

UCHealth – University of Colorado Hospital Aurora Garage 2 Project

University of Colorado Design Review Board
Schematic Design (Revised)
April 10, 2020

Contents

- A. Introductions
- B. Site & Landscape
- C. Building
- D. Sustainable Strategies

A. Introductions

A/E Team



Pact Studios, LLC – Architectural Design



Martin & Martin – Civil and Structural Engineering



Specialized Engineering Solutions – MEP Design; Low Voltage; Lighting Design



Kimley>Horn – Landscape Architecture



Felsburg Holt & Ullevig – Traffic, Transportation, and Parking Study



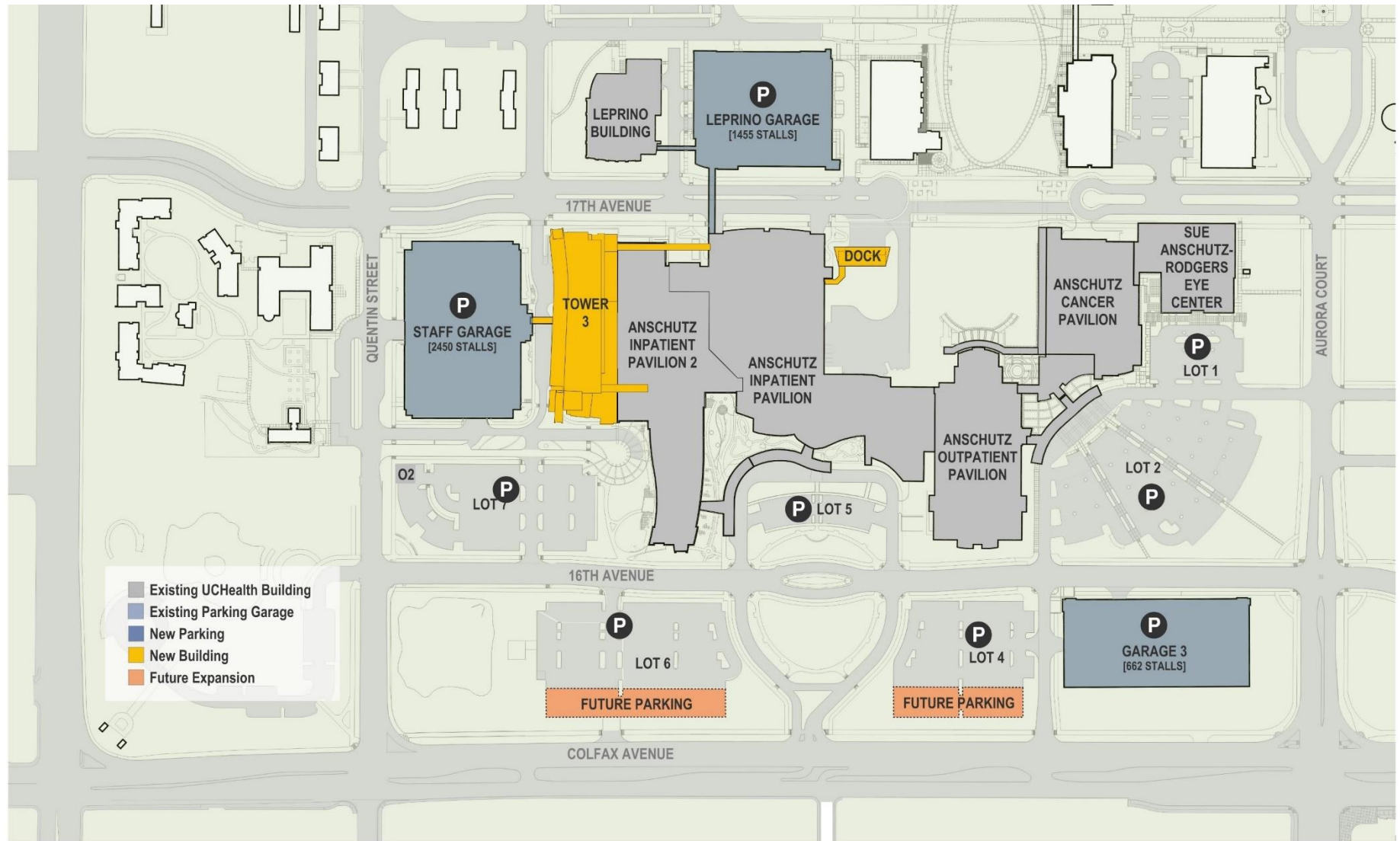
Lerch Bates – Vertical Transportation



Fd2s – Graphic and Signage Design

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Campus Plan



Context of Project – Campus



Feedback from March 13 DRB Review

1. Review access and Circulation

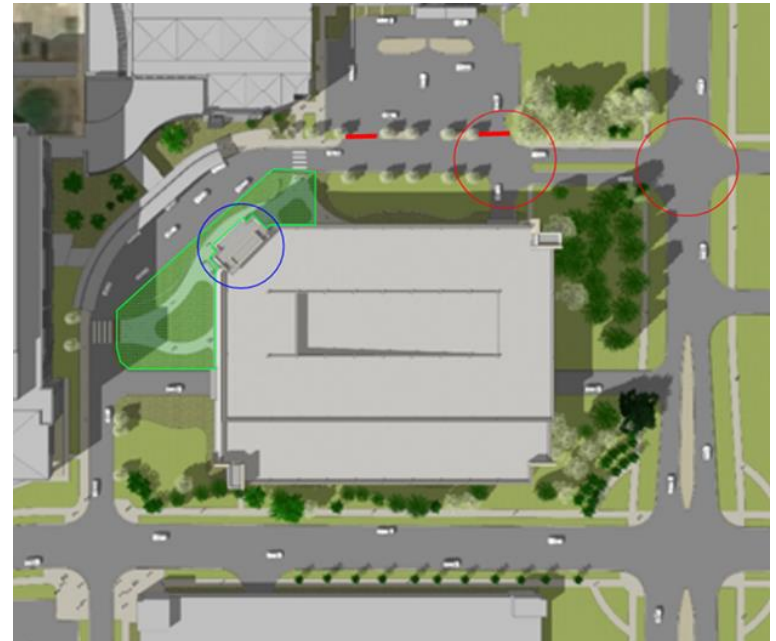
- A. Study traffic impact at intersection of Aurora Court and Drop-off Drive
- B. Study traffic impact at intersection of Drop-off Drive and north entrance/exit of garage

2. Refine urban design solution

- A. Reconsider garage materials
- B. Reconsider landscape design

3. Refine architectural mass

- A. Study moving primarily vertical circulation core away from corner
- B. Locate on north side with more direct access to northeast crosswalk



Site Plan with key areas to address indicated

Feedback from March 23 DRB Work Session

1. Review access and circulation

- A. Lot 1 Concept
- B. Traffic Study

2. Refine urban design solution

- A. Overall Design
- B. North Side
- C. West Side
- D. Northwest Corner
- E. Landscape Walls

3. Refine architectural mass

- A. New Elevator Core Location and Configuration
- B. Façade Design
- C. Sustainable Concrete Mix



New Landscape Concept shared during Work Session



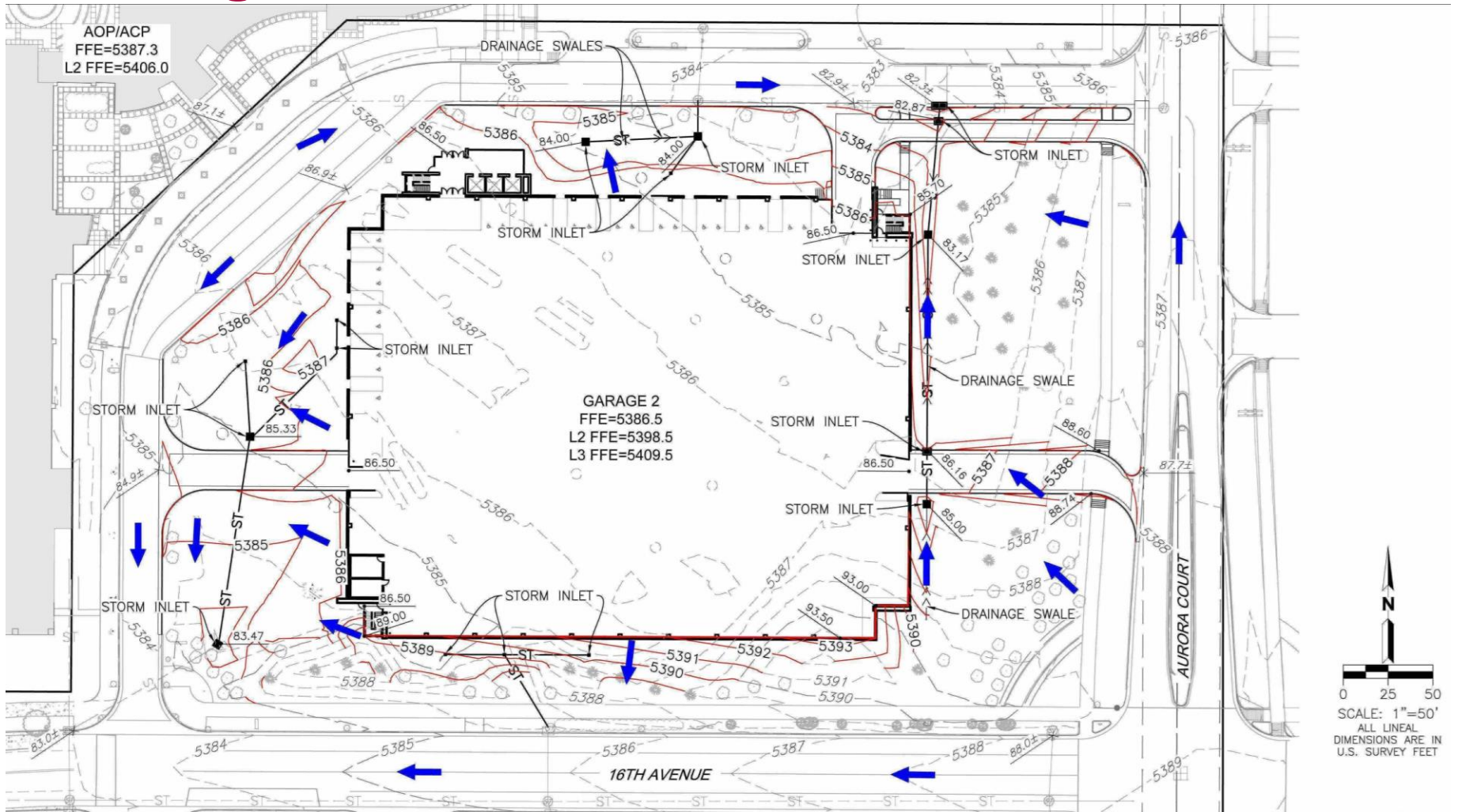
New Architecture Concept shared during Work Session



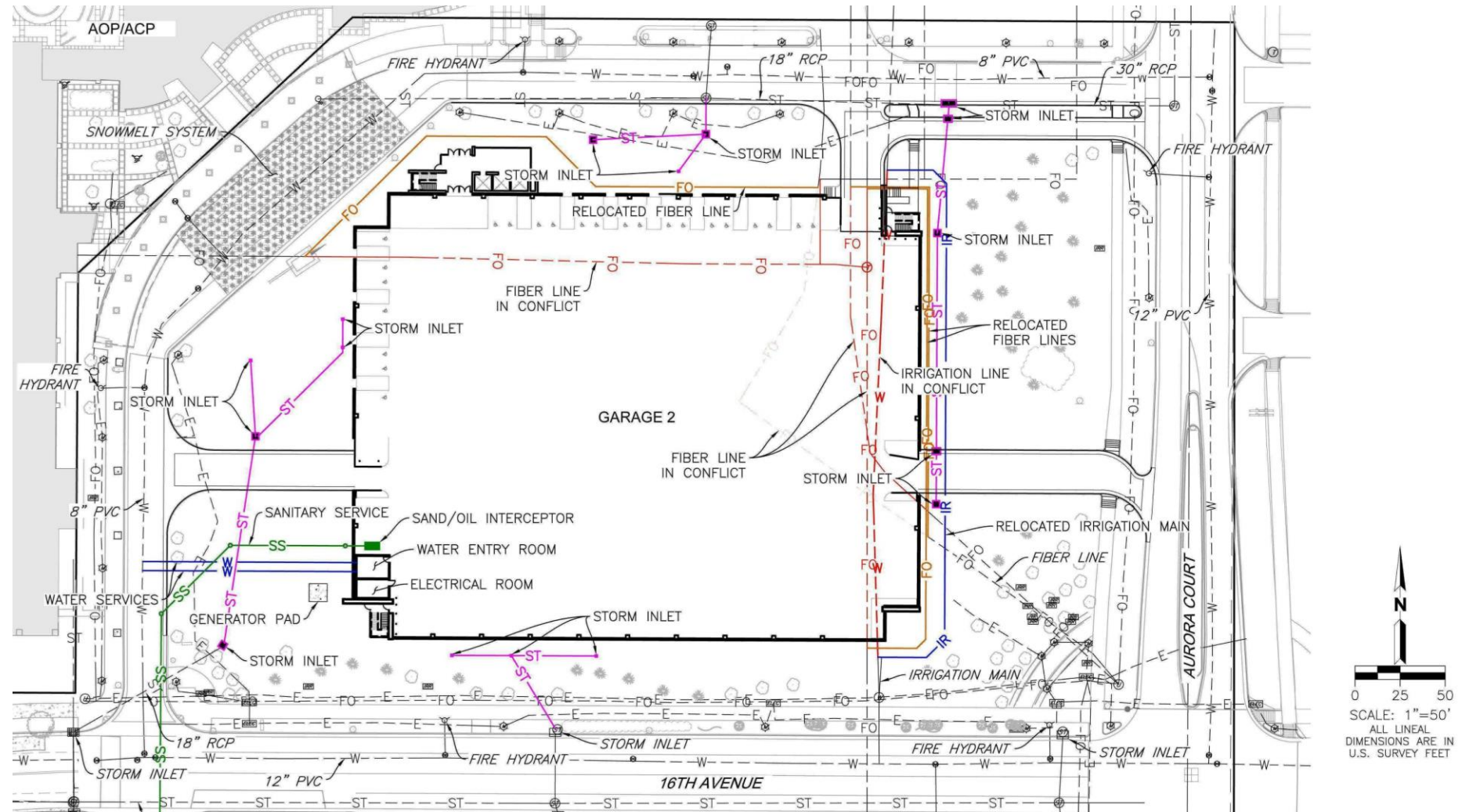
New Architecture Concept shared during Work Session

B. Site & Landscape

Grading Plan






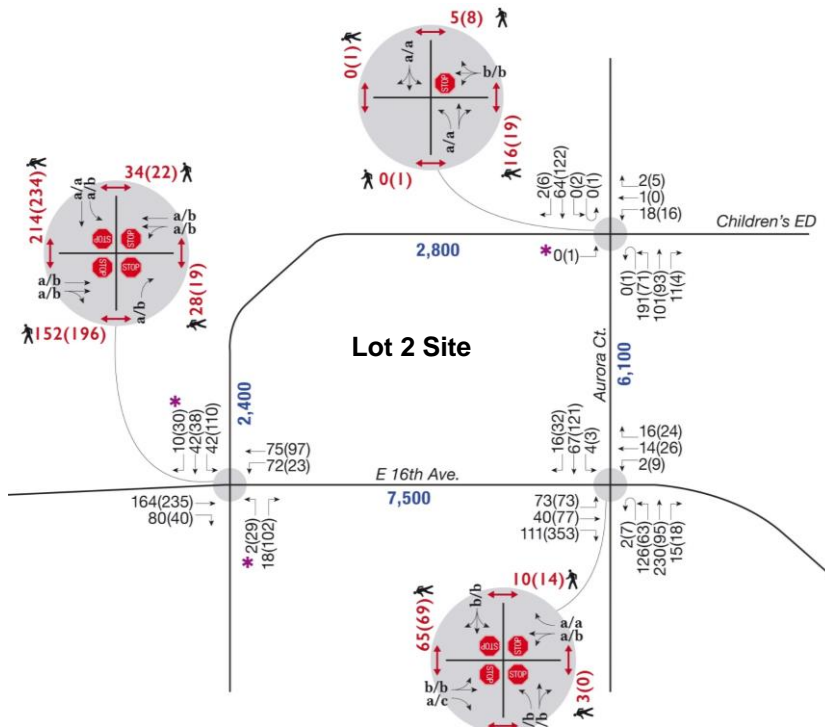
Utility Plan



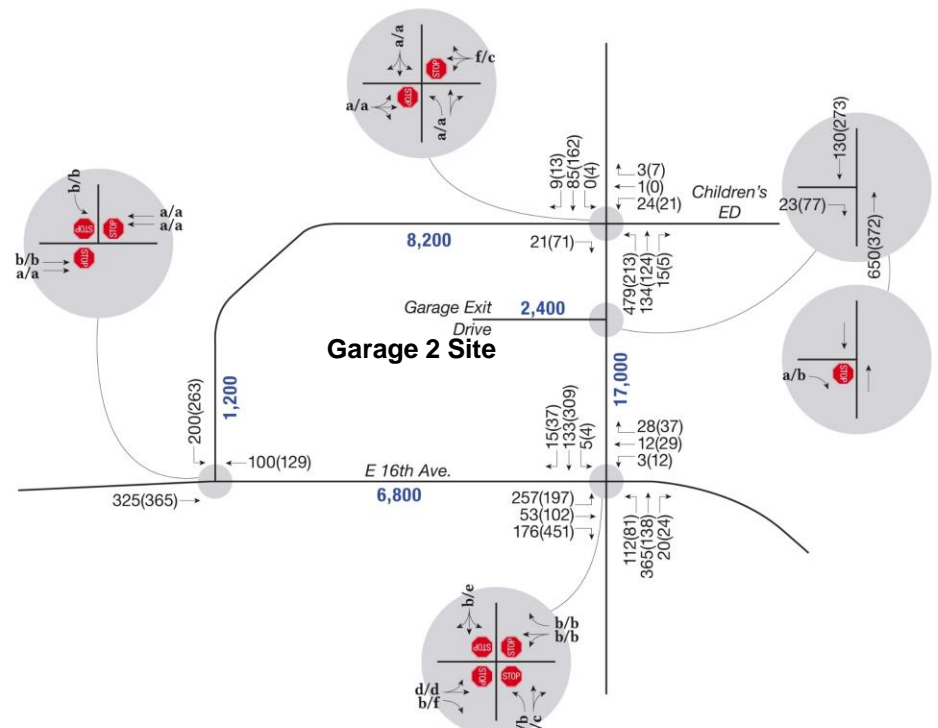
Traffic Study

LEGEND

- XXX(XXX) = AM(PM) Peak Hour Traffic Volumes
- XXXX = Daily Traffic Volumes
- x/x = AM/PM Peak Hour Unsignalized Intersection Level of Service
-  = Stop Sign
-  = AM/PM Pedestrians
-  = Illegal/Prohibited Turn Movements

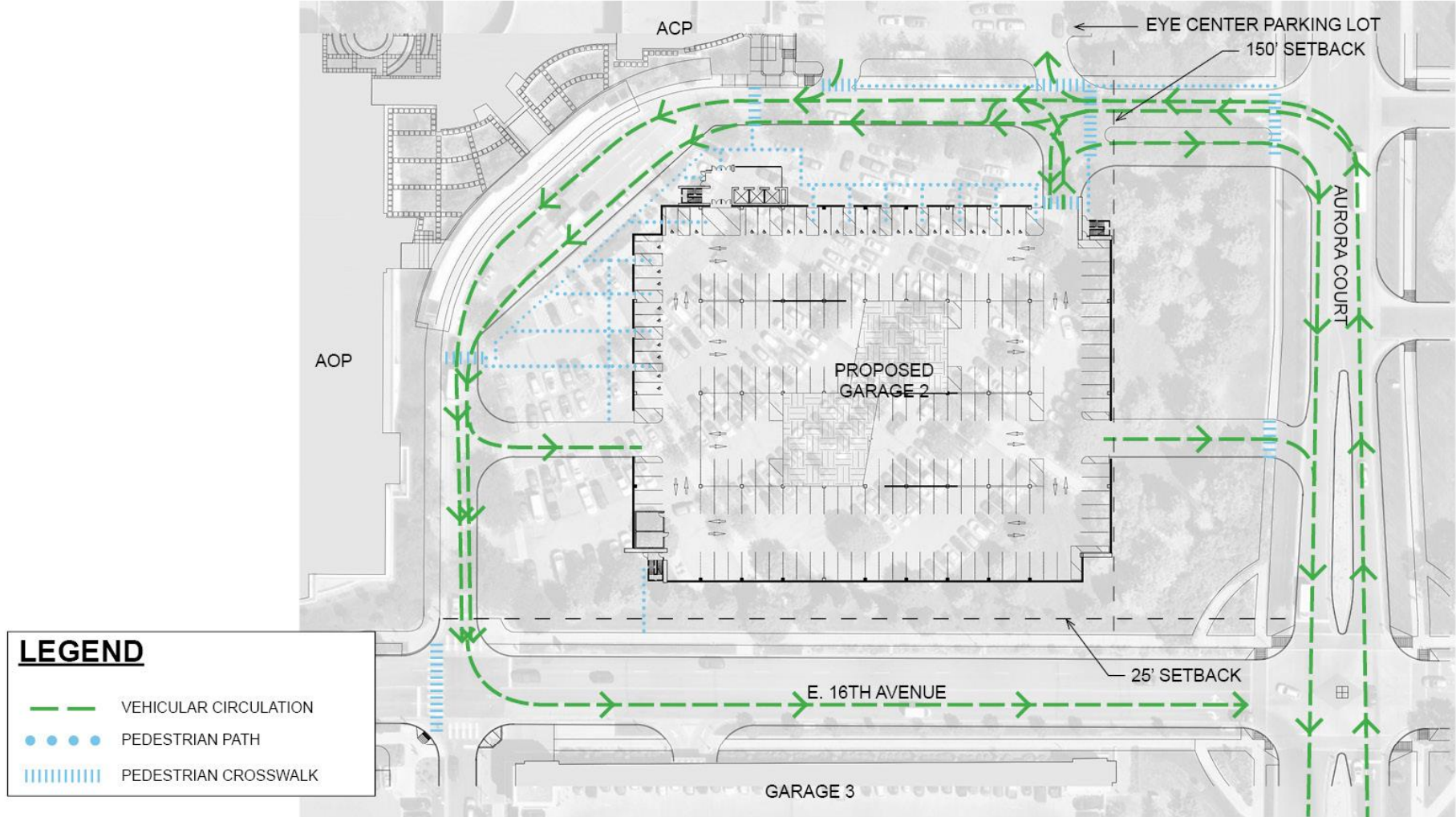


Existing Traffic Volumes



Anticipated 2025 Traffic Volumes

Pedestrian and Vehicular Circulation



PEDESTRIAN AND VEHICULAR CIRCULATION

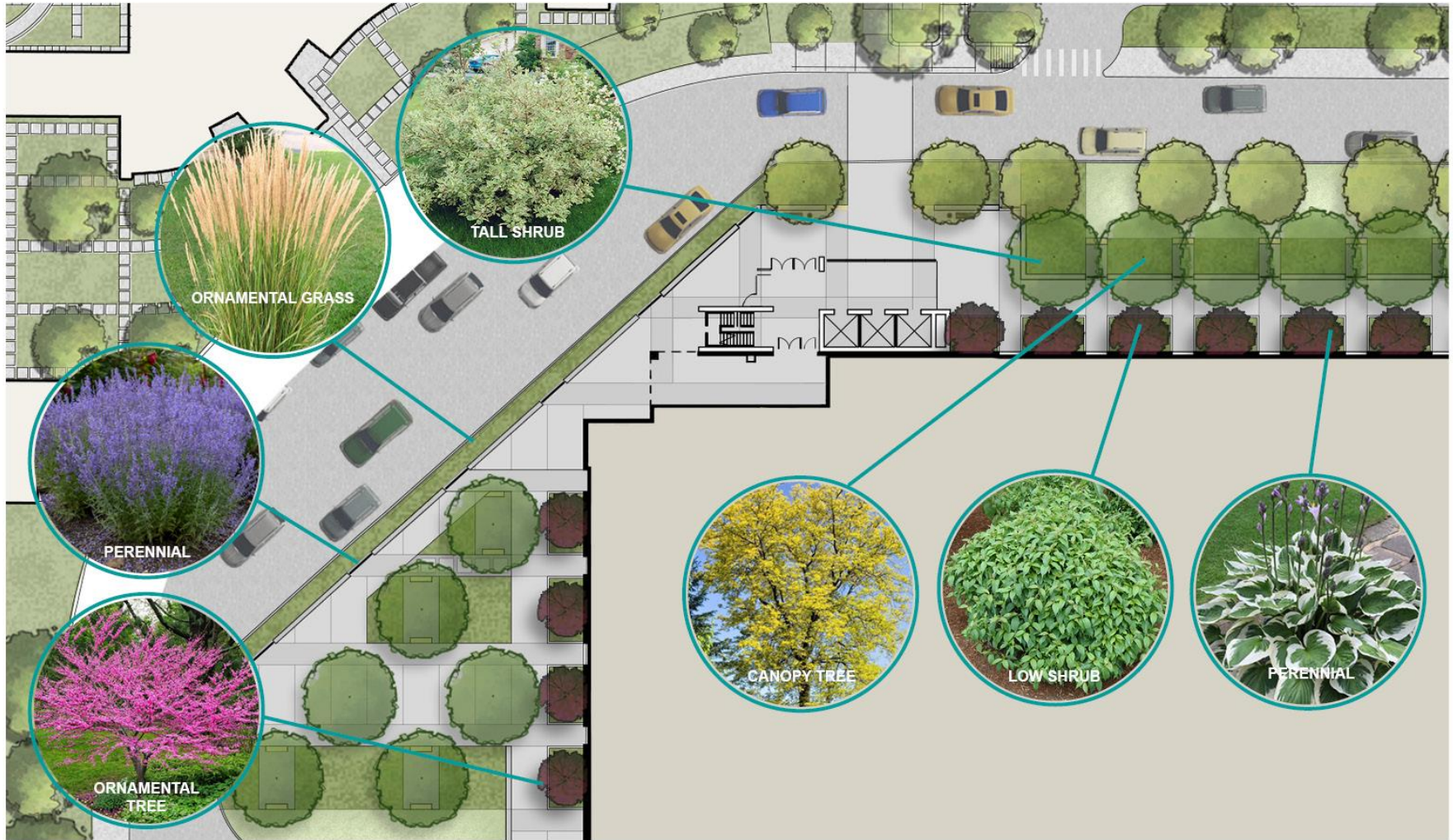


Overall Project Site Plan



OVERALL SITE PLAN

Planting Plan

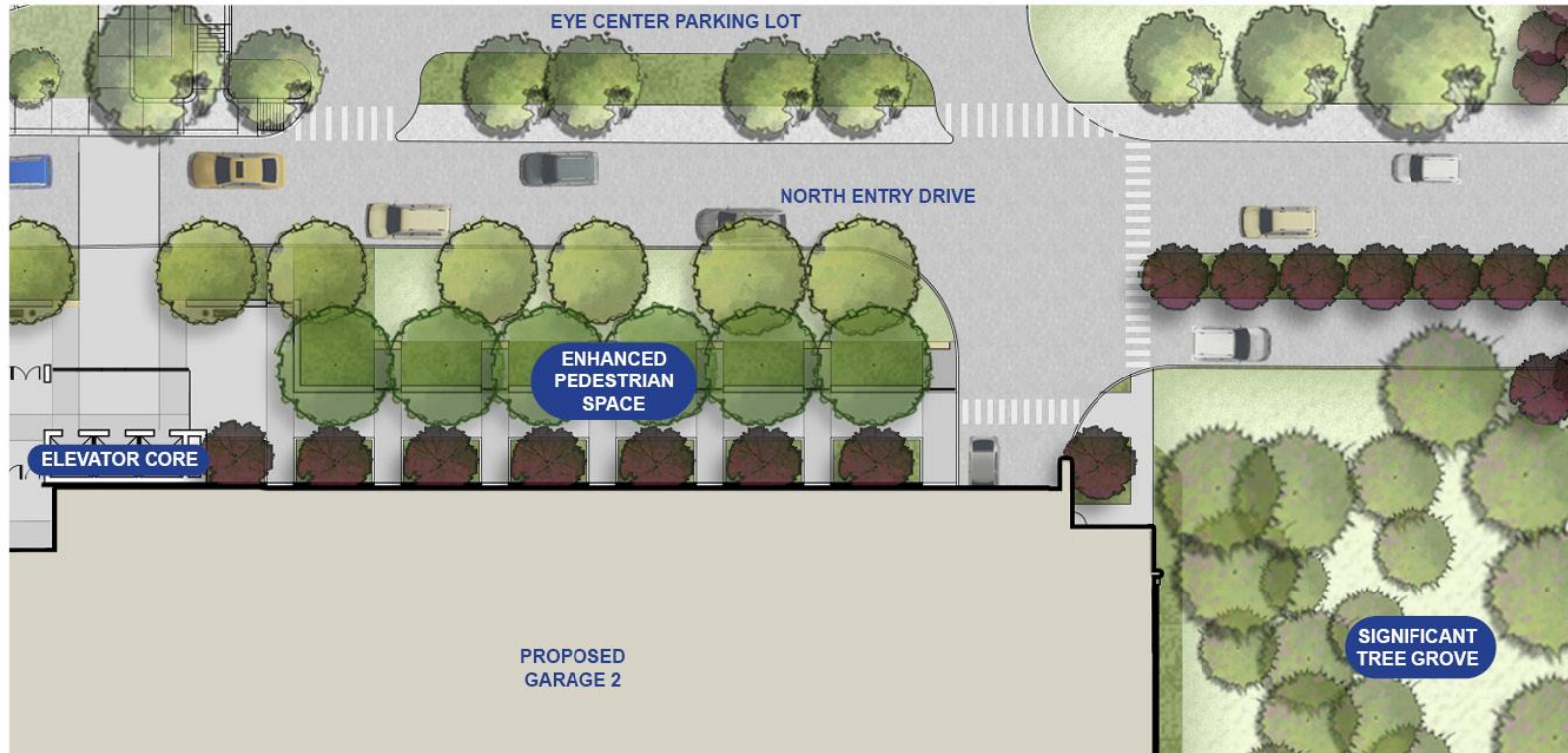


PLANTING PLAN



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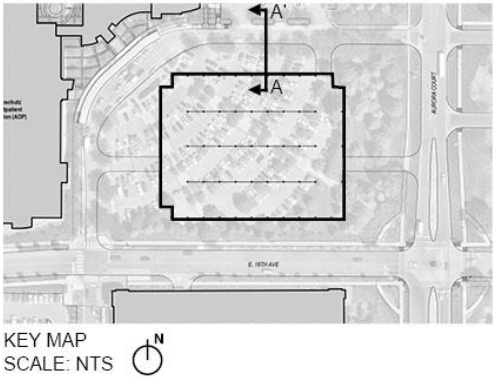
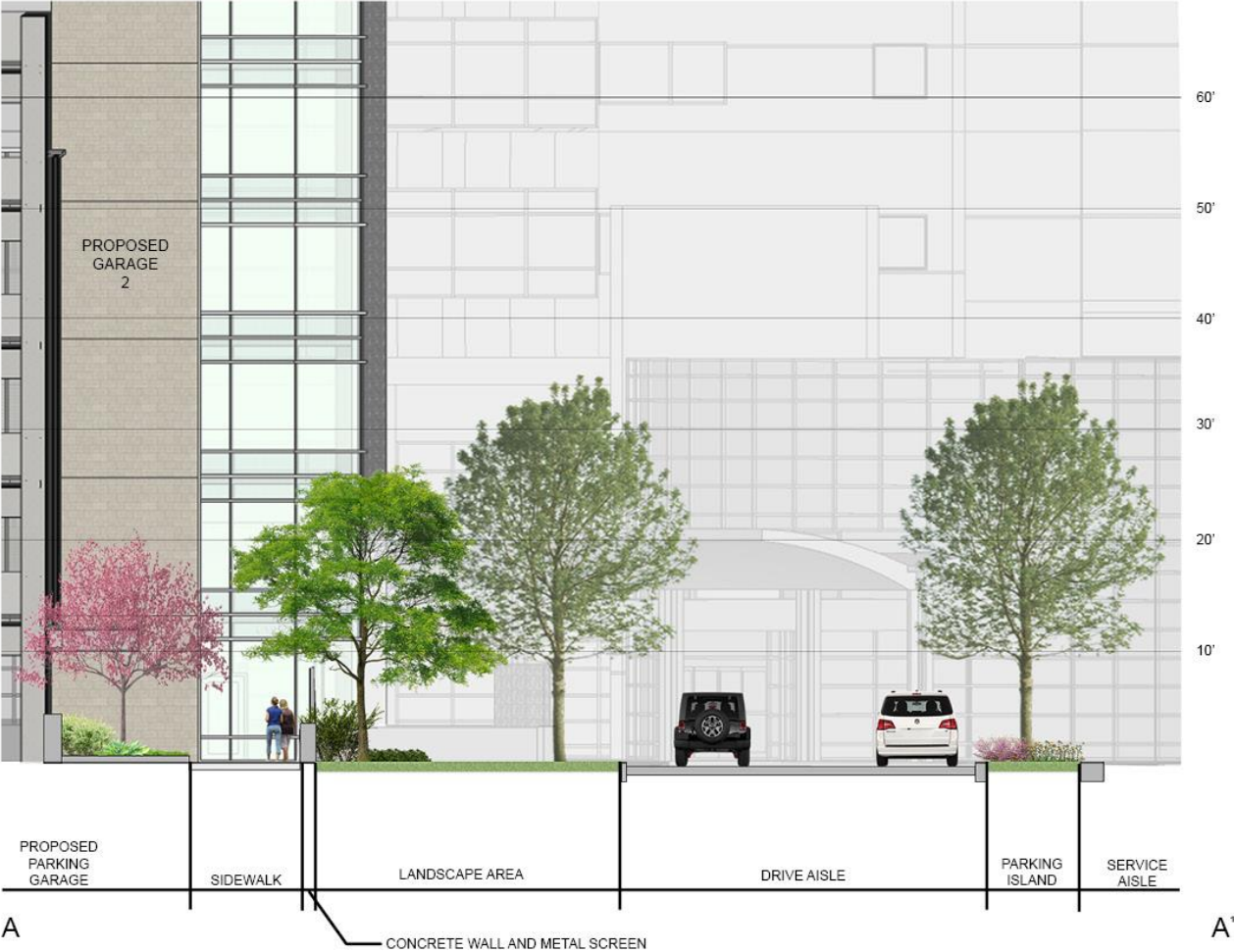
Enlargement Plan



NORTH PLAZA ENLARGEMENT PLAN



Landscape Section

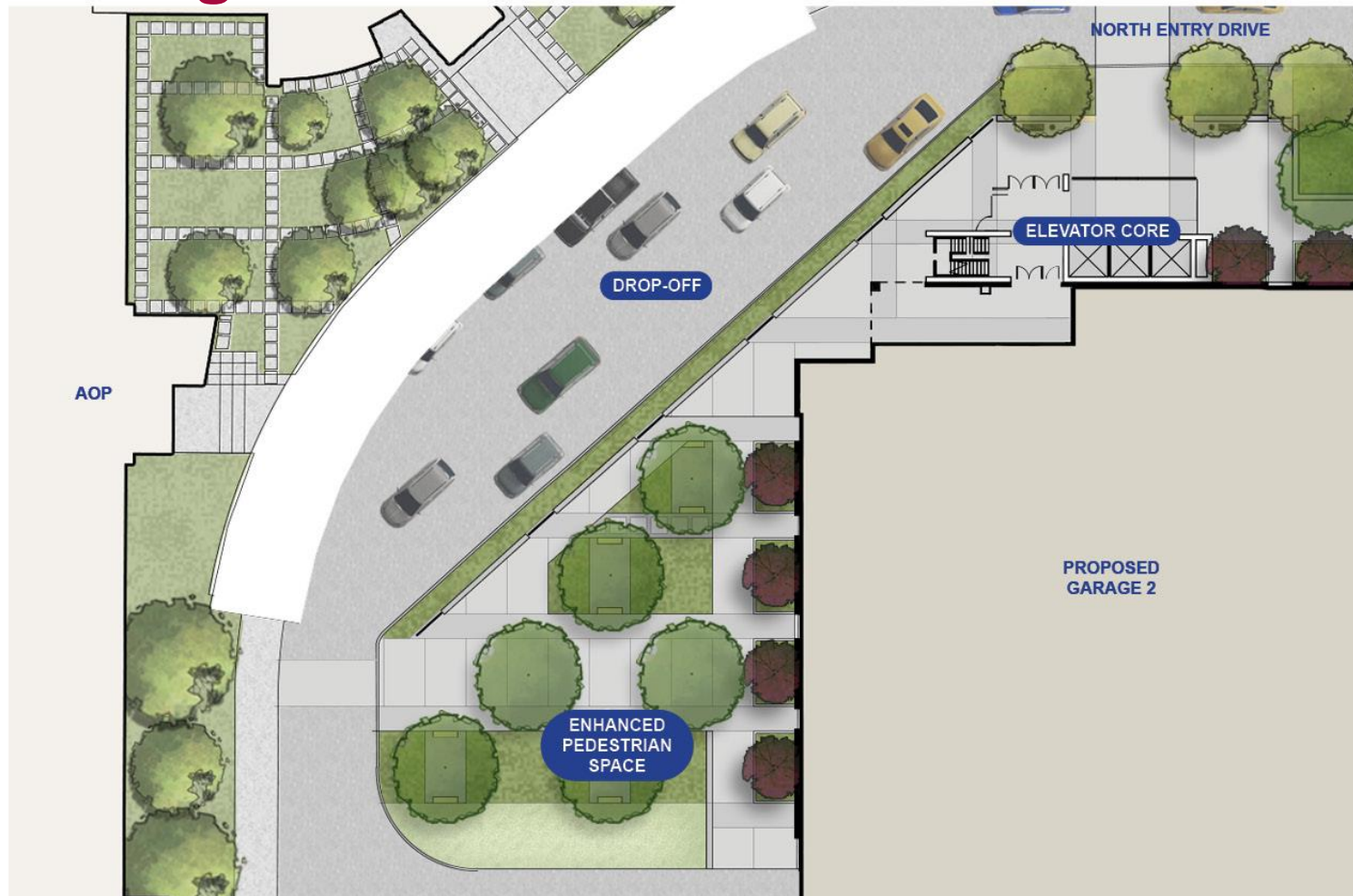


ENTRY DRIVE SECTION FACING WEST

North Plaza Perspective Views

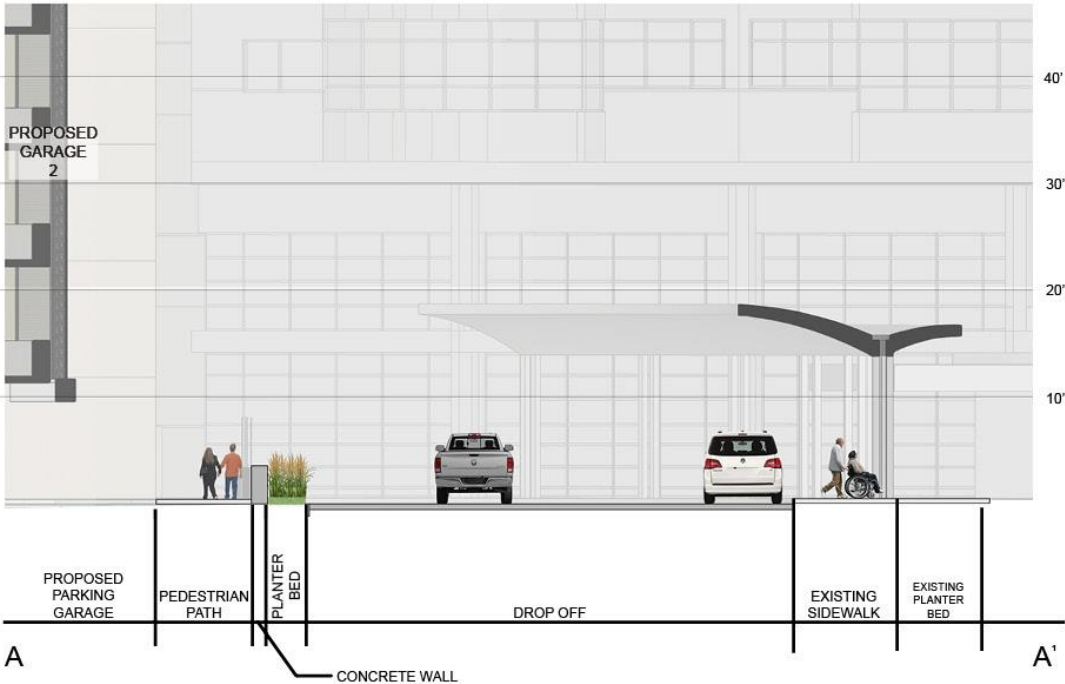


Enlargement Plan

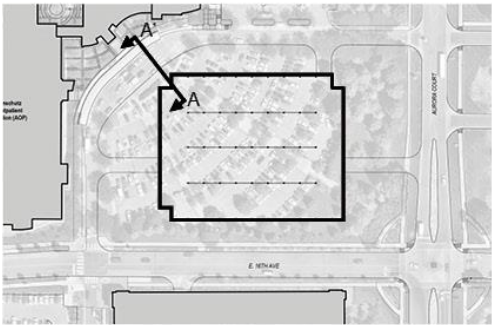


WEST PLAZA AND ELEVATOR CORE ENLARGEMENT PLAN

Landscape Section



DROP OFF AREA FACING SOUTHWEST



KEY MAP
SCALE: NTS



Landscape Section

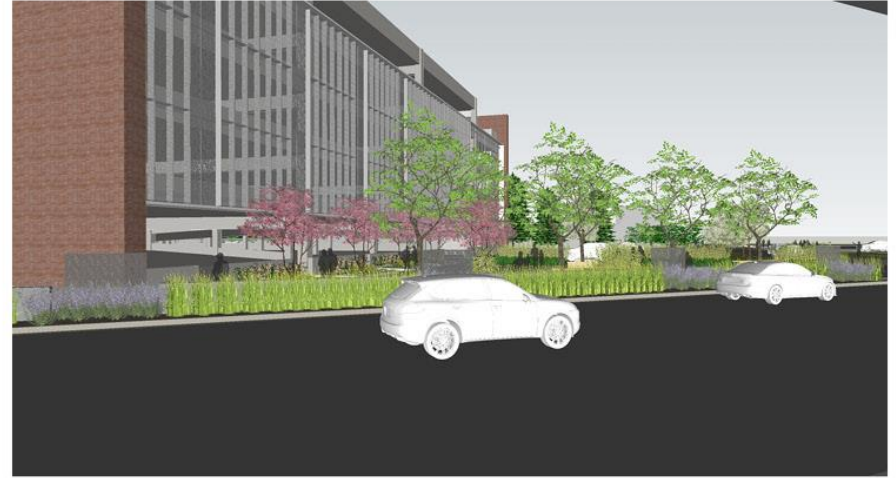


WEST PLAZA FACING NORTH

0' 5' 10' 20'
SCALE: 1"=10'

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West Plaza Perspective Views



C. Building

Inspiration



Palo Alto, CA

Hoover Parking Garage - Stanford



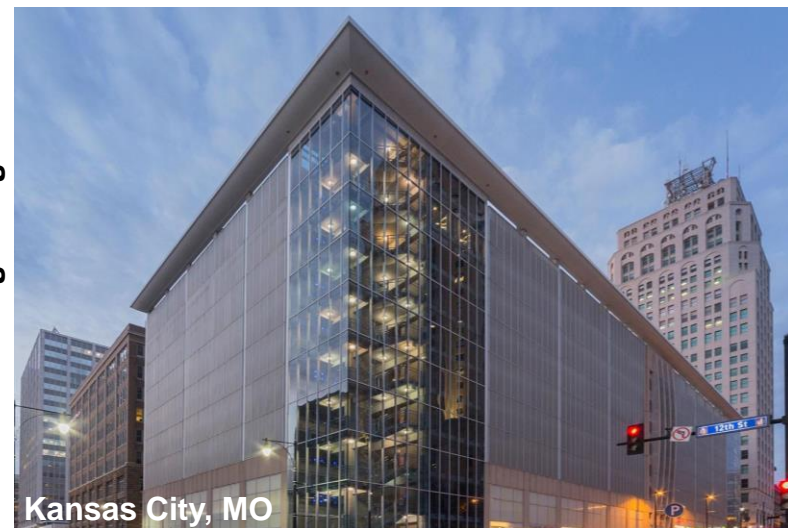
Raleigh, NC

Green Square Parking Garage



Kansas City , MO

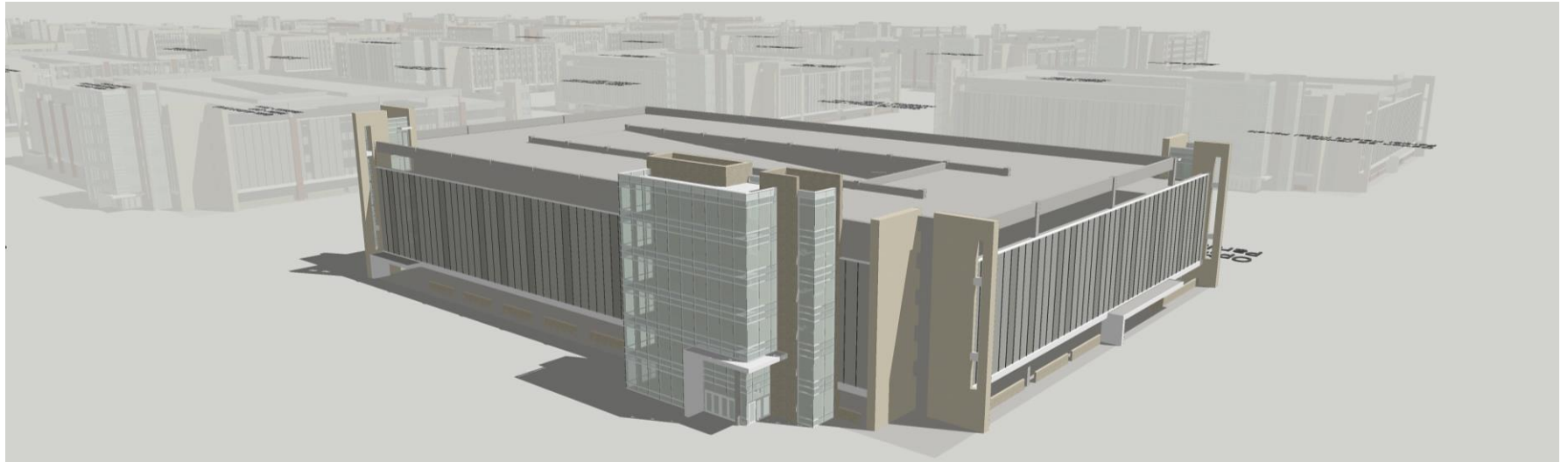
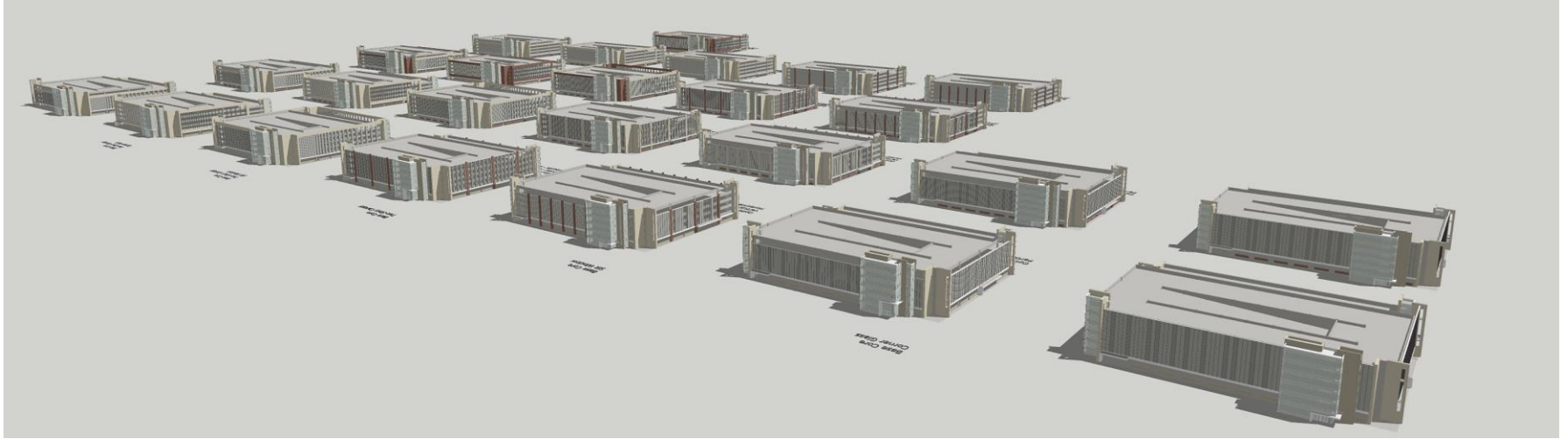
Rockhurst University Garage



Kansas City, MO

Standard Parking Garage

Façade Studies



Option 2A Selected for Further Study during March 27 DRB Work Session

Façade Vignettes – Screen Articulation



Steel Return at Opening



Recess at Opening



Proud at Opening



Flat Screen Fade

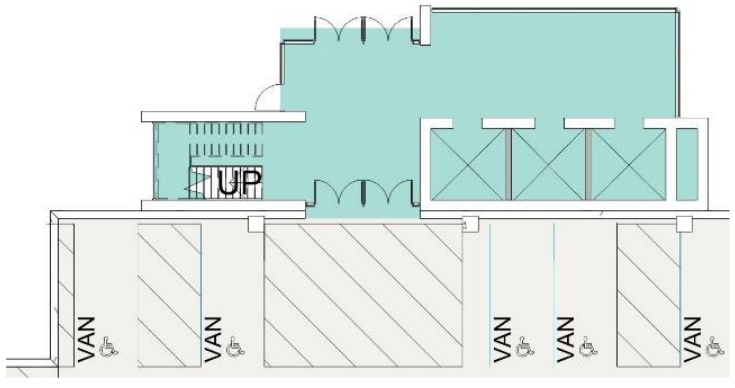


Perpendicular Screen Fade



Combo Fade

Core Floor Plan



Initial Elevator Core and Stair Concept



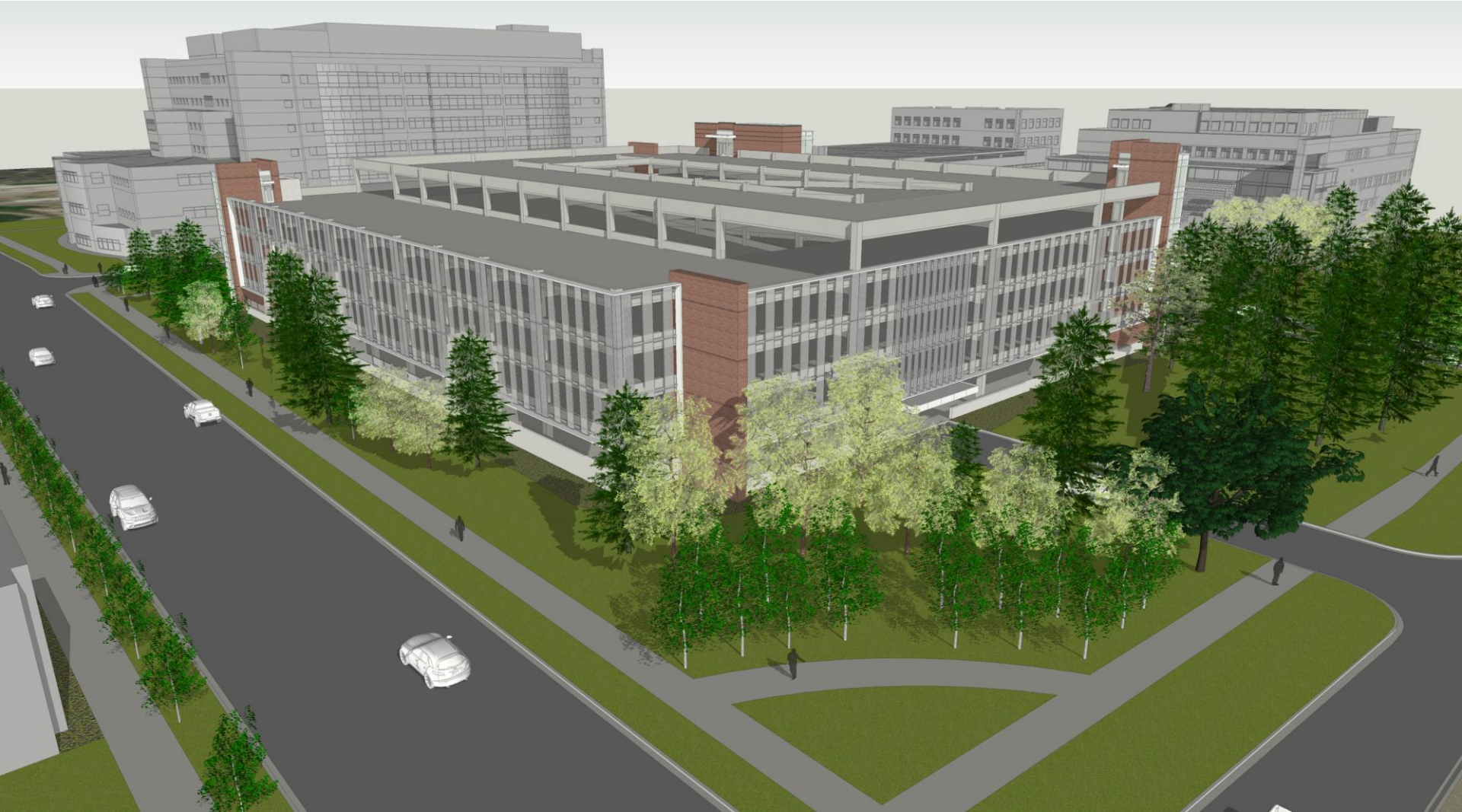
Preferred Elevator Core and Stair Concept

Aerial Plan



Aerial Plan

South & East Elevations



Aerial View Looking Northwest

North Elevation



Aerial View Looking Southwest

North & West Elevations



Aerial View Looking Southeast

South & West Elevations



Aerial View Looking Northeast

Schematic Design - Elevations



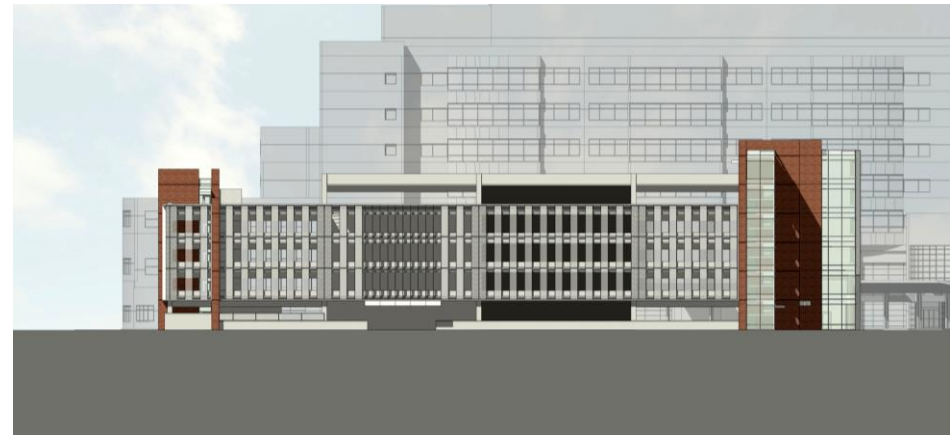
North Elevation



West Elevation

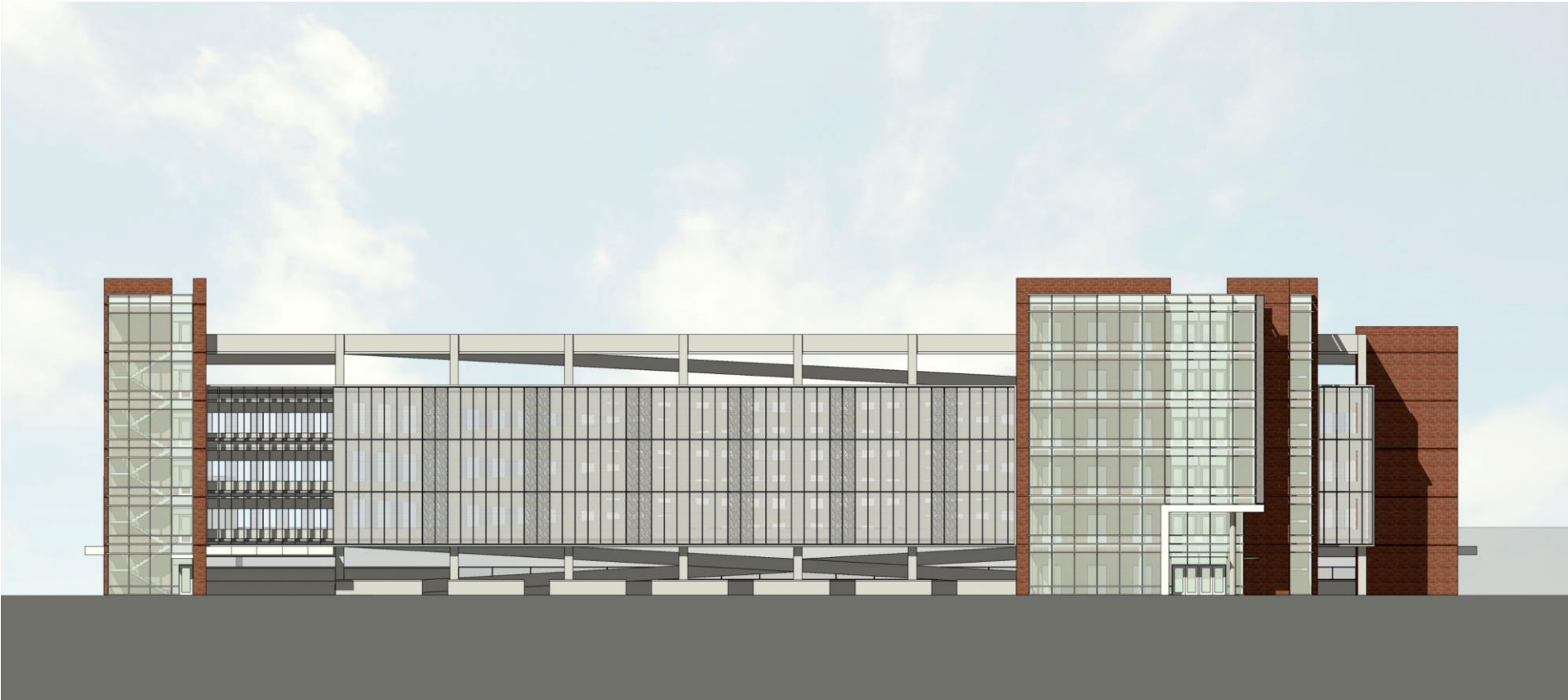


South Elevation



East Elevation

Schematic Design - Elevations



North Elevation

Schematic Design - Elevations



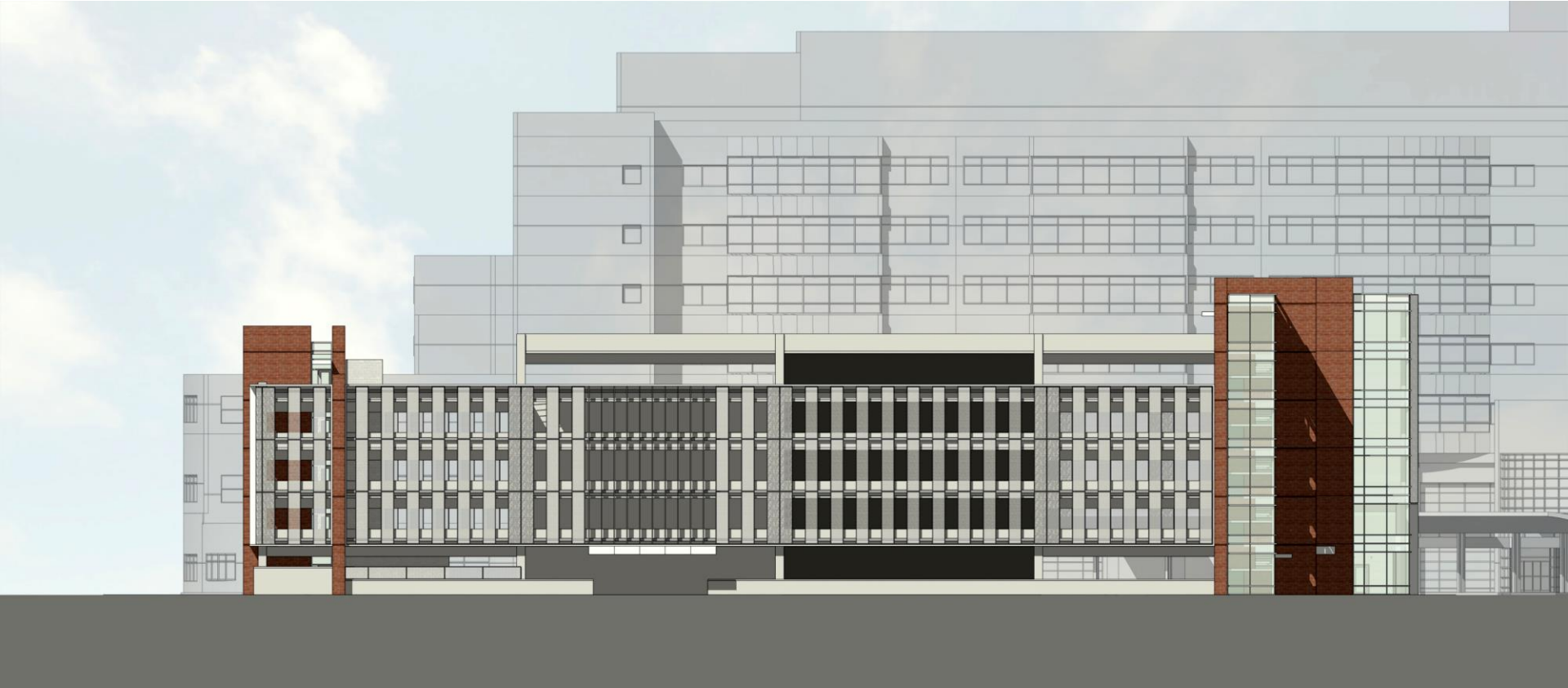
West Elevation

Schematic Design - Elevations



South Elevation

Schematic Design - Elevations



East Elevation

Schematic Design - Perspectives



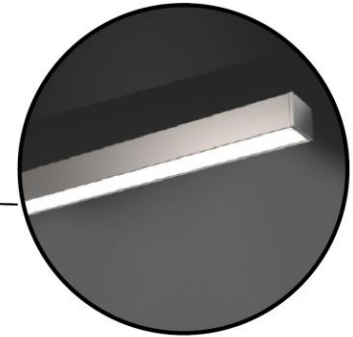
Street View at 16th Ave & Aurora Court Looking Northwest

Schematic Design - Perspectives

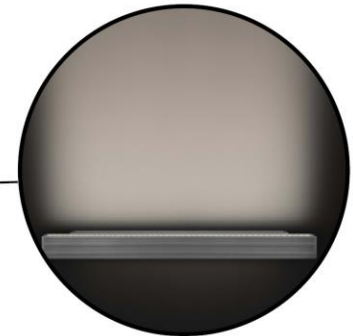


Street View at Entry Drive & Aurora Court Looking Southwest

Lighting Concept



**A-light Accolade D3
Mullion Mounted**



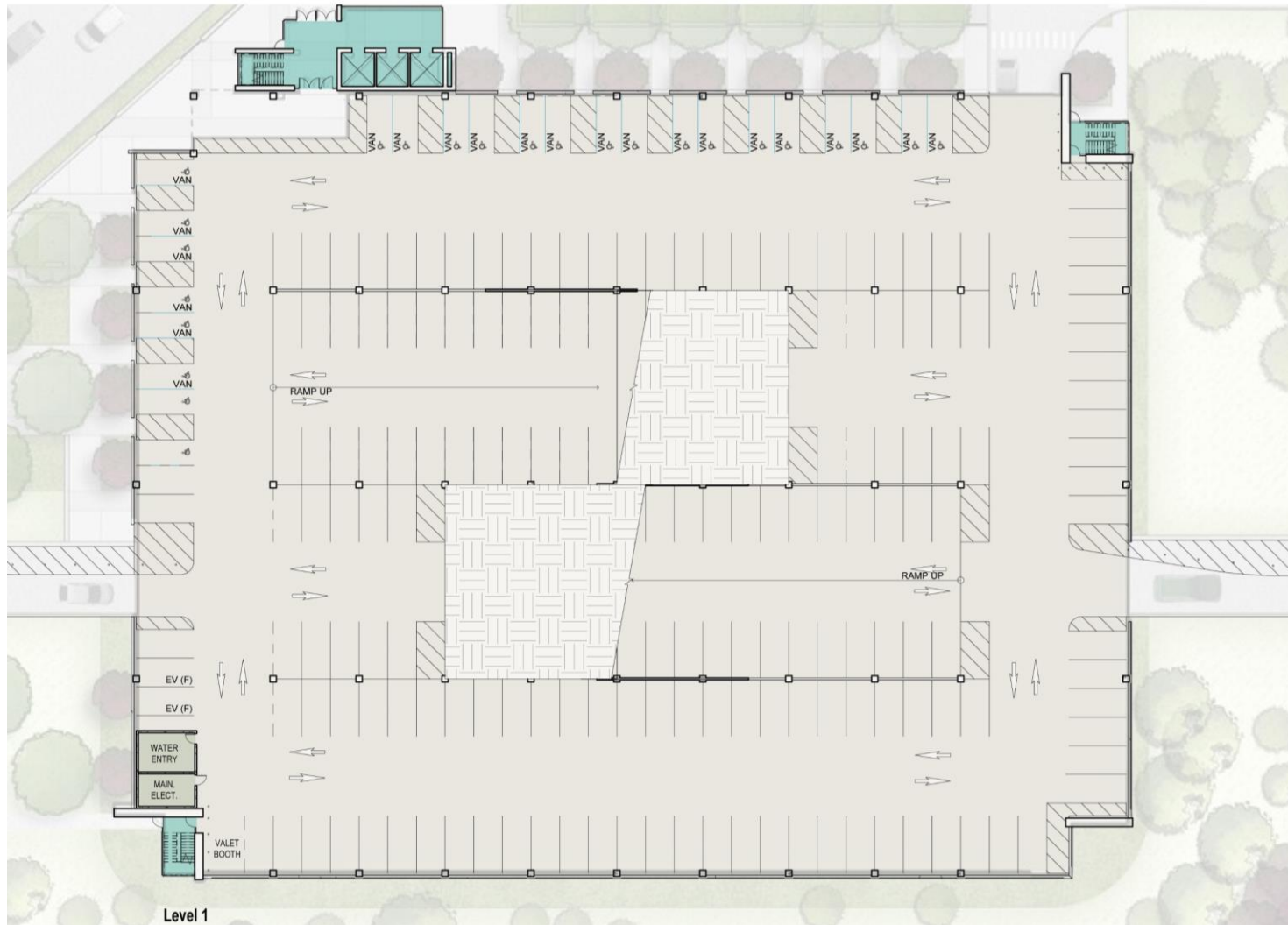
**Lumenpulse Slim Linear
LED Grazing**



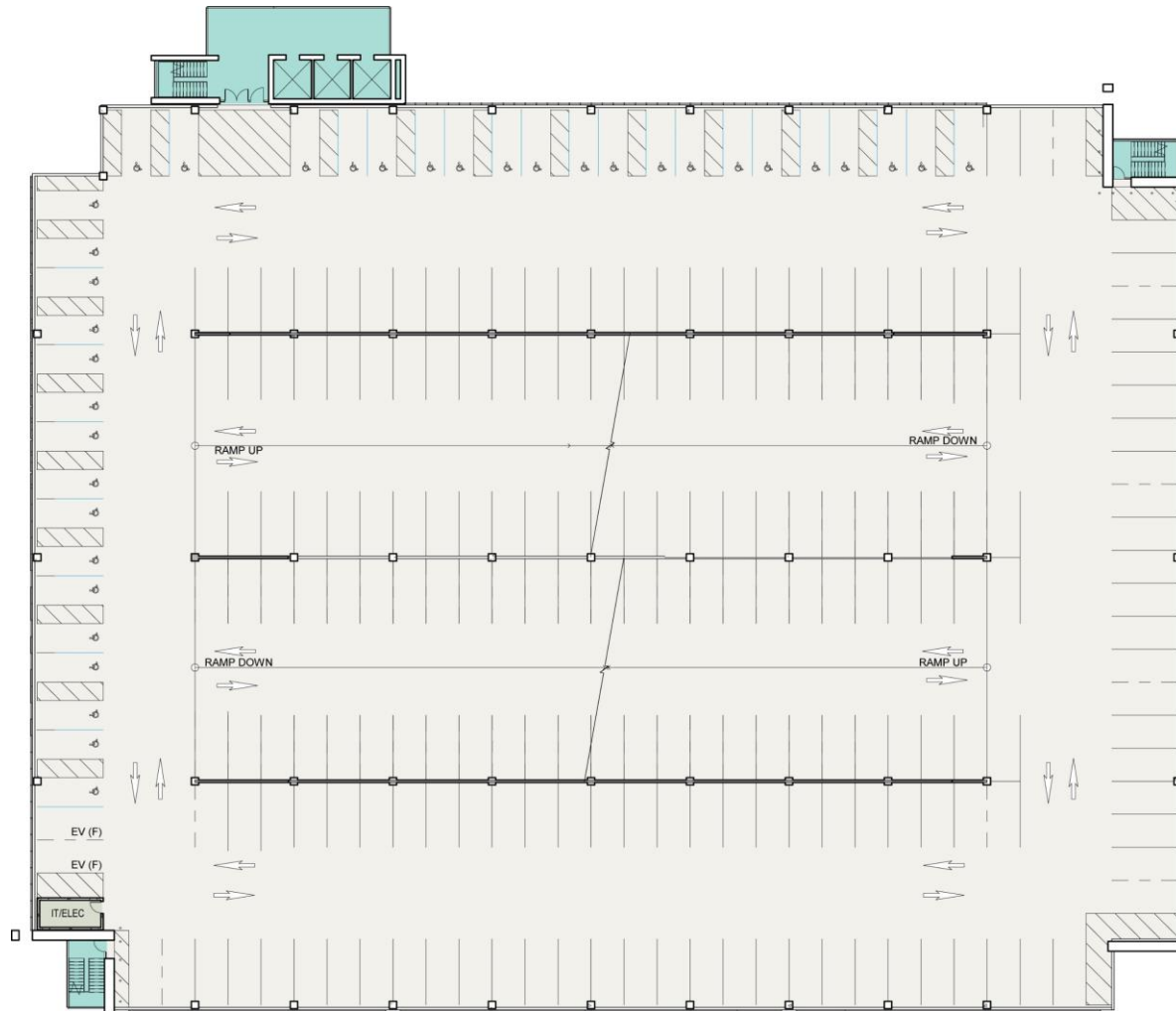
**Lumenpulse Inground
Uplight**

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Ground Level Floor Plan

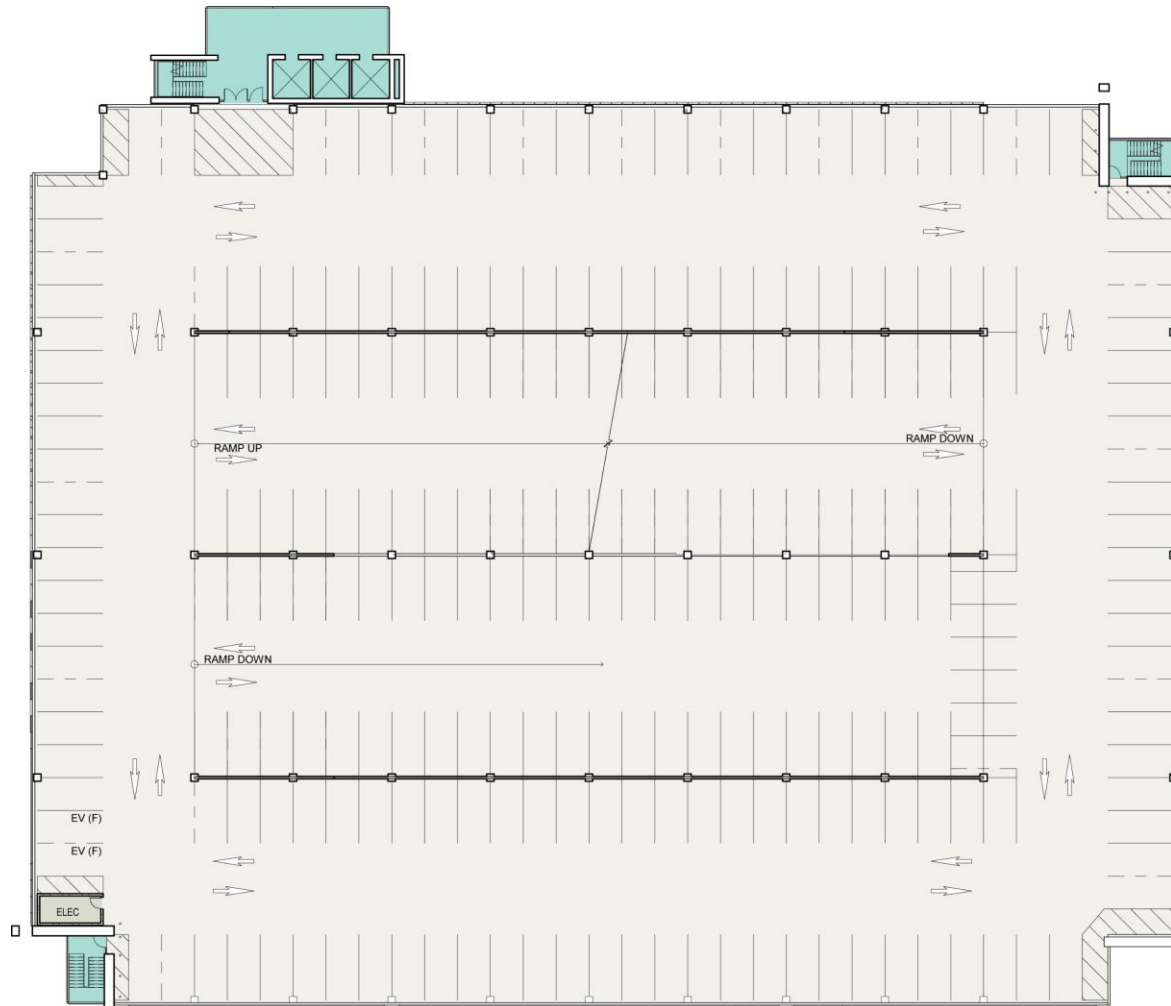


Levels 2-4, Typical Floor Plan



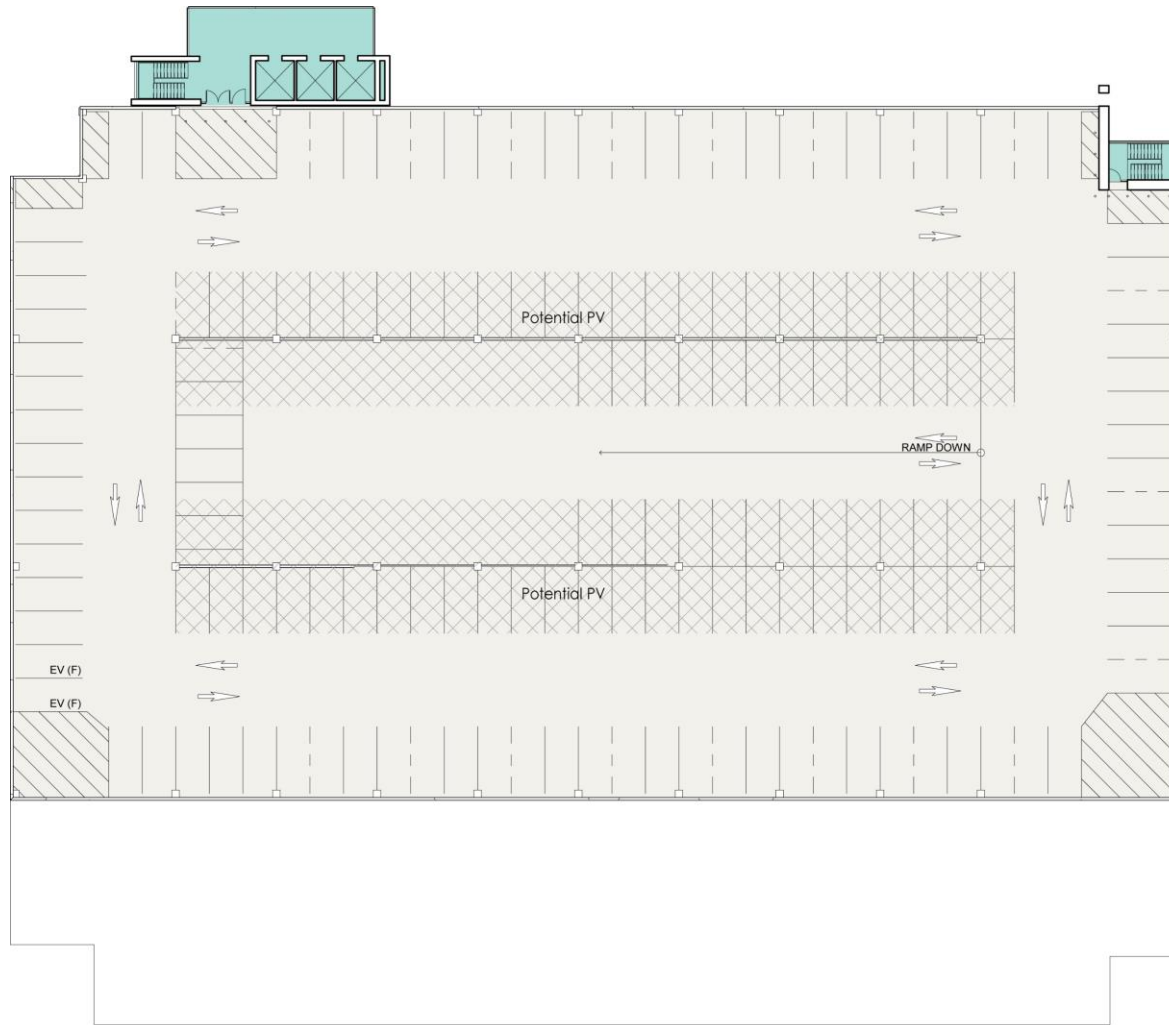
Levels 2-4 (Typical Layout)

Level 5 Floor Plan



Level 5

Level 6 Floor Plan



Levels 6

D. Sustainable Strategies

Energy Design Consideration Summary

	Typical Parking Structure	Best Practices	Project Implementation
Performance Specification	None.	Energy goal-driven specification	Design team has set annual energy goal of 51kWH /parking stall/year.
Ventilation	Mechanical ventilation if underground or enclosed	Natural ventilation only	Garage will be entirely naturally ventilated. Daylighting sensors provided to reduce power to luminaires by 30%.
Daylighting	None	Daylight provides 75%-100% energy use reduction for electric lighting during daytime hours	
Electric Lighting	0.18-0.30 W/ft2 installed load	0.05-0.18 W/ft2 installed load depending on illuminance requirements Concern for safety and way finding, driving time, and lighting use. Flow considerations reduce energy use by 75% during nighttime hours (can vary based on garage use patterns).	0.17 W/ft2 installed load.
Pedestrian Flow	Concern for safety and way finding		High priority on pedestrian experience and way finding.
Equipment	Active heating methods to prevent freezing in drainpipes and elevator gear.	Passive heating and heat recovery methods to prevent freezing in drain-pipes and elevator gear.	TBD
Incentives	Preferred parking.	Preferred parking and onsite charging stations powered by renewable energy	Infrastructure for (2) EV charging stations per floor.
Renewable Energy	None	Solar electricity and wind used in appropriate climate zones	Alternate for solar electricity on top level is included.
Commissioning	Commissioning but no measurement and verification (M&V)	Commissioning and ongoing M&V	TBD

Notes:

1. US Energy Star does not provide Energy Use Intensity (EUI) data for parking garage projects.
2. This list is adapted from NREL guidelines for Low-Energy Parking Structure Design.

Concrete Mix

SEARCH BY PROPERTIES: 03 30 00 CAST-IN-PLACE CONCRETE

DESIGN INTENT

Compressive Strength
≈ 5000 psi

@ Curing Time
28d

≈ Compressive Strength Other

@ Curing Time

Slump (min)

Options

≤ W/C Ratio

≧ SCM

≤ EC3 / 1 yd3

☒ Standardweight ☐ Lightweight

GEOGRAPHIC

Filter by Country/Region
USA x

Filter by State/Province
Colorado x

ADVANCED

☒ Filter by Manufacturer

☒ Filter by Plant

☒ Filter by Product Name

kgCO2e embodied per 1 yd3

Tour : BOXPLOT DIAGRAM

Notes:

Design team is using the EC3 website as a tool for selecting a concrete mix. Other variables will need to be considered and evaluated to ensure the proper concrete mix is selected.

EC3 Online Tool for Material Comparisons

Organization Name: Martin Marietta

Plant Name: Quivas

Product Name: A5512

Description: Exterior 5000 PSI

GWP: 400 kgCO2e

Declared Unit: 1 yd3

Concrete Compressive Strength 28D: 5000 psi

Original EPD File: [DOWNLOAD EPD](#)

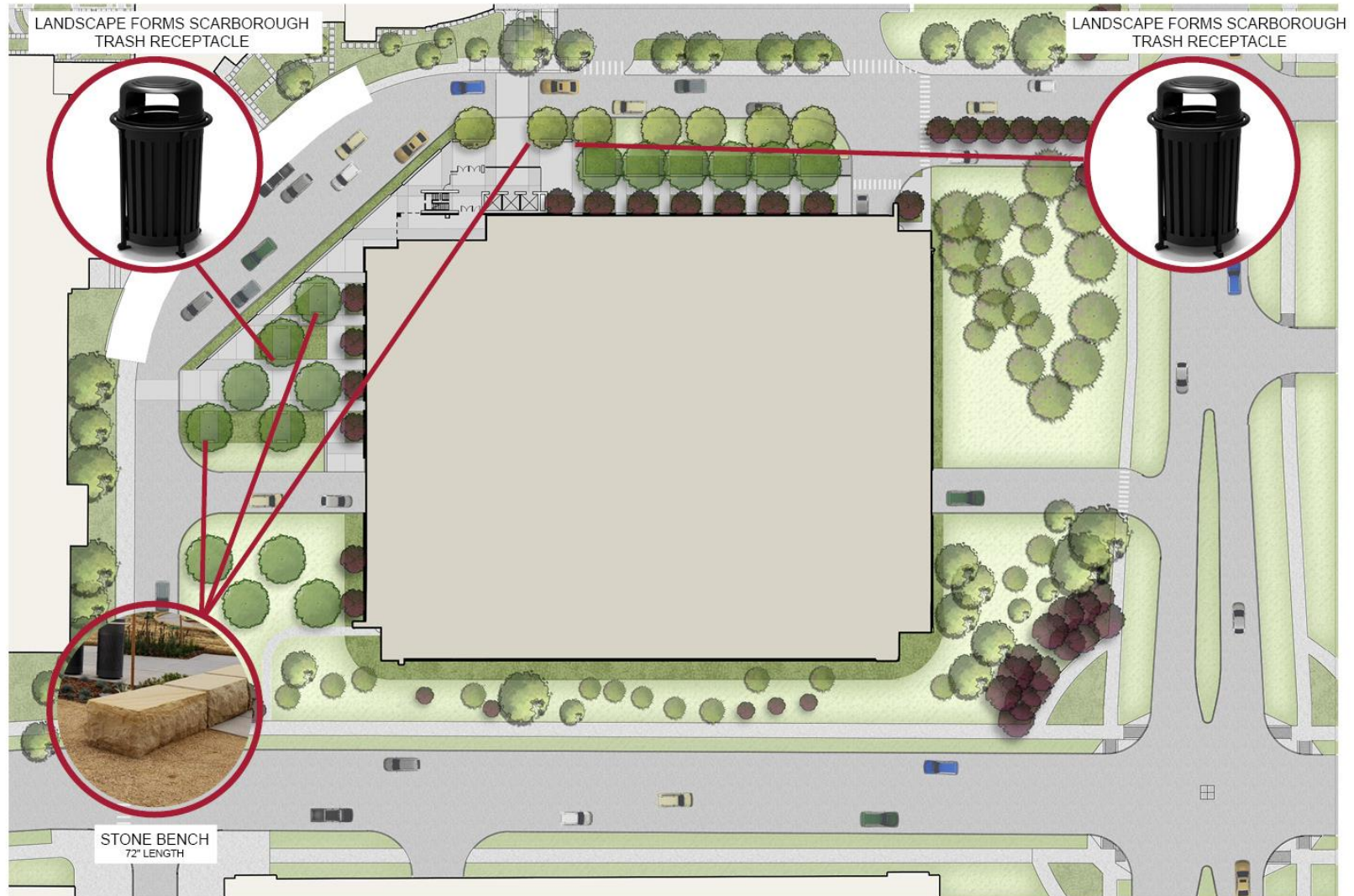
[View](#)

Example of Concrete Mix that would fall below the Carbon Leadership Forum (CLF) baseline for Ready Mix concrete, which is 458.73

Thank you

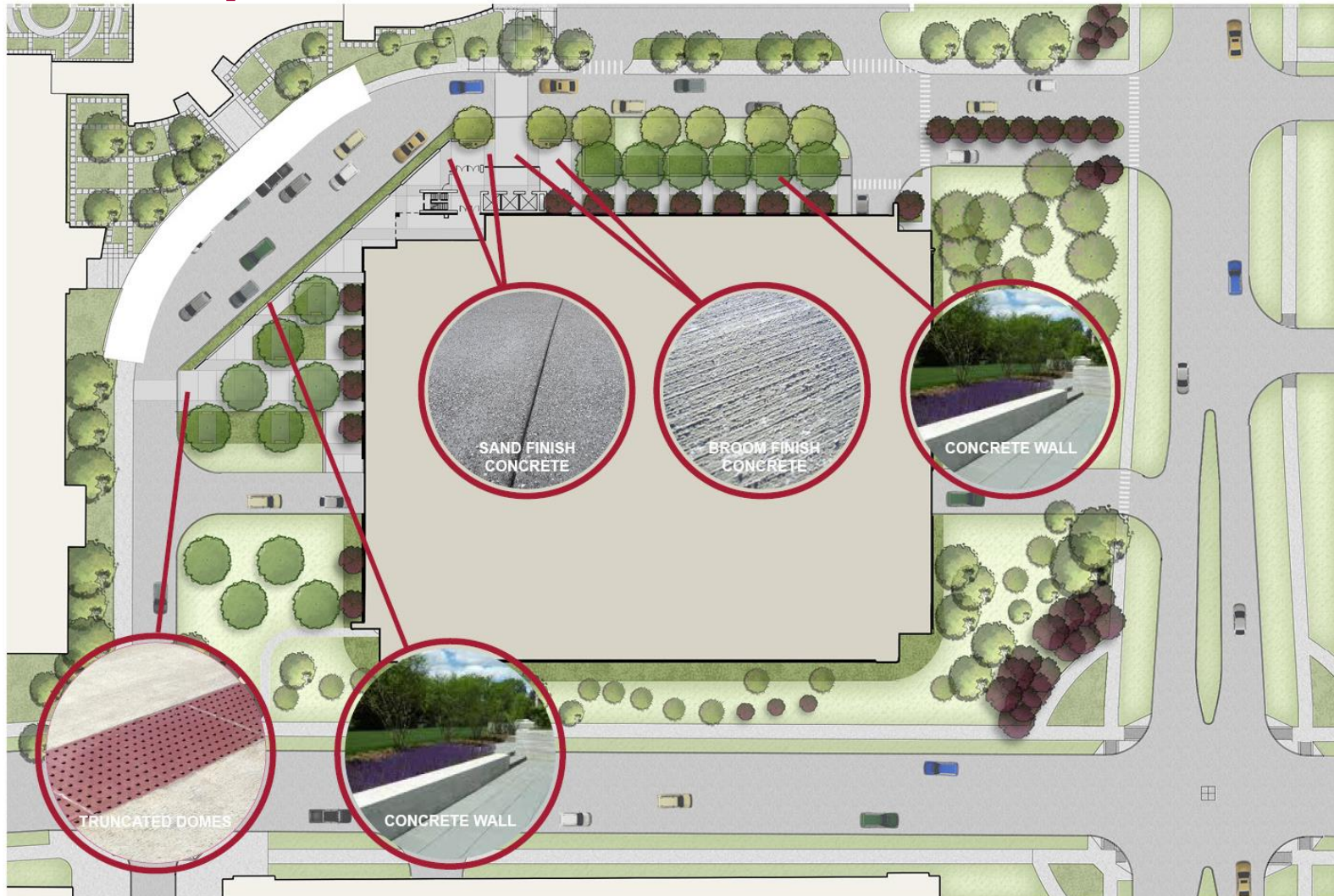
Appendix

Site Furnishings



SITE FURNISHINGS

Hardscape and Material Finishes



HARDSCAPE AND MATERIAL FINISHES



Plant Palette



AUTUMN BLAZE MAPLE ☀️



PYRAMIDAL ENGLISH OAK ☀️



PONDEROSA PINE ☀️



COLORADO SPRUCE ☀️



SKYLINE HONEY LOCUST ☀️



SPRING SNOW CRAB APPLE ☀️



EASTERN REDBUD 🌙



BLUE SPRUCE ☀️

PROPOSED PLANT PALETTE

SHADE 🌙 PARTIAL ☀️ SUN ☀️

Plant Palette



KNOCKOUT ROSE ☀️



SEA GREEN JUNIPER ☀️



DWARF KOREAN LILAC ☀️ ☀️



OREGON GRAPE HOLLY 🌿



GRO-LOW FRAGRANT SUMAC ☀️ ☀️



INKBERRY HOLLY ☀️ 🌿



VINCA 🌿

PROPOSED PLANT PALETTE



Plant Palette



CLIMBING HYDRANGEA ☾



BLACK-EYED SUSAN ☀



PAMPAS GRASS ☀☀



FEATHER REED GRASS ☀☀



PLANTAIN LILY ☾



MINIATURE BEARDED IRIS ☀☀



LITTLE BLUESTEM GRASS ☀



SEDGE ☾

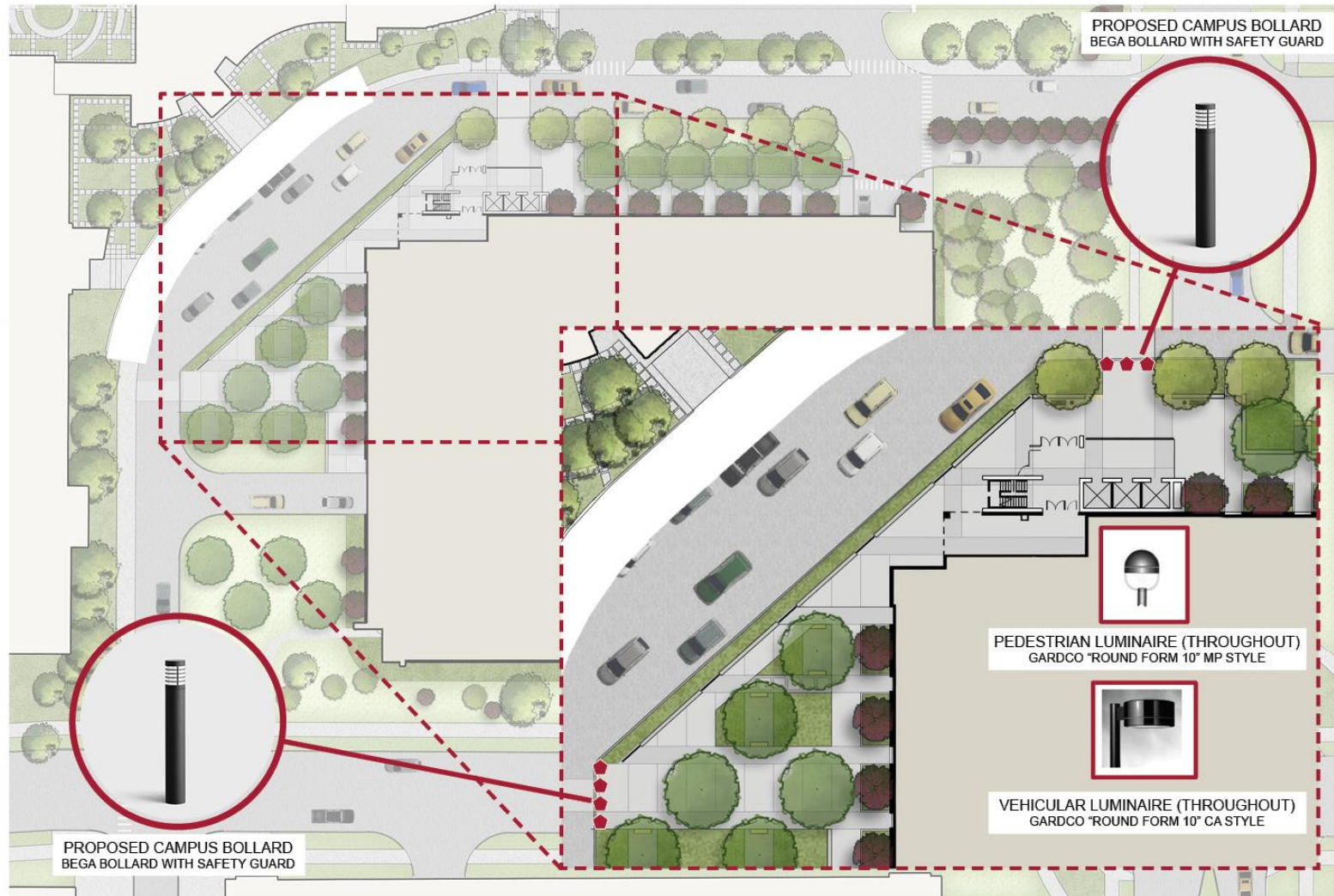
PROPOSED PLANT PALETTE



Precedent Images



Site Lighting



SITE LIGHTING



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Lighting Fixtures

Fixture Vocabulary A

Vehicular Luminaire

Gardco “Round Form 10” CA Style

Material: Aluminum, RAL7038

Height: 30’ (RA5)

*See University of Colorado Denver

Design & Construction Standards, Section 26 56 00
for additional Information



Bollard Lighting

Gardco “Round Form 10” MP Style

Material: Aluminum, RAL7038

Size: 16” Diameter

*See University of Colorado Denver

Design & Construction Standards, Section 26 56 00
for additional Information



Discontinued

Pedestrian Luminaire

Gardco “Round Form 10” MP Style

Material: Aluminum, RAL7038

Height: 10’ (RA4)

*See University of Colorado Denver

Design & Construction Standards, Section 26 56 00
for additional Information



Exterior Building Wall Lighting

Gardco “Bollard 10” BR160

Material: Aluminum

Color: RAL 7038

*See University of Colorado Denver

Design & Construction Standards, Section 26 56 00
for additional Information



Campus Standard Fixtures

Total Parking Counts and GSF

Statistic Per Level

Level 6	164 spaces	45,808 GSF
Level 5	252 spaces	64,592 GSF
Level 4	241 spaces (35 ADA)	77,565 GSF
Level 3	242 spaces (36 ADA)	77,565 GSF
Level 2	242 spaces (36 ADA)	78,354 GSF
Level 1	169 spaces (2 ADA/22 van)	78,250 GSF

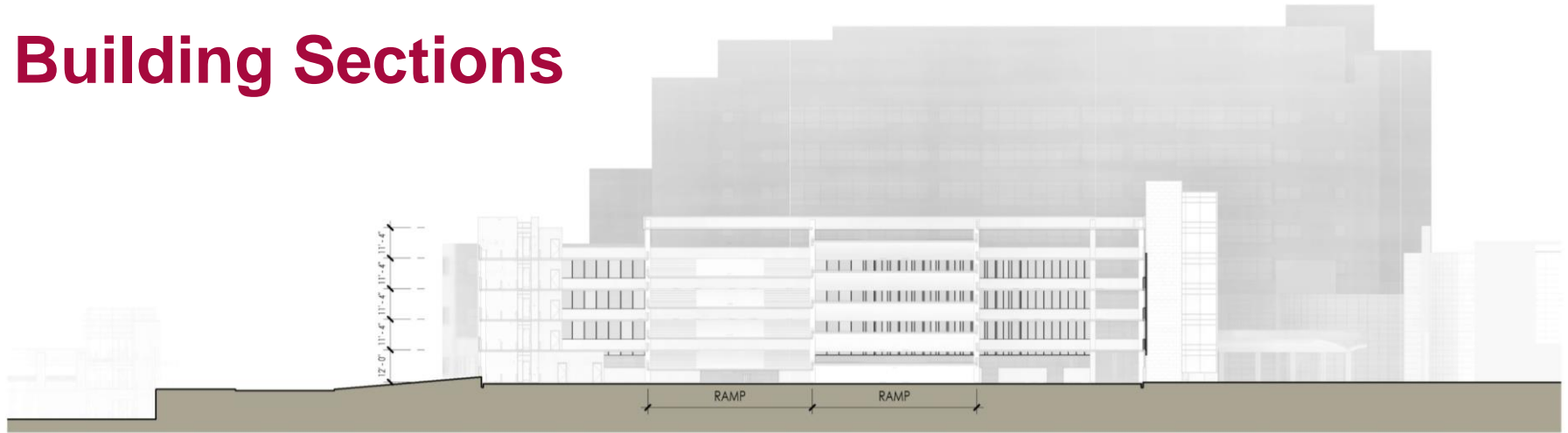
Totals

1,179 typical spaces
22 Van spaces
109 ADA spaces

Grand Total

1,310 spaces 422,134 GFA (322 SF/stall)

Building Sections



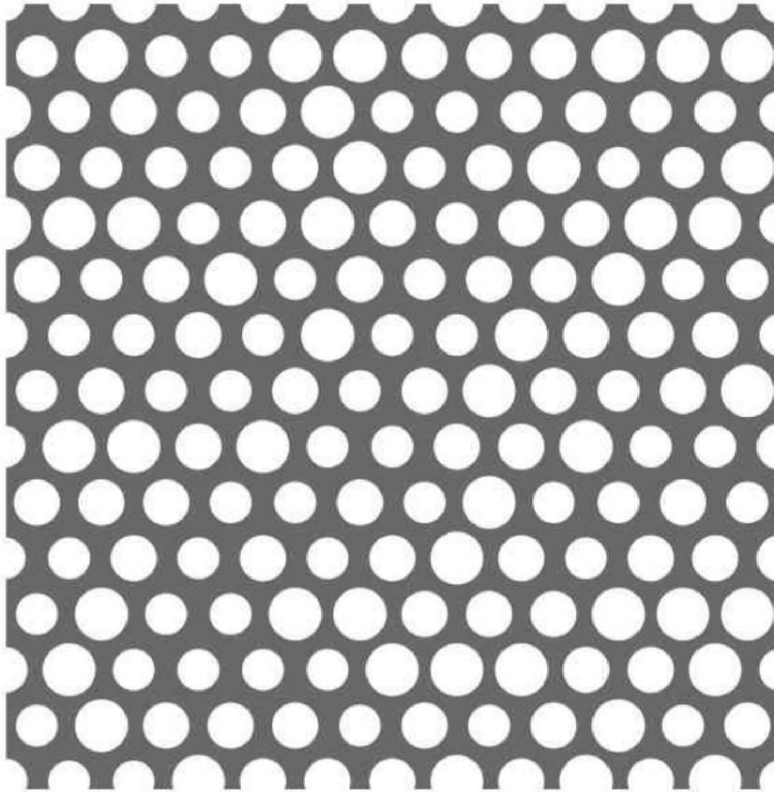
North/South Section



East/West Section

Perforated Screen

Perforation Pattern 1 - Base Pattern



Aero

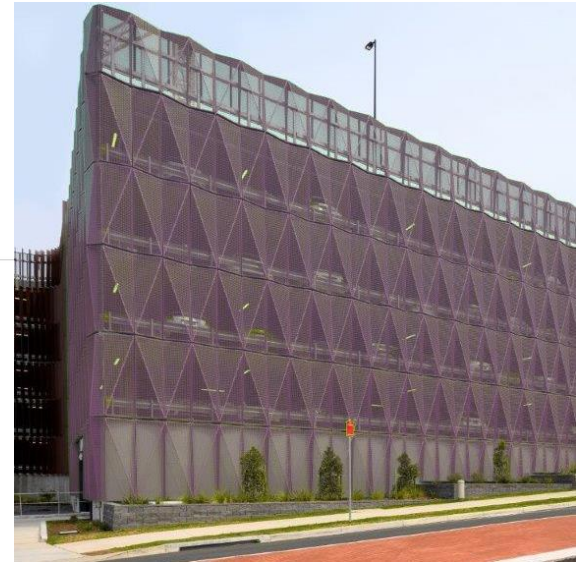
- Material: Aluminum
- Finish: Powder Coated or Anodized
- Open Area: 56%
- Stock Status: Custom Made
- Max. Width: 60"
- Max. Length: 16' 4"
- Weight: 0.7373 lb/ft²
- Thickness: 0.125"
- Applications: Parking Garage Screens, Cladding, and Facades
- Attachment Methods: The Atmosphere System from the Valmont® Structures Architectural Facades product line or Screw Fastened (Use isolators LF11.0 from the Architectural Facades product line).

Notes

Other materials and thickness can be manufactured upon request. Open area and weight calculations are based on .12in (3.0mm) aluminum. Other versions of Aero are available to meet your exact specifications. While the ratio of hole sizes may need to be constant, the hole sizes and resulting open area can be adjusted.

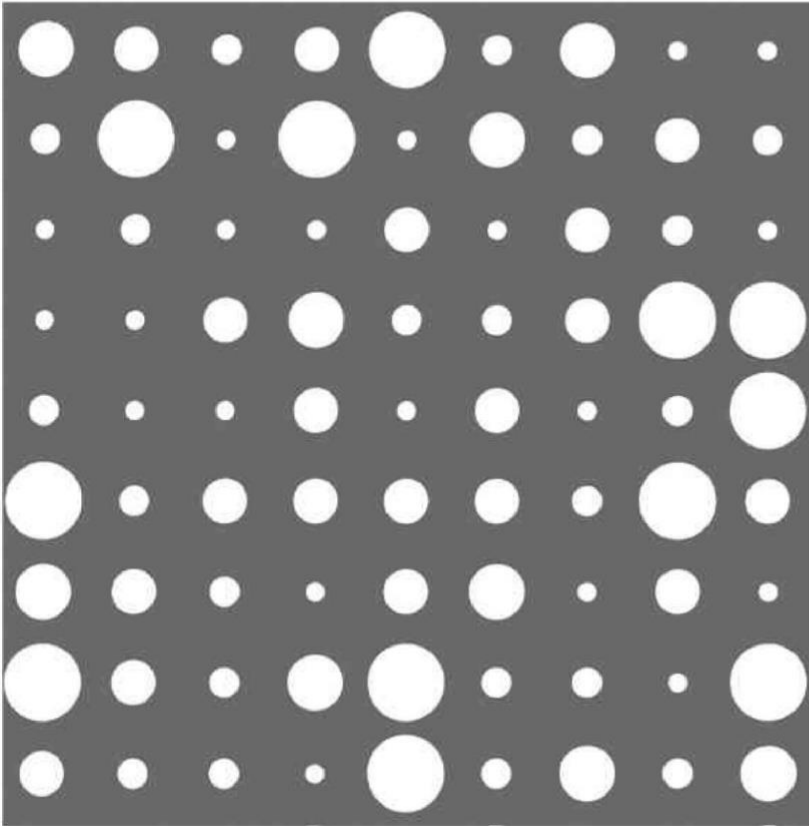
[View Reference Numbers](#)

[DOWNLOAD SPECIFICATION SHEET](#)



Perforated Screen

Perforation Pattern 2 - Used as accent and within landscape



Champagne

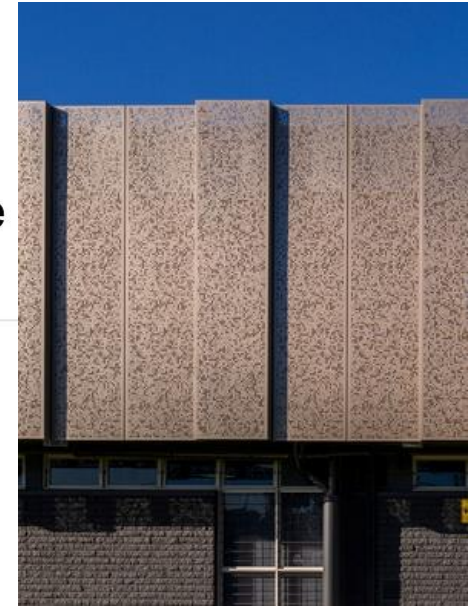
- Material: Aluminum
- Finish: Powder Coated or Anodized
- Open Area: 22%
- Stock Status: Custom Made
- Max. Width: 60"
- Max. Length: 16' 4"
- Weight: 1.2903 lb/ft²
- Thickness: 0.125"
- Applications: Decorative, Cladding, Facades, Ceiling Tiles, Privacy Screens, Partitions
- Attachment Methods: The Atmosphere System from the Valmont® Structures Architectural Facades product line or Screw Fastened (Use isolators LF11.0 from the Architectural Facades product line).

Notes

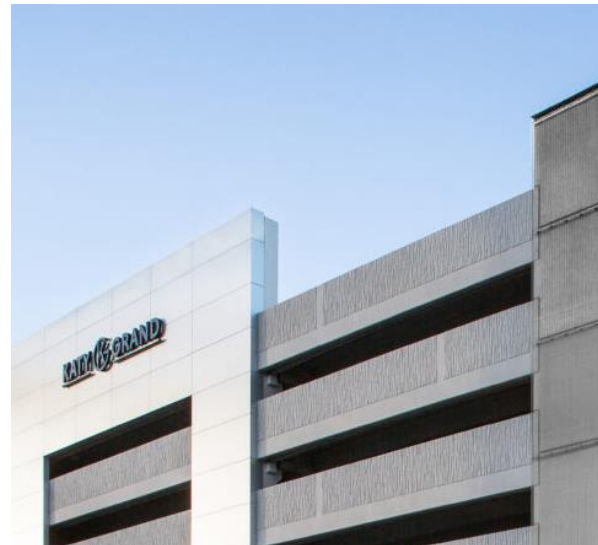
Other materials and thickness can be manufactured upon request. Open area and weight calculations are based on .12in (3.0mm) aluminum.

[View Reference Numbers](#)

[DOWNLOAD SPECIFICATION SHEET](#)



Concrete Texture



Updated Core

