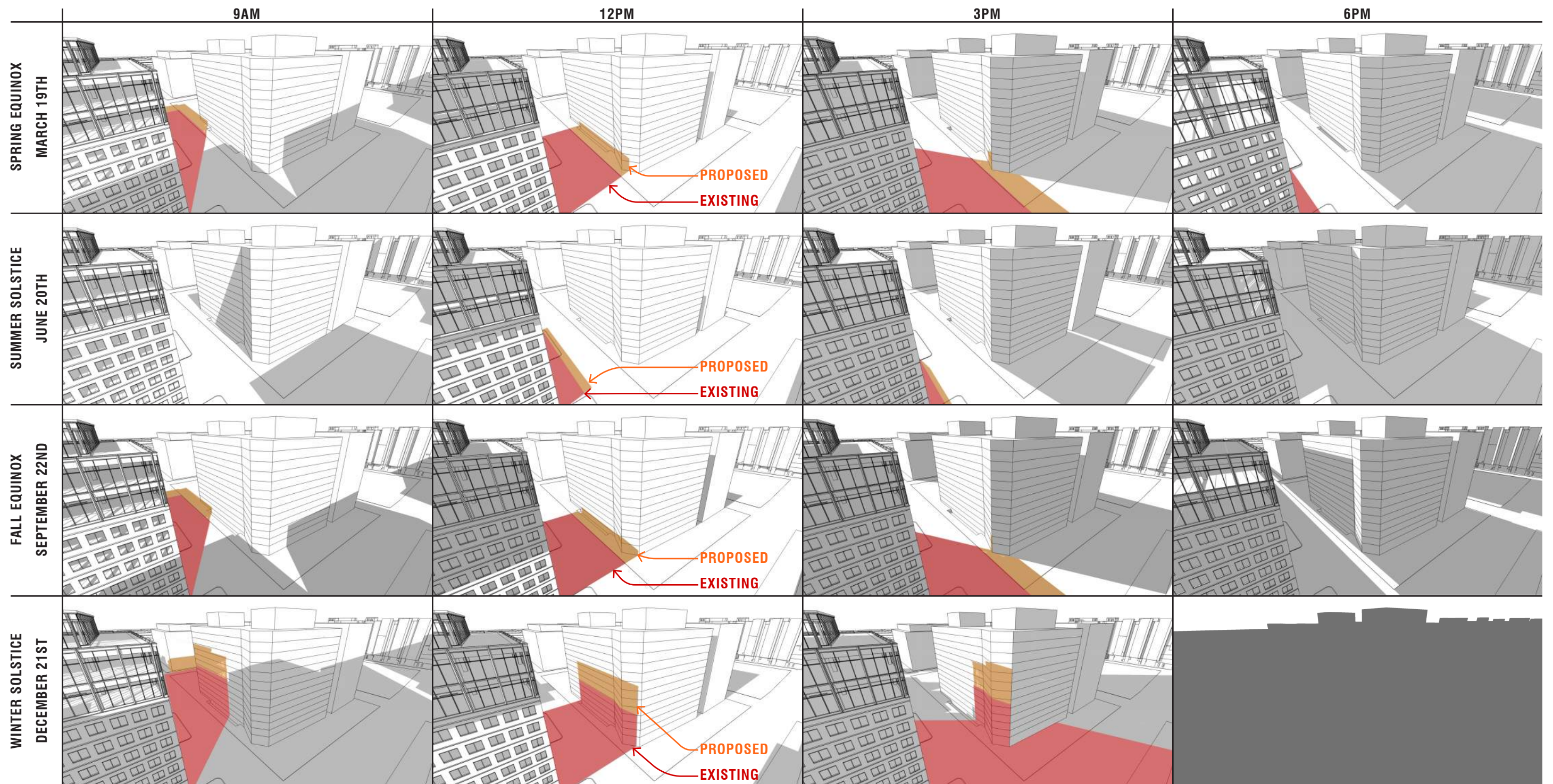
- CLT layers are rotated 90 degrees, composite material shows a structural strength that rivals steel
- Lighter wooden buildings can withstand earthquakes better and dissipate the energy of shaking more readily than steel structures
- CLT lamination negates imperfections that any one layer has
- Increasing the density of the wood causes it to char rather than burn outright which slows destruction and helps to maintain structural integrity
- Wood performance in fire is predictable, design for fire resistance through increasing wood depth:
 - » 1hr exposure = 1.8in/hr
 - » 2hrs exposure = 1.58in/hr¹



Concept Section

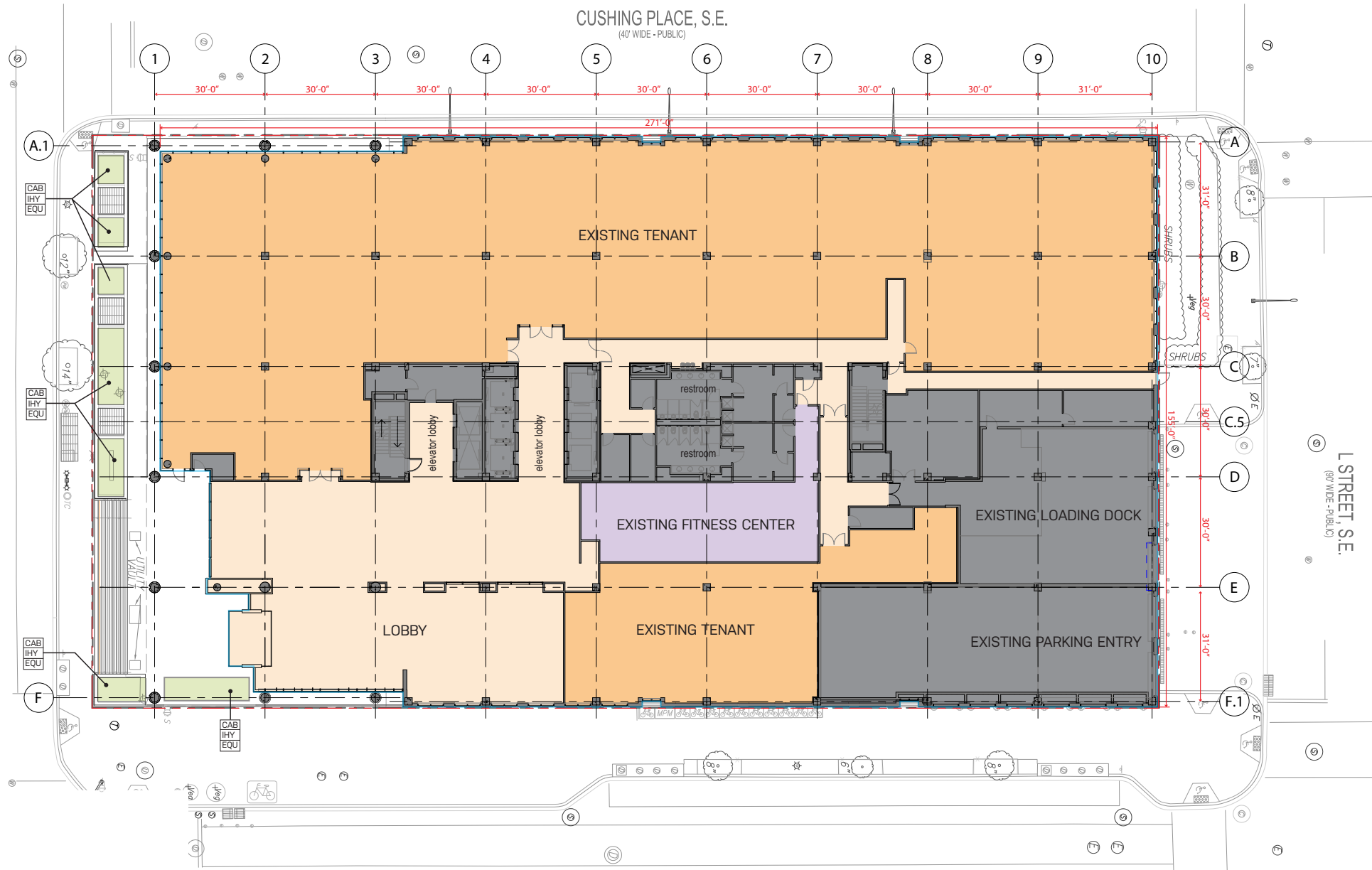


Shadow Study



Proposed - 1st floor plan

*All floor plans are illustrative & final layout is subject to adjustment prior to permit review



EXISTING PLANT SCHEDULE

SYMBOL	PLANT TYPE	QTY
CAB	Cornus Alba Bailhalo	Existing
IHY	Incrediball Hydrangea	Existing
EQU	Euisetum	Existing

EXISTING PLANTINGS



CAB



IHY



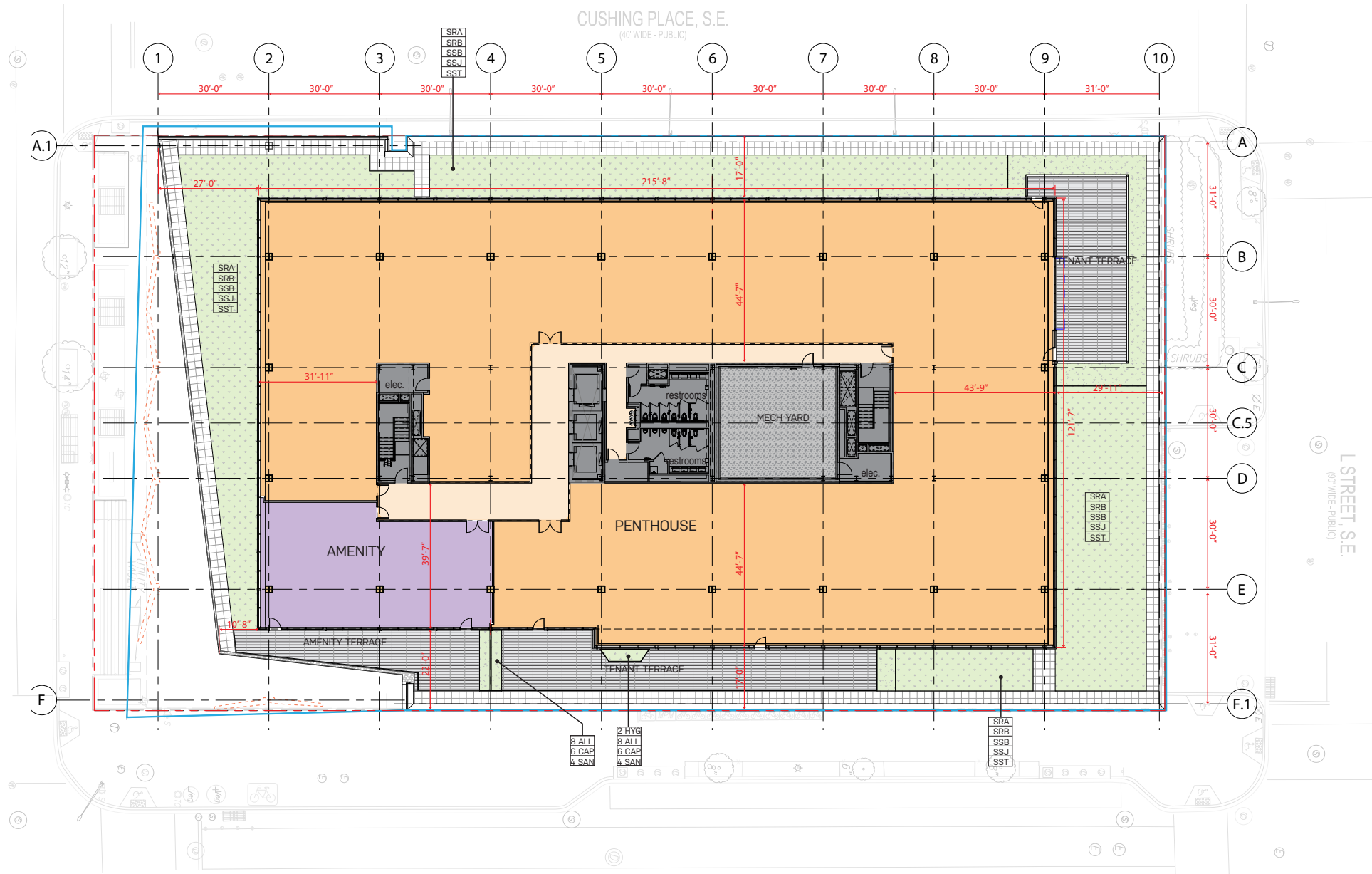
EQU





Proposed - Penthouse plan

*All floor plans are illustrative & final layout is subject to adjustment prior to permit review



PLANT SCHEDULE: TOTAL GREEN ROOF AREA: 6,990 SF

SYMBOL	BOTANICAL NAME	COMMON NAME	QTY	SIZE	ROOT	REMARKS
SHRUBS						
BUS	<i>Buxus sinica</i> var. <i>insularis</i> 'Justin Brouwers'	Justin Brouwers Boxwood	25	18-24" HT.	CONT	
HYQ	<i>Hydrangea quercifolia</i> 'Sike's Dwarf'	Dwarf Oakleaf Hydrangea	27	24-36" HT.	CONT	Full, matching
ITV	<i>Itea virginica</i> 'Merlot'	Sweetspire	9	18-24" HT.	CONT	
GRASSES, GROUNDCOVERS, PERENNIALS, & VINES						
ALL	<i>Allium schoenoprasum</i> 'Album'	Nodding Onion	130	1 Gallon	CONT	Evenly distribute in planter
CAP	<i>Carex pensylvanica</i>	Pennsylvania Sedge	114	1 Gallon	CONT	Plant in groups of 5-7
MUC	<i>Muhlenbergia capillaris</i>	Muhly Grass	7	1 Gallon	CONT	
SAN	<i>Salvia nemerosa</i> 'Amethyst'	Wood Sage	65	1 Gallon	CONT	Plant in groups of 5-7
GREEN ROOF						
SRA	<i>Sedum rupestre</i> 'Angelina'	Stonecrop	2773	8"	PLUG	
SRB	<i>Sedum rupestre</i> 'Baby Tears'	Stonecrop	2773	8"	PLUG	
SSB	<i>Sedum reflexum</i> 'Blue Spruce'	Stonecrop	2773	8"	PLUG	
SSJ	<i>Sedum spurium</i> 'John Creech'	Stonecrop	2773	8"	PLUG	
SST	<i>Sedum tematum</i>	Stonecrop	2773	8"	PLUG	

GREEN ROOF



GRASSES, GROUNDCOVERS, PERENNIALS & VINES



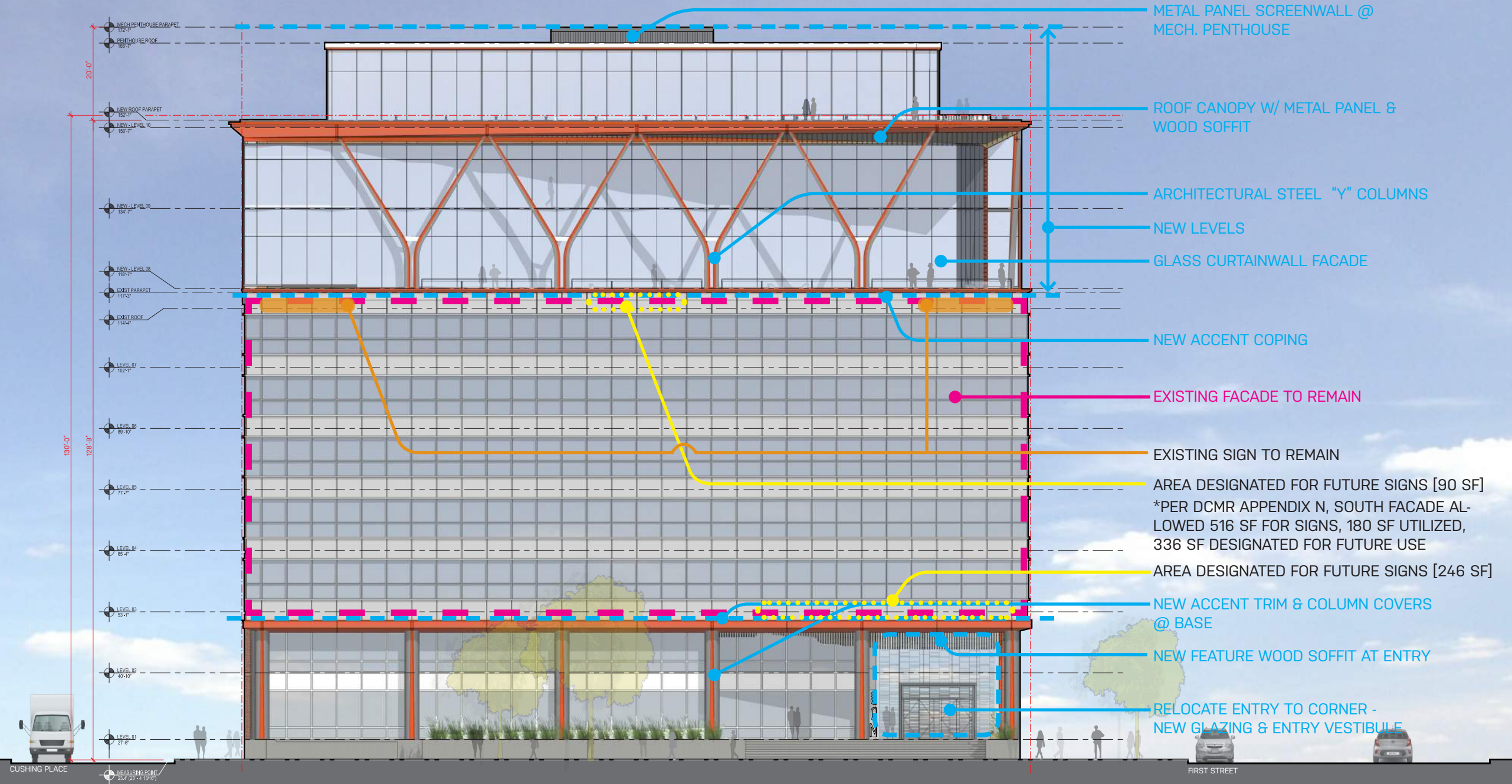
SHRUBS



South Elevation



South Elevation - notated



Existing Entry



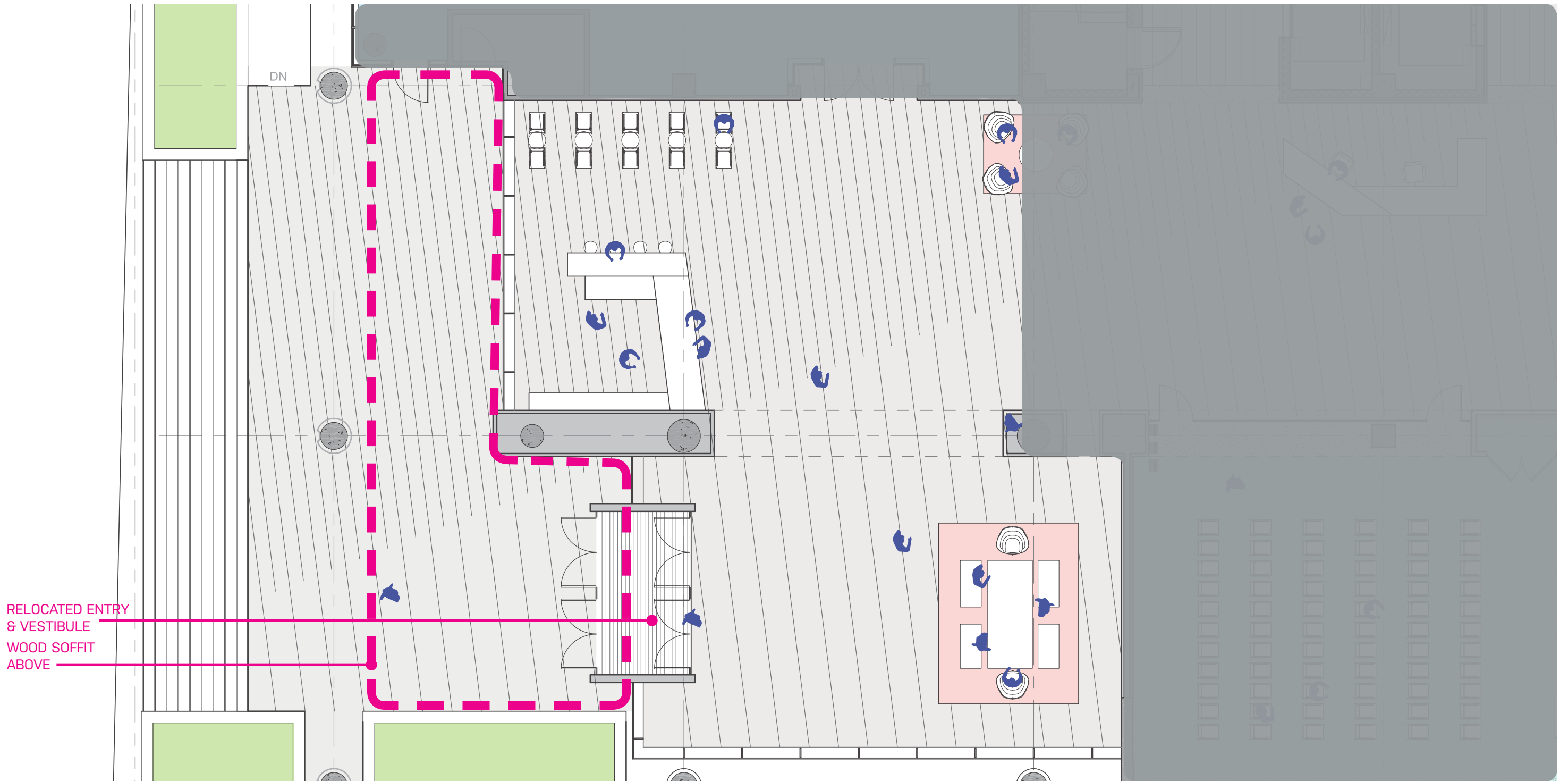
Proposed Entry



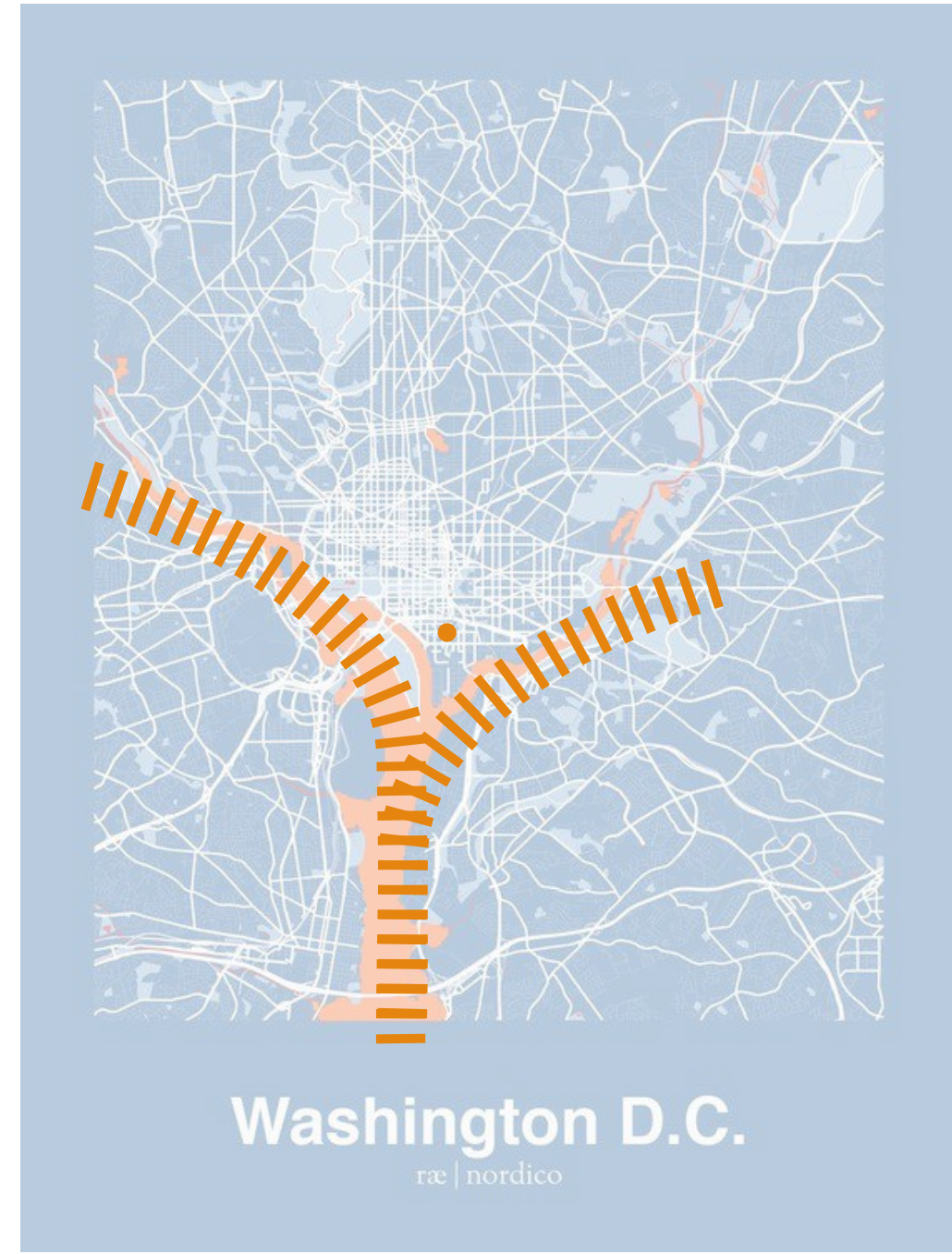
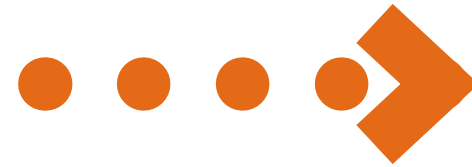
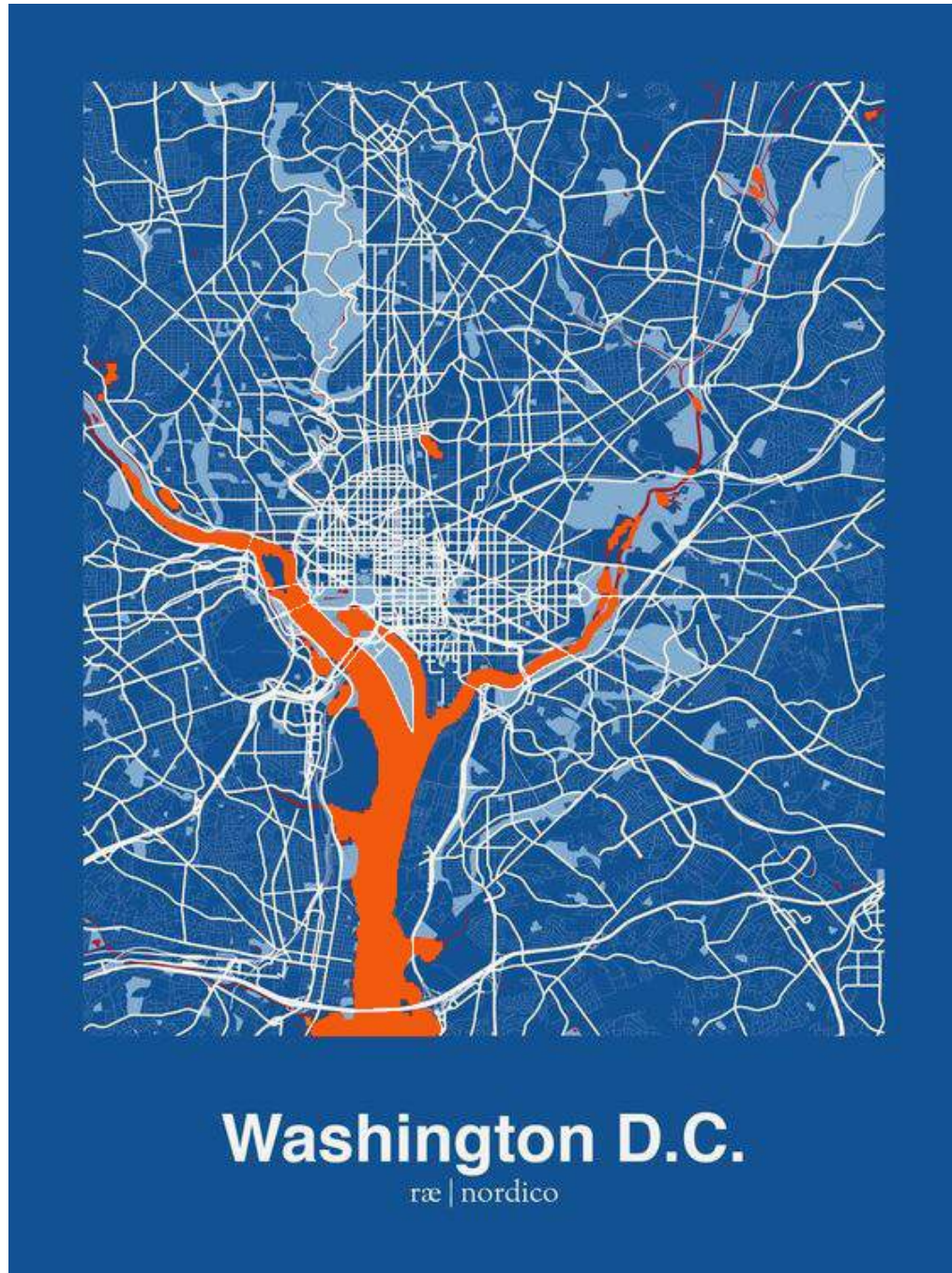
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Ground floor concept



soffit concept



soffit concept

