



CALH – CONSTRUCT ARABIAN LEOPARD HABITAT CFA FINAL SUBMISSION

July 16, 2026

A leopard is resting on a thick, weathered wooden branch. The leopard's head is turned towards the camera, showing its distinctive spotted coat and intense gaze. The background is a soft, out-of-focus natural setting. A white rectangular box is overlaid on the image, containing the text "PROJECT OVERVIEW".

PROJECT OVERVIEW

PROJECT PURPOSE AND NEED

Arabian Leopard Conservation Program

- The Smithsonian Institution's NZCBI has entered a partnership to advance Arabian Leopard conservation efforts with the Royal Commission of AlUla (RCU).
- Facility will provide year-round public viewing of adult and cub leopards to support conservation education.
- The habitat needs to accommodate a minimum of (2) full-time animals with the capacity to support additional animals on a temporary basis.
- There are strict animal care requirements to ensure these animals adapt and thrive in the new habitat.



الهيئة الملكية لمحافظة العُلا
ROYAL COMMISSION FOR ALULA

SITE LOCATION

Location of project is within the National Zoo and Conservation Biology Institute (NZCBI)

- Located at 3001 Connecticut Ave, NW
- Within the National Zoological Park Historic District

Zoo in Your Backyard and Unoccupied American Bison Exhibit

- Location is adjacent to Asia Trail, relating thematically to the Arabian Leopard's natural habitat
- Adjacent to high traffic visitor areas
- Unoccupied animal exhibit
- Existing topography replicates the mountainous terrain of the Arabian Peninsula

- SITE BOUNDARY
- OLMSTED WALK
- ZOO IN YOUR BACKYARD EXHIBIT
- BISON EXHIBIT AND HABITAT



EXISTING SITE PLAN

A photograph of a leopard resting on a large, weathered log in a savanna environment. The leopard is looking towards the camera with a calm expression. A white rectangular text box is centered over the image, containing the text "EXISTING CONDITIONS" in a bold, black, sans-serif font.

EXISTING CONDITIONS

EXISTING PROJECT SITE

Features List:

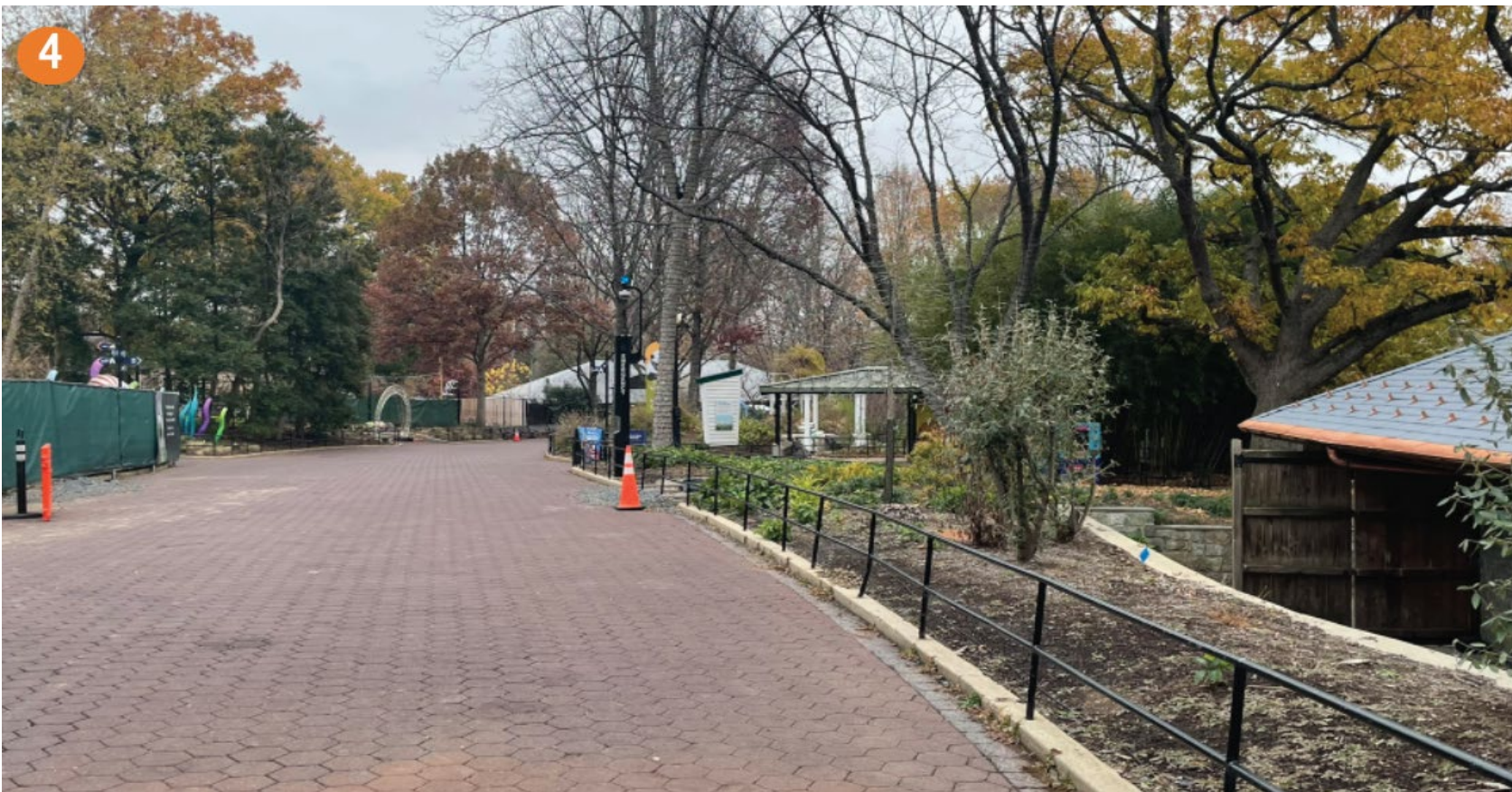
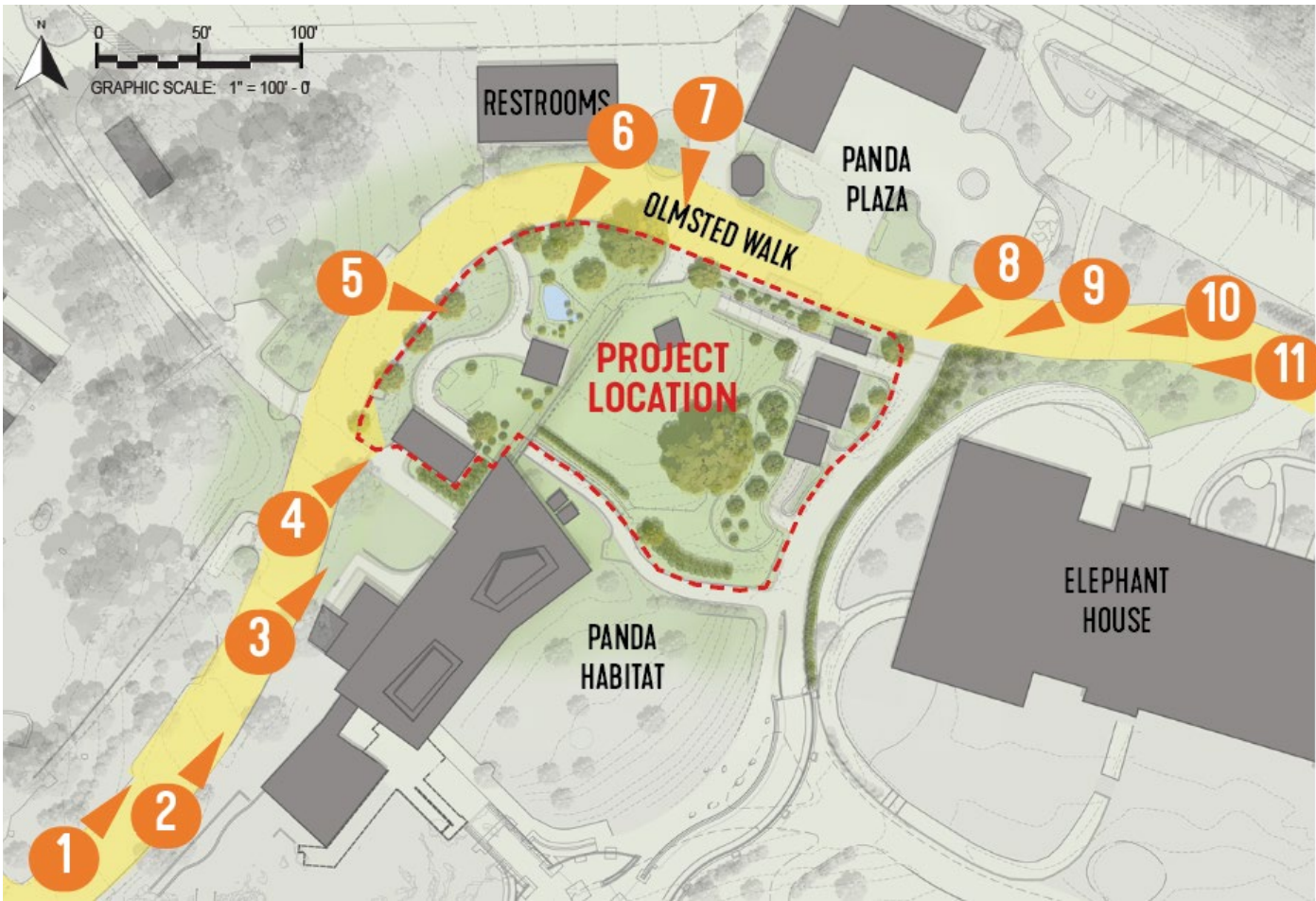
- 1. West Entrance to Zoo in Your Backyard
- 2. Northwest entrance to Zoo in Your Backyard
- 3. Zoo in Your Backyard Exhibit
- 4. Viewing area for American Bison Exhibit
- 5. Service Access for American Bison Exhibit
- 6. Exit from Panda House
- 7. American Bison Yard
- 8. Olmsted Walk Bench Niche with Drinking Fountain
- 9. Vendor Area and Niche
- 10. Vending Shade Structure
- 11. Gazebo
- 12. Bison Overlook Structure
- 13. Bison Habitat Shade Structure
- 14. Bison Care Shed
- 15. Bison Care Building
- 16. Panda Concession Shade Structure and Vending Area
- 17. Pond
- 18. Olmsted Rail & Curb
- 19. Carderock Wall
- 20. Bamboo Arch
- 21. Bamboo Landscape Rail and Curb
- 22. Retaining Wall



Figure 5.5.2.1: Existing Site Plan

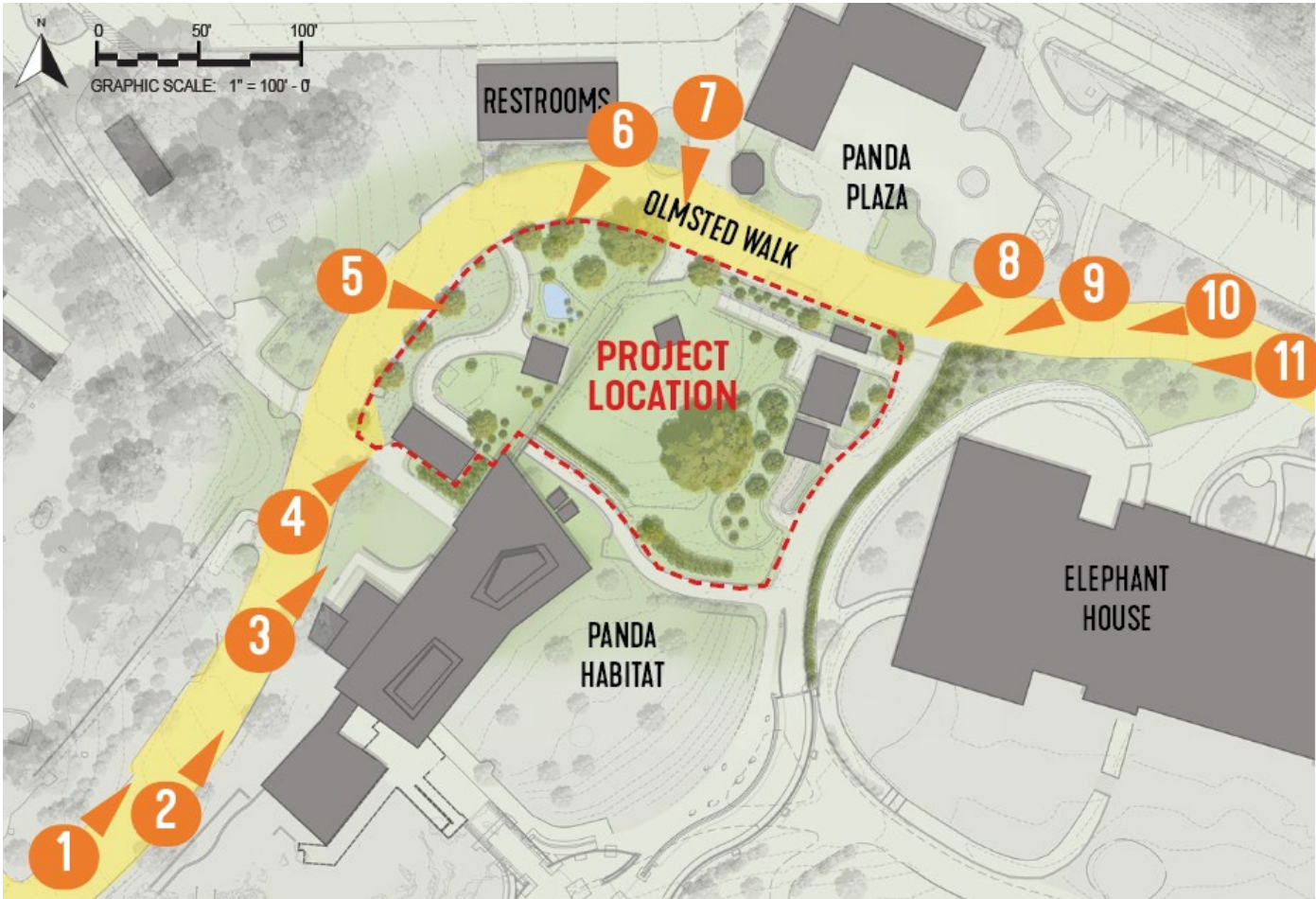
EXISTING CONDITIONS – SITE VIEW PHOTOGRAPHS

Along Upper Olmsted Walk



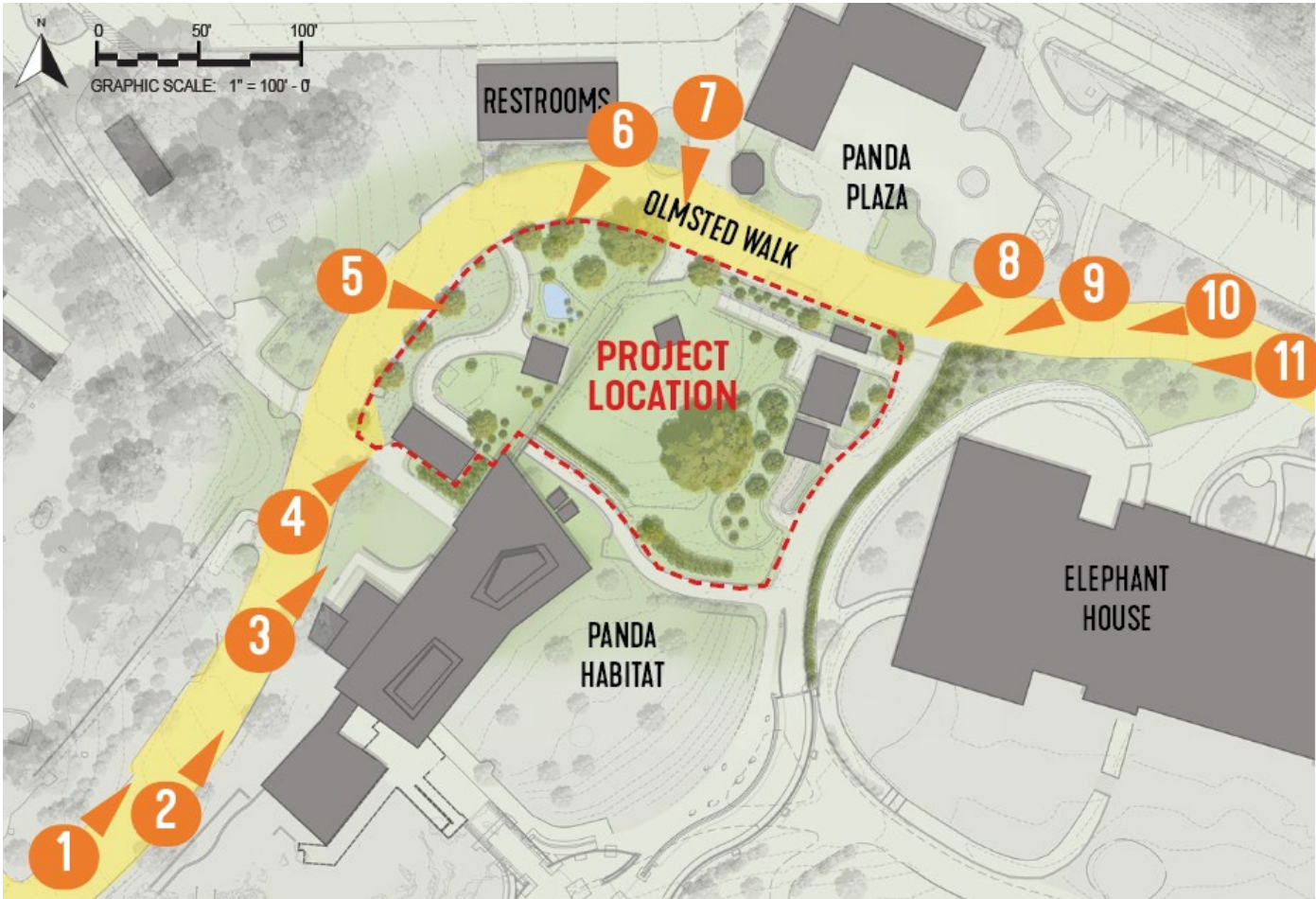
PROJECT SITE VISIBILITY FROM OLMSTED WALK

Along Upper Olmsted Walk – Zoo in Your Backyard



PROJECT SITE VISIBILITY FROM OLMSTED WALK

Along Lower Olmsted Walk – Elephant House Loading Dock and Asia Trail Entry



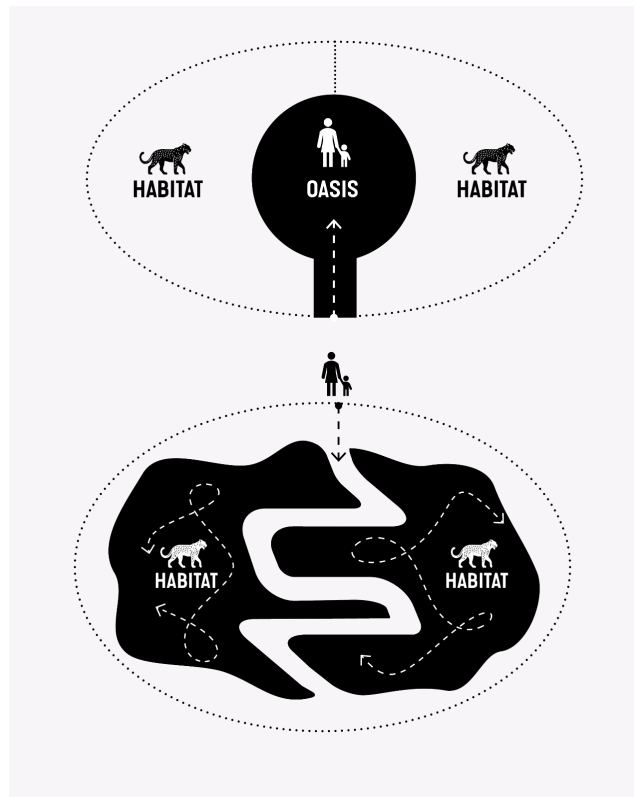
A photograph of a leopard resting on a thick, weathered wooden branch. The leopard is looking directly at the camera with a calm expression. Its fur is covered in a pattern of dark spots and rosettes. The background is a soft, out-of-focus natural setting. A semi-transparent white rectangular box is centered over the image, containing the text "FINAL DESIGN" in a bold, black, sans-serif font.

FINAL DESIGN

SITE ORGANIZATION CONCEPTS

Site Scheme – Oasis Wadi Hybrid Combo

- Multiple visitor vantagepoints throughout exhibit via accessible paths:
 - Olmsted Walk viewing
 - Under tunnel within exhibit
 - Within Oasis Area
- Flexibility for animal placement and movement



PROPOSED SITE PLAN

Features List:

- 1. West Entrance to Arabian Leopard Exhibit
- 2. North Entrance to Arabian Leopard Exhibit
- 3. New Arabian Leopard Care Building (one-story plus basement)
- 4. New Arabian Leopard Habitat with Custom Faux Rockwork
- 5. New Off-view Arabian Leopard Habitat
- 6. New Pedestrian Tunnel through Exhibit, with Poured-in-place Rubber Surfacing
- 7. New Pedestrian Pathway with Exposed Aggregate Concrete Pavement
- 8. New Retaining Wall
- 9. New Habitat Enclosure
- 10. New guardrail
- 11. Existing Benches and Niche to Remain
- 12. New Urban Planter
- 13. New Service Access, Existing Curb Cut and Service Access
- 14. New Screen Fence
- 15. New Service Access, Existing Curb Cut
- 16. New Bioretention
- 17. Existing Retaining Wall
- 18. Shade Structure



Figure 5.5.3.1: Proposed Site Plan - Features

DESIGN INSPIRATION

Architecture in Service to the Landscape – Key Contextual Principles

- **Materiality:**

Natural stone, brick, cast concrete, wood, and terracotta tile

- **Form:**

Building masses are simple and articulated to reduce visual bulk, often setback or screened by vegetation to maintain the continuity of the pedestrian experience

- **Roofscape:**

Often the most visually prominent element when viewed from the winding grades of Olmsted Walk. Historic rooflines are typically pitched or hipped, clad in clay tile or slate

- **Building Hierarchy:**

Supporting structures—restrooms, concessions, maintenance—are utilitarian and recessive while exhibition buildings are more expressive



PROPOSED MASSING

Through the Section 106 Consulting Parties process, the mitigation of the visual impact of the care building and roof profile from Olmsted Walk was discussed and further developed.

The previous roof profile shown within the Concept Submission was a traditional gable form that transitioned to an inverted gable. The request was made during the Section 106 process to simplify the geometry of the roof to mitigate visual impact.



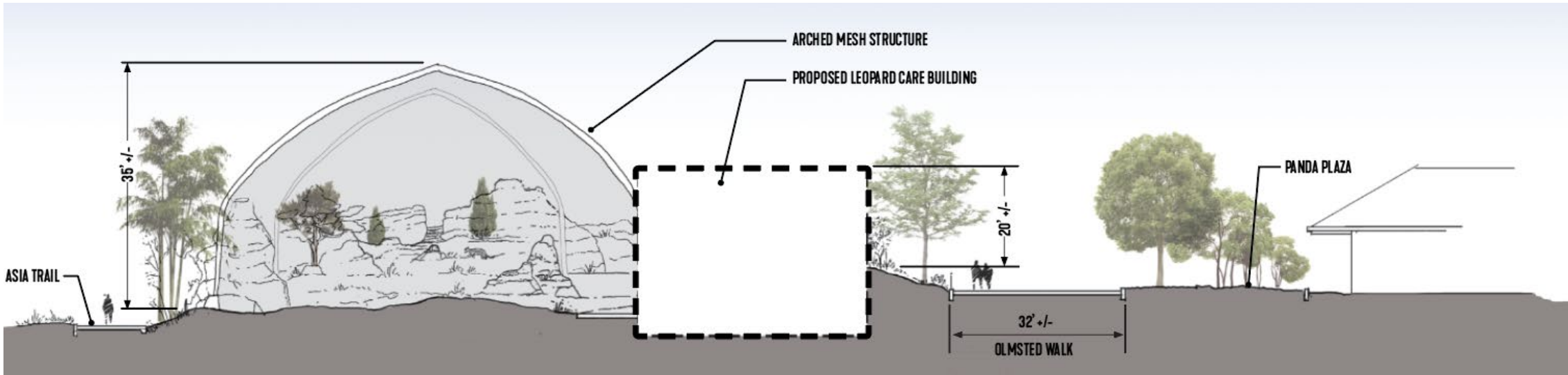
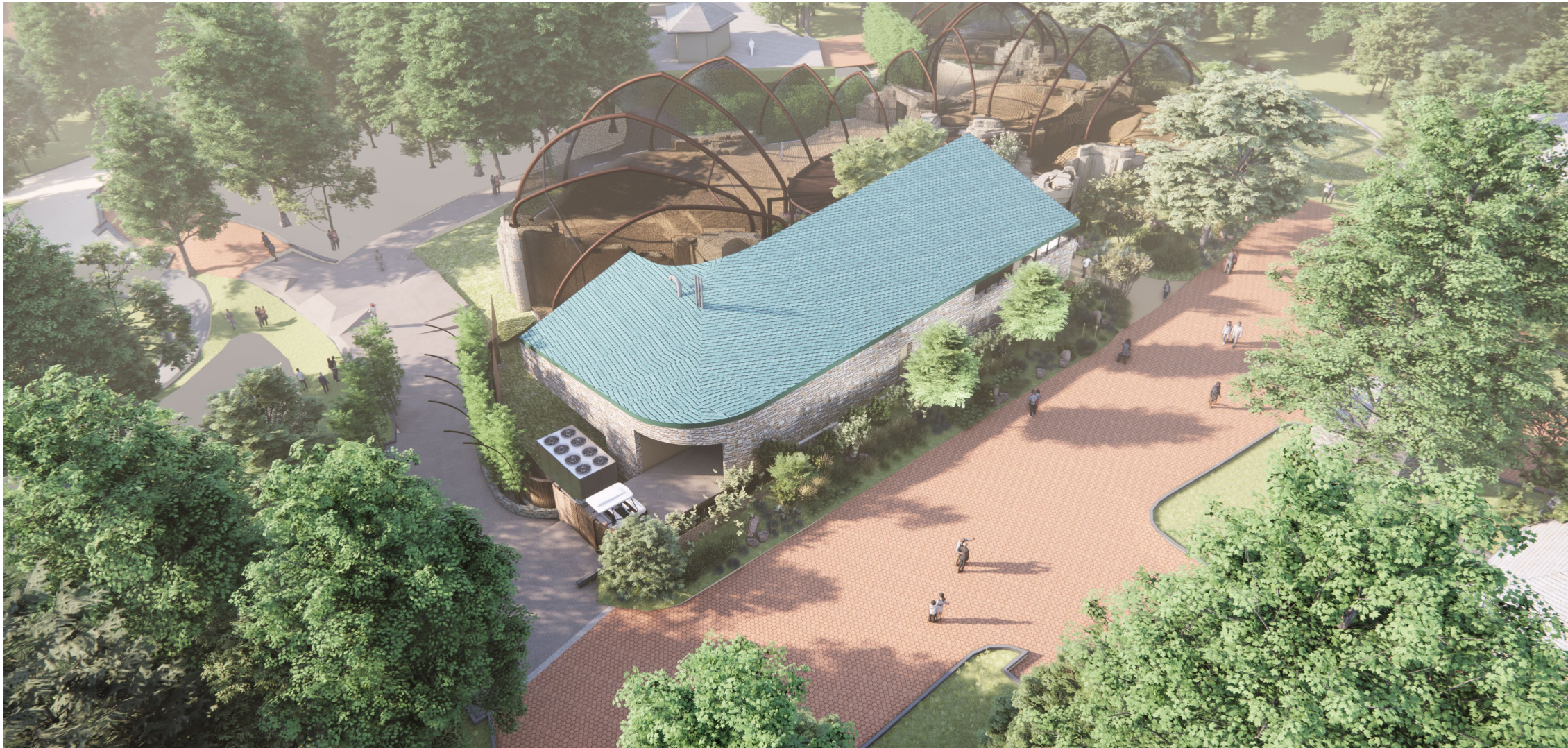
Figure 5.6.1.1: Concept Design Roof Profile



Figure 5.6.1.2: Final Design Roof Profile

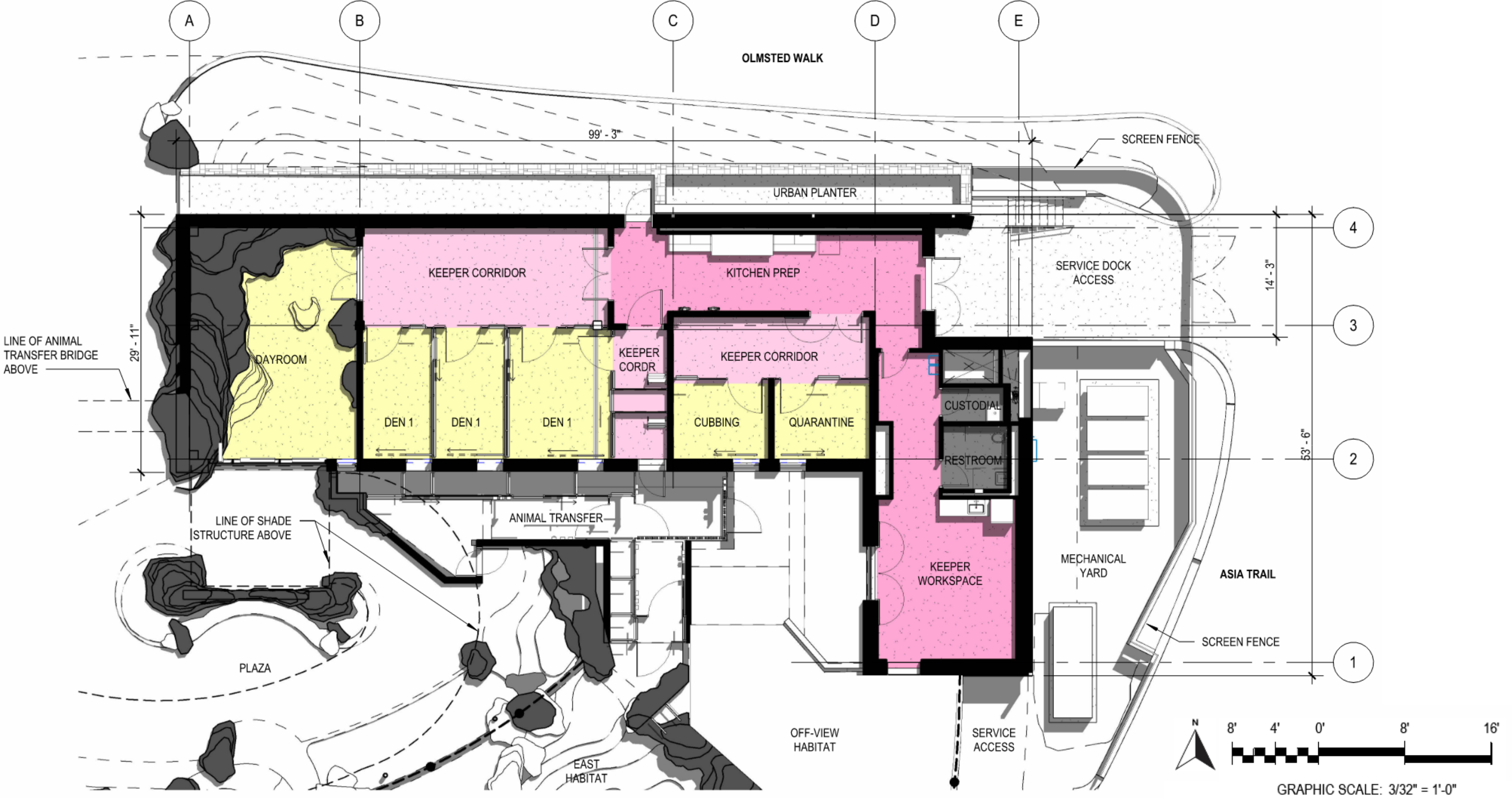
PROPOSED FINAL DESIGN

Animal Care Building and Habitat Enclosure



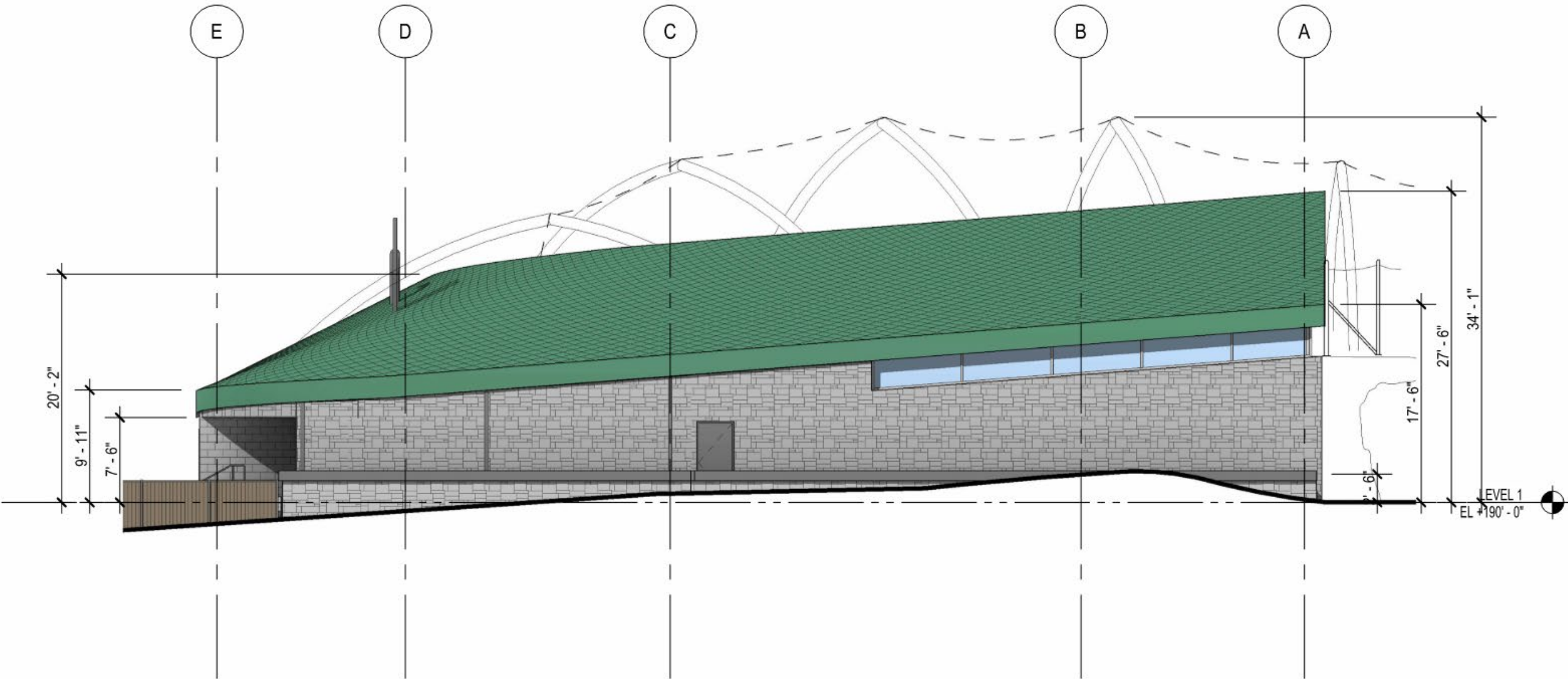
PROPOSED FINAL DESIGN

Animal Care Building Floor Plan – Level 1



PROPOSED FINAL DESIGN

Animal Care Building Elevations - North

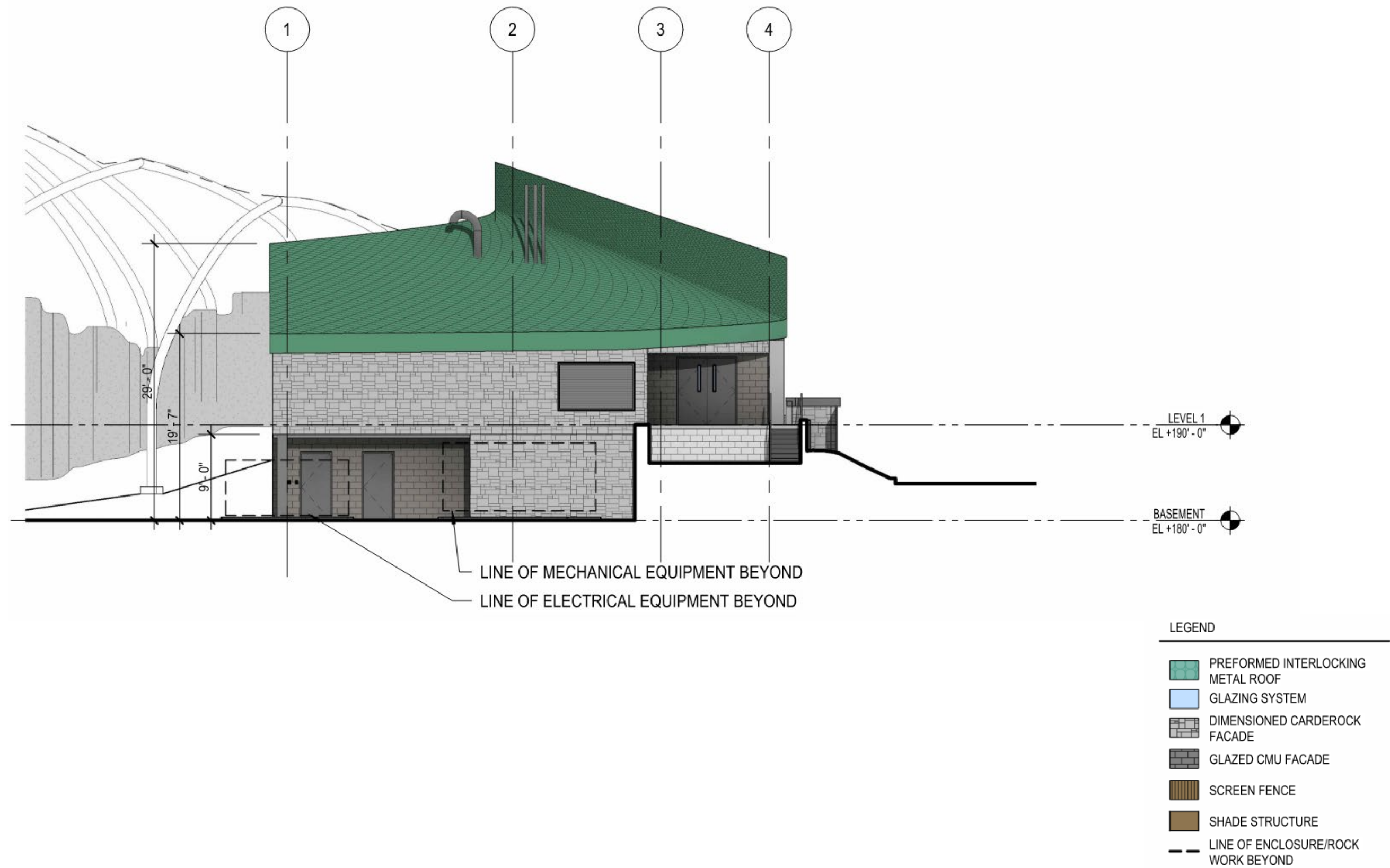


LEGEND

-  PREFORMED INTERLOCKING METAL ROOF
-  GLAZING SYSTEM
-  DIMENSIONED CARDEROCK FACADE
-  GLAZED CMU FACADE
-  SCREEN FENCE
-  SHADE STRUCTURE
-  LINE OF ENCLOSURE/ROCK WORK BEYOND

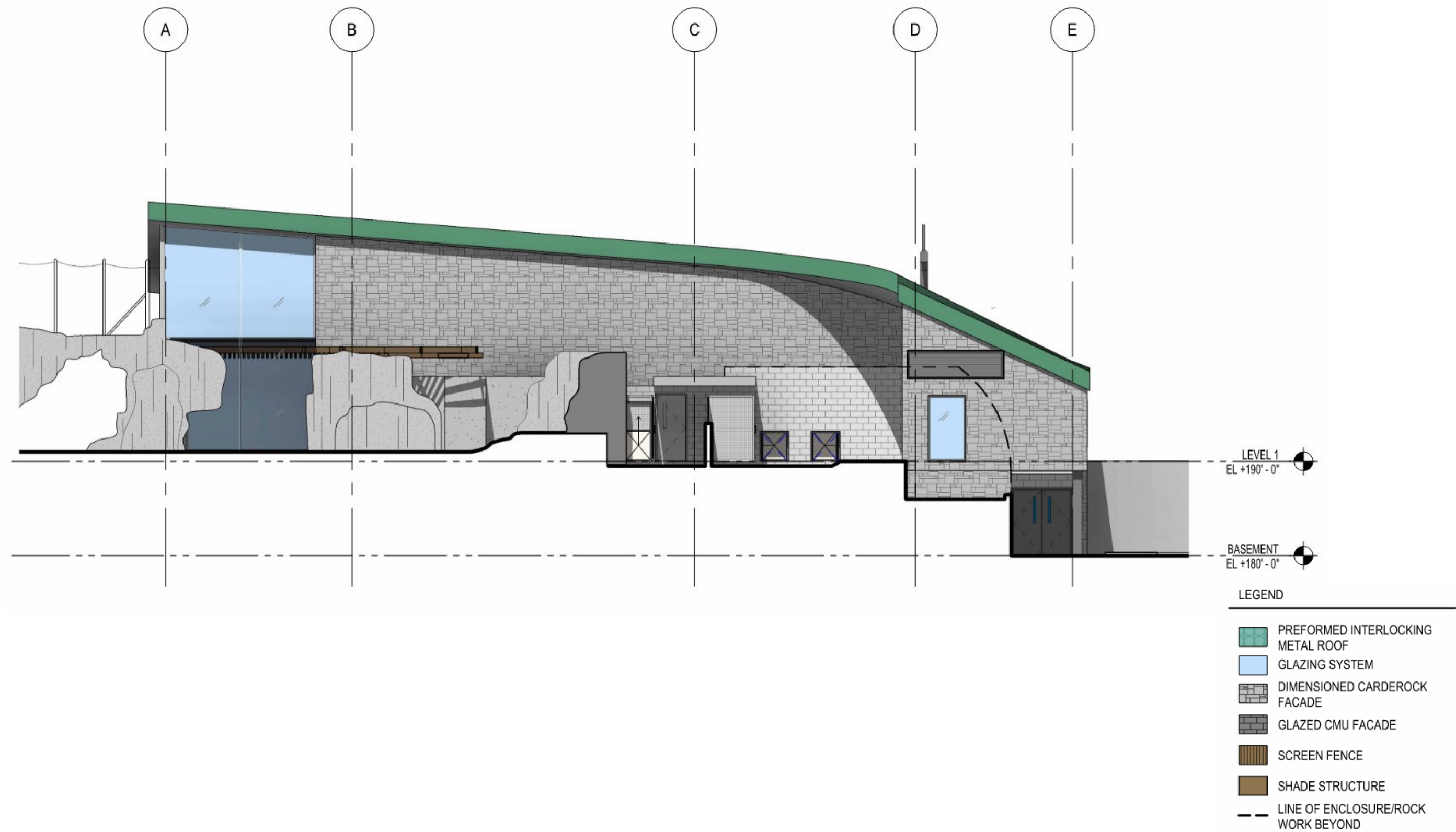
PROPOSED FINAL DESIGN

Animal Care Building Elevations - East



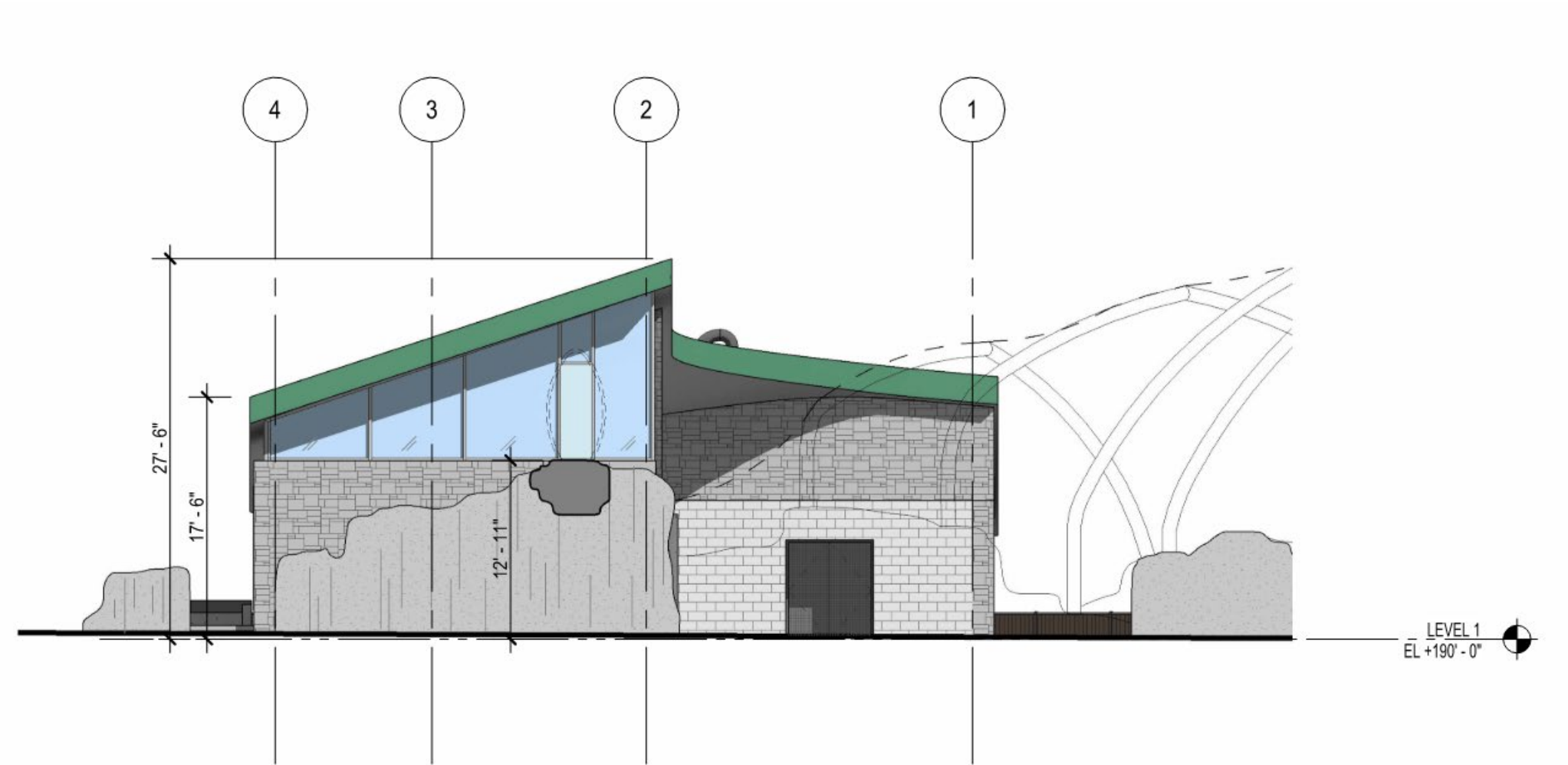
PROPOSED FINAL DESIGN

Animal Care Building Elevations - South



PROPOSED FINAL DESIGN

Animal Care Building Elevations - West



LEGEND

- PREFORMED INTERLOCKING METAL ROOF
- GLAZING SYSTEM
- DIMENSIONED CARDEROCK FACADE
- GLAZED CMU FACADE
- SCREEN FENCE
- SHADE STRUCTURE
- LINE OF ENCLOSURE/ROCK WORK BEYOND

PROPOSED ANIMAL CARE BUILDING MATERIALS

Natural Stone - Carde

A common ashlar cour proposed, inspired by t of Carderock found thr district.

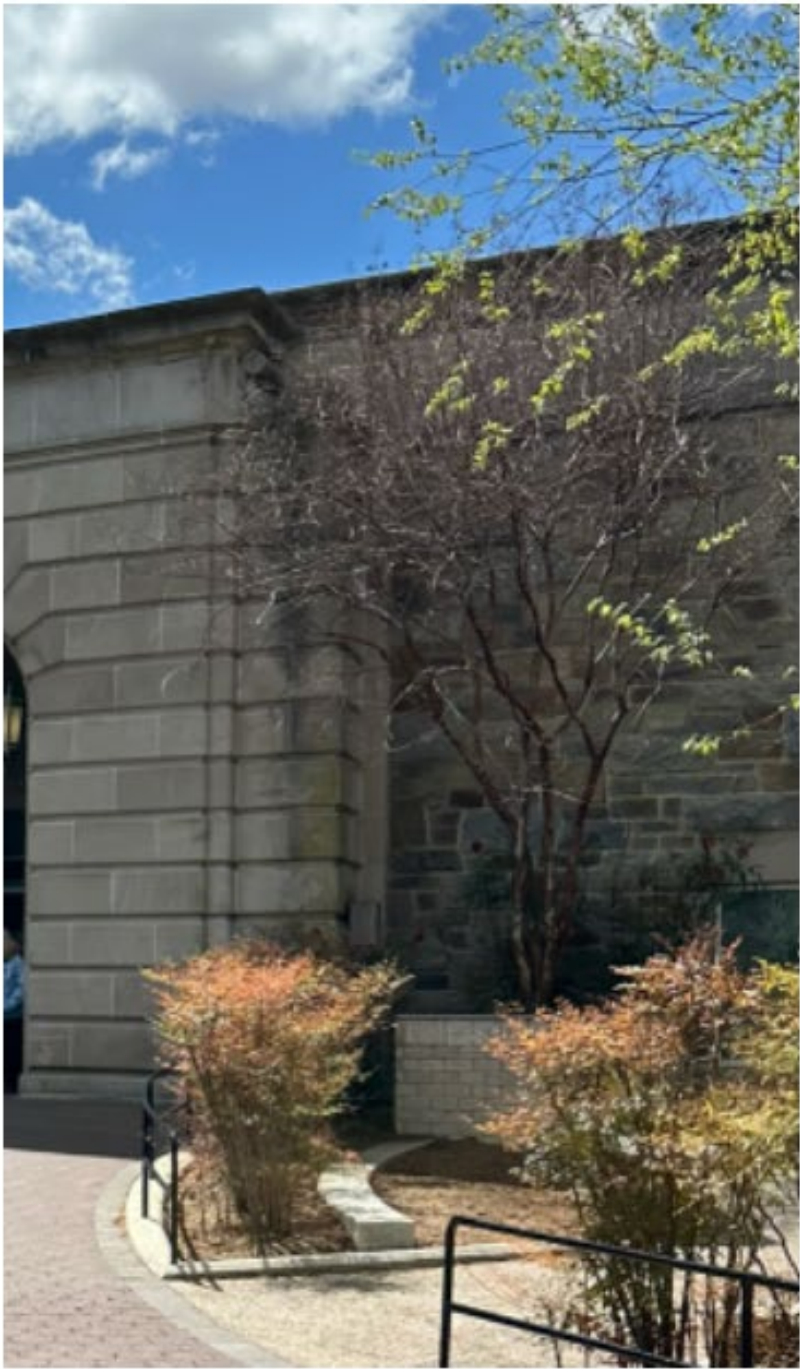
- Basis of Design: Tri-Ashlar Veneer - 3-1/2 Random Lengths



Figure 5.2.1.1: Proposed Facade Material
Carderock, Ashlar Coursing



Conservation Pavilion featuring Carderock, ashlar coursing



Elephant House featuring carved Indiana Limestone and
Carderock, ashlar coursing

Figure 5.2.1.2: Natural Stone - Precedent Imagery

PROPOSED ANIMAL CARE BUILDING MATERIALS

Green Colored Roof – Pre-Patinated Copper Shingles:

Pre-formed, interlocking, n as the preferred material for pre-patinated copper shingles are proposed.

- Basis of Design: Spengler Patinated Copper Diamond Shape Shingles Approximately 12"W by 1

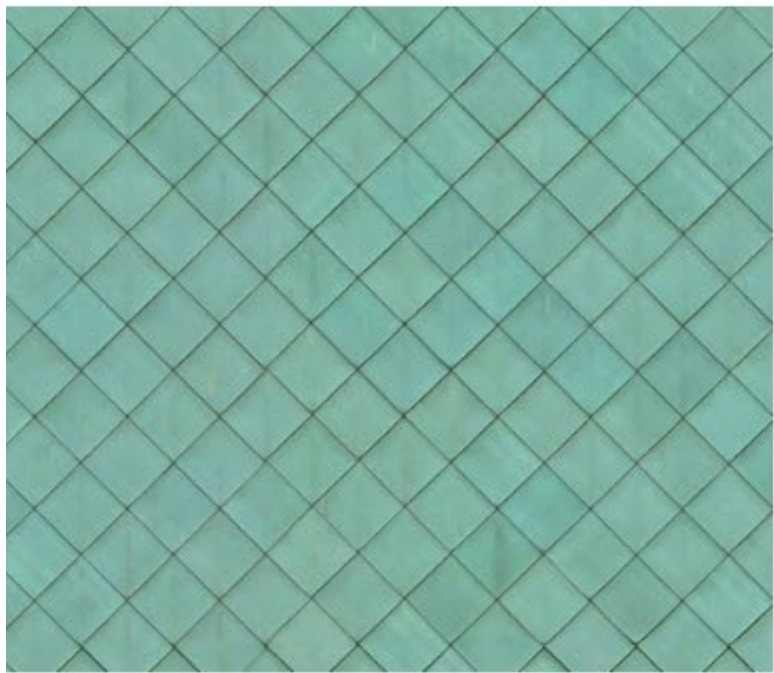


Figure 5.2.2.1: Proposed Roof Material - Pre-Patinated Copper Diamond Shape Shingles



Figure 5.2.2.2: Roof Precedent Imagery - Green-Colored Roof Think Tank Featuring Green Terracotta and Glass Tile Roof

PROPOSED ANIMAL HABITAT STRUCTURE MATERIALS

■ Superstructure :

- To minimize the superstructure of the enclosure, members vary in size from 6" diameter for the shorter arches to 12" diameter for the taller arches. The diameter is consistent throughout each arch and does not taper.
- This approach maintains overall proportionality of the superstructure arches compared to utilizing a uniform dimension that work create disproportionate forms.
- The recommend color for the habitat enclosure structure is bronze to blend in with the landscape of the Zoo and complement the metal finishes of the project.

■ Enclosure Mesh:

- Hand woven A316 stainless steel mesh, 2"x2"x1/8" programmatic requirement driven by animal size
- The enclosure mesh is recommended to be black oxidized finish to minimize visual impact when viewing the animals.



Figure 5.3.2.2: Proposed Enclosure Color Palette: Bronze Arches and Stainless Steel Black Oxidized Finish Mesh

PROPOSED SHADE STRUCTURE MATERIALS

- The shroud shown within the Concept Submission has been removed to create two separate vertical supports: one for the shade structure and one for the enclosure.
- Vertical supports for the shade structure range between 10" to 11" diameter and have been minimized. Where possible, the rockwork is utilized in lieu of an additional vertical support.



Figure 5.4.1.1: Concept Design Submission Shade Structure



Figure 5.4.1.2: Revised Shade Structure at Central Plaza - Painted Steel Supports Separated from Painted Steel Arch Supports at Enclosure

PROPOSED CONCEPT

Upper Olmsted Walk Looking East



NOTE: Exhibit structure to viewer’s left is the existing Cheetah Conservation Station

PROPOSED CONCEPT

Upper Olmsted Walk Looking East at Panda Overlook – Site Entry



PROPOSED CONCEPT

Olmsted Walk Looking South at Care Building/Day Room – Site Entry



PROPOSED CONCEPT

Olmsted Walk Looking South at Care Building/Day Room – Site Entry from Kiosk



PROPOSED CONCEPT

Lower Olmsted Walk Looking West – Asia Trail and Panda Plaza



PROPOSED CONCEPT

Lower Olmsted Walk Looking West – Elephant House



PROPOSED SHADE STRUCTURE CONCEPT

Lower Olmsted Walk Looking West – Elephant House



PROPOSED SHADE STRUCTURE CONCEPT

Shade Structure Perspective View - West Site Visitor Entry Looking at West Habitat



PROPOSED SHADE STRUCTURE CONCEPT

Plaza Looking at Day Room and Animal Transfer



PROPOSED LANDSCAPE PLAN



Figure 5.8.2.1: Proposed Concept Site Plan - Features

PROPOSED PLANTING PALLETTE

OLMSTED WALK

ECOSYSTEM ANALOGUE



PLANT PALETTE



GLEDITSIA
TRIACANTHOS



CARPINUS
CAROLINIANA



ILEX GLABRA
'DENSE'



RHUS
AROMATICA
'GRO-LOW'



CAREX
LEAVENWORTHII



CAREX
PLANTAGINEA



FESTUCA MAIREI



ATHYRIUM FILIX-
FEMINA 'LADY IN
RED'

	SCIENTIFIC NAME	COMMON NAME	DEER RESISTANT	POLLINATOR	NATIVE
TREES	<i>Gleditsia triacanthos</i> var. <i>inermis</i>	Honey Locust	X	X	X
	<i>Carpinus caroliniana</i>	American Hornbeam	X	X	X
SHRUBS	<i>Carcococca hookeriana</i> var. <i>humilis</i>	Dwarf Sweetbox			
	<i>Ilex glabra</i> 'Densa'	Inkberry Holly	X	X	X
	<i>Rhus aromatica</i> 'Gro-Low'	Gro-low Sumac	X	X	X
PERENNIALS	<i>Athyrium filix-femina</i> 'Lady in Red'	Lady in Red Lady Fern	X		X
	<i>Deschampsia flexuosa</i>	Crinkled Hairgrass	X		X
	<i>Dryopteris erythrosora</i> 'Brilliance'	Brilliance Autumn Fern	X		
	<i>Carex leavenworthii</i>	Leavenworth's Sedge	X	X	X
	<i>Carex muskingumensis</i> 'Oehme'	Oehme' Palm Sedge	X		X
	<i>Carex plantaginea</i>	Plantain-leaf Sedge	X	X	X
	<i>Festuca mairei</i>	Atlas Fescue	X		X
	<i>Metteuccia struthiopteris</i>	Ostrich Fern	X		X
	<i>Sesleria autumnalis</i>	Autumn Moor Grass	X		X

PROPOSED SITE RAILING PLAN



Secondary Pedestrian Rail (42\"/>



Olmsted Rail (36\"/>



Bamboo Landscape Rail



Screen Fence



Bamboo Arch

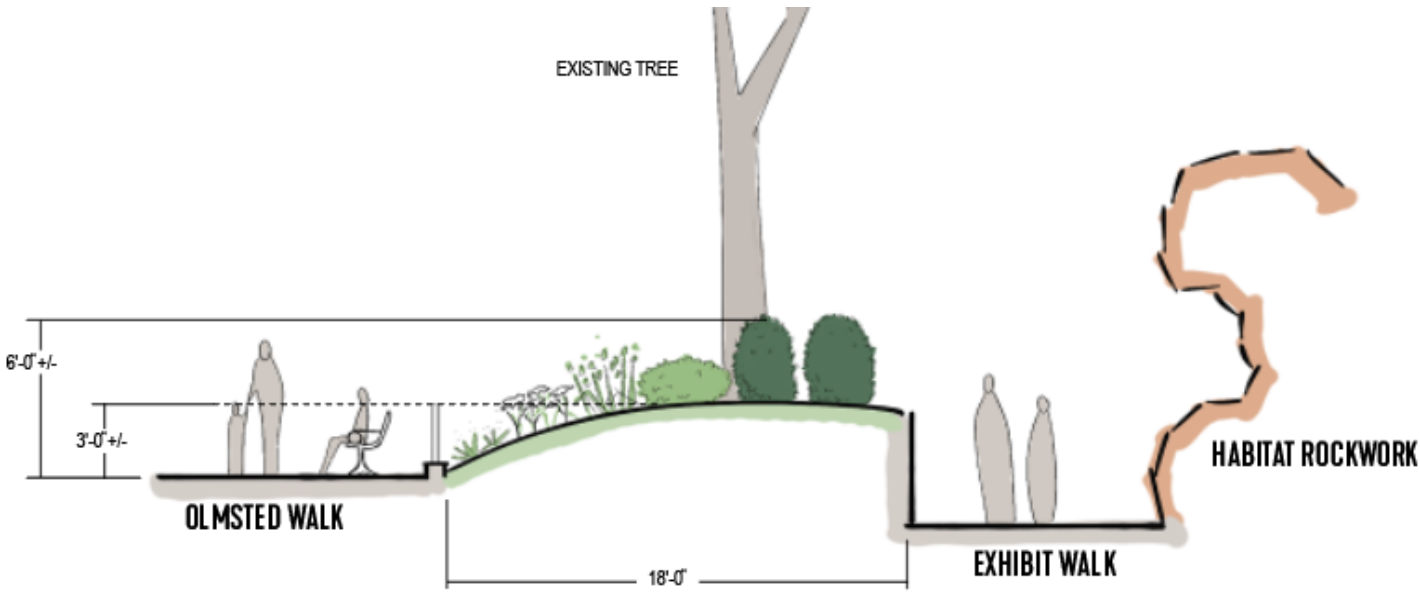


Carderock Wall

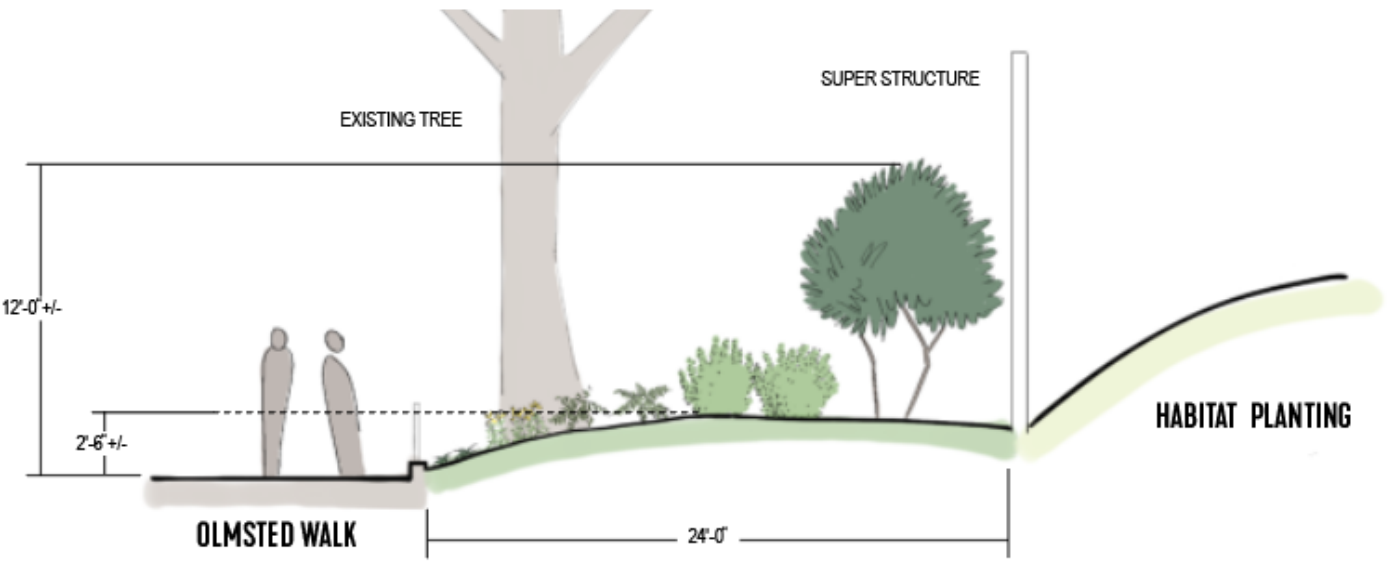
- SECONDARY PEDESTRIAN BARRIER (42" H)
- OLMSTED RAIL (36" H)
- BAMBOO LANDSCAPE RAIL
- BAMBOO ARCH
- SCREEN FENCE
- CARDEROCK WALL



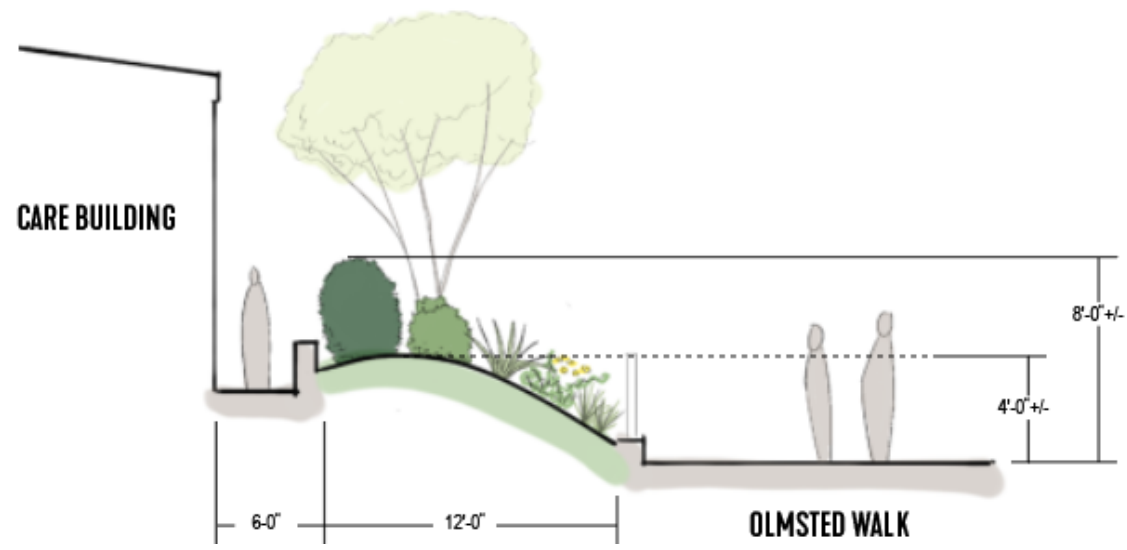
PROPOSED BERM CONDITIONS



Section A: Through Olmsted and Habitat



Section B: Through Olmsted and Habitat



Section C: Through North Berm