



**Smithsonian Institution
Revitalization of the Historic Core**

Revitalize Castle Phase 2

**Commission of Fine Arts
FINAL REVIEW**

November 2, 2023

EYP-Loring, LLC



Project Name

Revitalization of the Historic Core (RoHC)

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INTRODUCTION

INTRODUCTION

In October 2022, as part of the regular monthly Consulting Parties meetings, the Smithsonian Institution introduced a revised approach to the Section 106, NCPC and CFA review process, splitting the project consultation into two phases. The purpose of this split is to facilitate the approval of project elements related to an initial phase of construction scheduled to begin in the first quarter of 2023. This construction schedule is linked to opening the building to the public during the summer of 2026 in support of the celebration of the nation's Semiquincentennial.

This initial phase of construction focuses on below grade construction. This phase of work is related to excavation under the Castle to create a new mechanical equipment and systems routing level; excavation to the south, east, and west of the Castle for the SIB Extension which will link the Castle to the existing Quadrangle Building loading dock at the B1 level; and excavation to lower the existing basement floor three feet in support of accommodating visitor amenities. This scope was submitted for final review by CFA and approved at the meeting held on February 16, 2023.

This submission, for the Phase 2 elements, includes the remaining design components that must be finalized prior to the start of the remainder of construction, primarily above ground. Consultation through the Section 106 review process has continued in 2023 on the design components related to the above grade construction on the Castle and the site.

Status of Review by CFA

At the CFA meeting of June 17, 2021, the Commission approved the concept submission for the Revitalization of the Historic Core project. This approval was accompanied by comments and requests for additional information on some of the design issues.

At the CFA meeting of February 17, 2022, the Commission approved the revised concept. Additional information was requested on two of the design issues but commented favorably on the revisions that had been developed in response to prior comments.

At the CFA meeting of September 15, 2022, the Commission approved, based on its prior review of the submission materials, the revised concept design proposal for the renovation of and addition to properties in its historic core, and associated perimeter security elements.

In October 2022 the Smithsonian Institution introduced a revised approach to project sequencing, splitting the consultation into two phases. At the CFA meeting of February 16, 2023, the Commission approved based on prior review of the submission materials, the final design for Phase 1 of the renovations of and additions to the Smithsonian Institution Building (the Castle) and its associated landscape.

As noted in Section 2 of this submission, Outreach and Coordination, the Smithsonian Institution has continued to work with the consulting parties, including CFA staff, as part of the Phase 2 Section 106 review process since October 2022. The full list of design items which have been reviewed in Phase 2 is included in section 1.2, Description of the Proposed Project. Each design item is presented in section 3, Detailed Project Information.

1. PROJECT OVERVIEW

1. PROJECT OVERVIEW

1.1 SUBMISSION SUMMARY

The project site is located on the south side of the National Mall in Washington, D.C., within an area that is identified by the Smithsonian Institution as the South Mall Campus. The project site is bounded by the Arts and Industries Building on the East, the below-ground Quadrangle Building (Quad) on the South, and Jefferson Drive on the North. The Quad is connected to the Freer Gallery and contains the Ripley Center, the Arthur M Sackler Gallery, and the Smithsonian National Museum of African Art.

The total area of the site is approximately 2.50 acres. The project site includes one existing building, the Smithsonian Institution Building (SIB/Castle).

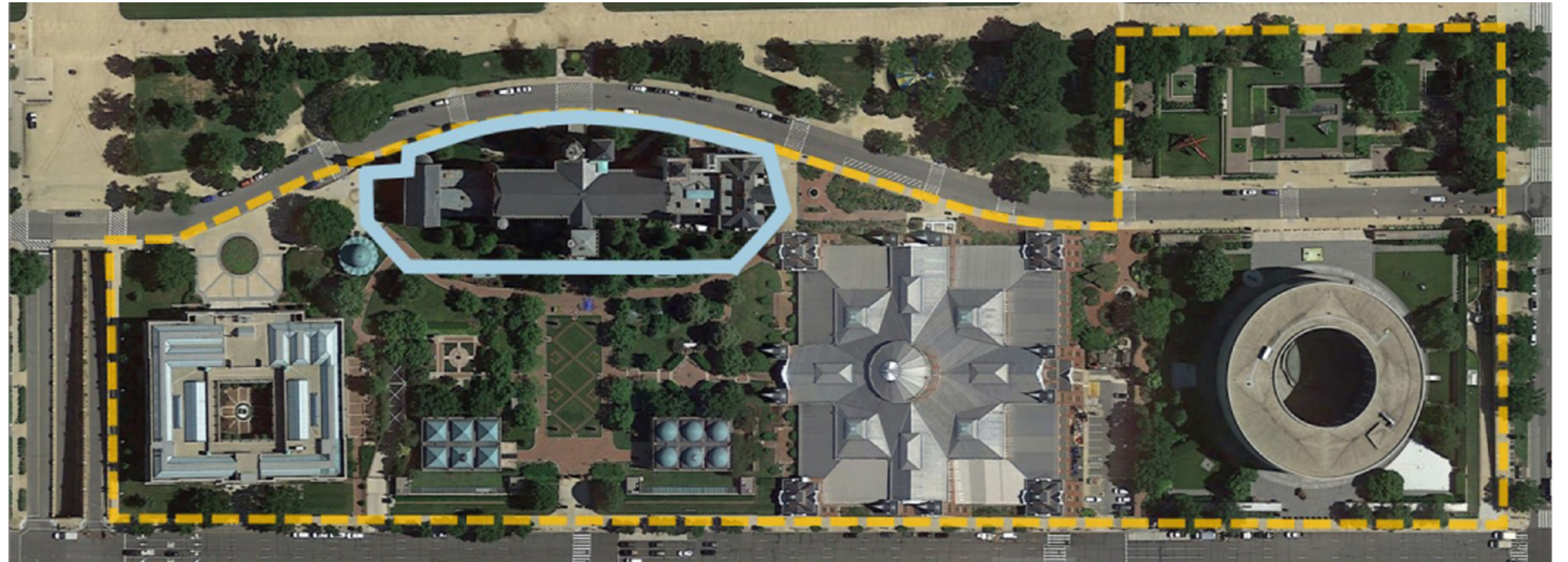


Figure 1.1.a - Project site.

— SMITHSONIAN INSTITUTION CASTLE
- - - SOUTH MALL CAMPUS



1. PROJECT OVERVIEW

1.2 DESCRIPTION OF THE PROPOSED PROJECT AND AREA

1.2.1 SCOPE

There is a need for comprehensive rehabilitation of the Smithsonian Institution Building (SIB or “the Castle”) in order to address physical deterioration, obsolete systems, and non-compliance with construction, accessibility, and life-safety codes. The Castle is a National Historic Landmark, listed in the National Register of Historic Places, part of the National Mall Historic District, and is included in the Smithsonian Quadrangle Historic District listed in the DC Inventory of Historic Sites.

The Smithsonian Institution Building (SIB), familiarly known as “the Castle”, is located on the National Mall in Washington, D.C. It was designed by James Renwick, Jr., under the direction of the Smithsonian’s first Secretary, Joseph Henry, and the Board of Regents. When completed in 1855, the building housed all the Smithsonian’s operations including research and administrative offices, lecture and exhibition halls, a library and reading room, chemical laboratories, storage areas for specimens, and living quarters for Joseph Henry and his family. As each successive Secretary has redefined the Smithsonian’s mission and managed its growth, the Castle’s interior spaces have undergone many modifications. While the building’s stewards do their best to maintain and repair it, continuing decay and piecemeal remodeling threaten the integrity of the building. In order to prevent impending catastrophic failure of structural, environmental, mechanical, and electrical systems, the building needs a full system revitalization.

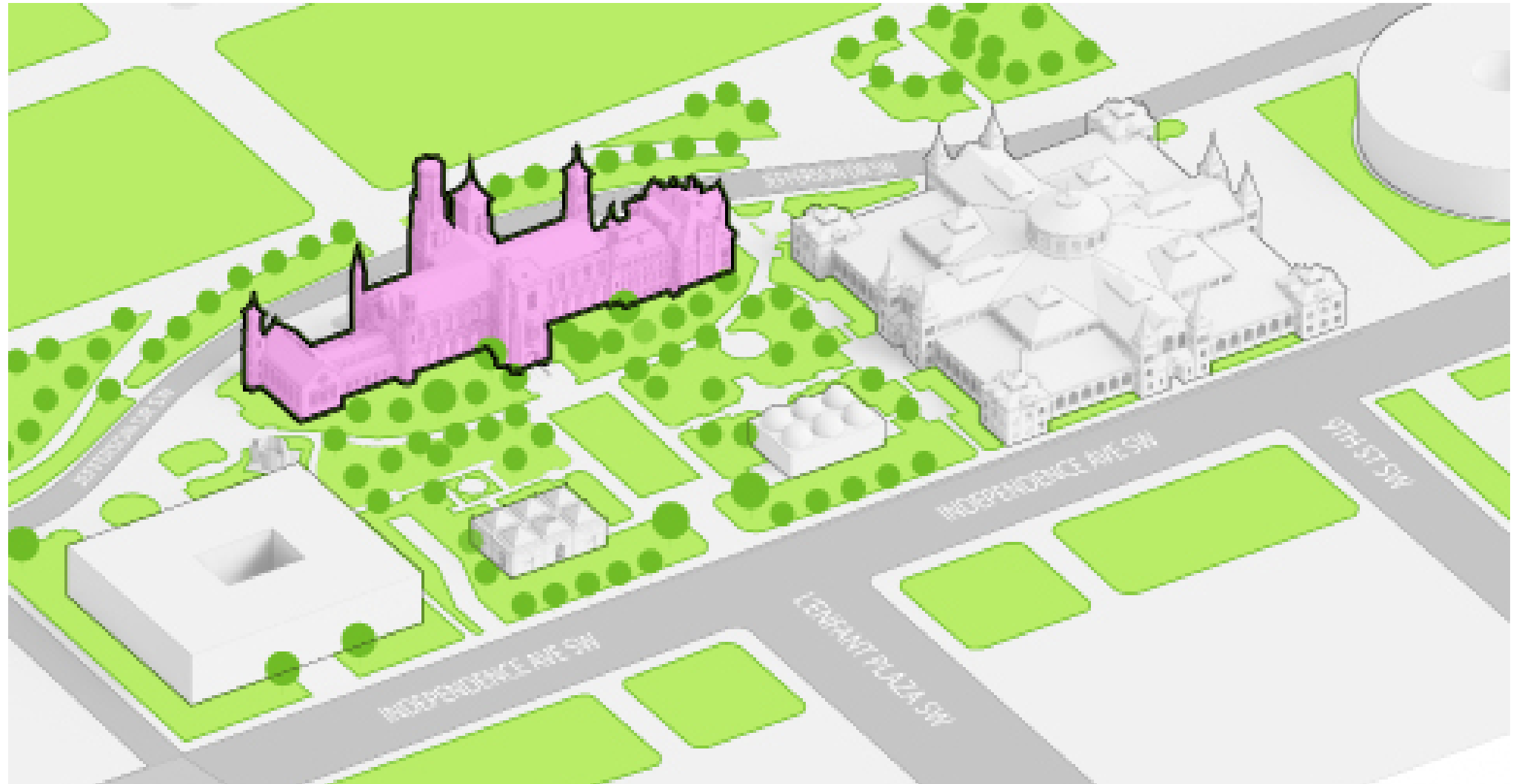


Figure 1.2.1.a - Overall scope.

1. PROJECT OVERVIEW

1.2 DESCRIPTION OF THE PROPOSED PROJECT AND AREA

1.2.1 SCOPE (CONTINUED)

Implementation of the South Mall Campus Master Plan, approved in 2018, included excavation below and adjacent to the Castle to create a mechanical distribution level and increase floor to ceiling height in the basement level. This project will implement these design actions, installs seismic base isolation, and creates a B1 level service extension, which is called the SIB Extension.

The B1 SIB Extension aligns with the B1 level of the adjacent Quadrangle Building and the existing loading dock and provides space for non-public support functions. The SIB Extension will facilitate the use of the historic interiors of the Castle for public programming by providing space for SI building operations and support. The SIB Extension will not be used for public programming.

This project will excavate but not enable a future B2 level connection between the Castle and the Quadrangle. This project will not provide any public circulation between any South Mall Campus buildings.

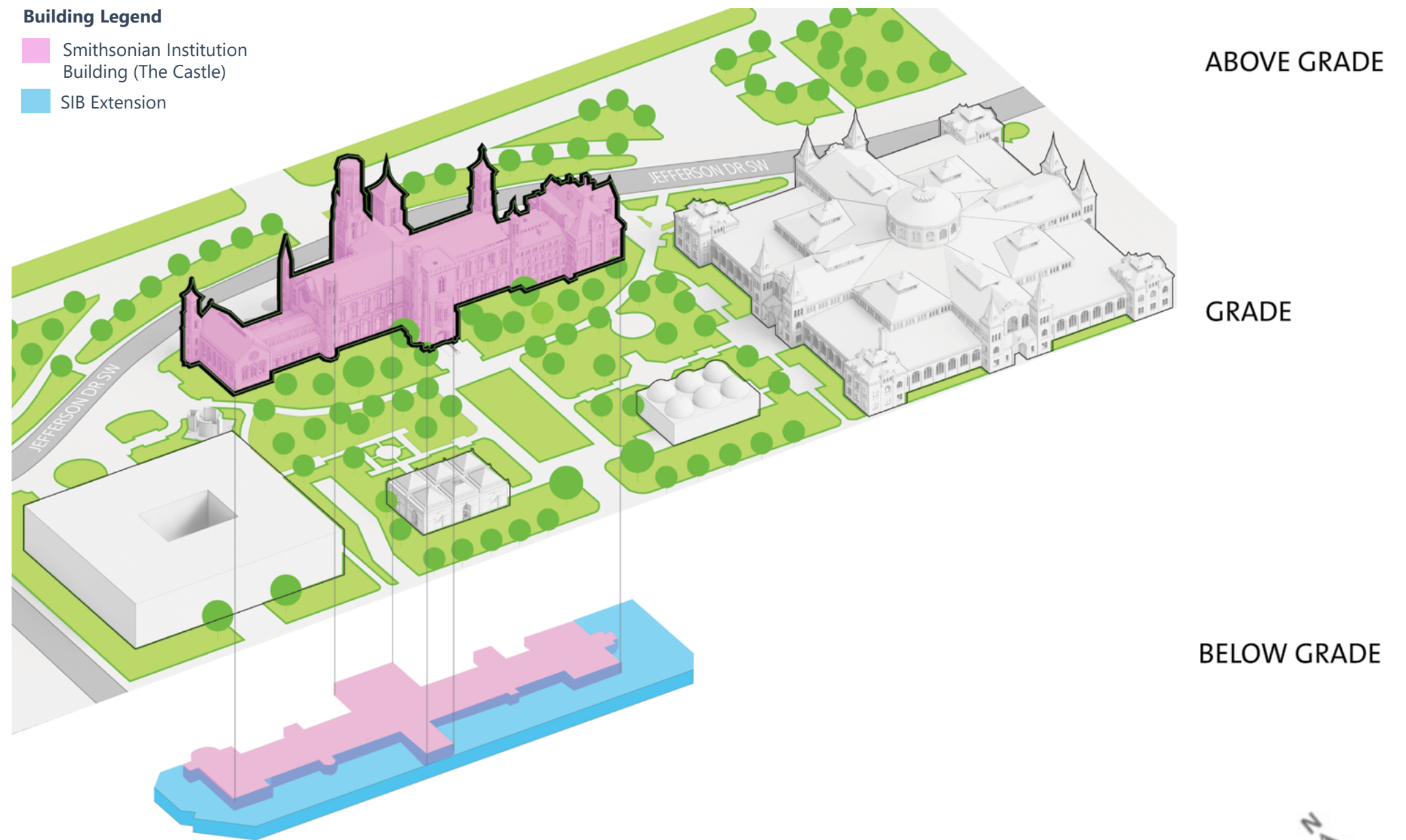


Figure 1.2.1.b - Modifications to the Castle, and basement level expansion.

1. PROJECT OVERVIEW

1.2 DESCRIPTION OF THE PROPOSED PROJECT AND AREA

1.2.1 SCOPE (CONTINUED)

BUILDING SECTION

The longitudinal section of the building illustrates that the new mechanical level (Level B1) extends the entire length of the building. This creates a simplified backbone for serving the entire Castle from below. The section also illustrates the lowering of the basement floor approximately 3 feet. Some areas of the basement floor have been lowered in the past. This comprehensive approach will create a single floor level that is universally accessible and creates headroom to satisfy the needs of a more intensive public use of this level of the building.

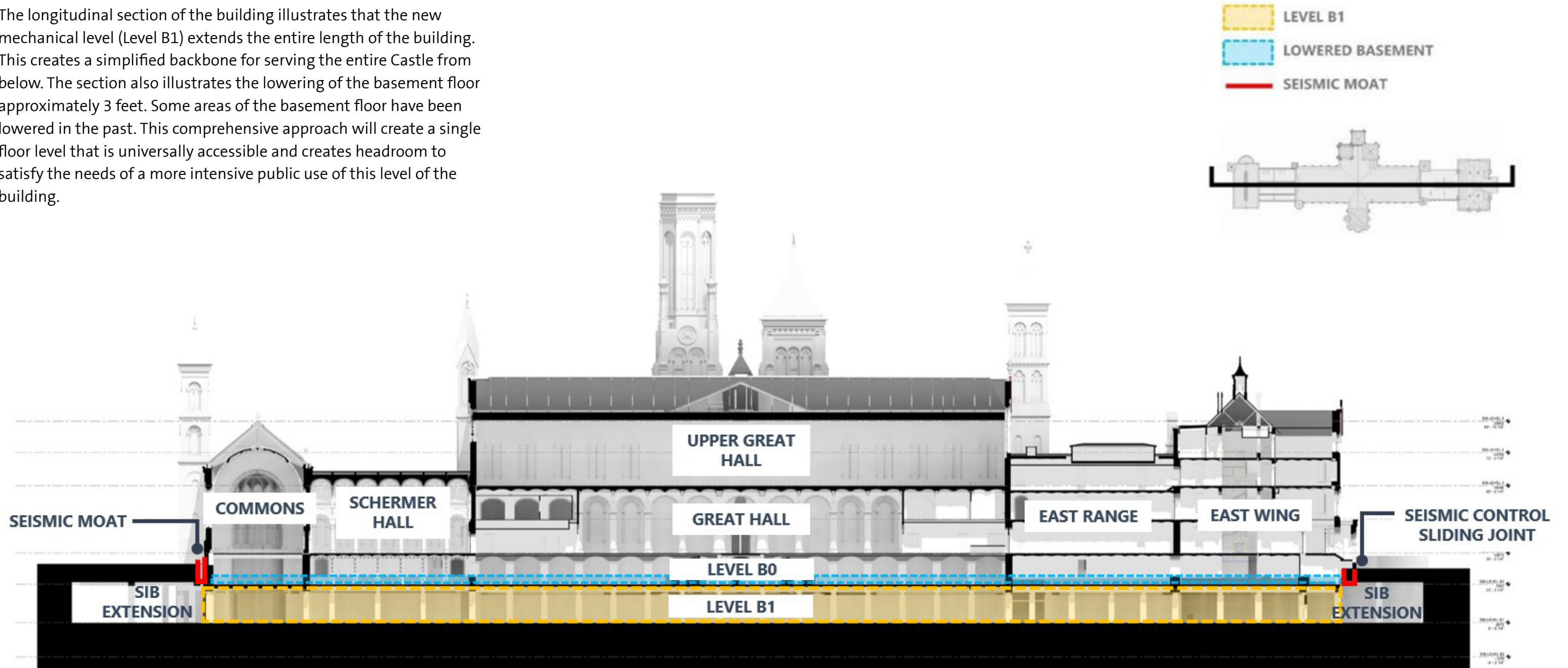


Figure 1.2.1.c - Mechanical equipment and distribution level building section.

1. PROJECT OVERVIEW

1.2 DESCRIPTION OF THE PROPOSED PROJECT AND AREA

1.2.2 PHASES

PHASE 1

During the design development process, a review of the overall construction process identified a required pause in site construction activities during the summer of 2026 to allow the Castle to be made available to the public in support of the celebration of the nation's Semiquincentennial. An initial phase of construction will be completed prior to the spring of 2026 which will focus on work below grade. This will include the seismic retrofit of the Castle foundations, excavation under the Castle to create the new mechanical equipment and systems routing level, lowering the basement level three feet to accommodate visitor amenities and public programming, and excavation to the south, east, and west of the Castle to create the SIB extension which will link the Castle to the existing Quadrangle Building loading dock on the B1 level.

Approval by CFA for the Phase 1 design components was received on February 16, 2023. The components are listed in Figure 1.2.2a.

Phase 1 - Previously Approved Project Components

- Introduction of New Areaways and Window Wells (Locations and Dimensions)
- Installation of Seismic Control Joint Around the Castle Perimeter (Location and Width)
- Extent of Excavation Adjacent to Castle
 - SIB Extension (B1 Level)
 - B2 Level Cistern
- Excavation Beneath the Castle
 - Base Isolation
 - Lowering of the Basement Level
 - Mechanical Distribution Level
 - Future Quadrangle Building B2 Connection
- Creation of Alternate Pedestrian Routes for Circulation Around the Castle

Figure 1.2.2.a – Phase 1 - Components of Review

1. PROJECT OVERVIEW

1.2 DESCRIPTION OF THE PROPOSED PROJECT AND AREA

1.2.2 PHASES (CONTINUED)

PHASE 2

Section 106 Consultation on the Phase 2 design components has continued through 2023. The components are listed in Figure 1.2.2.b. Presentations on some of these components were initiated in Consulting Parties meetings that occurred prior to the decision to divide the review process into two phases. Since approval of the Phase 1 components in February 2023 additional design refinements and reviews have occurred. Construction on the majority of these elements will start after the celebrations in 2026.

Phase 2	
<ul style="list-style-type: none">• New Areaways and Window Wells<ul style="list-style-type: none">• Finishes• Emergency Generator• Landscape and Grading Plan<ul style="list-style-type: none">• New Landscape Planting Plan• Perimeter Security• Signage• Site Lighting• South Entrance• North Entrance• Seismic Control Joint Finishes• Roof Area<ul style="list-style-type: none">• South Tower Elevators - Exterior Alterations, Interior Effects• Replacement of Roof Materials• Roof Modifications• Rooftop Mechanical Penthouses• East Wing 4th Floor Egress• Lightning Protection• Fall Protection	<ul style="list-style-type: none">• Exterior Walls<ul style="list-style-type: none">• Replacement and Restoration of Windows• Replacement and Restoration of Windows - Interior Effects• Exterior Masonry Restoration• New Basement Windows• Basement Egress Doors• Basement Level Interior Alterations – Effects• Exterior Lighting - Building

Figure 1.2.2.b – Phase 2 - Components of Review

1. PROJECT OVERVIEW

1.3 PLANS AND POLICIES

CONFORMANCE TO EXISTING PLANS, POLICIES AND RELATED GUIDANCE

Comprehensive Plan for the National Capital

The proposed design is intended to support consistency with the Comprehensive Plan, including the sections on Urban Design, Historic Preservation, Parks and Open Space, and Visitor and Commemoration Elements.

National Historic Preservation Act

The Smithsonian Institution has an independent responsibility to comply with Section 106 of the National Historic Preservation Act (NHPA). To fulfill the Section 106 requirements for the South Mall Master Plan, a Programmatic Agreement (PA) was prepared in 2018.

The Smithsonian Institution initiated the Section 106 process for the project pursuant to the PA. Seventeen consulting party meetings have been held to-date, as well as a series of on-site meetings to review materials and mock-ups. The Smithsonian has engaged with the NCPC, CFA, DC SHPO, NPS, and the Advisory Council on Historic Preservation (ACHP) as required by the South Mall Master Plan Programmatic Agreement. SI also maintains a project website at <https://www.sifacilities.si.edu/historic-core>

A Programmatic Agreement was prepared for Phase 1 construction activities, which outlines avoidance, minimization and initial mitigation measures for adverse effects resulting from the project. Identified adverse effects include installation of the seismic control joint; the addition and enlargement of areaways, and window wells at the building perimeter, all of which alter the Castle's relationship with the ground plane and introduce visual intrusions at the base of the building that impact the setting of the Castle and the National Mall. The PA also describes the process for ongoing consultation under Phase 2. The PA was executed on March 29, 2023.

Section 7 of the PA regarding the South Mall Master Plan included a requirement for monitoring of adjacent historic properties prior to and during any construction. The monitoring system for the Castle project, including monitors on the Castle, the Arts and Industries Building, and the Freer Gallery, have been installed and the monitoring system activated.

1. PROJECT OVERVIEW

1.4 PROPOSED DEVELOPMENT AND ALTERNATIVES

During the Phase 2 Section 106 consultation process, development of certain design issues was aided by robust discussions with the Consulting Parties. Numerous design alternatives were developed and reviewed in an effort to minimize any adverse effects of the design interventions. Examples of this process include:

- Reducing perimeter security from a continuous line of bollards on Jefferson Drive to three secure zones at building access points
- Perimeter security- design of the hardened bench at the north entrance. (Design Issue 3.3.2, pages 41-44)



Figure 1.4.a– Proposed design of hardened bench at porte cochere

Early efforts at reducing the number of bollards required to provide the necessary secure perimeter had resulted in focusing on utilizing hardened furniture and objects. Further design discussions minimized the size of the bench.

- Rooftop mechanical features- north hyphen (Design Issue 3.4.4, pages 70-72)

Outside air intakes required to serve new mechanical units in the attic must be located just behind the North and Flag Towers. While partially hidden by the towers, the intakes are visible from east and west of the Castle. Numerous design alternatives were reviewed to identify the location, size, and architectural treatment which is most appropriate.

- Areaway Finishes (Design Issue 3.1.4, pages 26-27)

As new features at the base of the historic Castle the configuration and finishes of the areaways are critical to the visual quality of the building. Areaway configurations were finalized during the Phase 1 review process. During Phase 2 the focus was on the materials, textures, and colors of the finishes. Numerous visualizations and site visits to review material samples were utilized to develop the final design.

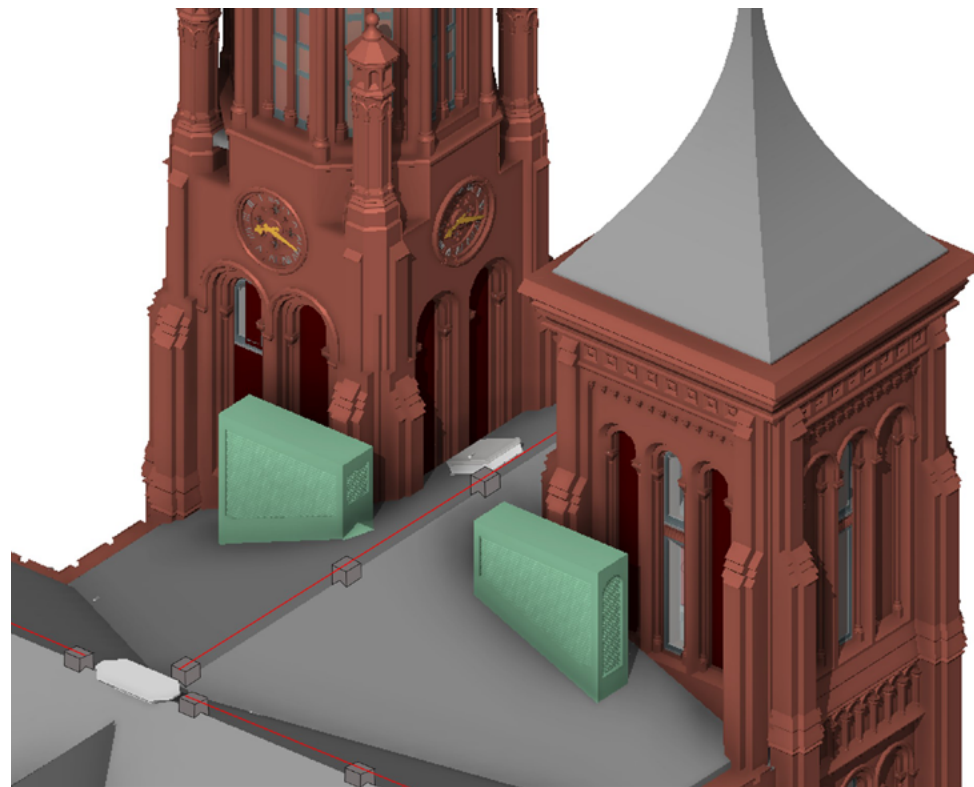


Figure 1.4.b – Proposed green rooftop additions represent mechanical penthouses with patina

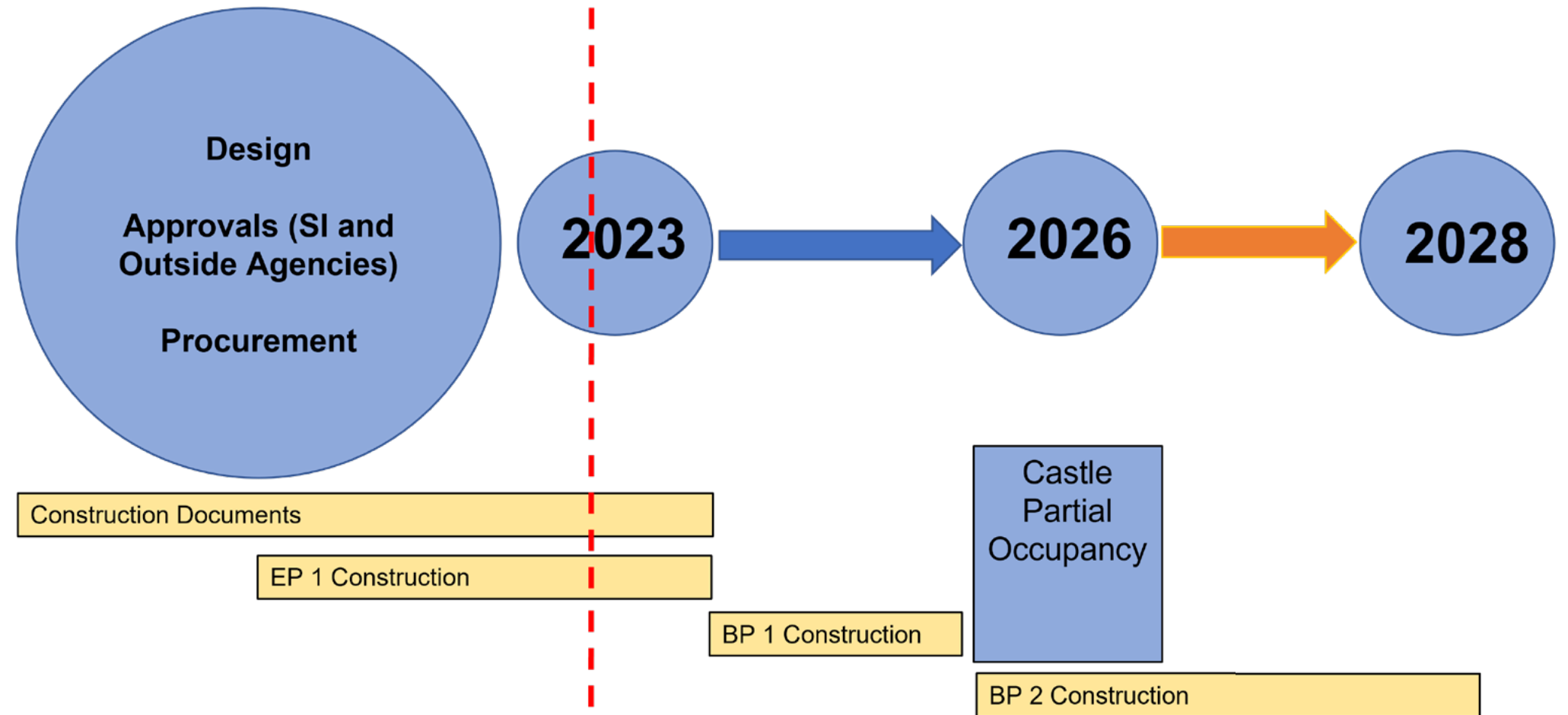


Figure 1.4.c – South areaway visualization with finishes

1. PROJECT OVERVIEW

1.5 SCHEDULE

The project has been subdivided into a series of construction components. The primary purpose of this was to expedite early construction packages that are critical to preparing the South Mall campus and the site prior to work in the Castle. This will also facilitate the partial occupancy of the building in the summer of 2026 for the Semiquincentennial Celebrations.



Legend

EP (Early Package) 1
 Telecommunications Hub
 Site Utility Relocation

BP (Building Package) 1
 Selective Interior Removals
 Preparation for 2026 Partial Occupancy

BP (Building Package) 2
 Excavation and Foundation
 Site Improvements and Perimeter Security
 Building Accessibility
 Roof Upgrades
 Masonry Repair
 Window Replacements
 Interior Construction

2. OUTREACH AND COORDINATION

2. OUTREACH AND COORDINATION

2.1 PUBLIC ENGAGEMENT

The South Mall Campus Master Plan Programmatic Agreement provides the framework for and reinforces the importance of ongoing and future public consultations as part of the implementation of the Master Plan in compliance with the National Historic Preservation Act. As part of the Section 106 review process Consulting Parties meetings have been held in alignment with the milestone progress of the project, initiated during Concept Design. In parallel with the public meetings the project has been submitted for review to the National Capital Planning Commission (NCPC) and the Commission of Fine Arts (CFA). All of these formal review processes incorporate public input.

The Smithsonian has coordinated review of the RoHC in accordance with the Programmatic Agreement Stipulation 1 – Preliminary Project Consultation. The Signatories were convened for preliminary consultation in October 2020, April 2021, October 2021, and May 2022 and October 2023.

In October 2022 the Smithsonian Institution coordinated with the Consulting Parties to break the review process into two components to facilitate the projected construction schedule, including partially reopening the building in the summer of 2026 for the public celebrations in support of the nation’s Semiquincentennial. Consulting Parties meetings continued on a regular basis with a focus initially on the Phase 1 design components. The Phase 1 scope was submitted for final review by CFA and NCPC with approval received from CFA on February 16, 2023, and NCPC on April 6, 2023. Prior to approval by NCPC a Programmatic Agreement was executed on March 29, 2023, which addressed the Phase 1 scope and the ongoing public engagement for the Phase 2 scope.

The Section 106 process was initiated in October 2020, and the following meetings have been held virtually and in-person:

- 2021-1-13: RoHC Consulting Parties Meeting #1 (Description of the scope of the project and the historic significance of the Castle and the Arts & Industries Building)
- 2021-5-26: RoHC Consulting Parties Meeting #2a (Presentation of the concept design - focus on the rehabilitation of the Castle and AIB)
- 2021-5-27: RoHC Consulting Parties Meeting #2b (Presentation of the concept design - focus on the central utility plant, cooling towers, and landscape)
- 2021-11-16: RoHC Consulting Parties Meeting #3 Part 1 (Presentation of an overall project update during the schematic design phase)
- 2021-12-14: RoHC Consulting Parties Meeting #3 Part 2 (Presentation of the draft Assessment of Effects on Historic Resources)
- 2022-6-15: RoHC Consulting Parties Meeting #4 (Revitalize Castle Scope)
- 2022-08-24- RoHC Consulting Parties Meeting #5, Part 1 online
- 2022-09-07- RoHC Consulting Parties Meeting #5, Part 2, site visit
- 2022-09-28- RoHC Consulting Parties Meeting #6, online
- 2022-10-26- RoHC Consulting Parties Meeting #7, Part 1, online
- 2022-11-15 RoHC Consulting Parties Meeting #7, Part 2, joint cover and perimeter security mock-ups on site
- 2022-11-30- RoHC Consulting Parties Meeting #8, including review of Assessment of Effects report and draft of proposed Programmatic Agreement
- 2023-01-25- RoHC Consulting Parties Meeting #9, review of Programmatic Agreement
- 2023-02-22 RoHC Consulting Parties Meeting #10- roof mechanical elements, lightning protection, and exterior masonry
- 2023-03-22 RoHC Consulting Parties Meeting #11- south entry

- ramp, paving, railings, south tower elevator interior effects
- 2023-04-12 RoHC Consulting Parties Meeting on site review of exterior materials
- 2023-04-26 RoHC Consulting Parties Meeting #12- roof mechanical elements, windows, seismic joint covers
- 2023-05-24 RoHC Consulting Parties Meeting #13- roof modifications, emergency egress, fall protection, roof access
- 2023-06-28 RoHC Consulting Parties Meeting #14- planting plan, perimeter security, north ramps, exterior signage, areaway finishes, exterior lighting
- 2023-07-11 RoHC Consulting Parties Meeting on site review of areaway finish materials
- 2023-07-26 RoHC Consulting Parties Meeting #15- basement windows interior effects, window replacement, lowering B0 floor interior effects
- 2023-09-27 RoHC Consulting Parties Meeting #16, review of Assessment of Effects report of the Phase 2 design components
- 2023-10-25 RoHC Consulting Parties Meeting #17, review initial minimization and mitigation measures

On August 12 and September 16, 2021, the Smithsonian met with the National Park Service to discuss the elements of the project that impact NPS property and the Smithsonian’s comprehensive construction schedule for the Smithsonian projects on the Mall.

On May 12, 2022, the Smithsonian met with the National Park Service to discuss the Revitalize Castle scope and perimeter security. Consultation and coordination with the National Park Service will continue through 2023 including coordination on signage to facilitate public wayfinding during construction.

The Smithsonian Institution has created and maintains a project specific webpage for the RoHC for Section 106 consulting parties and the public: <https://ahhp.si.edu/historic-core>

2. OUTREACH AND COORDINATION

2.1 PUBLIC ENGAGEMENT

Figure 2.1.a represents the status of the Section 106 Consultation process for the Phase 1 portion of the project. The Assessment of Effects report has been created and reviewed with the Consulting Parties. A Programmatic Agreement has been created and issued to the Consulting Parties for review and comment. The final Programmatic Agreement was presented on January 25, 2023, in Consulting Parties Meeting #9.

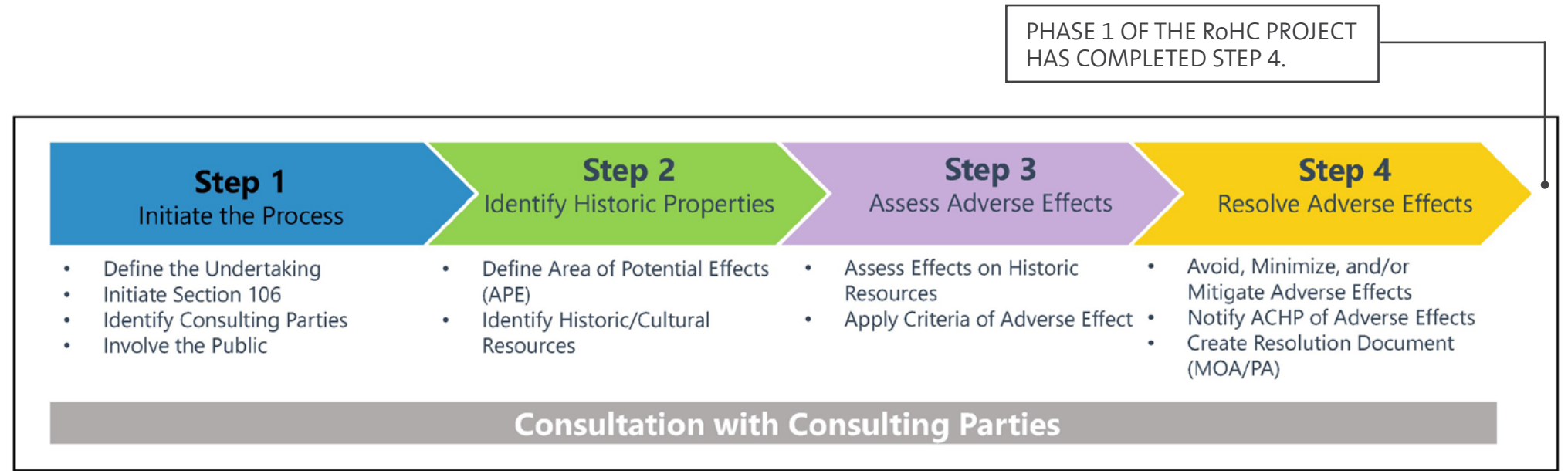


Figure 2.1.a - Section 106 process overview – Phase 1

Figure 2.1.b represents the status of the Section 106 Consultation process for the Phase 2 portion of the project. Public consultation has continued through 2023 with monthly Consulting Parties meetings and additional on-site meetings to review samples and mock-ups. An Assessment of Effects report has been created and reviewed, covering the Phase 2 design issues. This will be used in developing an amendment to the existing Programmatic Agreement or a new Memorandum of Agreement.

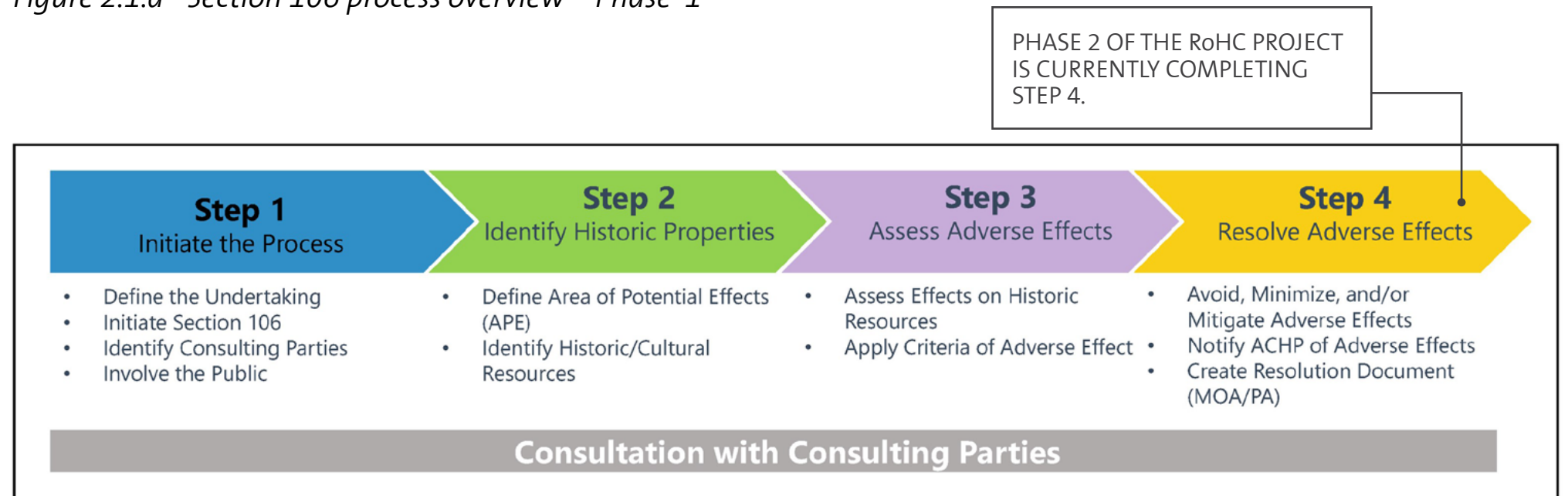


Figure 2.1.b - Section 106 process overview – Phase 2

2. OUTREACH AND COORDINATION

2.2 COORDINATION WITH FEDERAL, STATE, AND LOCAL AGENCIES

Invited Consulting Parties

Public Agencies

- National Capital Planning Commission
- U.S. Commission of Fine Arts
- DC State Historic Preservation Office
- Advisory Council on Historic Preservation
- Architect of the Capitol
- DC Department of Transportation
- DC Office of Planning
- DC Water
- National Archives and Records Administration
- National Gallery of Art
- National Park Service – National Mall and Memorial Parks
- National Park Service – National Historic Landmarks Program
- Department of Agriculture
- General Services Administration
- Washington Metropolitan Area Transit Authority
- DC Department of Energy and Environment
- Department of Energy
- Department of Health and Human Services
- Federal Aviation Administration
- Department of Justice
- Environmental Protection Agency

Interested Parties

- American Institute of Architects, DC Chapter
- Committee of 100 on the Federal City
- Cultural Landscape Foundation
- DC Preservation League
- Destination DC
- Docomomo US and DC Chapter
- Historic Anacostia

- National Association of Olmsted Parks
- National Mall Coalition
- National Trust for Historic Preservation
- Society of Architectural Historians
- Society of Architectural Historians, Latrobe Chapter
- US Capitol Historical Society
- Victorian Society in America
- Victorian Society New York
- Southwest BID
- Southwest Neighborhood Assembly
- National Civic Art Society
- American Society of Landscape Architects
- Garden Club of America

Local Elected Representatives

- Advisory Neighborhood Commission 2C
- Advisory Neighborhood Commission 6D

Participation from 10 individual citizens

3. DETAILED PROJECT INFORMATION

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3.0 PROGRAMMATIC USE

BUILDING SECTION

The programmatic use of the Castle has been regularly adjusted since the building was completed in 1855. Most recently the building was utilized predominantly as office space for Smithsonian staff, with just 17% of the interior space open to the public. All of this space is located on the first floor. The proposed revitalization will reclaim some significant historic spaces that had been taken out of the public realm. The proposed plan will result in over 60% of the interior being available to the public spread out over three floors of the building.

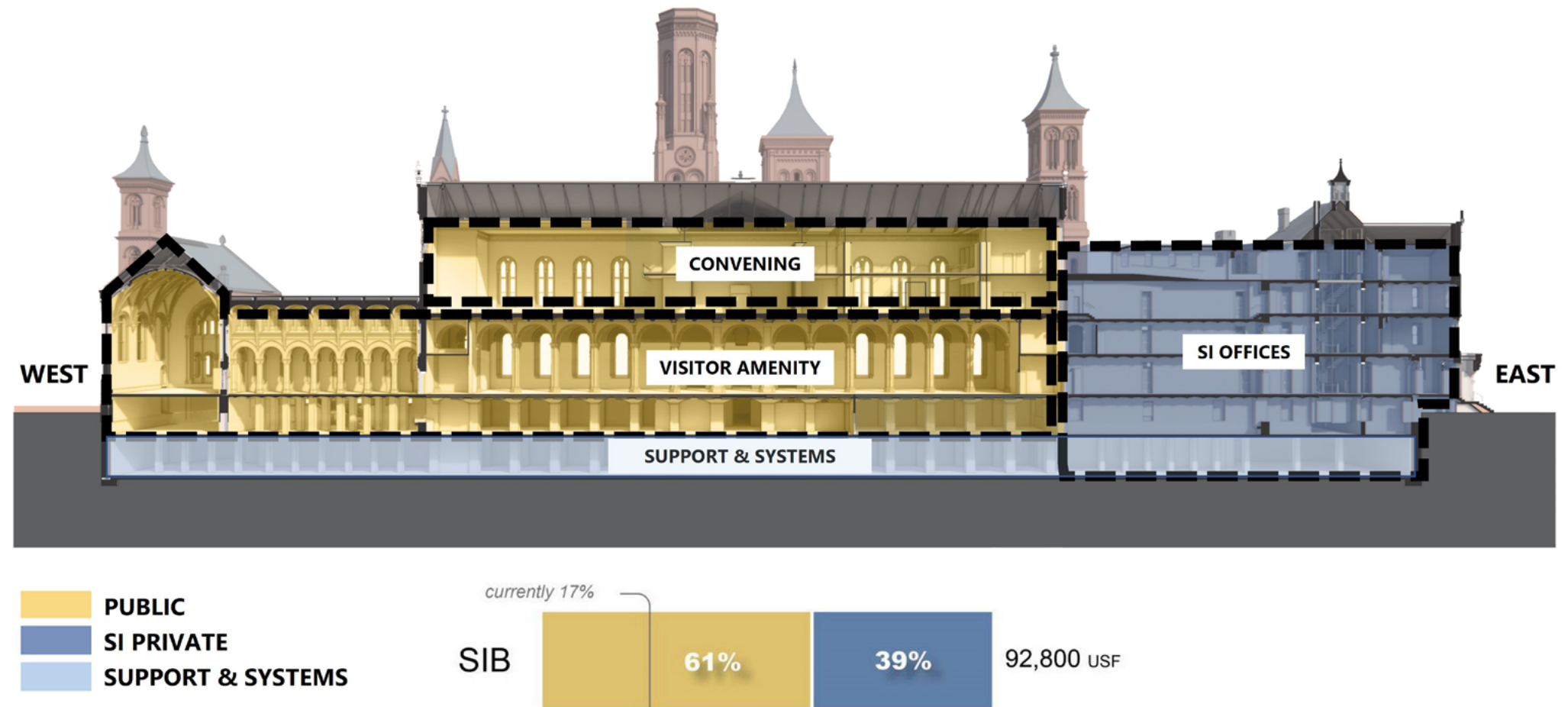


Figure 3.0.1.a – Proposed Section - Longitudinal

3. DETAILED PROJECT INFORMATION

3.1 NEW AREAWAYS AND WINDOW WELLS

3.1.1 OVERVIEW

Existing areaways and window wells are located around the Castle (Figure 3.1.1.a). These vary in plan dimensions and depth and were created at different times during the history of the building. The existing areaways and window wells are used to allow exterior light into basement spaces, for storage, as locations for mechanical equipment, and as egress points from the basement.

The revised program for the basement of the Castle creates public amenity spaces which will require additional egress points. The SIB Extension will also require new egress points. The areaway modifications are designed to accommodate these egress pathways. Revised and new areaways and light wells will also support improved penetration of exterior light into the basement.

The Phase 1 review of the areaways and window wells was limited to the plan configurations and depths. Phase 2 review includes the finishes, railings, and other details. To provide background for review of the Phase 2 elements general information regarding the areaways has been included.

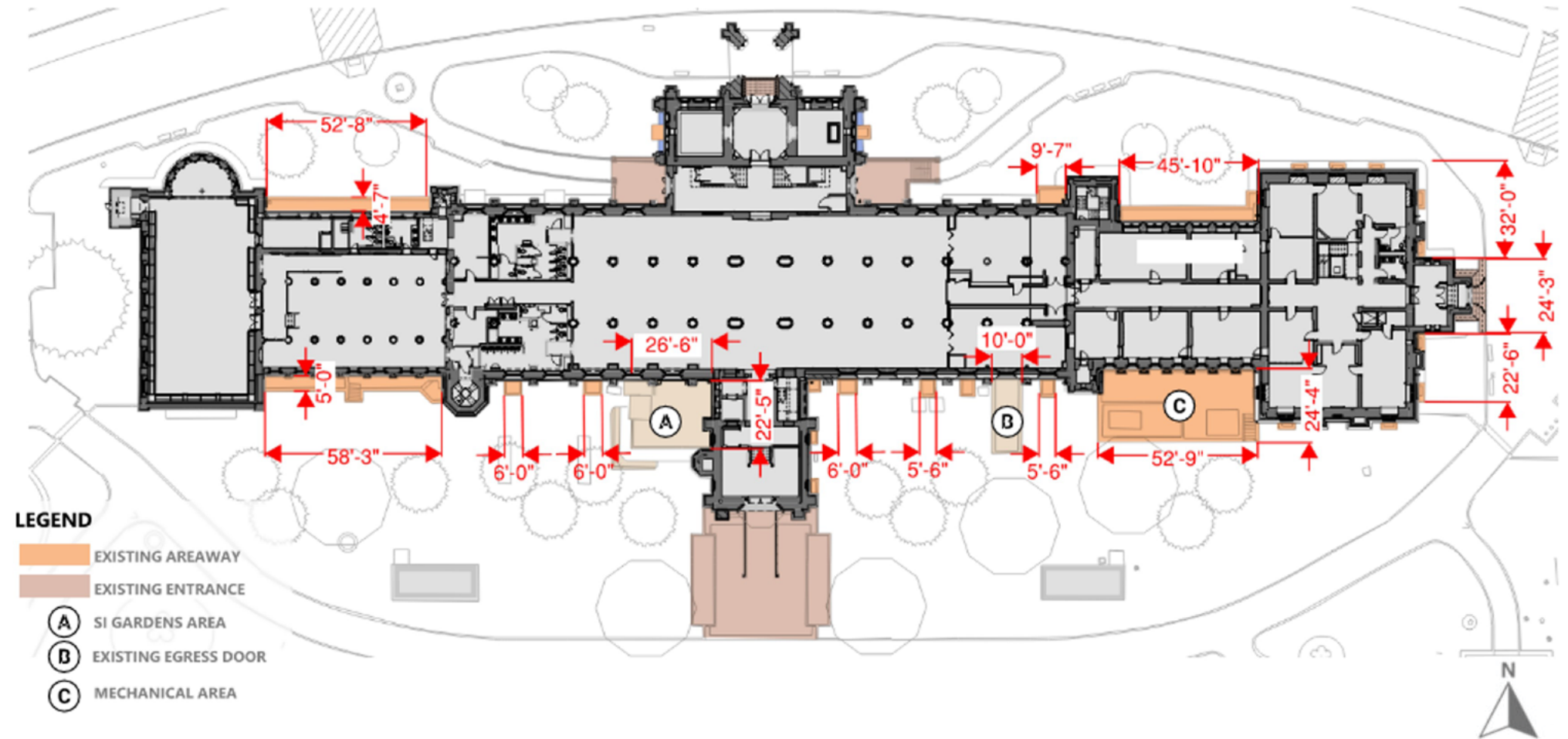


Figure 3.1.1.a – Existing areaways and window wells

3. DETAILED PROJECT INFORMATION

3.1 NEW AREAWAYS AND WINDOW WELLS

3.1.2 EXISTING CHARACTER

The existing areaways on the south side of the Castle are not visible from the garden due to their distance from the public pathway and existing vegetation.



A. SOUTH LANDSCAPE LOOKING NORTHEAST



B. SOUTH LANDSCAPE LOOKING NORTHWEST

Figure 3.1.2.a – Existing view of south areaway from public path

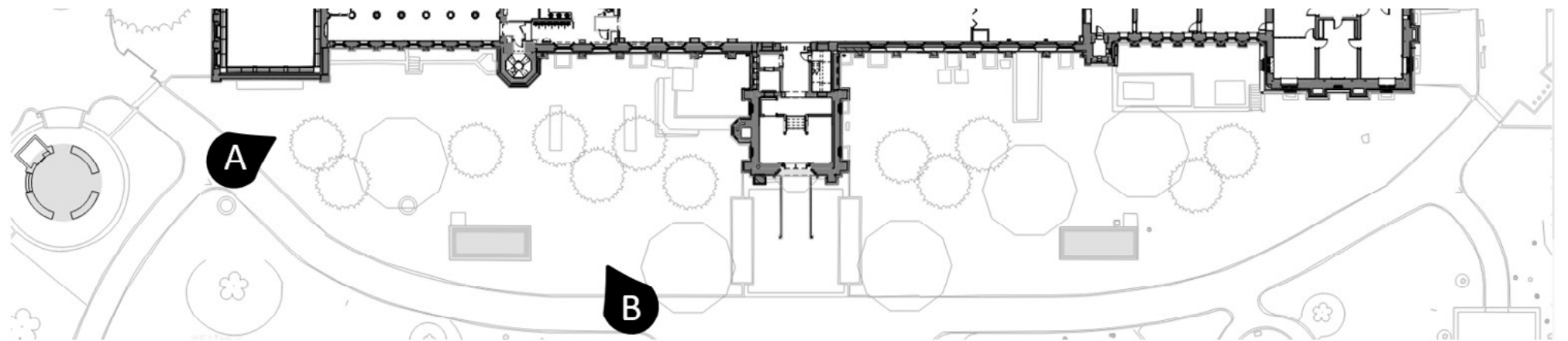


Figure 3.1.2.b – Existing site plan

3. DETAILED PROJECT INFORMATION

3.1 NEW AREAWAYS AND WINDOW WELLS

3.1.3 SOUTHWEST AREAWAY

The southwest areaway is comprised of two areaways that flank the Octagon Tower. This allows the tower to come down to grade matching its historic configuration. The retaining walls align with massing elements of the Castle (buttresses). The retaining walls will include a fall protection railing and access control gates.

The west portion of the areaway provides egress from the basement, the SIB Extension, and the upper floors of the Castle through the Octagon Tower.

The east portion of the areaway provides egress from the basement and an outdoor seating area that is accessed from the building interior.

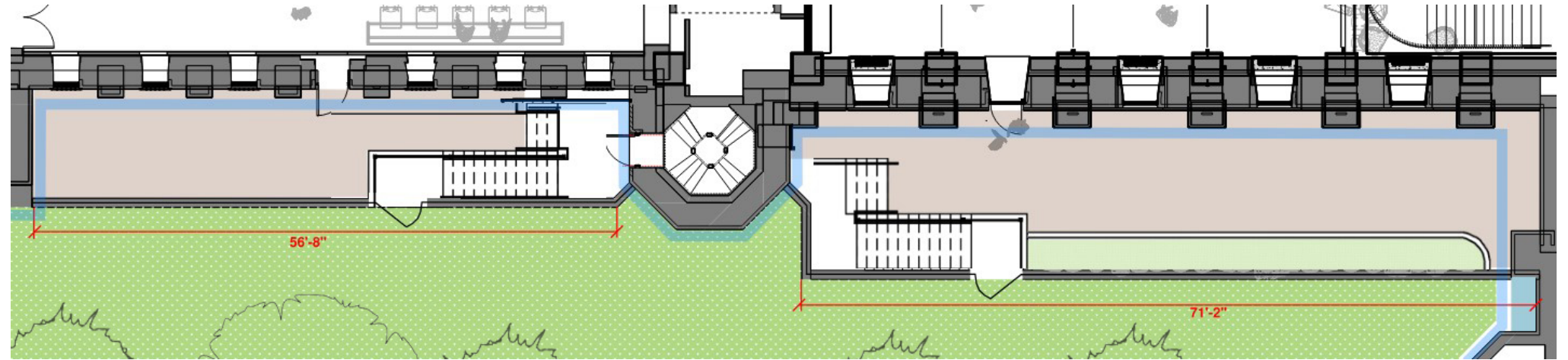
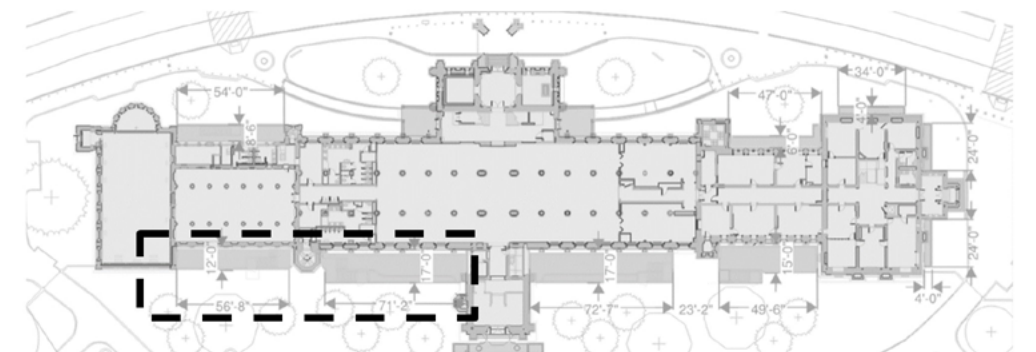


Figure 3.1.3.a – Proposed southwest areaway, plan



3. DETAILED PROJECT INFORMATION

3.1 NEW AREAWAYS AND WINDOW WELLS

3.1.3 SOUTHWEST AREAWAY (CONTINUED)

Figure 3.1.3.b illustrates the existing view of a pedestrian on the walkway in the Haupt Garden looking towards the Octagon Tower. The visualization (Figure 3.1.3.c) illustrates the proposed areaways flanking the Octagon Tower, allowing the Tower to visually connect to grade. This both maintains the Octagon Tower's relationship with grade, and minimizes the visual presence of the areaways.

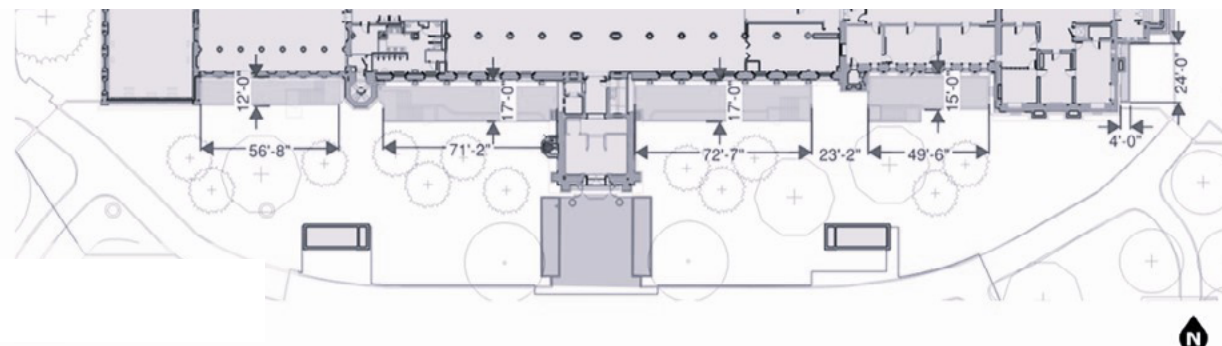
While no plantings are shown in the visualization plantings will be installed that reflect the existing character of the Haupt Garden. See section 3.3.1 New Planting Plan pages 35-40.



Figure 3.1.3.b – Existing condition



Figure 3.1.3.c – Proposed southwest areaway, conceptual visualization from public path



3. DETAILED PROJECT INFORMATION

3.1 NEW AREAWAYS AND WINDOW WELLS

3.1.4 FINISHES

VISUALIZATION

Figures 3.1.4.a and 3.1.4.b are renderings of potential finishes at the southwest areaway. Stucco is shown on the Castle's base, gray porcelain pavers on the floor, poured in-place concrete with an architectural finish at the stairs and landing, and a stucco finish on the new retaining wall.

Color selections for the stucco will be finalized utilizing mock-ups during construction.



Figure 3.1.4.a – South areaway visualization with finishes, red tinted stucco



Figure 3.1.4.b – South areaway visualization with finishes, gray tinted stucco

3. DETAILED PROJECT INFORMATION

3.1 NEW AREAWAYS AND WINDOW WELLS

3.1.4 FINISHES (CONTINUED)

MATERIALS

Figure 3.1.4.c is a rendering of the finishes at the southwest areaway. Stucco is shown on the Castle's base, gray porcelain pavers on the floor, poured in-place concrete with an architectural finish at the stairs and landing, and a neutral gray stucco finish on the new retaining wall.

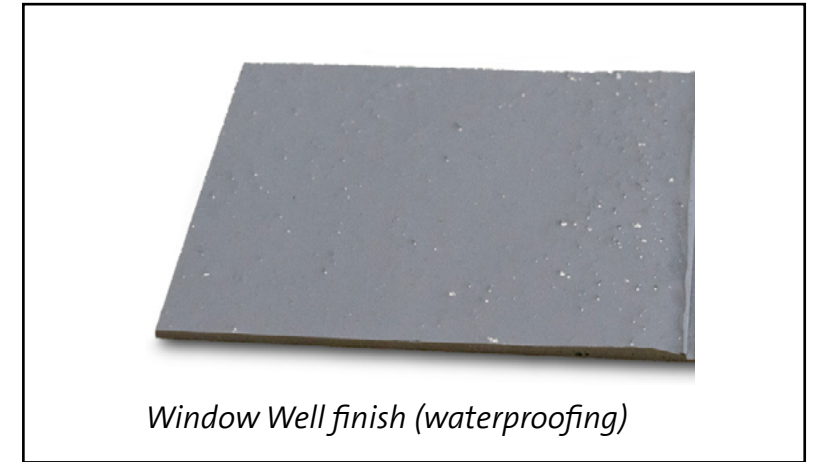
Mock-ups executed during the construction process will be utilized to make final color selections. CFA and NCPC staff will be invite to participate in the mock-up review process.



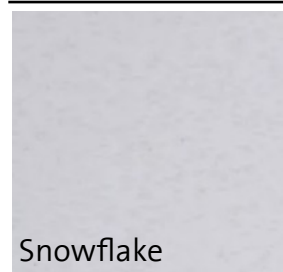
(A) – Floor - Porcelain paver over pedestal



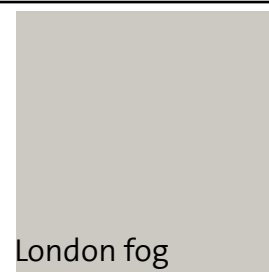
(B) – Stair - Poured in-place concrete with architectural finish



Window Well finish (waterproofing)



Snowflake



London fog

(C) – Gray tinted stucco color options - final selection to be made based on mock-up during construction



Creme brule



Dusty peach



Light adobe



Slate Rose

(C) – Red tinted stucco color options - final selection to be made based on mock-up during construction

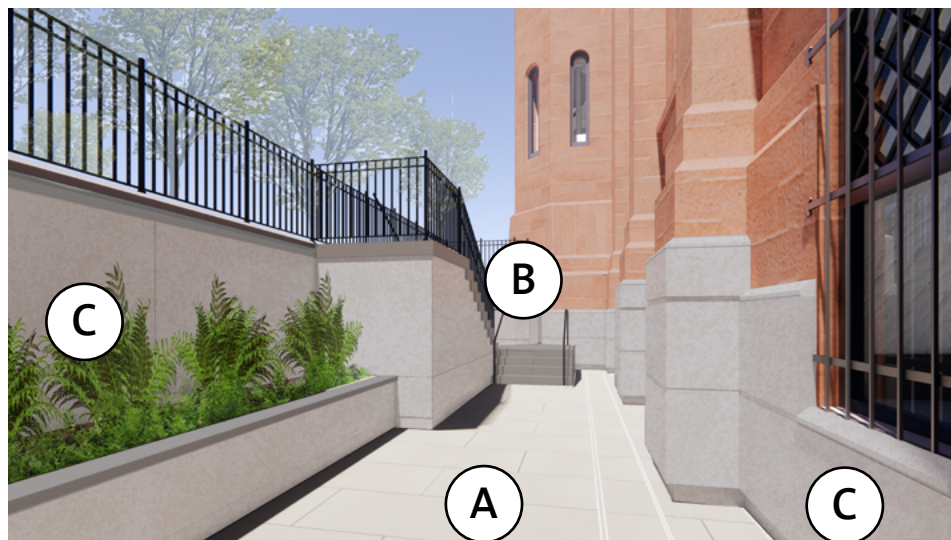


Figure 3.1.4.c – South areaway visualization with finishes

3. DETAILED PROJECT INFORMATION

3.1 NEW AREAWAYS AND WINDOW WELLS

3.1.5 SOUTHEAST AREAWAY

The southeast areaway is comprised of two areaways that flank the Southeast Tower. This allows the tower to come down to grade matching its historic configuration. The retaining walls align with massing elements of the Castle (buttresses). The retaining walls will include a fall protection railing and access control gates.

The west portion of the areaway provides egress from the basement and an outdoor seating area that is accessed from a staff area in the basement.

The east portion of the areaway provides a location for the emergency generator for the Castle.

Bisecting the areaways maintains the Southeast Tower's relationship with grade, and minimizes the visual presence of the areaways.

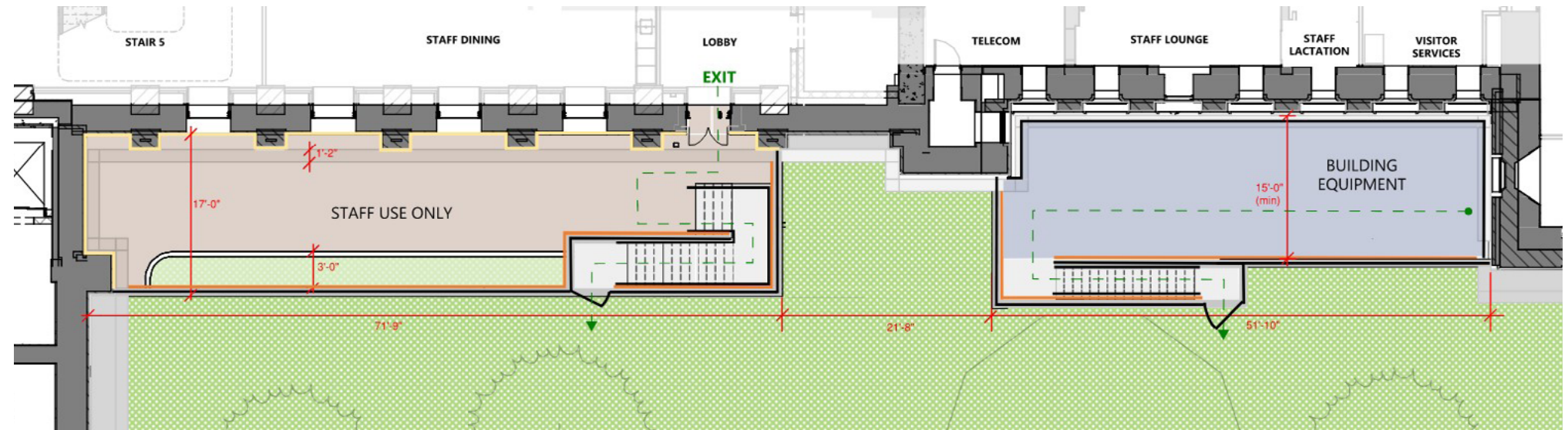
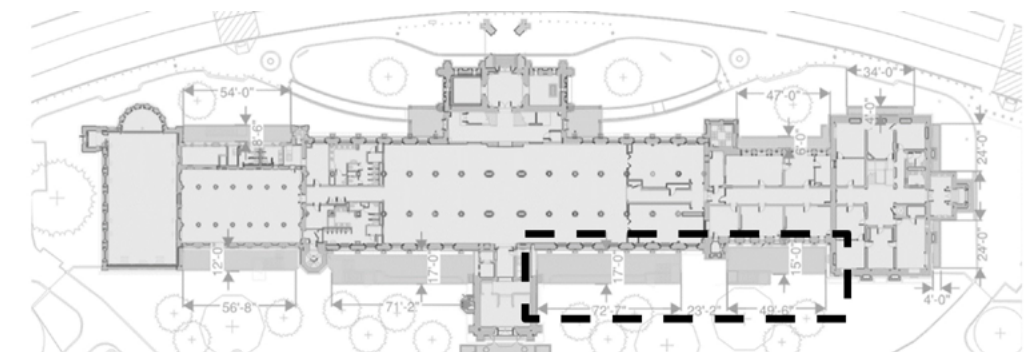


Figure 3.1.5.a - Proposed southeast areaway, plan



3. DETAILED PROJECT INFORMATION

3.1 NEW AREAWAYS AND WINDOW WELLS

3.1.6 EMERGENCY GENERATOR

The existing areaway at the southeast corner of the building currently houses an emergency generator for the Castle. New emergency generator equipment is needed to properly serve the revitalized Castle. Pathways in the garden are set away from the building, minimizing any view into this areaway by the public. The visual impact of the equipment is further minimized by keeping the height of the equipment no higher than the areaway wall and selecting equipment that has a simple housing with no exposed components.

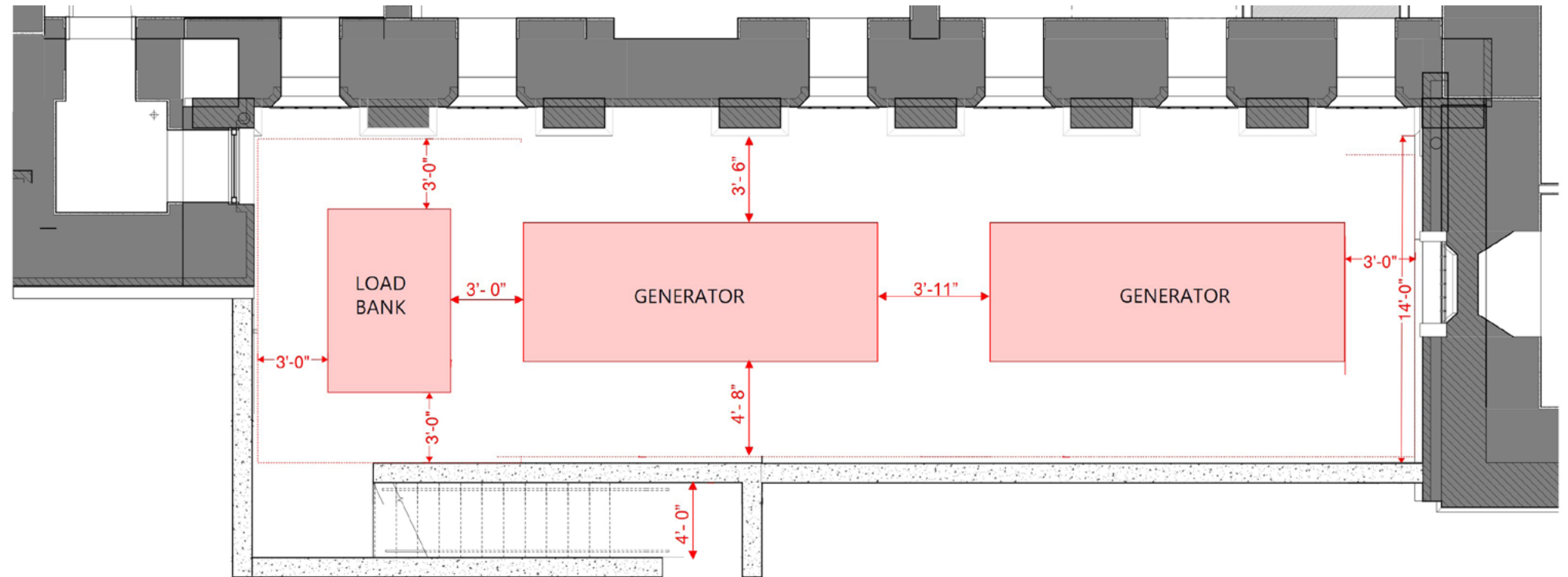


Figure 3.1.6.a Plan - Southeast (East) Areaway with generator

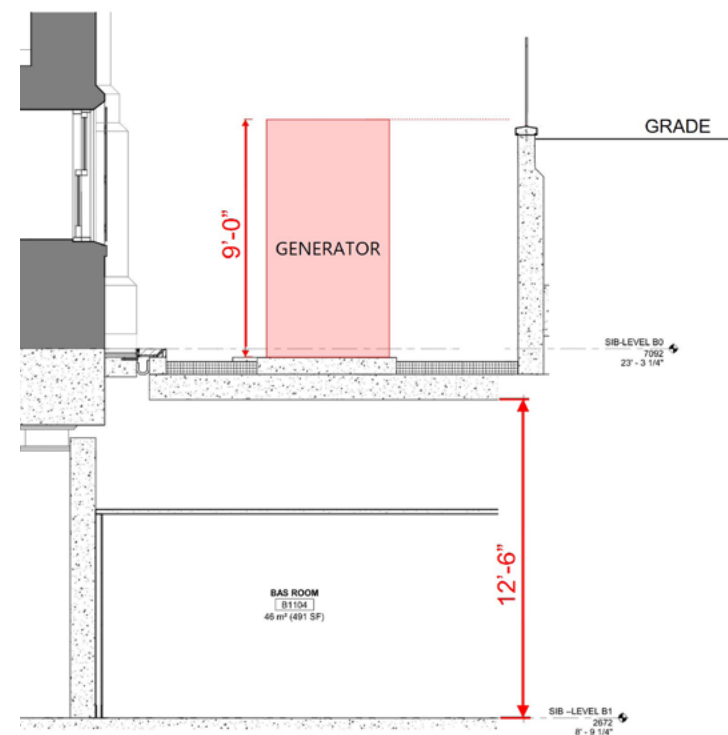


Figure 3.1.6.b Section - Southeast (East) Areaway with generator



Figure 3.1.6.c Example of generator, all components enclosed

3. DETAILED PROJECT INFORMATION

3.2 SEISMIC CONTROL JOINT

3.2.1 OVERVIEW

As part of the seismic base isolation of the Castle a control joint is required around the entire Castle perimeter. This is critical to isolating the building from the movement of the ground in the event of a seismic event. Base isolation with a perimeter joint minimizes the visual impact of seismic design on the Castle. The alternate approach would require lateral bracing of the upper areas of the unreinforced masonry structure. This would have significant impact on many of the interior spaces of the building.

For efficiency, it is best if the seismic joint layout is as regular as possible, which is a particular challenge on a building such as the Castle which is very irregular in plan where it meets grade.

Phase 1 review considered the locations and dimension of the seismic control joint. Phase 2 of the project considered materials to infill the seismic control joint cover plate.

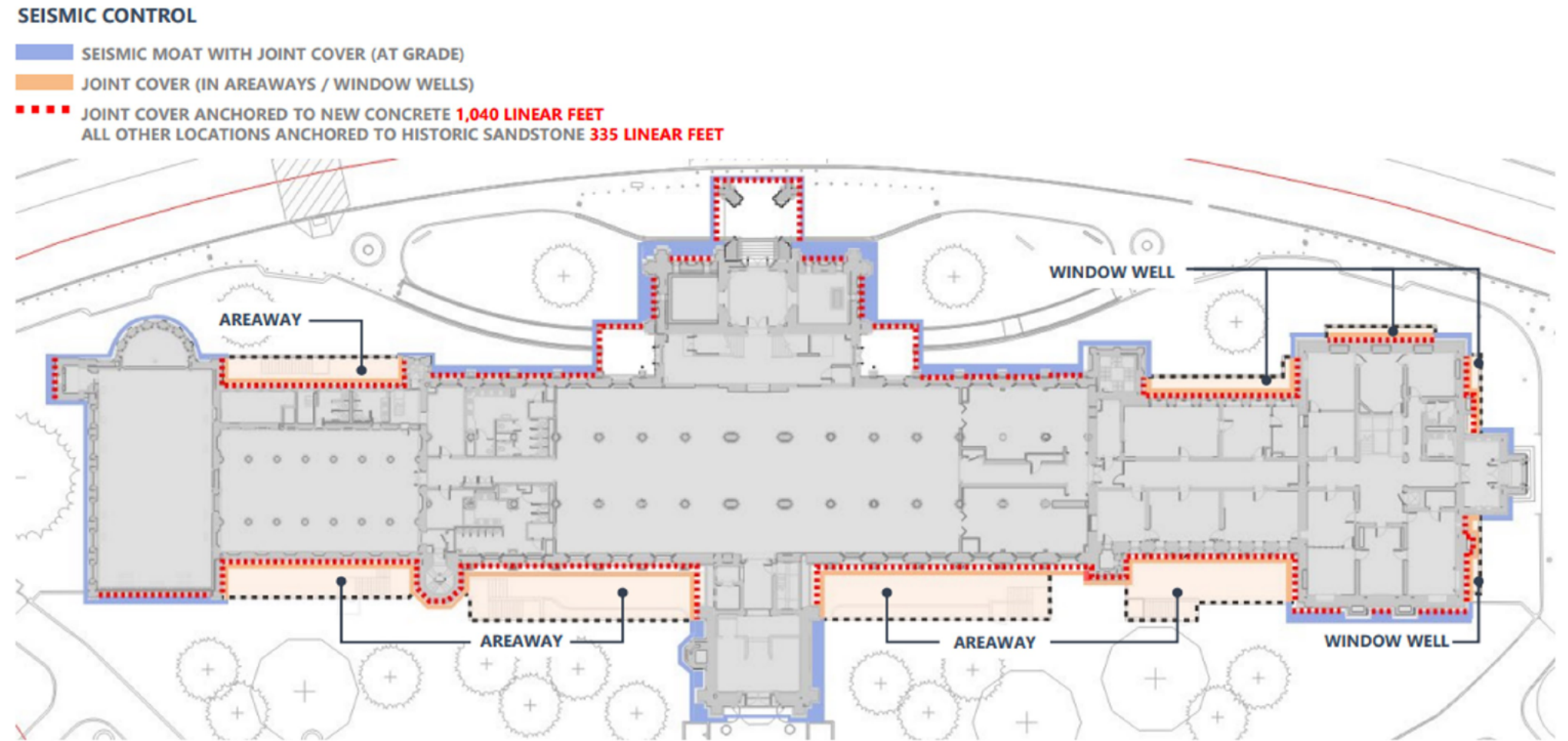


Figure 3.2.1.a – Seismic control joint perimeter locations

3. DETAILED PROJECT INFORMATION

3.2 SEISMIC CONTROL JOINT

3.2.2 CONTROL JOINT DETAIL

At a number of locations around the Castle the seismic joint cover will replace a concrete apron. The metal joint covers are designed to accommodate a filler material to minimize their visual impact. The joint cover metal can also be treated to minimize the visual impact.

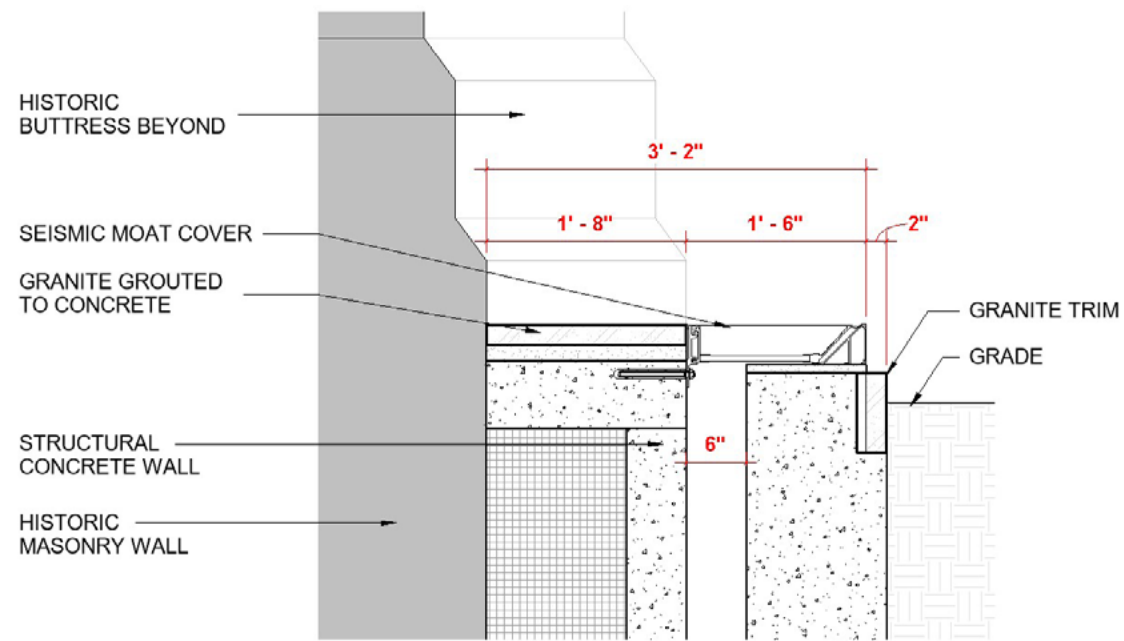


Figure 3.2.2.a – Section detail, seismic control joint cover between buttresses – anchored to new concrete

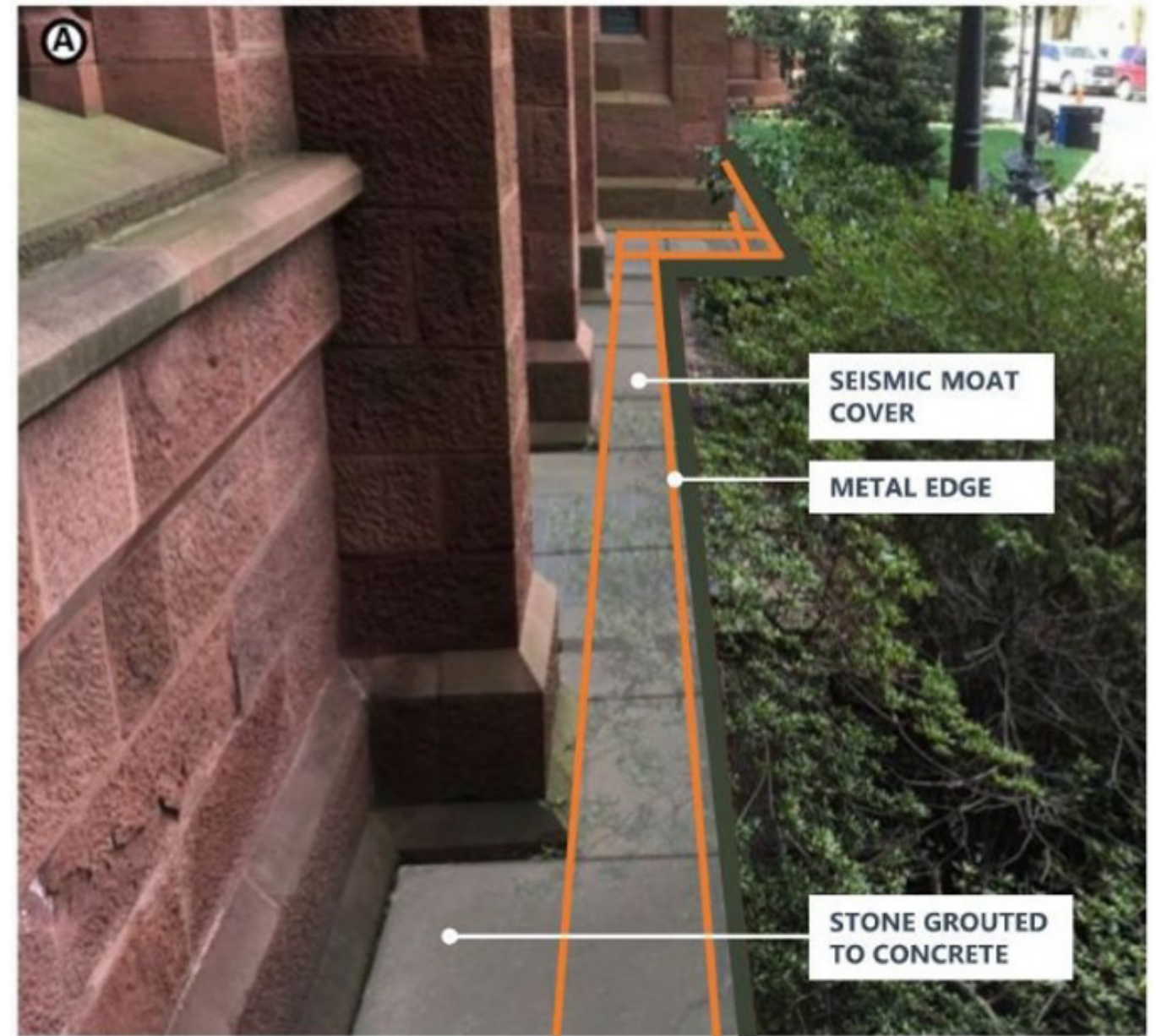
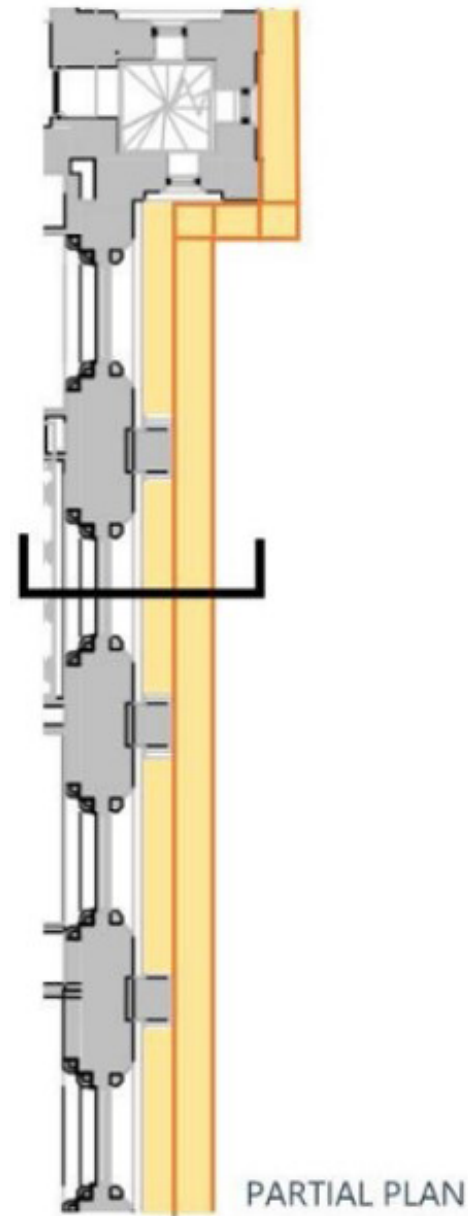


Figure 3.2.2.b – Conceptual seismic control joint cover, visualization

3. DETAILED PROJECT INFORMATION

3.2 SEISMIC CONTROL JOINT

3.2.3 SEISMIC CONTROL JOINT FINISHES

Seismic Control Joint

In Phase 1 the overall seismic joint detail was approved including the location adjacent to the base of the building. Figure 3.2.3.a illustrates a location between the building buttresses where the joint cover is 20 inches away from the face of the building. This area will be finished with stone to match the infill material of the joint cover.

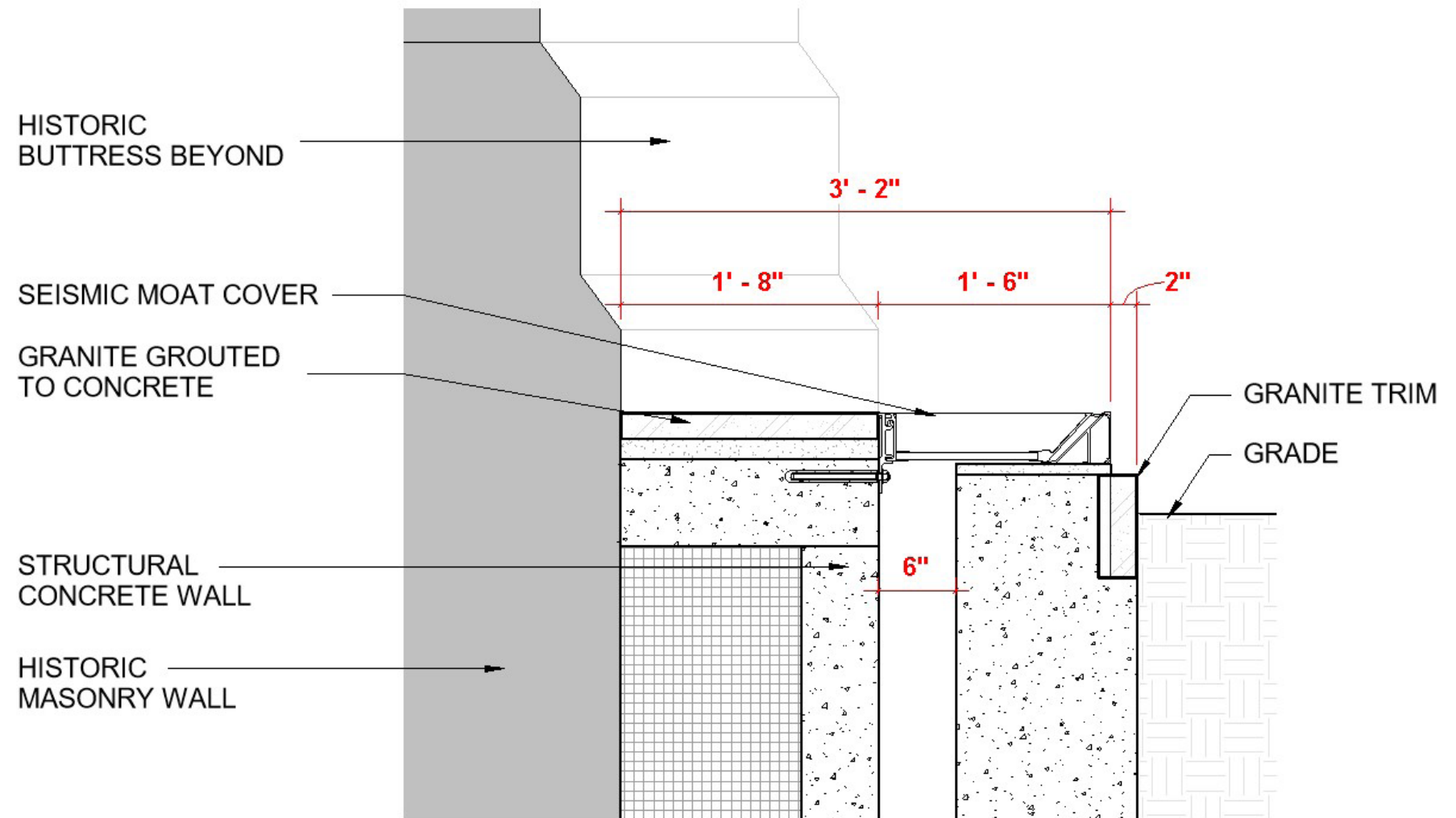


Figure 3.2.3.a – Narrowest finish option for the seismic control joint, selected as preferred during Phase 1 consultation.

3. DETAILED PROJECT INFORMATION

3.2 SEISMIC CONTROL JOINT

3.2.3 SEISMIC CONTROL JOINT FINISHES (CONTINUED)

Joint Cover Infill

Where the seismic joint is at grade and in the landscape the cover will be filled with granite, Olympic Black. This was the preferred granite when reviewed at the site. Visually the black receded into the landscape. Where the seismic joint crosses a sidewalk, such as at the porte cochere, the cover will be filled with exposed aggregate concrete to match the sidewalk.



Figure 3.2.3.b – Sample of Olympic Black granite against Castle (preferred)



Figure 3.2.3.c – Sample of Olympic Black granite against Castle (preferred)

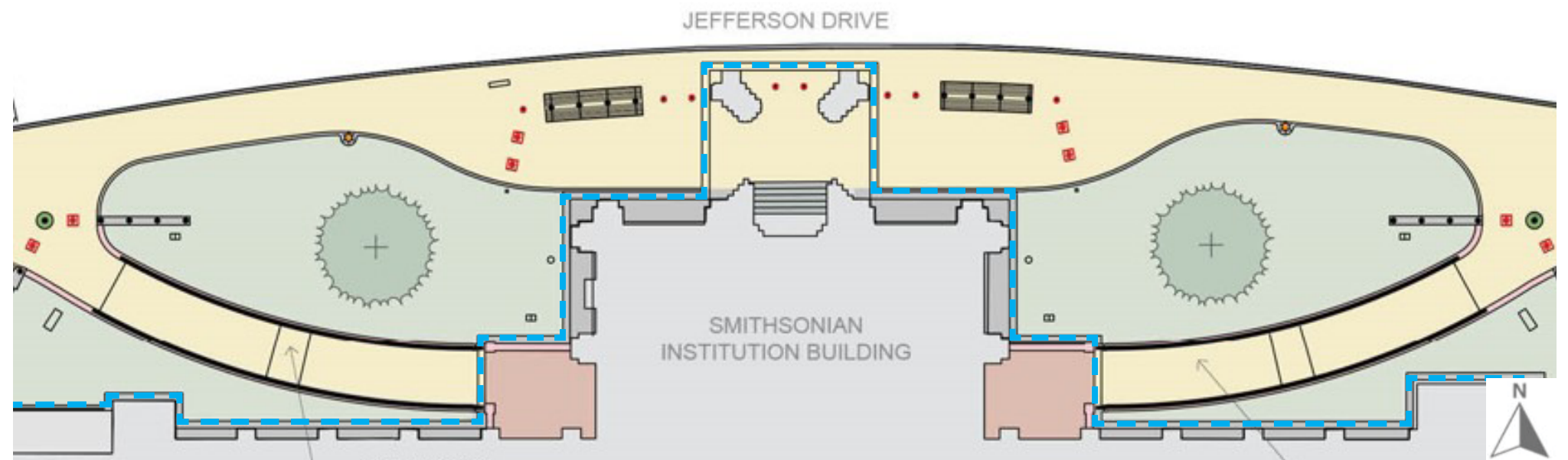


Figure 3.2.3.d – Partial site plan noting the seismic joint line location at the porte cochere

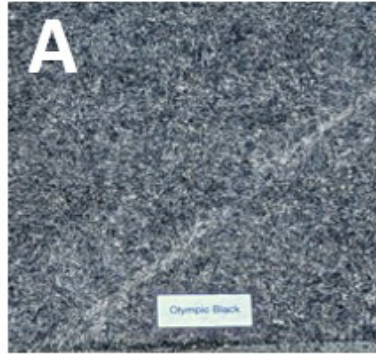
3. DETAILED PROJECT INFORMATION

3.2 SEISMIC CONTROL JOINT

3.2.3 SEISMIC CONTROL JOINT FINISHES (CONTINUED)

Joint Cover Metal Finish

MATERIALS TO MATCH BY LOCATION



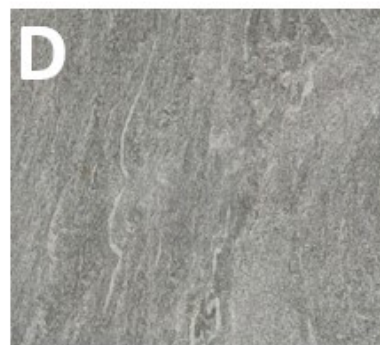
A. OLYMPIC BLACK
Perimeter



B. BRICK PAVER
South Entry

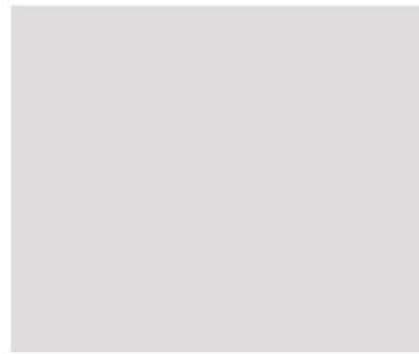


C. EXPOSED AGGREGATE
North Entry



D. PORCELAIN PAVER
Areaways

METAL FINISH ALL LOCATIONS



Clear Anodized Aluminum

Figure 3.2.3.e – Materials to Match Joint Cover Metal Finish

3. DETAILED PROJECT INFORMATION

3.3 LANDSCAPE AND GRADING PLAN

3.3.1 NEW LANDSCAPE PLANTING PLAN

Existing Plan

The plantings on the south side of the Castle originated as part of the Haupt Garden design in 1987. Later additions and tree growth have resulted in some very dense areas of coverage that limit views of the Castle, particularly from the south. Some of the trees have also grown very close to the building resulting in moisture retention in the exterior masonry and staining. The extensive excavation required around the building to facilitate the below grade construction will require the removal of all the existing plantings.

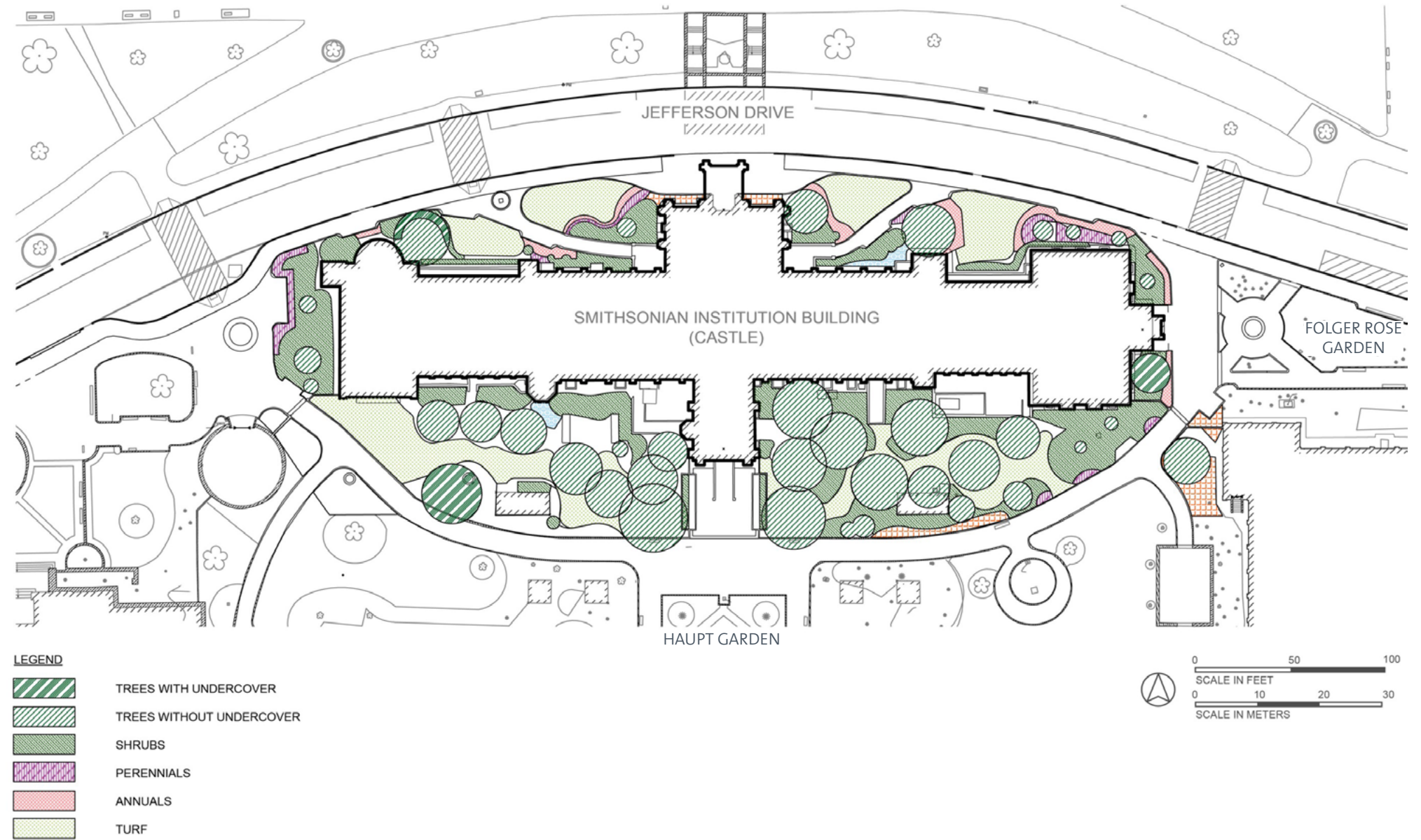


Figure 3.3.1.a - Landscape plan - existing

3. DETAILED PROJECT INFORMATION

3.3 LANDSCAPE AND GRADING PLAN

3.3.1 NEW LANDSCAPE PLANTING PLAN (CONTINUED)

Proposed Planting Plan

The proposed planting plan is compatible with the design intent of the 1987 Haupt Garden design with adjustments to improve views of the Castle and develop more space around the building to inhibit biological growth on the Castle's sandstone and to allow space for maintenance of the exterior walls.

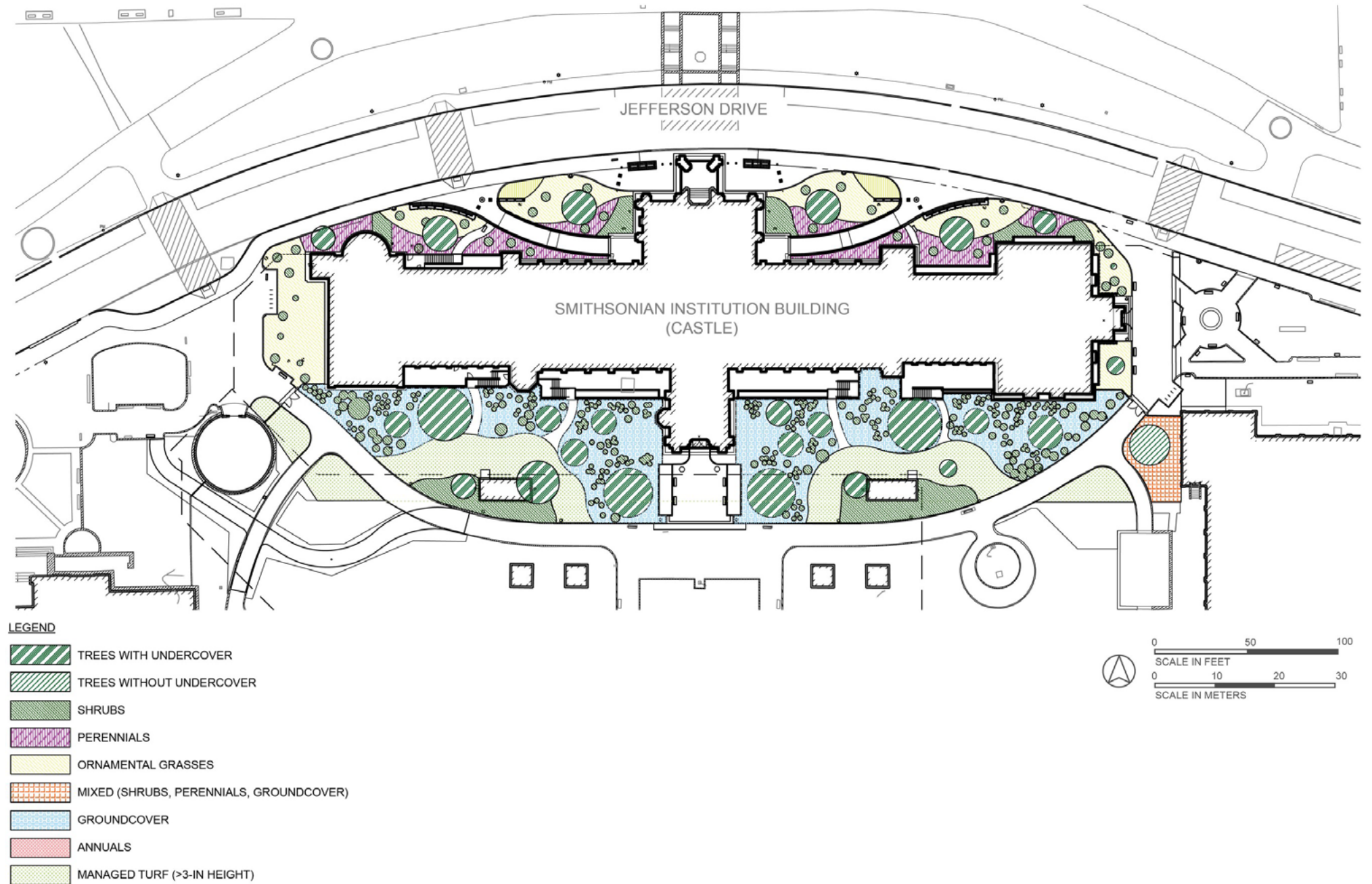


Figure 3.3.1.b - Landscape plan - proposed

3. DETAILED PROJECT INFORMATION

3.3 LANDSCAPE AND GRADING PLAN

3.3.1 NEW LANDSCAPE PLANTING PLAN (CONTINUED)

Proposed Tree Planting Plan

As part of Smithsonian Gardens the plantings around the Castle are curated. The tree and plant selections look to serve educational purposes as well as focus on native species.

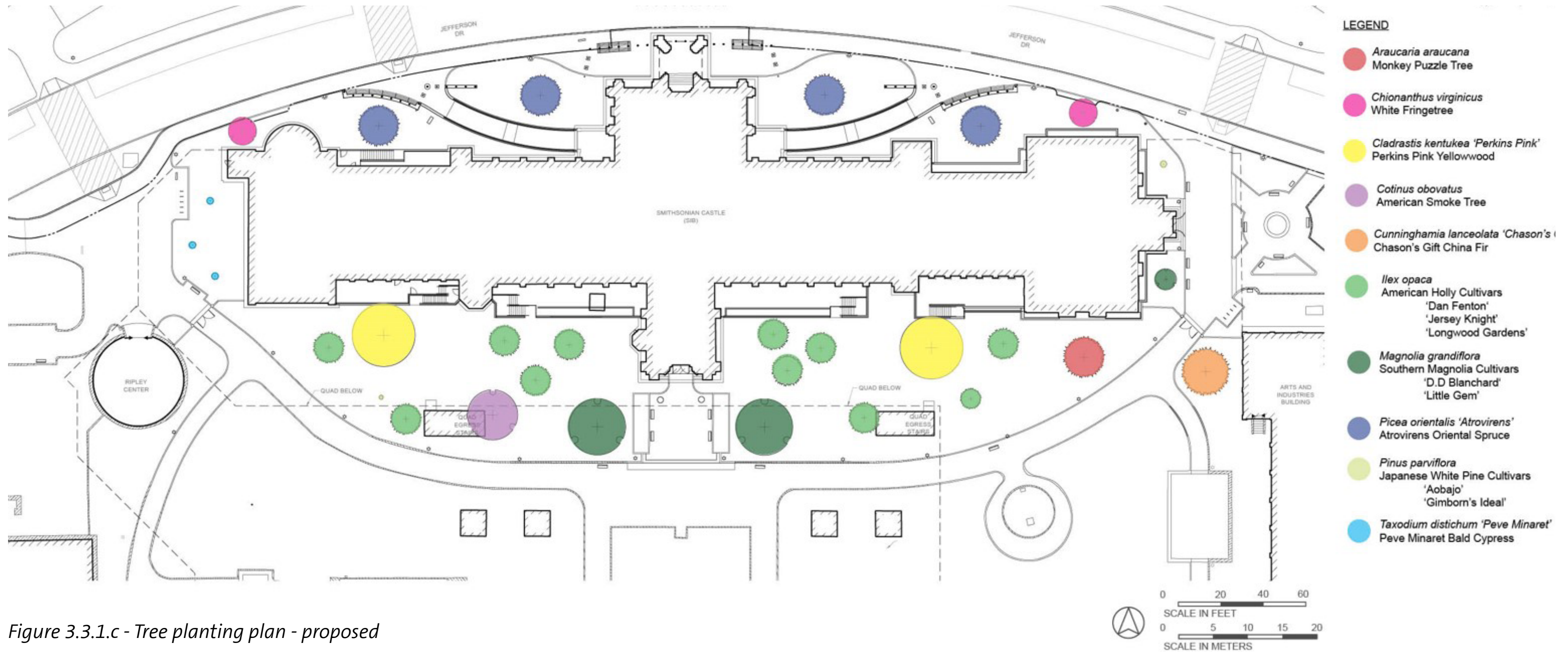


Figure 3.3.1.c - Tree planting plan - proposed

3. DETAILED PROJECT INFORMATION

3.3 LANDSCAPE AND GRADING PLAN

3.3.1 NEW LANDSCAPE PLANTING PLAN (CONTINUED)

Proposed Understory Planting Plan

The understory planting plan has been coordinated with the access/ egress requirements of the Castle. In particular defined egress pathways have been developed so they are integrated with the composition, but are also in compliance with life-safety requirements.

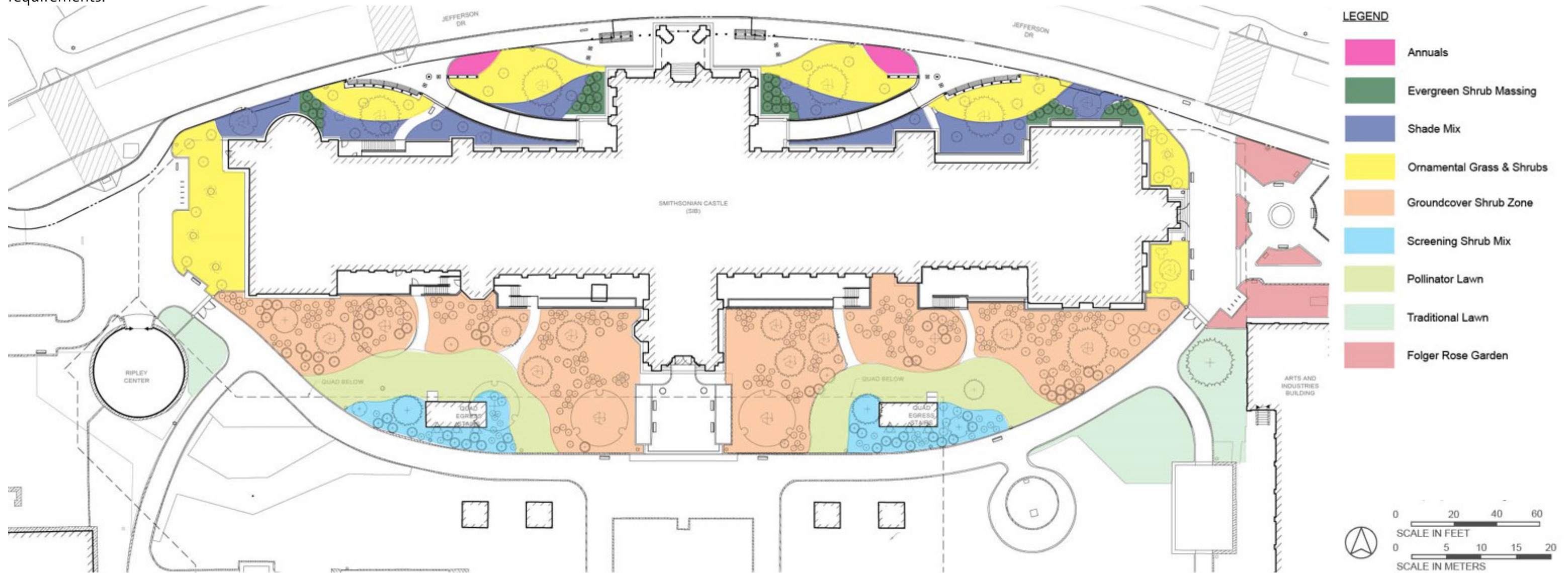


Figure 3.3.1.d - Understory planting plan - proposed

3. DETAILED PROJECT INFORMATION

3.3 LANDSCAPE AND GRADING PLAN

3.3.1 NEW LANDSCAPE PLANTING PLAN (CONTINUED)

Proposed Hardscape

The pathways and access points to the Castle are defined with two materials- exposed aggregate concrete and brick. Exposed aggregate sidewalks are the standard for sites around the National Mall. Brick is the defining path material in the Haupt Garden and the Folger Rose Garden.

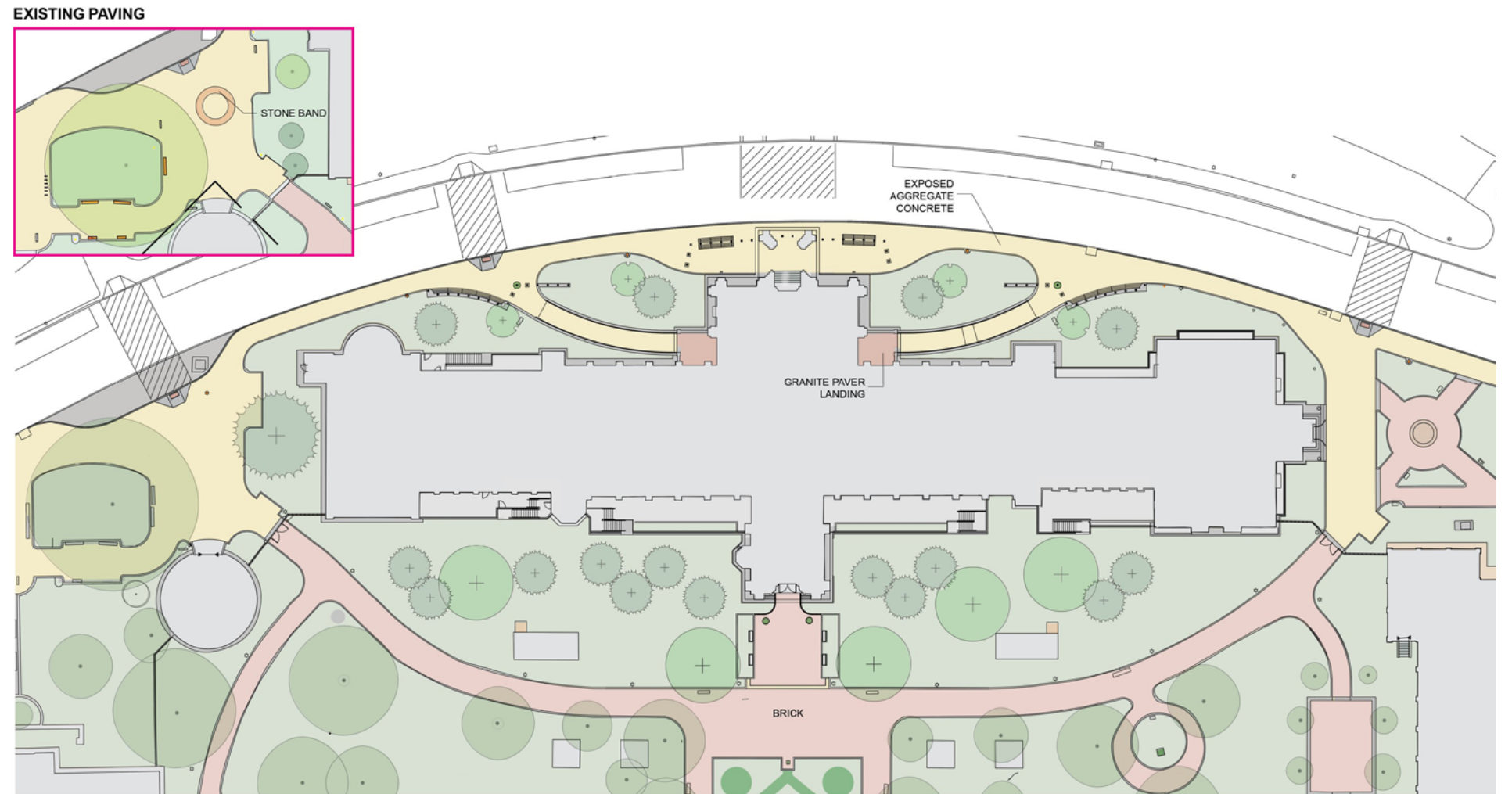


Figure 3.3.1.e - Paving plan - proposed

3. DETAILED PROJECT INFORMATION

3.3 LANDSCAPE AND GRADING PLAN

3.3.1 NEW LANDSCAPE PLANTING PLAN (CONTINUED)

The proposed planting design at the south side of the Castle will create a seamless visual link to the Haupt Garden while creating better view angles for the prominent elements of the Castle façade including the South Tower, Octagon Tower, and the Southeast Tower.



Figure 3.3.1.f - Rendering of south landscape, looking northwest - proposed

3. DETAILED PROJECT INFORMATION

3.3 LANDSCAPE AND GRADING PLAN

3.3.2 PERIMETER SECURITY

Proposed Perimeter Security Plan

The layout of the perimeter security components along the north side of the Castle was approved as part of the Phase 1 review process. Phase 2 is focused on the design and materials for all of the hardened elements. This includes bollards, fixed and retractable, benches, urn pedestals, and signage.

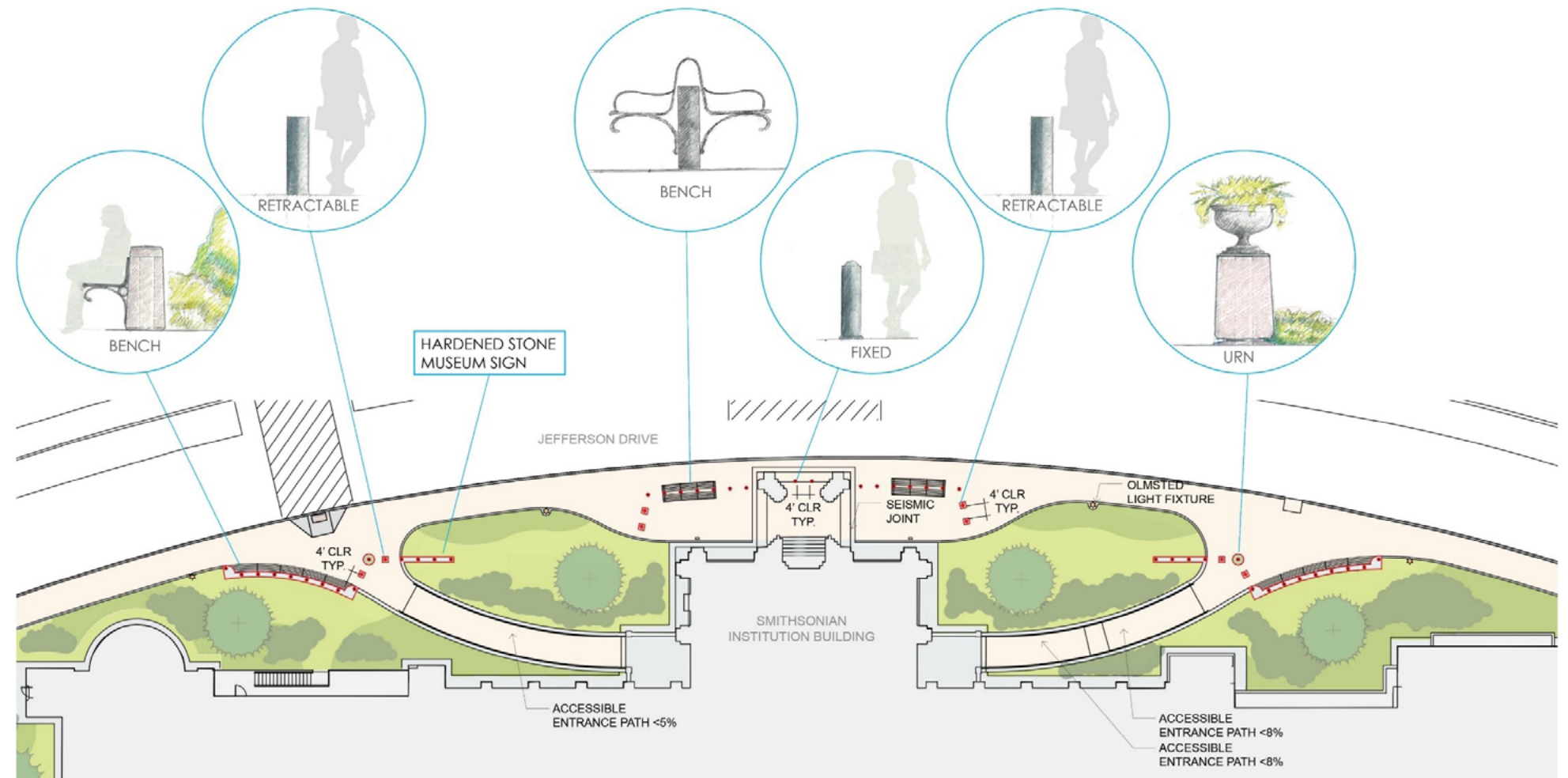


Figure 3.3.2.a – Perimeter security plan - proposed

3. DETAILED PROJECT INFORMATION

3.3 LANDSCAPE AND GRADING PLAN

3.3.2 PERIMETER SECURITY (CONTINUED)

Bollards

The number of freestanding bollards has been minimized by using hardened furniture and signage to develop the required line of protection at the buildings entrances.

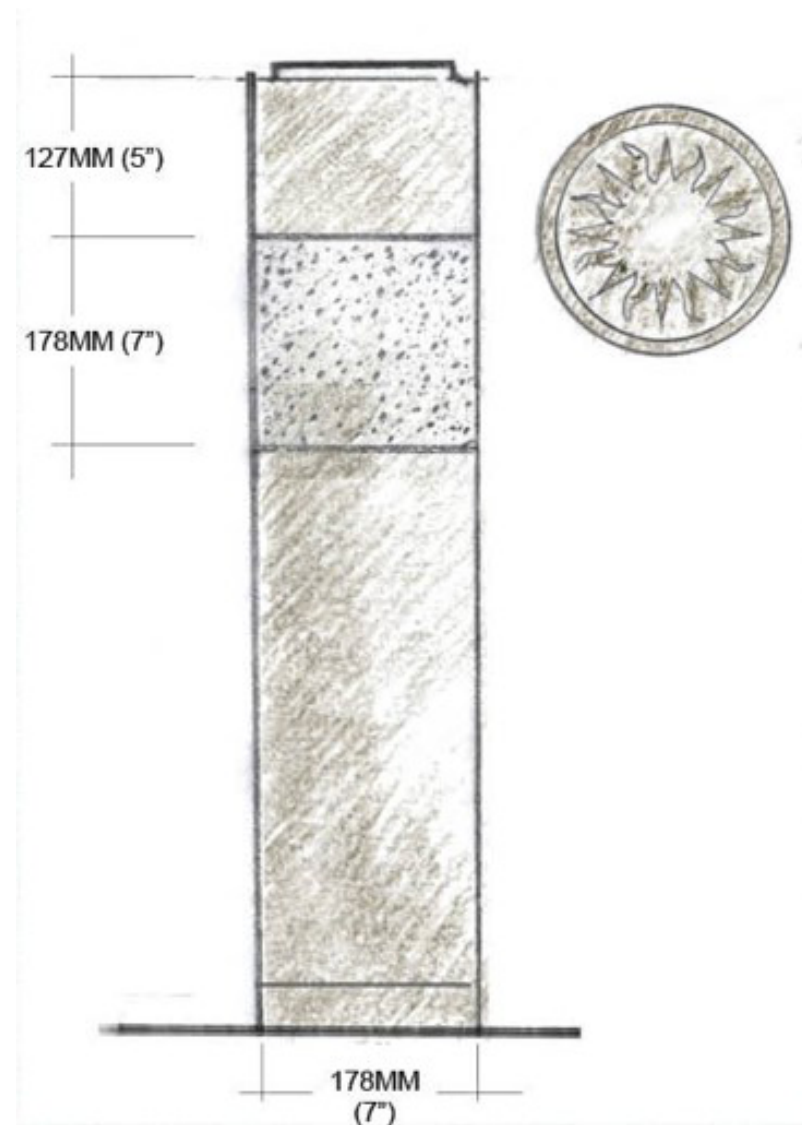


Figure 3.3.2.c – Bollard design

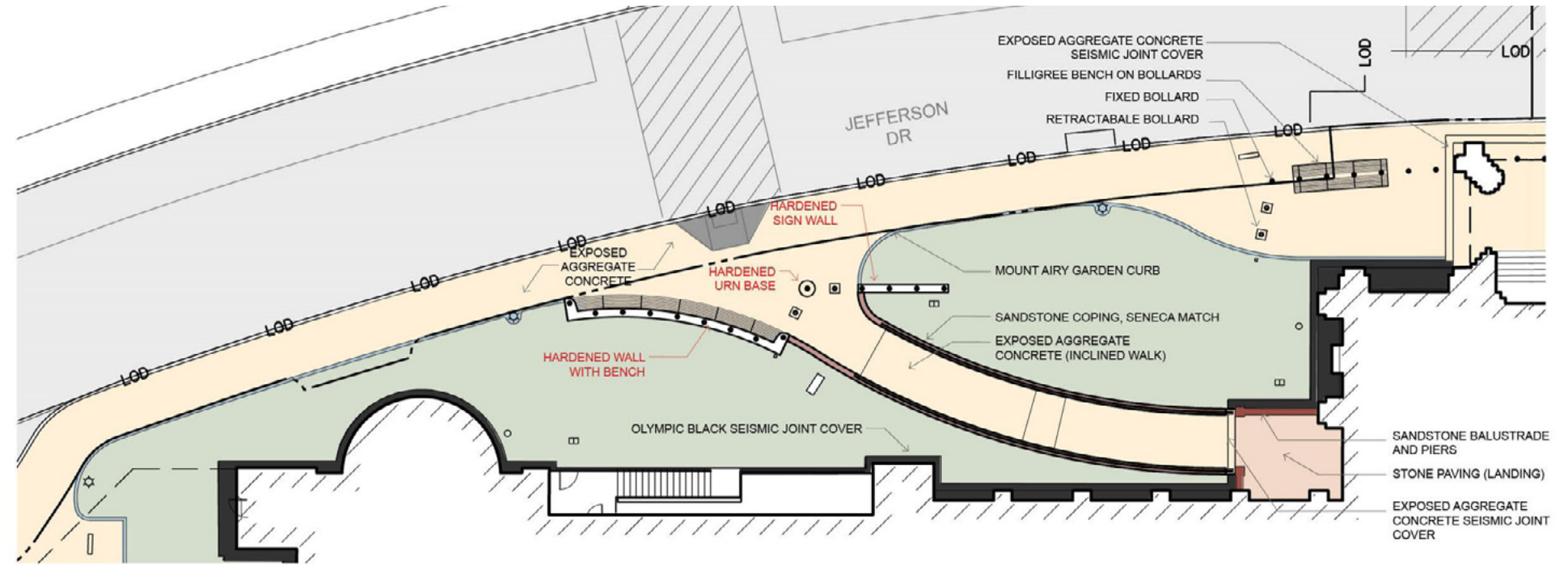


Figure 3.3.2.b – Perimeter security plan, hardened elements - proposed



Figure 3.3.2.d – Bollard mock-up at the porte cochere, for Consulting Parties review; example of bronze bollard cover at National Museum of the American Indian

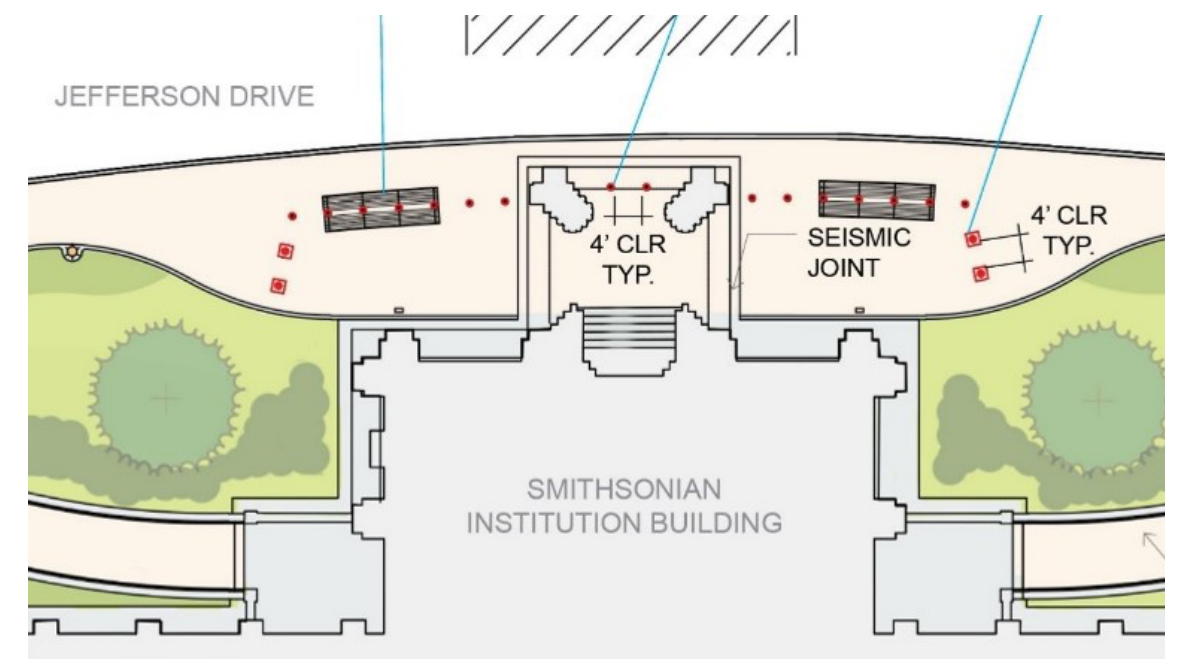


Figure 3.3.2.e – Porte-cochere plan - proposed

3. DETAILED PROJECT INFORMATION

3.3 LANDSCAPE AND GRADING PLAN

3.3.2 PERIMETER SECURITY (CONTINUED)

Benches

Two bench designs have been developed. Double-sided metal slat benches flanking the porte cochere will be mounted to bollards. To the east and west, at the entry walkways to the building, single sided metal slat benches will be mounted to a hardened stone wall.

The hardened stone wall steps down from the bench ends to maximize visibility of the Castle and the landscape. This alternative was developed in Section 106 consultation to minimize adverse effect.

Use of a brown-red granite is preferred to be contextual to both the Castle's red sandstone and existing materials in the sidewalk realm.



Figure 3.3.2.f – Detail elevation of double-sided metal slat bench at porte cochere

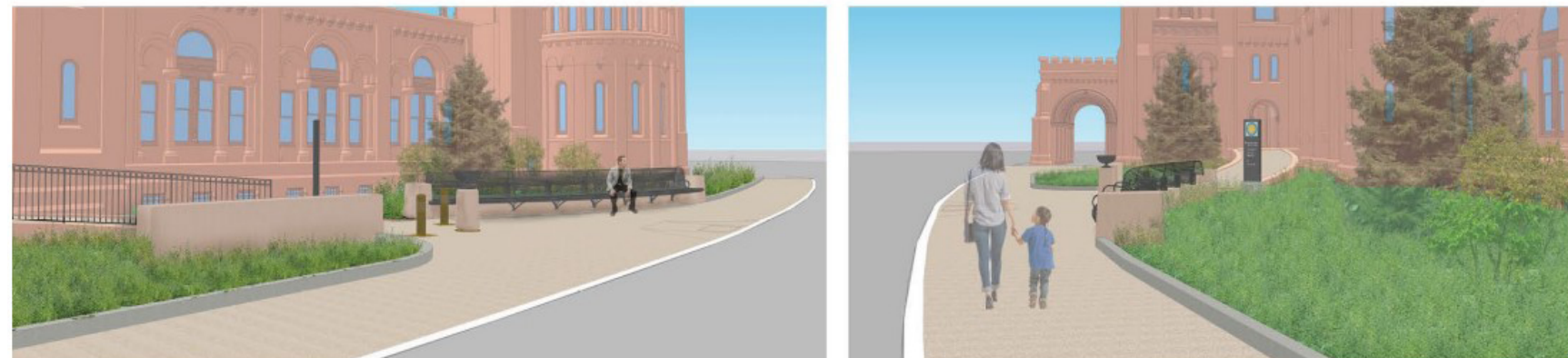


Figure 3.3.2.g – Context rendering of perimeter security on Jefferson Drive

3. DETAILED PROJECT INFORMATION

3.3 LANDSCAPE AND GRADING PLAN

3.3.2 PERIMETER SECURITY (CONTINUED)

Low building signs, engraved granite walls, will be located in the planting beds flanking the entry. The granite for all of the elements will be the same.

The renderings illustrate the use of a brownish-red granite. Samples for this type of granite which will be available in the quantities required for the project are being sourced. A final selection will be reviewed with CFA staff when available.

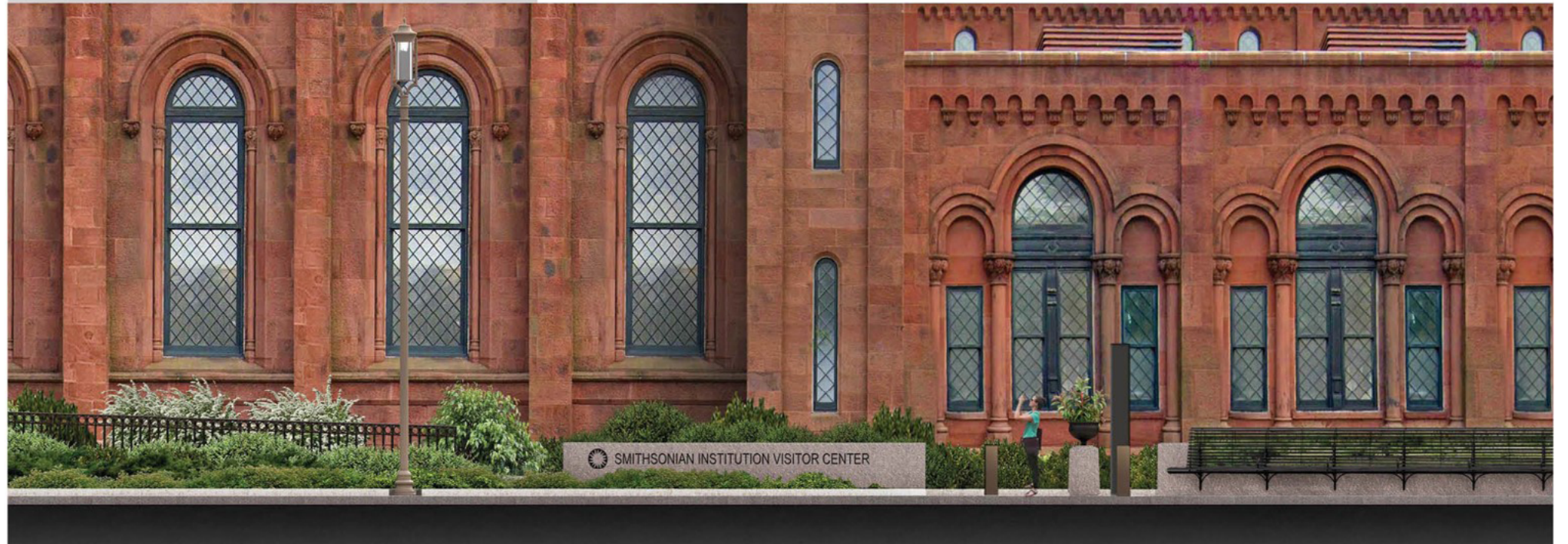


Figure 3.3.2.h – Rendering of perimeter security

3. DETAILED PROJECT INFORMATION

3.3 LANDSCAPE AND GRADING PLAN

3.3.3 SIGNAGE

While designed to be specific to the Castle site, the signage will be compatible with signage used at other Smithsonian sites around the Mall. This includes the signage pylons which will be mounted on a granite base which will match similar granite in the landscape.

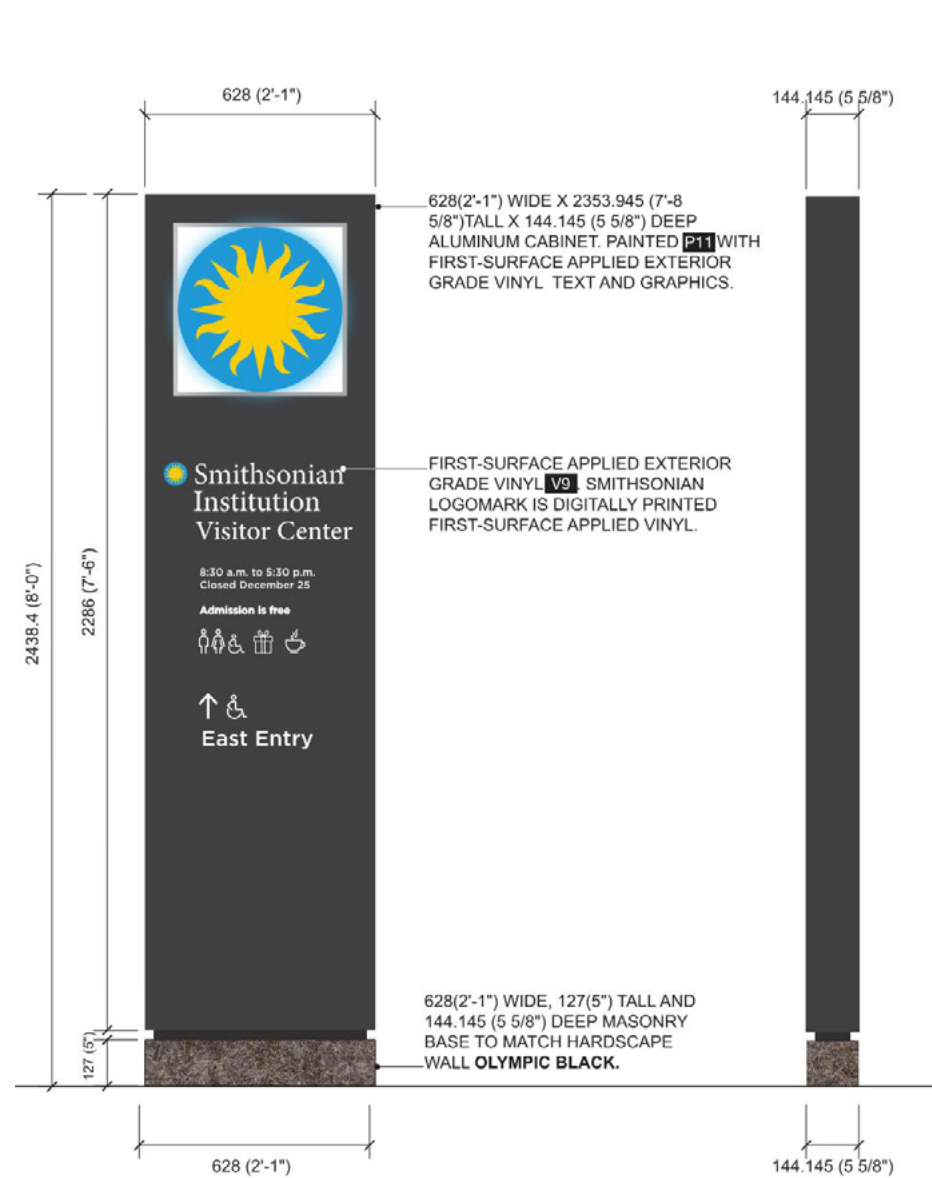


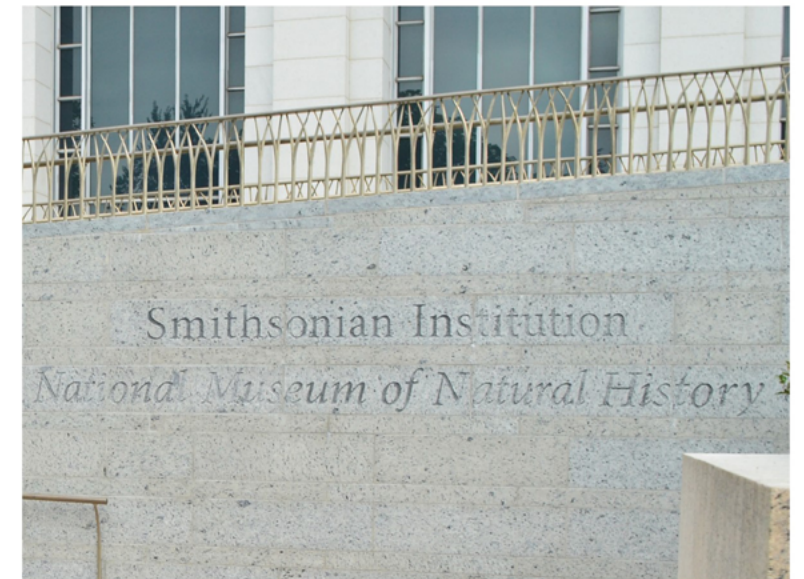
Figure 3.3.3.a – Elevation and section of the proposed signage pylon



REDDISH-BROWN GRANITE



CARVED LETTERS IN GRANITE



CARVED LETTERS IN GRANITE

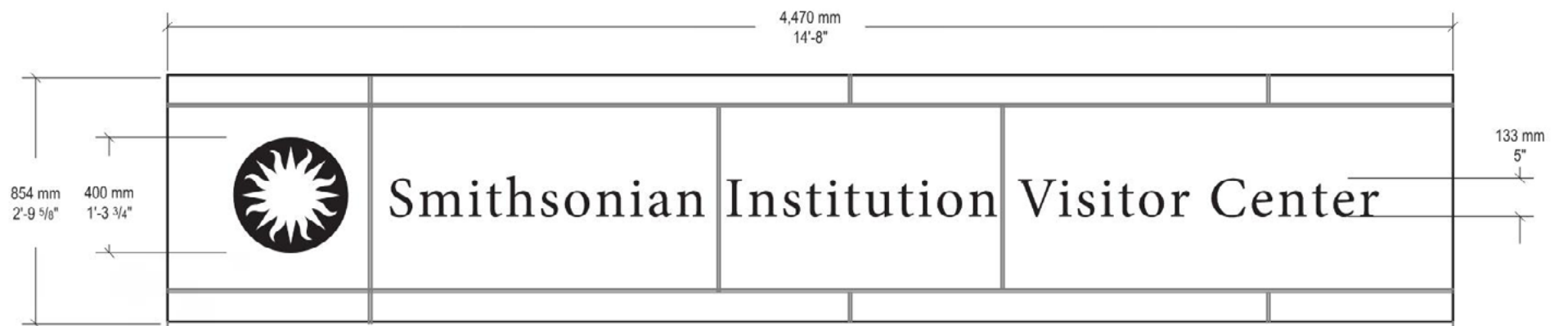


Figure 3.3.3.b – Elevation drawing of the hardened wall with engraved signage, and other National Mall precedents

3. DETAILED PROJECT INFORMATION

3.3 LANDSCAPE AND GRADING PLAN

3.3.4 SITE LIGHTING

On the Mall side of the building the light fixture standard is the “Olmsted” light fixture. This fixture is located throughout the Mall. On the south side of the Castle a “Victorian” light post is utilized in the Haupt Garden.

Use of these two different site lighting types is consistent with existing lighting found in the settings north and south of the Castle.



Figure 3.3.4.a – Existing Mall Olmsted light post

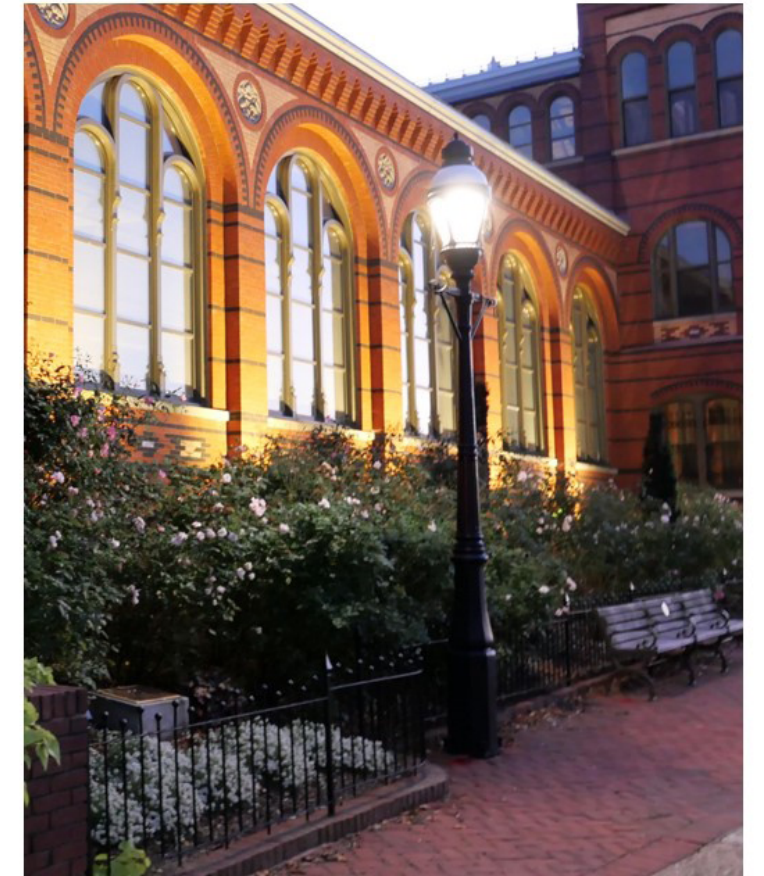


Figure 3.3.4.b – Existing Victorian light post

3. DETAILED PROJECT INFORMATION

3.3 LANDSCAPE AND GRADING PLAN

3.3.4 SITE LIGHTING (CONTINUED)

Olmsted Light Fixture

In the project area new Olmsted Light fixtures will be installed that are aligned across Jefferson Drive from existing fixtures. The exterior appearance of the new fixtures will match the existing ones, but the lamps and internal technology will be upgraded to provide better quality light that is more energy efficient. Temperature of lighting output is being coordinated with the Mall Streetscape Committee.

Mock-ups will be developed to select the color temperature and light intensity of the fixtures, This development is being coordinated with the National Mall Streetscape Committee. CFA and NCPC staff will be invited to participate in the mock-up review process.



Figure 3.3.4.c – Proposed placement of the Olmsted light posts on the south side of Jefferson Drive, aligning radially with the existing National Mall Olmsted posts

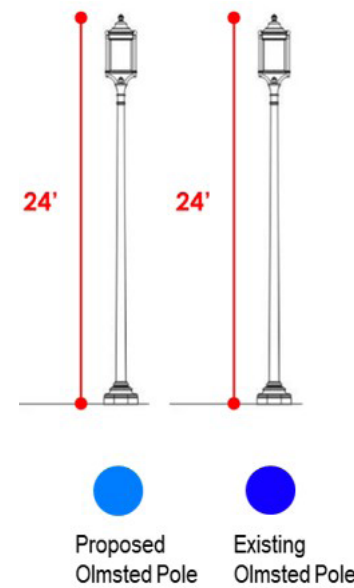


Figure 3.3.4.d – Proposed and existing Olmsted pole

3. DETAILED PROJECT INFORMATION

3.3 LANDSCAPE AND GRADING PLAN

3.3.4 SITE LIGHTING (CONTINUED)

Victorian Light Fixture

A series of new Victorian light fixtures will be fabricated and installed along the pedestrian path in the Haupt Garden south of the Castle. These will replace existing fixtures that are in poor condition. The lamps and internal technology will be upgraded to provide better quality light that is more energy efficient.

Mock-ups will be developed to select the color temperature and light intensity of the fixtures. This development is being coordinated with the National Mall Streetscape Committee. CFA and NCPC staff will be invited to participate in the mock-up review process.

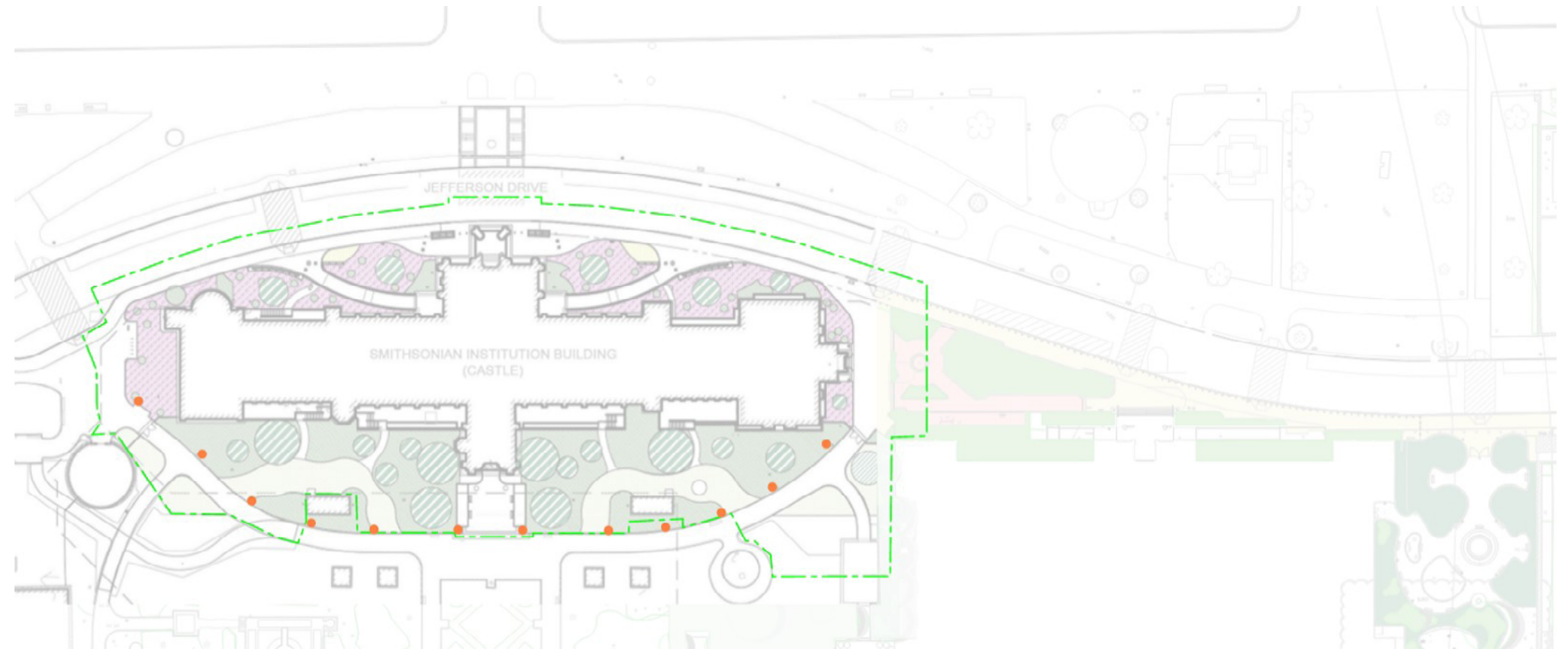


Figure 3.3.4.e – Proposed placement of the Victorian light posts south of the Castle

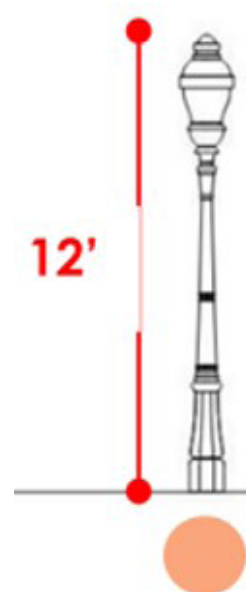


Figure 3.3.4.f – Proposed Victorian light post

3. DETAILED PROJECT INFORMATION

3.3 LANDSCAPE AND GRADING PLAN

3.3.4 SITE LIGHTING (CONTINUED)

Building Lighting

The facades of the Castle will be lit with fixtures that are incorporated into the landscape and new elements around the buildings including the areaway walls. No fixtures will be attached to the historic building except when they are hidden on a roof.

Building mounted fixtures will be readily reversible conditions.

Light levels of the facade illumination are being designed to provide a lower light intensity than either the Capitol or the Washington Monument. The facade illumination on the Castle will be dimmable allowing for adjustments after the installation.

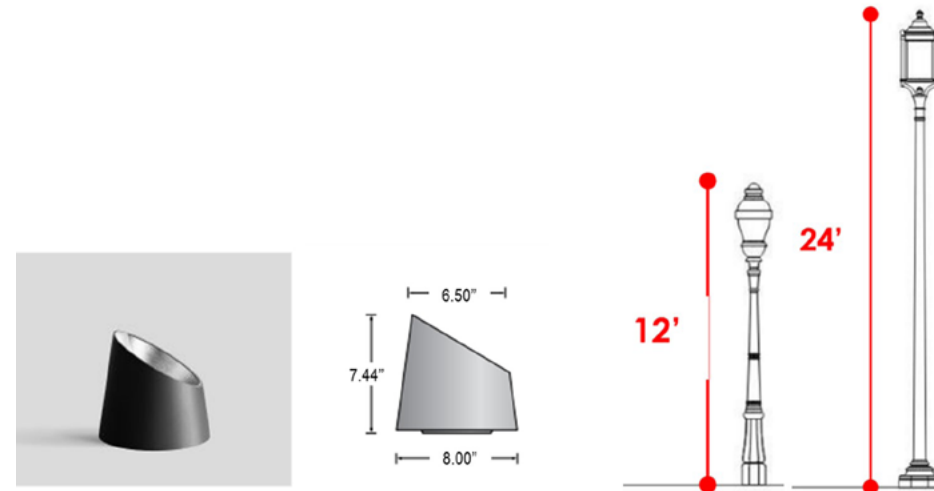


Figure 3.3.4.g – Building lighting is accomplished by the street light posts and 7” tall light fixtures installed in the ground and in non-visible locations around the Castle

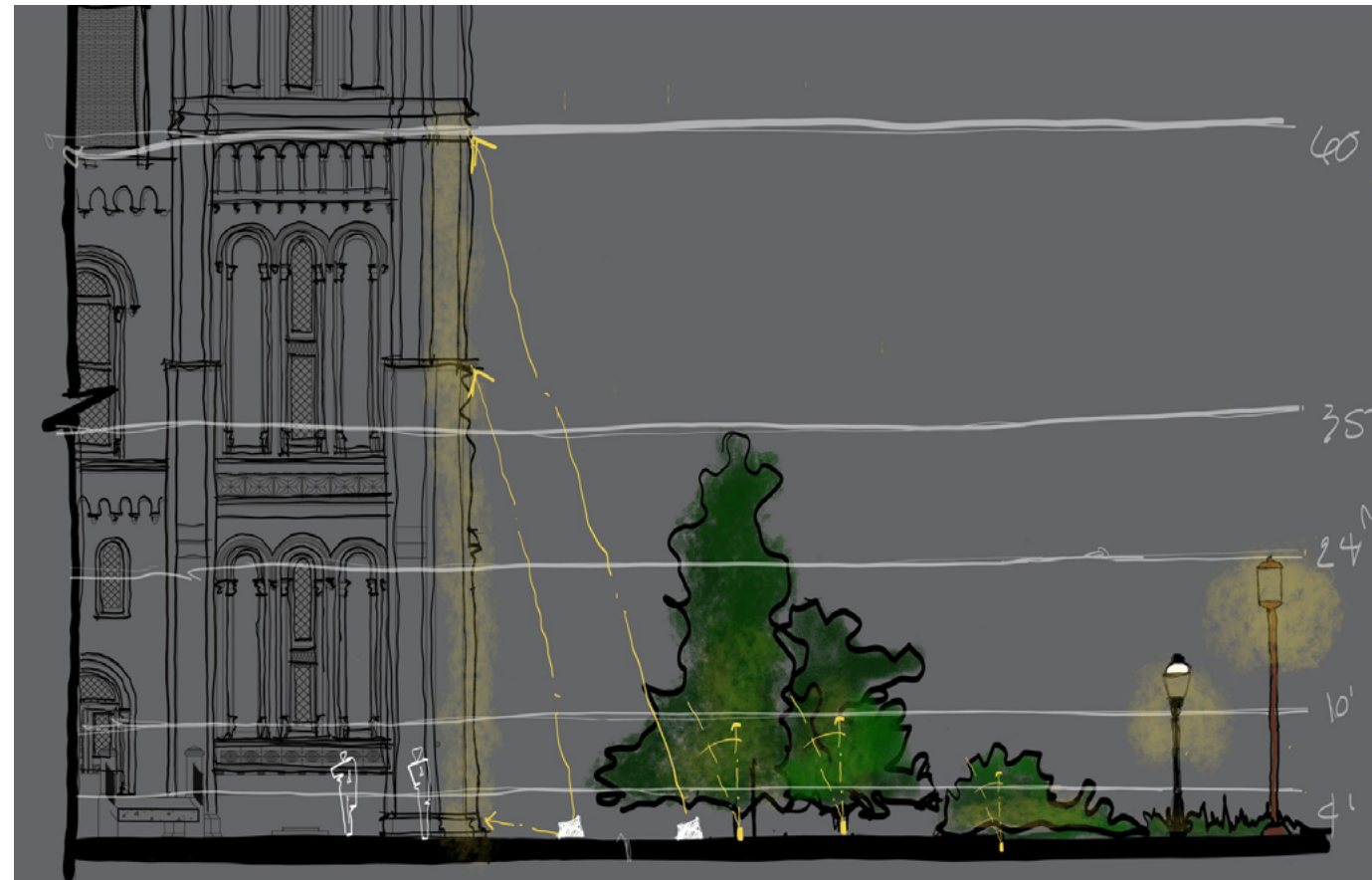


Figure 3.3.4.h – Section drawing detailing the light reach of in-ground fixtures and posts on the Castle facade

3. DETAILED PROJECT INFORMATION

3.3 LANDSCAPE AND GRADING PLAN

3.3.4 SITE LIGHTING (CONTINUED)

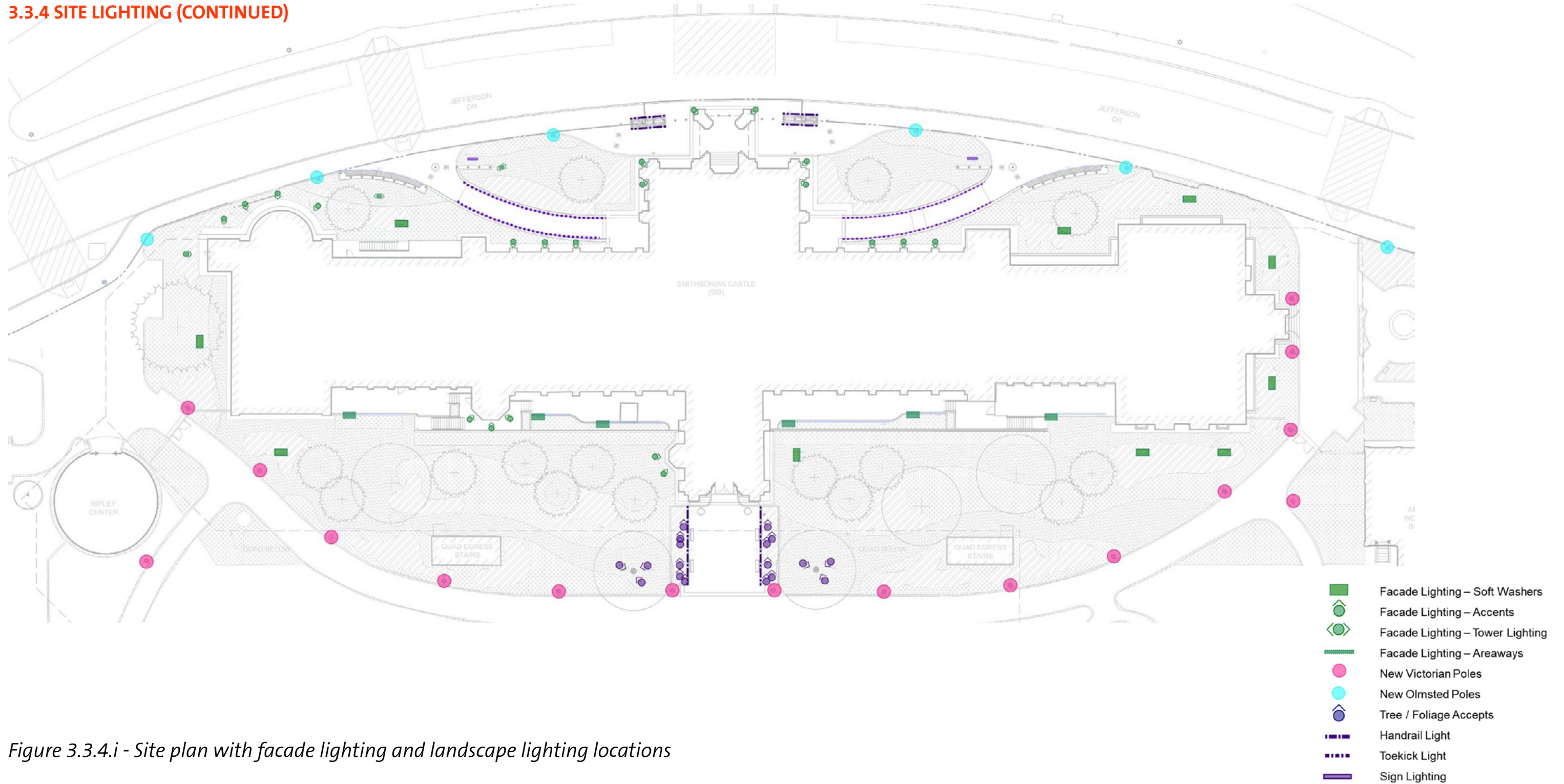


Figure 3.3.4.i - Site plan with facade lighting and landscape lighting locations

3. DETAILED PROJECT INFORMATION

3.3 LANDSCAPE AND GRADING PLAN

3.3.4 SITE LIGHTING (CONTINUED)



Figure 3.3.4.j - East elevation facade lighting - proposed



Figure 3.3.4.l - West elevation facade lighting - proposed

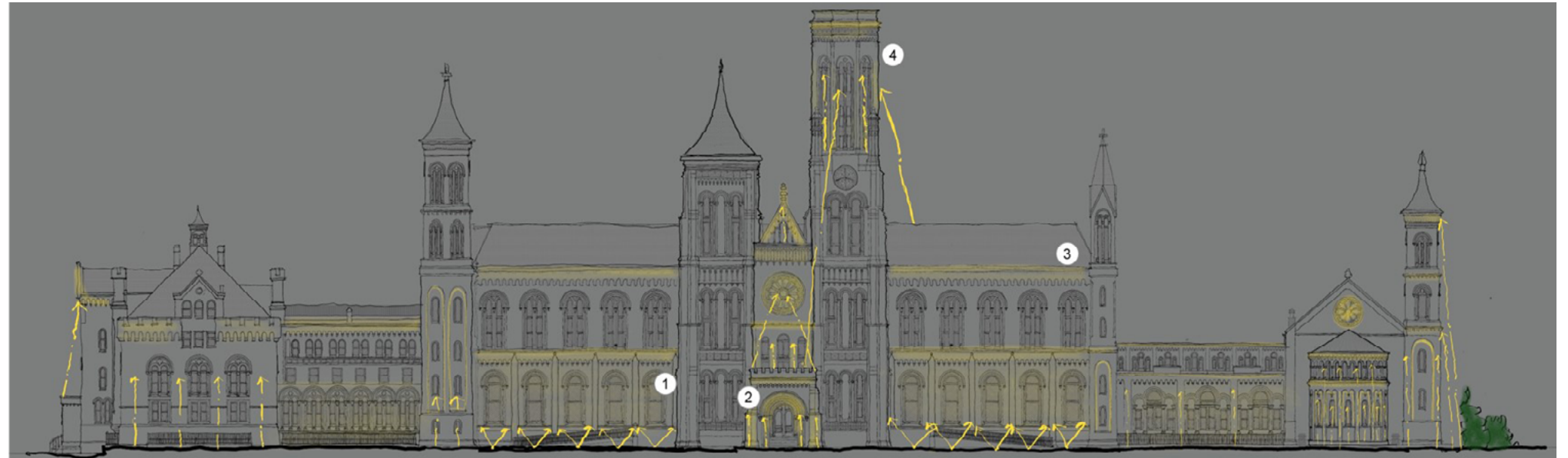


Figure 3.3.4.k - North elevation facade lighting - proposed

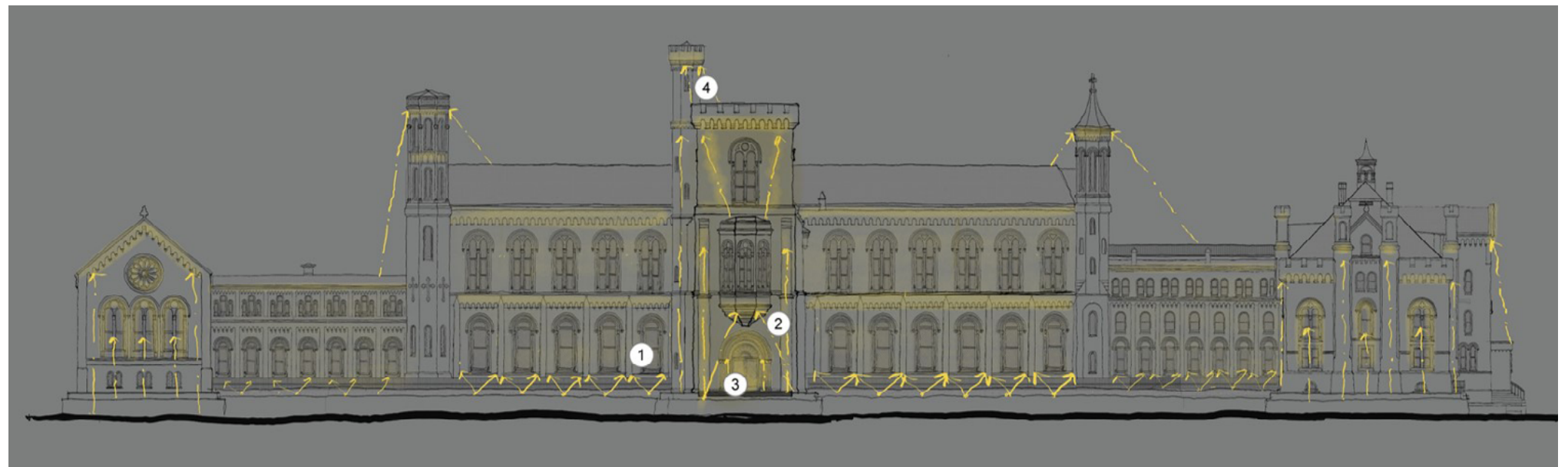


Figure 3.3.4.m - South elevation facade lighting - proposed

3. DETAILED PROJECT INFORMATION

3.3 LANDSCAPE AND GRADING PLAN

3.3.4 SITE LIGHTING (CONTINUED)

The façade of the Castle will be lit consistent with nearby buildings on the Mall. The focus will be on primary elements of the building and the lower levels. Lighting controls will allow for adjustments for seasons and special events.



Figure 3.3.4.n – Rendered night view of the Castle’s north elevation and Jefferson Drive

3. DETAILED PROJECT INFORMATION

3.3 LANDSCAPE AND GRADING PLAN

3.3.4 SITE LIGHTING (CONTINUED)

The approach to lighting of the south façade of the Castle will be similar to the north façade. While the Haupt Garden is typically closed at night the Castle is an important element of the Independence Avenue streetscape and is the terminus of the 10th Street/L'Enfant Promenade viewed.



Figure 3.3.4.o – Rendered night view of the Castle’s south elevation and Haupt Garden paths

3. DETAILED PROJECT INFORMATION

3.3 LANDSCAPE AND GRADING PLAN

3.3.5 SOUTH ENTRANCE

Existing Condition

The entrance at the South Tower from the Haupt Garden consists of an overall design developed as part of the garden development, overlaid with a ramp that was added later to provide accessibility. The ramp sits on top of Seneca sandstone steps that are part of the original building construction.



Figure 3.3.5.a – Existing South Entrance condition



Figure 3.3.5.b – Existing ramp connection to the historic sandstone stair treads

3. DETAILED PROJECT INFORMATION

3.3 LANDSCAPE AND GRADING PLAN

3.3.5 SOUTH ENTRANCE (CONTINUED)

Proposed Plan

The proposed design will remove the ramp and slope the sidewalk to provide universal access to the South Tower entrance. The design utilizes the same materials and detailing as the Haupt Garden.

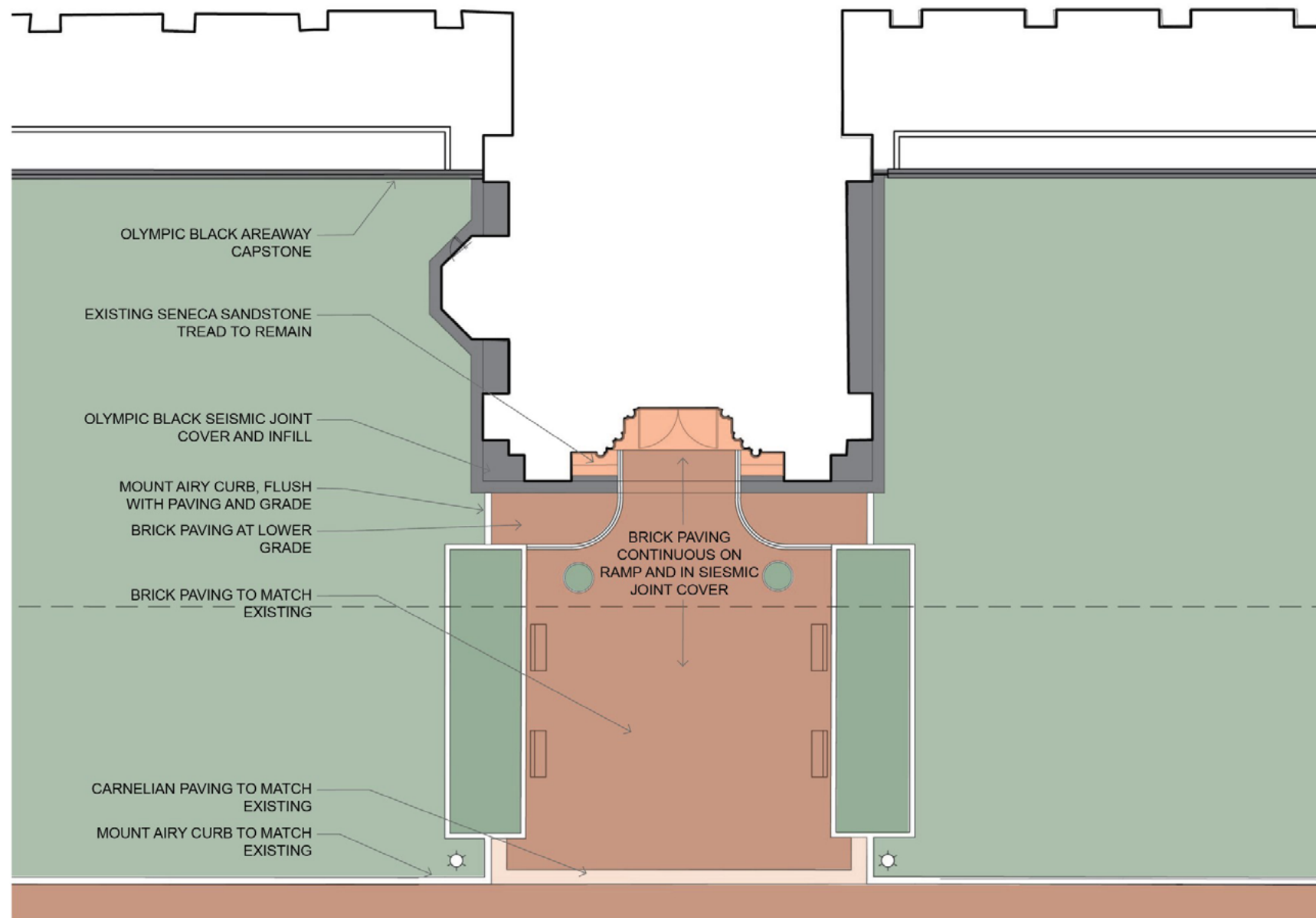


Figure 3.3.5.c – Proposed South Entrance plan



OLYMPIC BLACK



CARNELIAN* AND HAUPT BRICK



MOUNT AIRY



SENECA SANDSTONE FACADE



SENECA SANDSTONE STEP

3. DETAILED PROJECT INFORMATION

3.3 LANDSCAPE AND GRADING PLAN

3.3.5 SOUTH ENTRANCE (CONTINUED)

Seating

Benches flanking the entry will be on a slight slope. The legs will be custom modified to the slope so the seating surface is level.

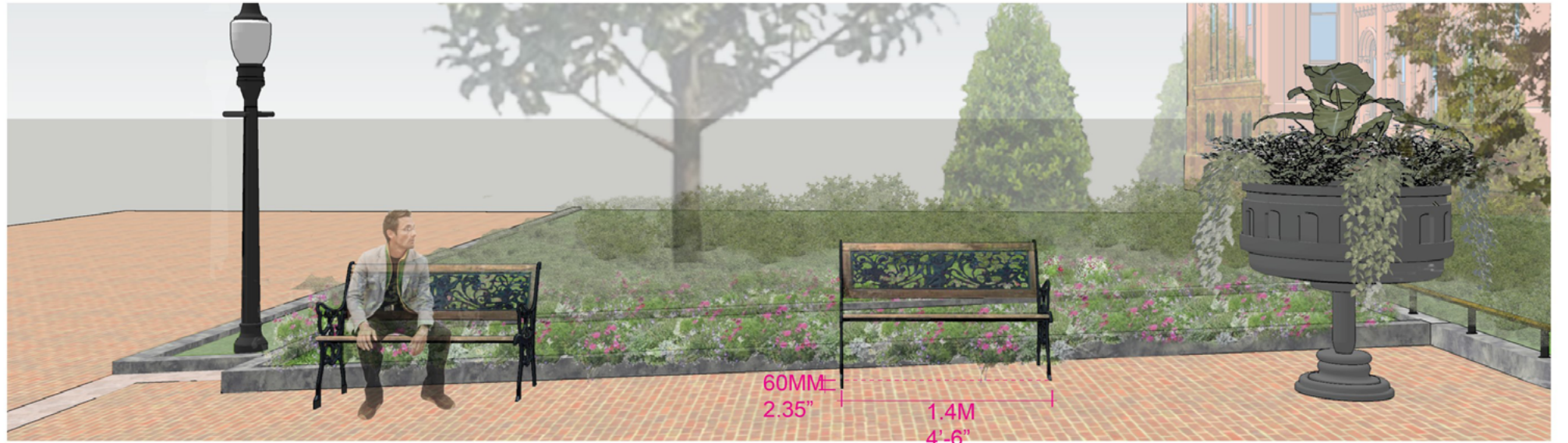


Figure 3.3.5.d – Proposed South Entrance renderings

3. DETAILED PROJECT INFORMATION

3.3 LANDSCAPE AND GRADING PLAN

3.3.5 SOUTH ENTRANCE (CONTINUED)

Connection to the Historic Steps

The sloped sidewalk will narrow at the building to fit within the arched opening while leaving the flanking colonnettes visible. As the sidewalk approaches the building the granite curb will be lowered to minimize the impact on the architectural detailing. A bronze kick rail on the lower curb will provide protection.

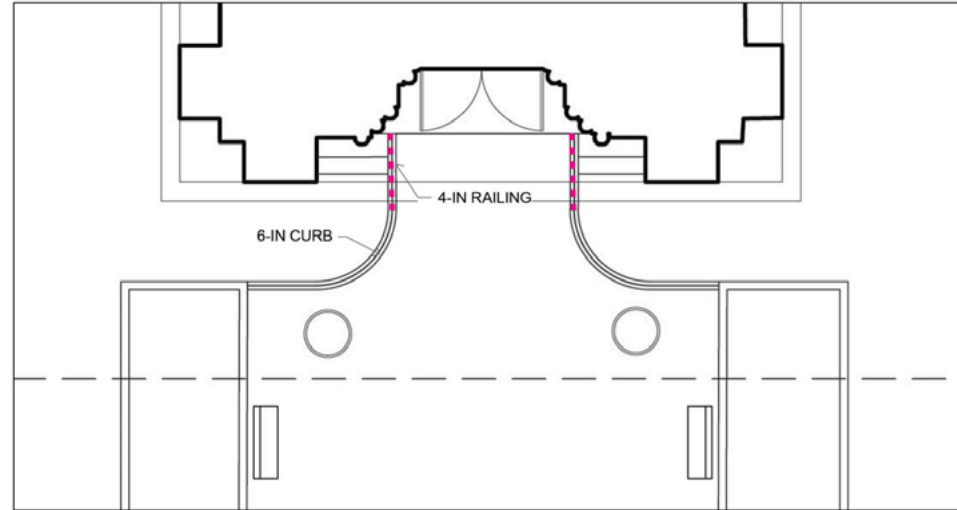


Figure 3.3.5.e – Proposed plan of South Entrance

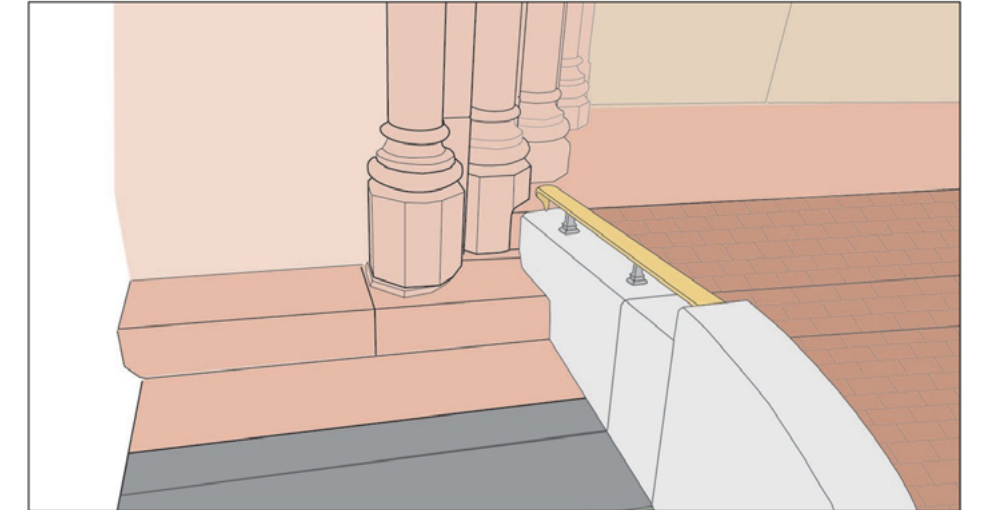


Figure 3.3.5.f – Detail drawing of the placement of the walkway, curb, and kick railing against the historic features of the Castle's South Entrance

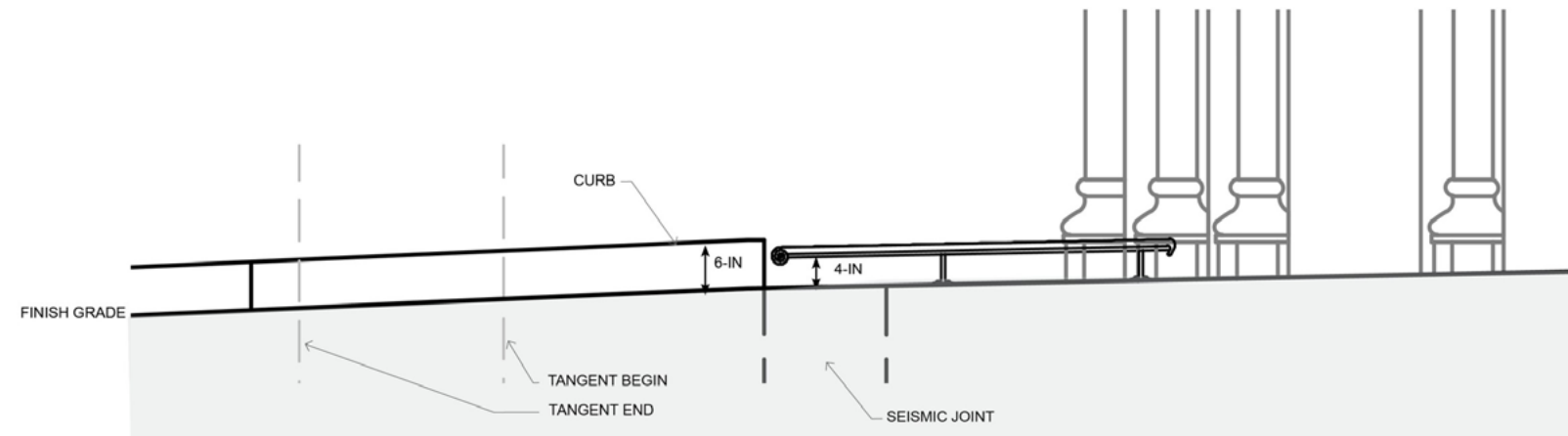


Figure 3.3.5.g – Section from walkway surface looking west. Stone curb transitions to a bronze kick rail to maintain visibility of the South Entrance stone colonnettes

3. DETAILED PROJECT INFORMATION

3.3 LANDSCAPE AND GRADING PLAN

3.3.6 NORTH ENTRANCE

Existing Condition

The north entrance has a non-historic ramped access on the west side (Figure 3.3.6.a) and steps on the east side.



Figure 3.3.6.a – Existing west accessible ramp to the Castle's North Tower

3. DETAILED PROJECT INFORMATION

3.3 LANDSCAPE AND GRADING PLAN

3.3.6 NORTH ENTRANCE (CONTINUED)

Proposed Plan

The proposed plan (Figure 3.3.6.c) includes sloped sidewalks/ramps on both the east and west sides of the north entrance to provide universal access. The layout is mirrored around the porte cochere with the sidewalk/ramp slopes minimized. The surfaces will be exposed aggregate concrete to match the adjacent sidewalks.

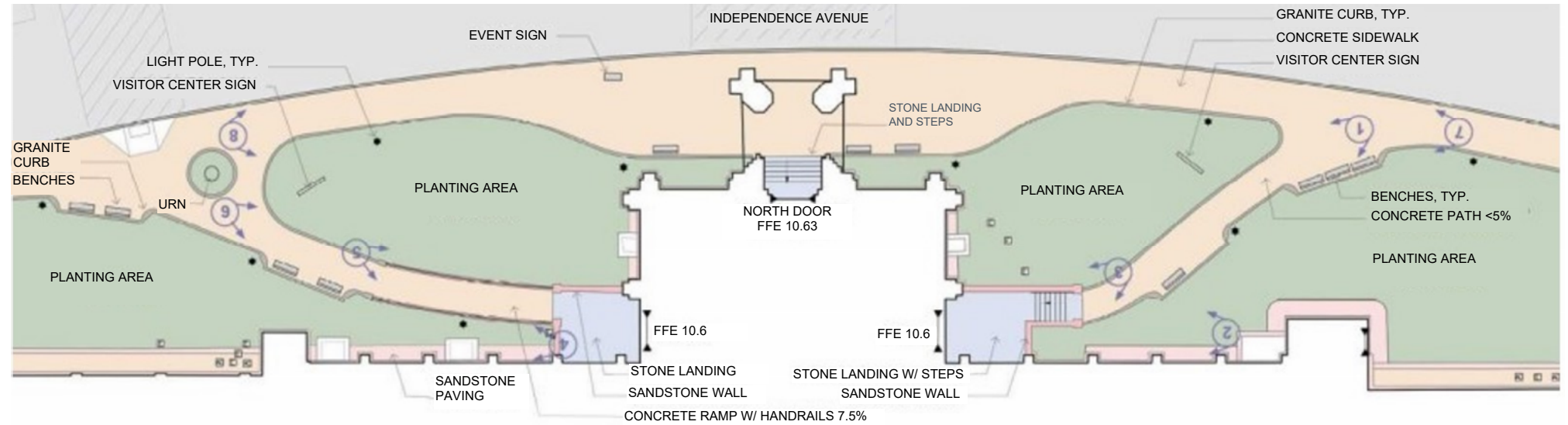


Figure 3.3.6.b – Existing site plan

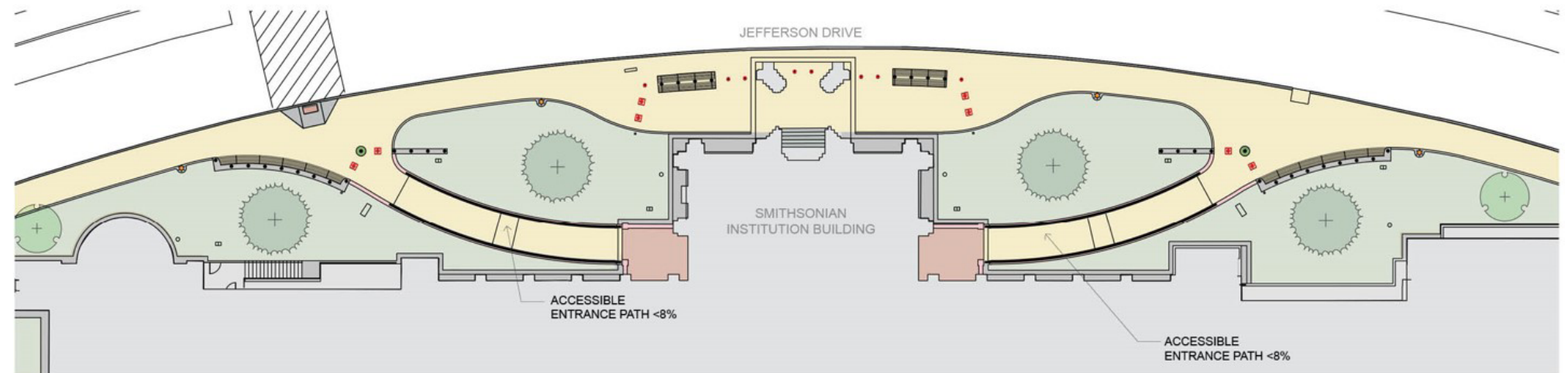


Figure 3.3.6.c – Proposed site plan and materials

PAVING AT RAMPS

- Exposed aggregate concrete on ramps leading to landings
- Exposed aggregate concrete in keeping with the sidewalks
- Stone proposed for landings

3. DETAILED PROJECT INFORMATION

3.3 LANDSCAPE AND GRADING PLAN

3.3.6 NORTH ENTRANCE (CONTINUED)

Railings

The railings at the ramps will be similar to the design for guardrails at areaways. The design precedent is the fencing that surrounds the Haupt Garden.



Figure 3.3.6.d – Proposed North Entry accessible walk guardrail elevation

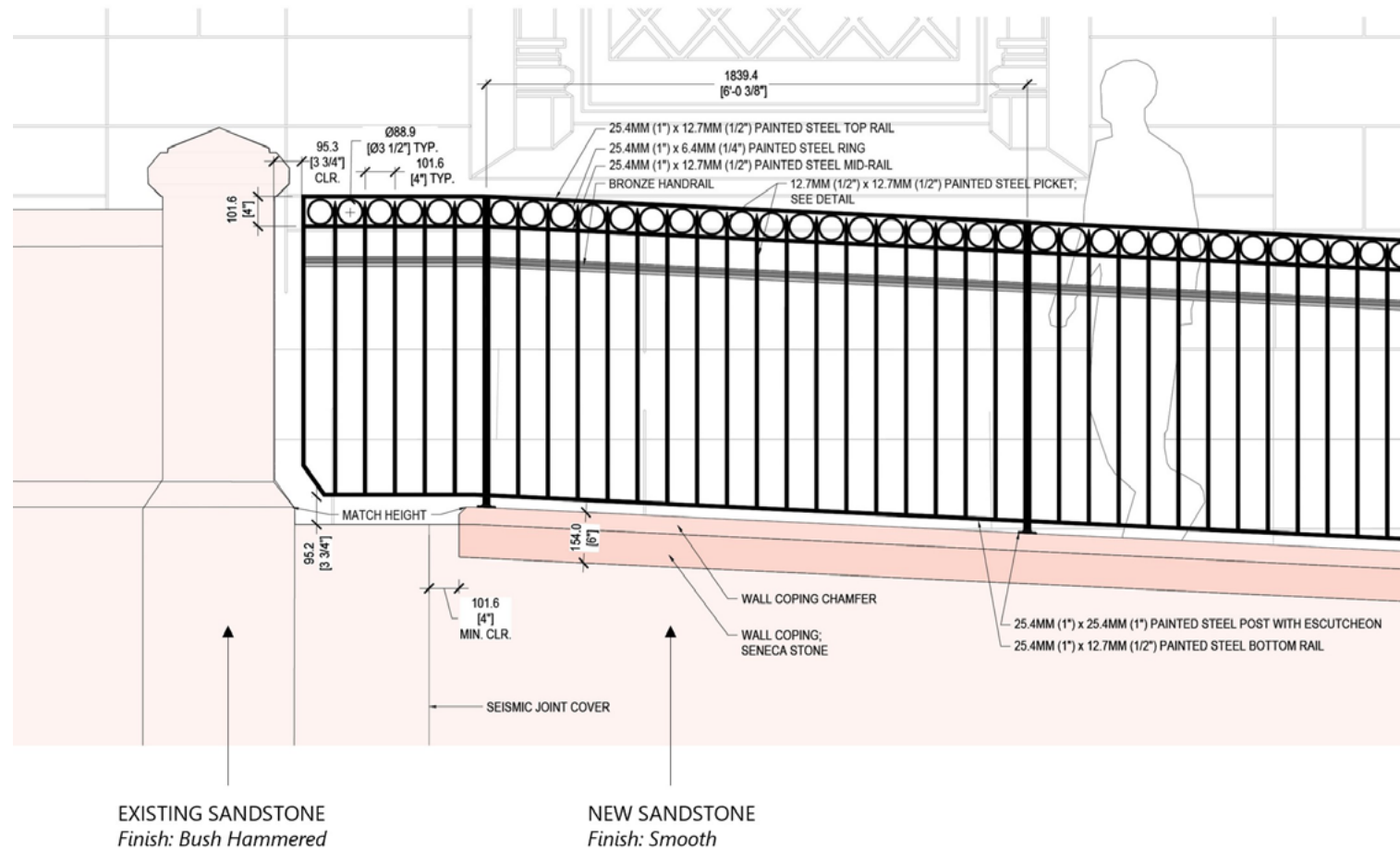


Figure 3.3.6.e – Proposed North Entry accessible walk guardrail detail, connection to the west landing at the North Entry

3. DETAILED PROJECT INFORMATION

3.3 LANDSCAPE AND GRADING PLAN

3.3.6 NORTH ENTRANCE (CONTINUED)

Railing Details

The railings will be painted steel, set above a Seneca sandstone coping. Mounted on the inside of the steel guardrail there is a bronze handrail. The handrail will have an integral downlight to wash the walking surface.

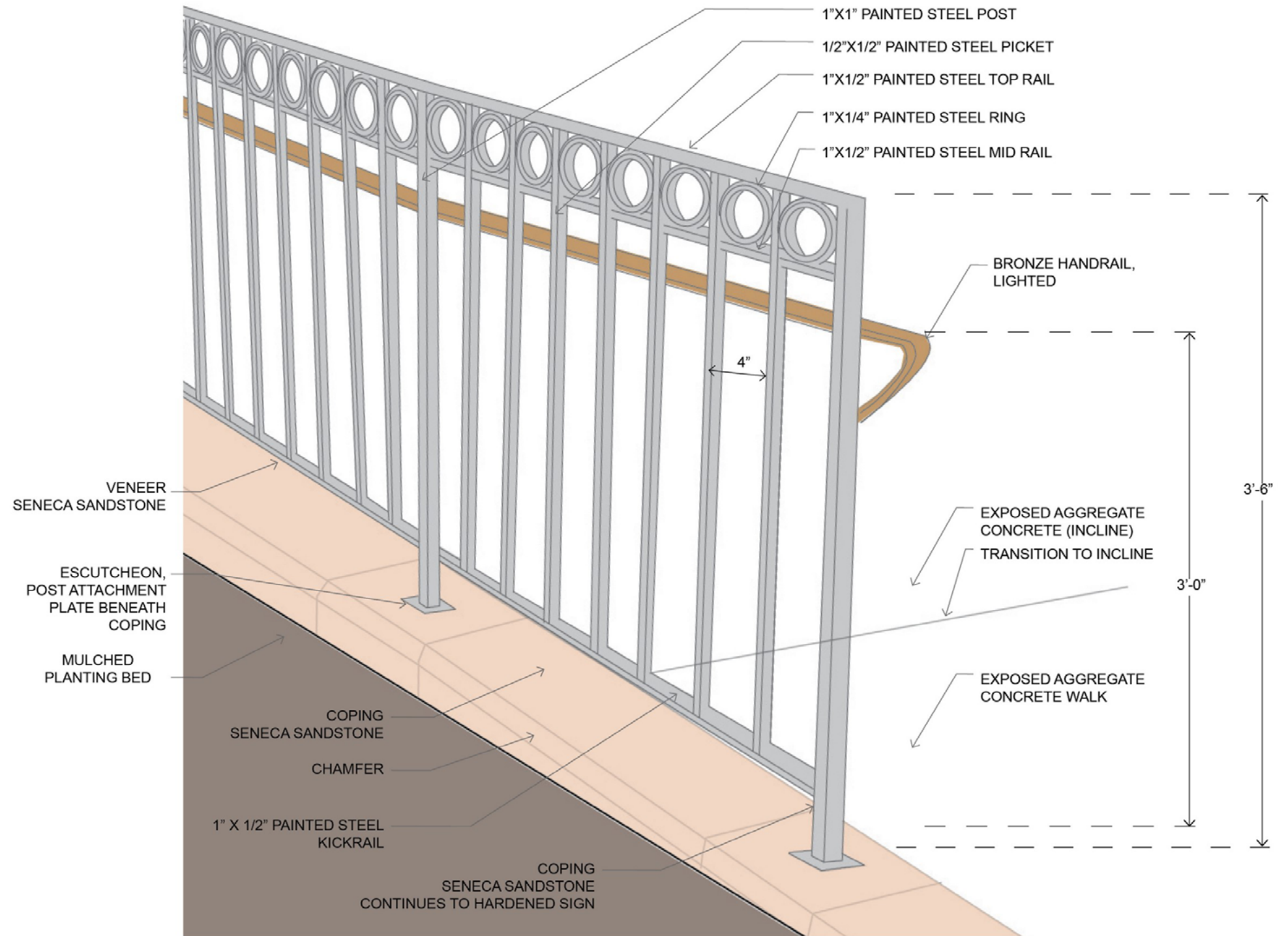


Figure 3.3.6.f – Proposed North Entry accessible walk guardrail detail

3. DETAILED PROJECT INFORMATION

3.4 ROOF AREA

3.4.1 SOUTH TOWER ELEVATORS

Roof Penthouses

Two elevators will be inserted in the link between the South Tower and the Main Building. To accommodate the required overhead space for the elevators small penthouses will be required at the edge of the gable roof. These penthouses will be clad in copper, similar to other rooftop elements, have sloped roofs, and be detailed with small arches to complement the vocabulary of openings on the building.

Two mechanical louvers will be inserted in the north wall of the south tower to serve mechanical equipment located in the attic.



Figure 3.4.1.a - Existing condition of the South Tower peaked roof and mechanical bulkhead to be removed, and the blind arches infilled with brick masonry

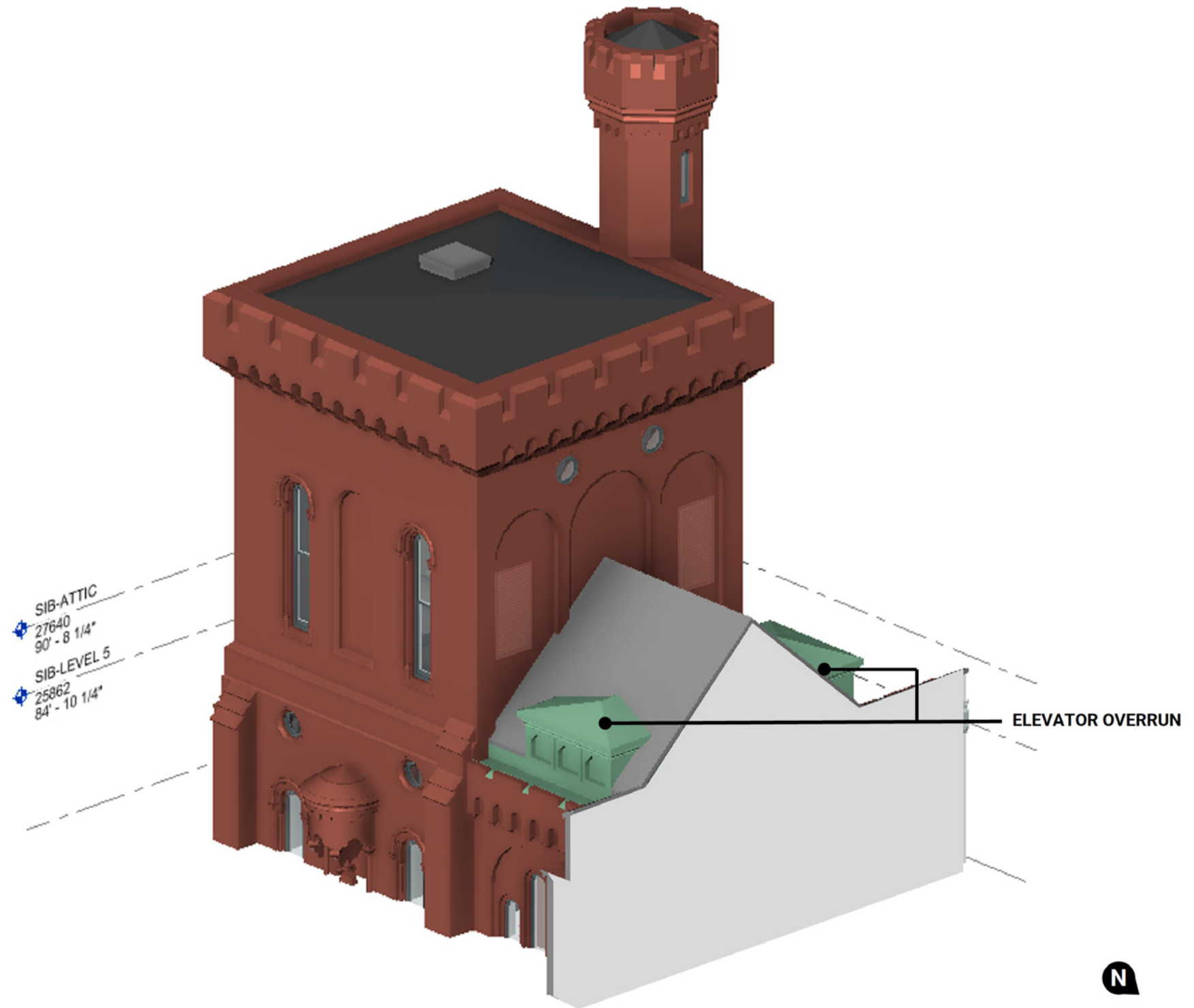


Figure 3.4.1.b - Partial axonometric view of the South Tower - proposed

3. DETAILED PROJECT INFORMATION

3.4 ROOF AREA

3.4.1 SOUTH TOWER ELEVATORS (CONTINUED)

Partial Roof Plan

The elevator locations are set by the interior plan. The shaft will be at the exterior wall. The roof includes a built-in gutter and a low parapet, which will help to hide the new penthouses from view at grade.

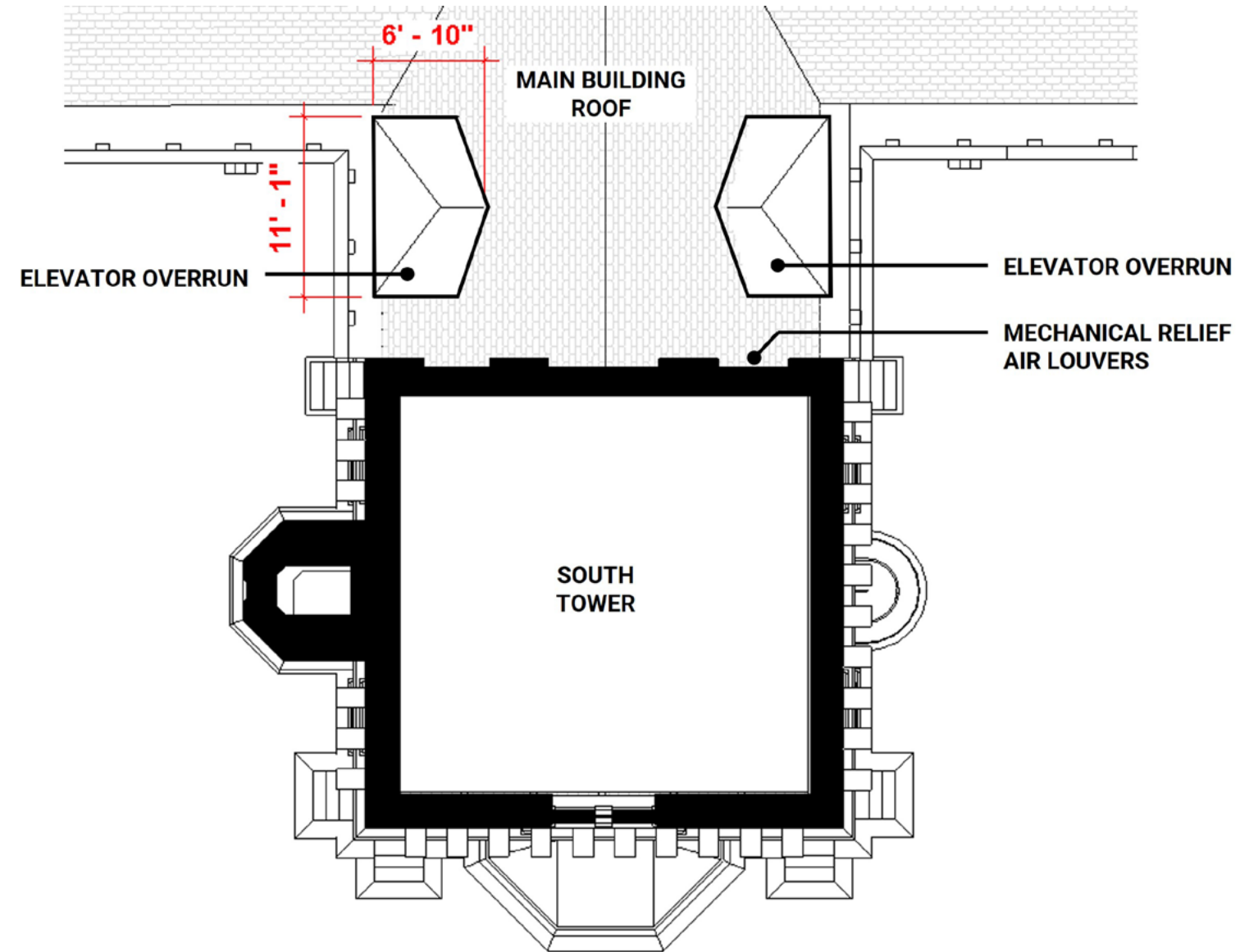


Figure 3.4.1.c - Roof plan noting locations of the elevator overruns and through wall louvers - proposed

3. DETAILED PROJECT INFORMATION

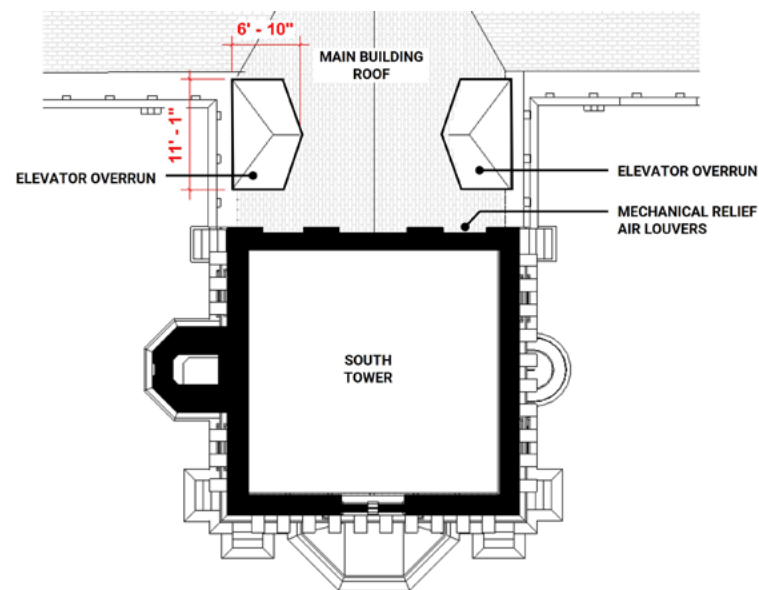
3.4 ROOF AREA

3.4.1 SOUTH TOWER ELEVATORS (CONTINUED)

Section

The height of the penthouses is set at the minimum required to provide the space needed for the elevators. The height at the outside face is minimized utilizing a hipped roof form.

The mechanical louvers in the South Tower are located in blind arches. The louvers will be installed flush with the brick surface and painted a red-brown color compatible with the adjacent brick.



Roof plan

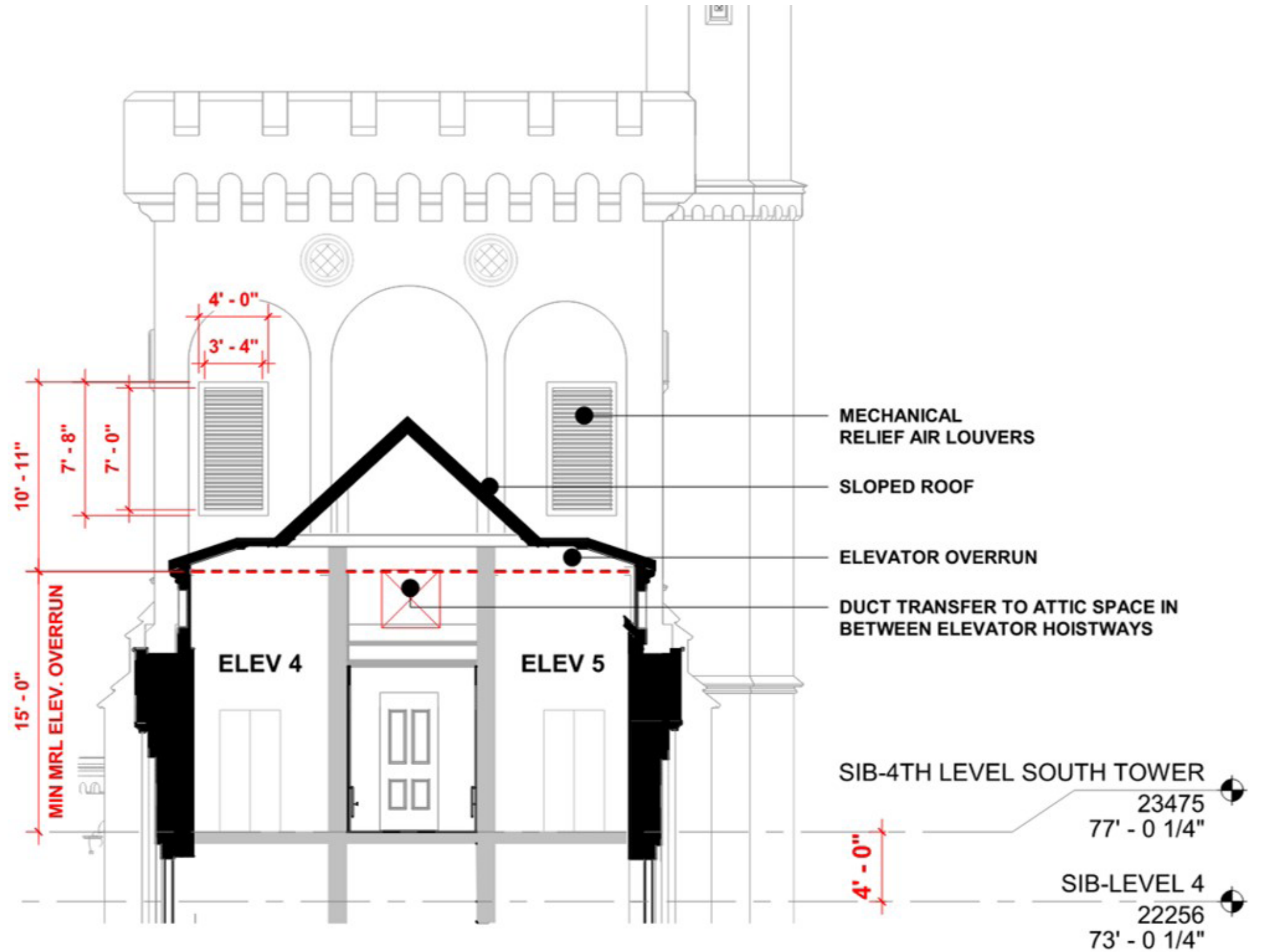


Figure 3.4.1.d - Section elevation depicting the size of the through wall louvers and extent of brick removal - proposed

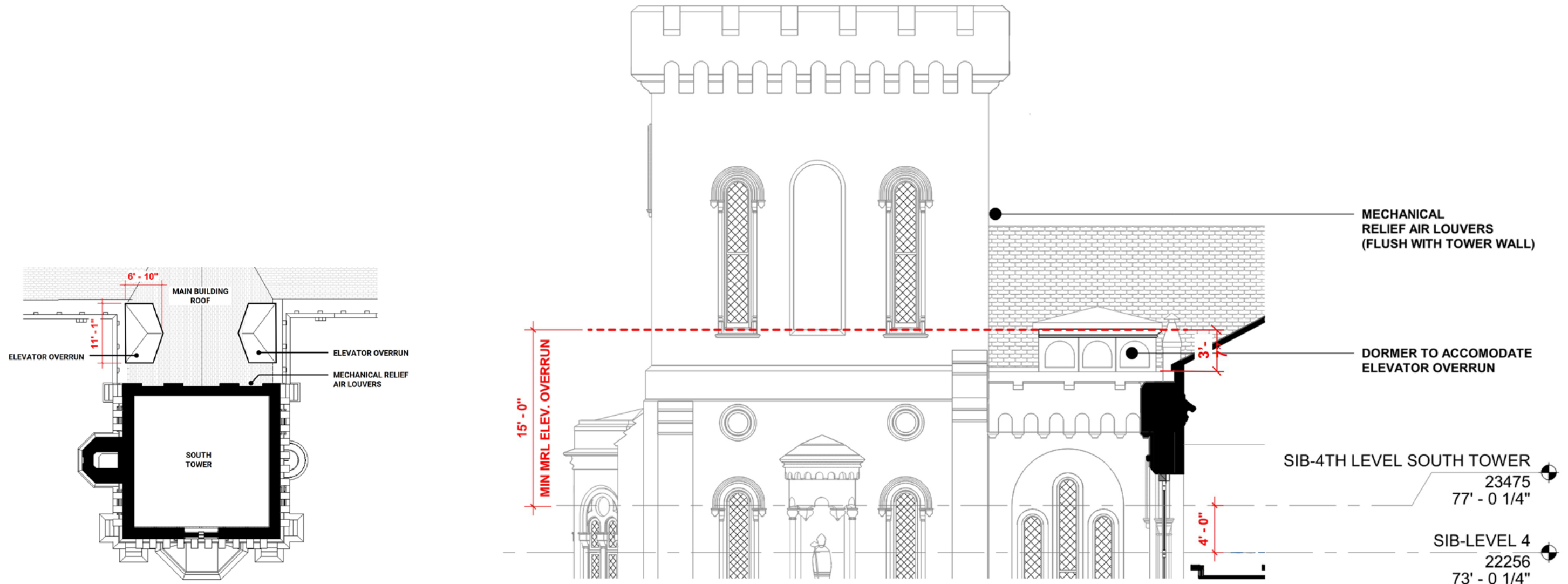
3. DETAILED PROJECT INFORMATION

3.4 ROOF AREA

3.4.1 SOUTH TOWER ELEVATORS (CONTINUED)

East Elevation

The elevation of the elevator penthouse facing east and west is partially blocked by the building parapet wall. The copper clad penthouse will be detailed with blind arches utilizing the vocabulary of adjacent openings on the building.



Roof plan

Figure 3.4.1.e - East elevation of the South tower, depicting the preferred hipped roof and detailing of the overrun - proposed

3. DETAILED PROJECT INFORMATION

3.4 ROOF AREA

3.4.1 SOUTH TOWER ELEVATORS (CONTINUED)

View from Grade

A view from the pedestrian pathway in the Haupt Garden illustrates that the penthouse will be visible. The copper cladding will blend with other roof elements.



EXISTING VIEW FROM GRADE – LOOKING NW



PROPOSED VIEW FROM GRADE – LOOKING NW

Figure 3.4.1.f - Location of the southeast elevator overrun noted with a red arrow

3. DETAILED PROJECT INFORMATION

3.4 ROOF AREA

3.4.2 REPLACEMENT OF ROOF MATERIALS

New Roofing Materials

The existing roofs will be removed, and new roofs installed utilizing materials that are compatible with the existing and historic materials. Grayson slate, which is quarried in Virginia, has been selected as the replacement slate. The original slate for the Castle is likely to have been quarried in the same area as Grayson slate. The metal roofing will be zinc-tin coated copper, matching what has been used on the building in the past.

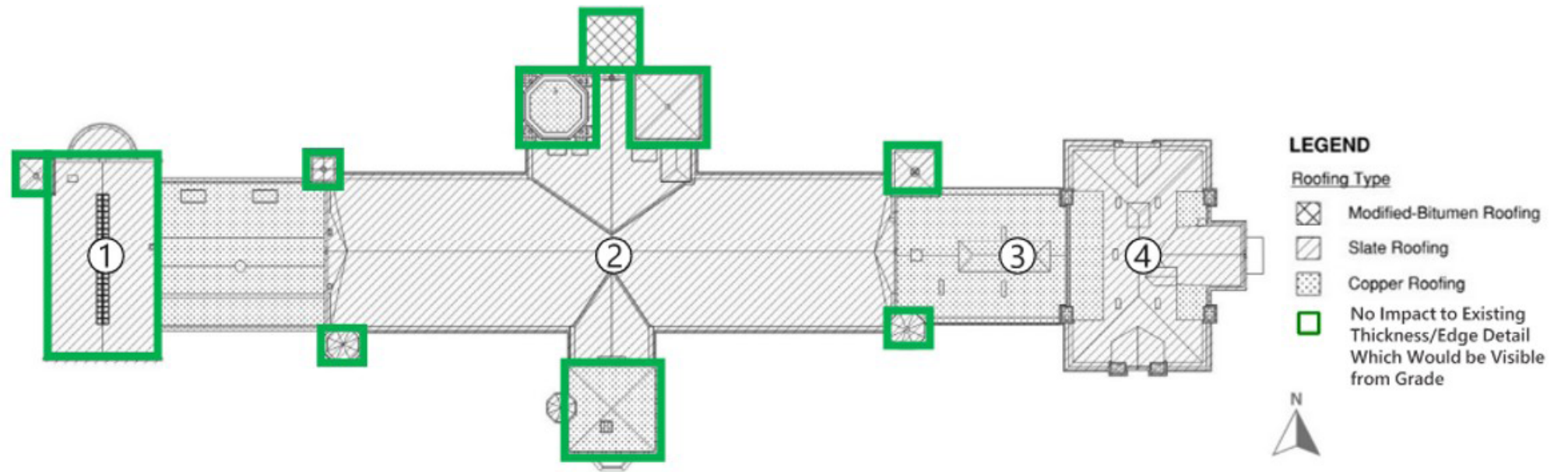


Figure 3.4.2.a – Proposed roof plan noting locations of slate and zinc-tin coated copper cladding



Figure 3.4.2.b – Proposed “Grayson Slate” shingles



Figure 3.4.2.c – Typical condition of slate roofing shingles



Figure 3.4.2.d – Typical condition of flat seamed lead coated copper roofing

3. DETAILED PROJECT INFORMATION

3.4 ROOF AREA

3.4.3 ROOF MODIFICATIONS

Roof Thickness

Roof thicknesses will be increased in some areas to accommodate upgraded structure and insulation. The additional thickness varies depending on the visual impact at various locations on the building. Where the increased thickness would result in a significant visual impact the amount of insulation was reduced to minimize the visual impact. The maximum increase was limited to 5 inches.

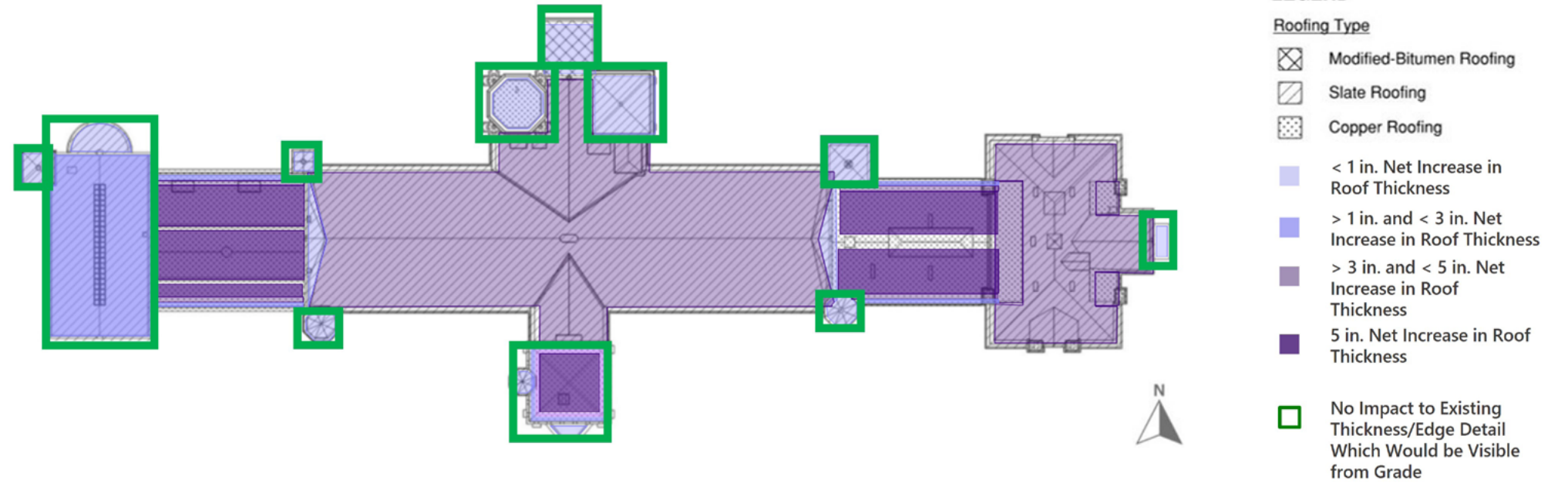


Figure 3.4.3.a – Proposed roof plan noting locations of slate and copper cladding, and dimensional changes. Green outline indicates areas with no proposed dimensional changes due to visible impacts.

3. DETAILED PROJECT INFORMATION

3.4 ROOF AREA

3.4.3 ROOF MODIFICATIONS (CONTINUED)

Visual Impact of Increased Thickness

These photo comparisons illustrate the visual impact of the increased roof thickness on the Main Building (Figure 3.4.3.b) and the East Range/ East Wing (Figure 3.4.3.c).

The proposed images illustrate an increase of insulation of a maximum of 5 inches, the visualizations show the minimal impact to the roof profile.



Figure 3.4.3.b – Proposed and existing montage demonstrating the dimensional roof change over the Main Building



Figure 3.4.3.c – Proposed and existing montage demonstrating the dimensional roof change over the East Range

3. DETAILED PROJECT INFORMATION

3.4 ROOF AREA

3.4.4 ROOFTOP MECHANICAL PENTHOUSES

Roof Top Elements

Figure 3.4.4.a illustrates that existing roof top mechanical elements will either be removed or modified to meet the requirements of the new mechanical systems. Some new elements will be required to serve the new systems.

Figure 3.4.4.b illustrates the historic masonry chimneys which will be retained but none will be active.

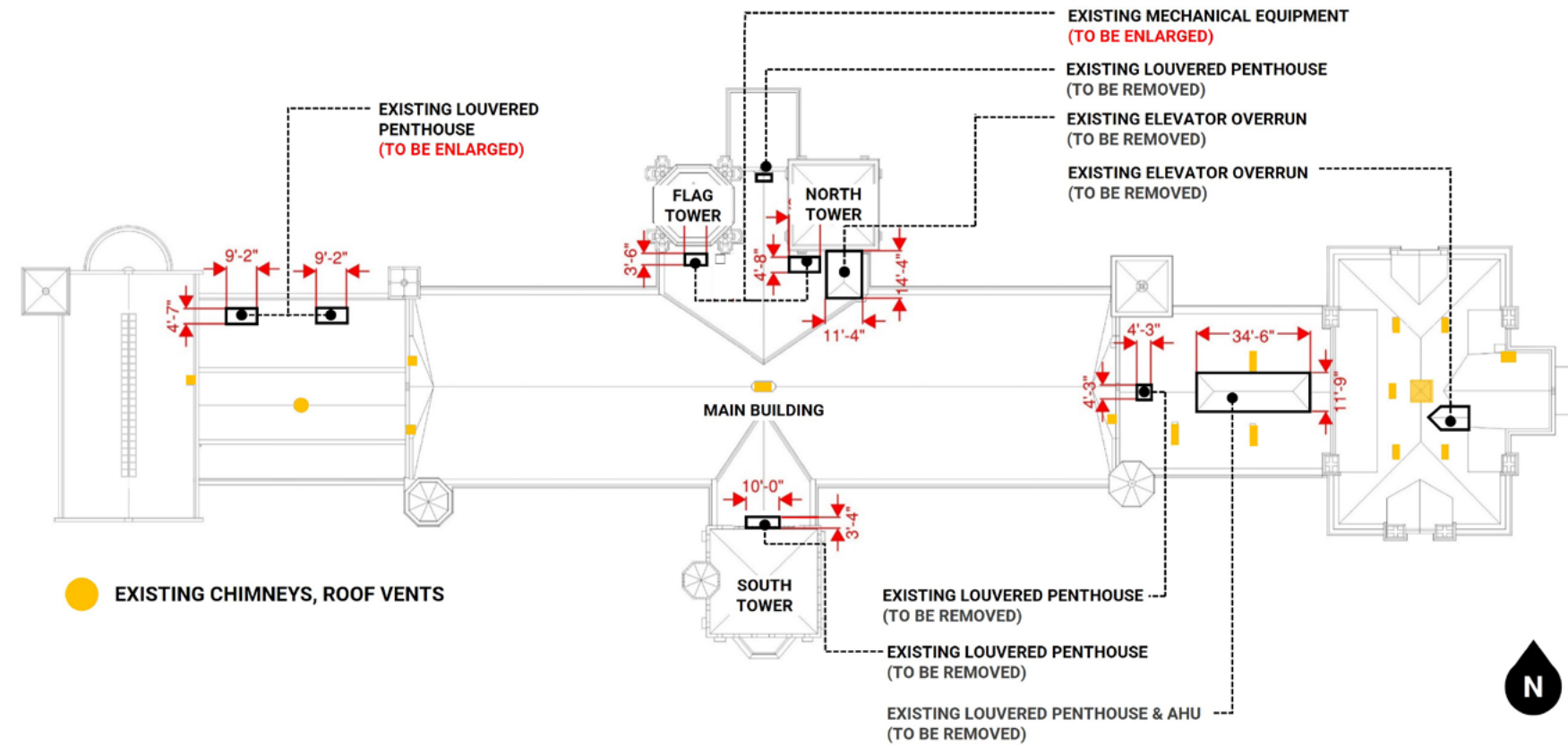


Figure 3.4.4.a – Existing roof plan; existing rooftop features with all black text tags will be removed

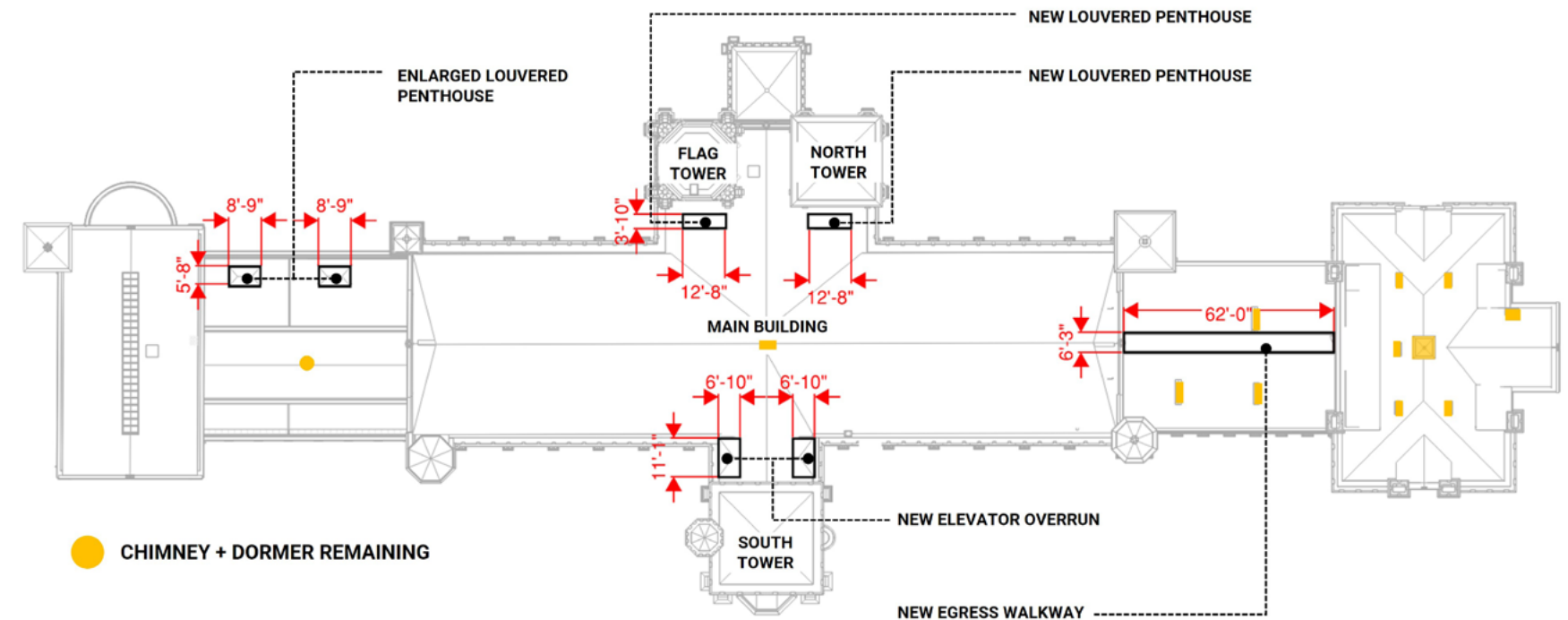


Figure 3.4.4.b – Proposed roof plan; historic chimneys and dormers that will be retained are noted in yellow

3. DETAILED PROJECT INFORMATION

3.4 ROOF AREA

3.4.4 ROOFTOP MECHANICAL PENTHOUSES (CONTINUED)

West Range Louvered Penthouses

Existing louvered penthouses on the north side of the West Range will be replaced with units that will be the same height, but with a deeper footprint to meet the needs of the new mechanical systems. The new penthouses will be clad in copper to match the other roof top elements.



Figure 3.4.4.c – West range existing mechanical penthouses



Figure 3.4.4.d – West range proposed mechanical penthouses

3. DETAILED PROJECT INFORMATION

3.4 ROOF AREA

3.4.4 ROOFTOP MECHANICAL PENTHOUSES (CONTINUED)

Flag and North Tower Louvered Penthouses

Existing penthouses located to the south of the North and Flag Towers will be replaced with new louvered penthouses. The new elements are narrow and shifted as high on the roof slope as possible to minimize the visibility of the elements from grade around the building.

The penthouses will be clad in copper and will feature an arched louvered opening at the penthouse facades that are visible from street level. These measures were developed in Section 106 consultation to minimize adverse effect.

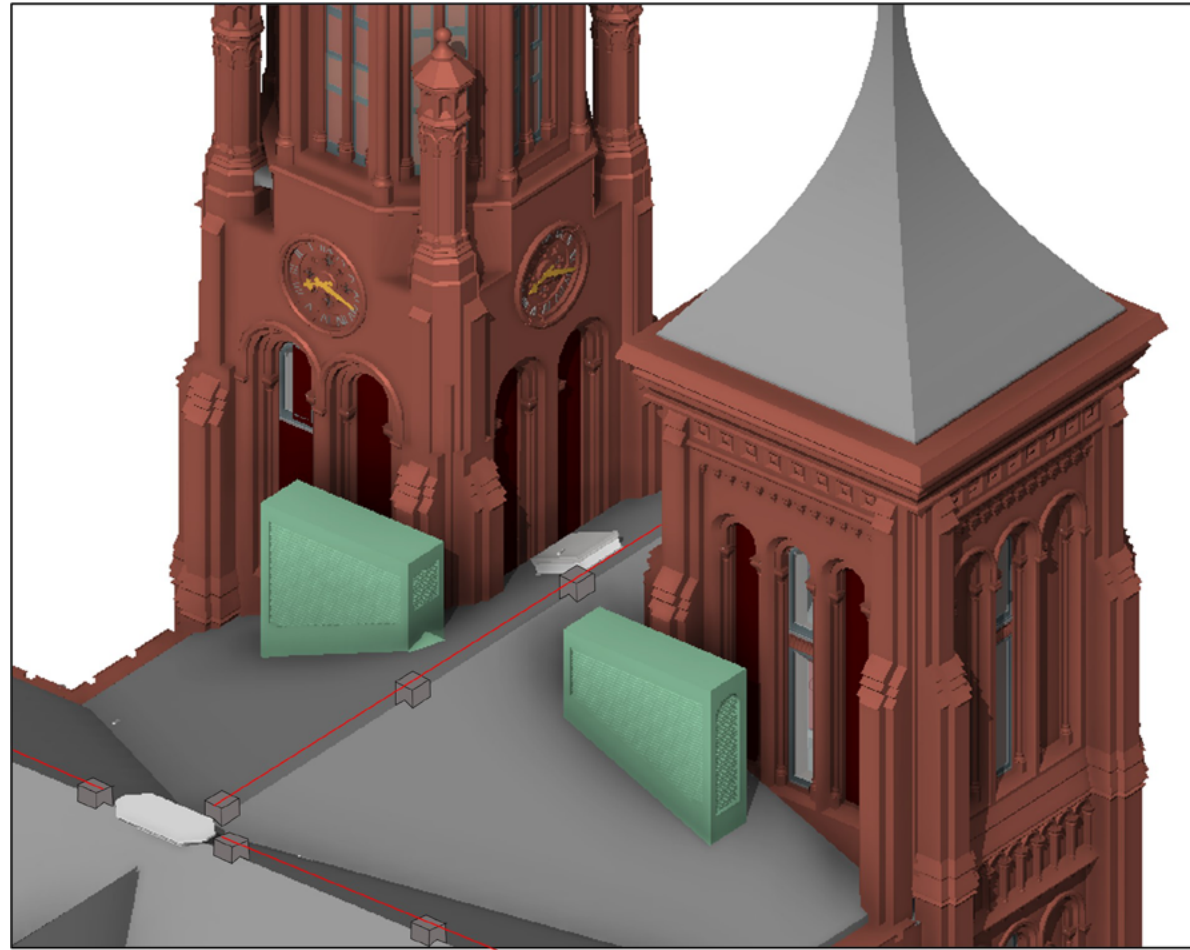


Figure 3.4.4.e – Axon view of the proposed North Entry hyphen mechanical penthouses



Figure 3.4.4.f – Rendered view of visibility of the west penthouse at the North Entry hyphen from Jefferson Drive

3. DETAILED PROJECT INFORMATION

3.4 ROOF AREA

3.4.5 EAST WING 4TH FLOOR EGRESS

Roof Plan

The fourth floor of the East Wing requires a second means of egress to allow it to be occupied. The proposed egress will be across the East Range roof to connect to the Main Building. This will require modifications to the roof and windows on both the East Wing and the Main Building.

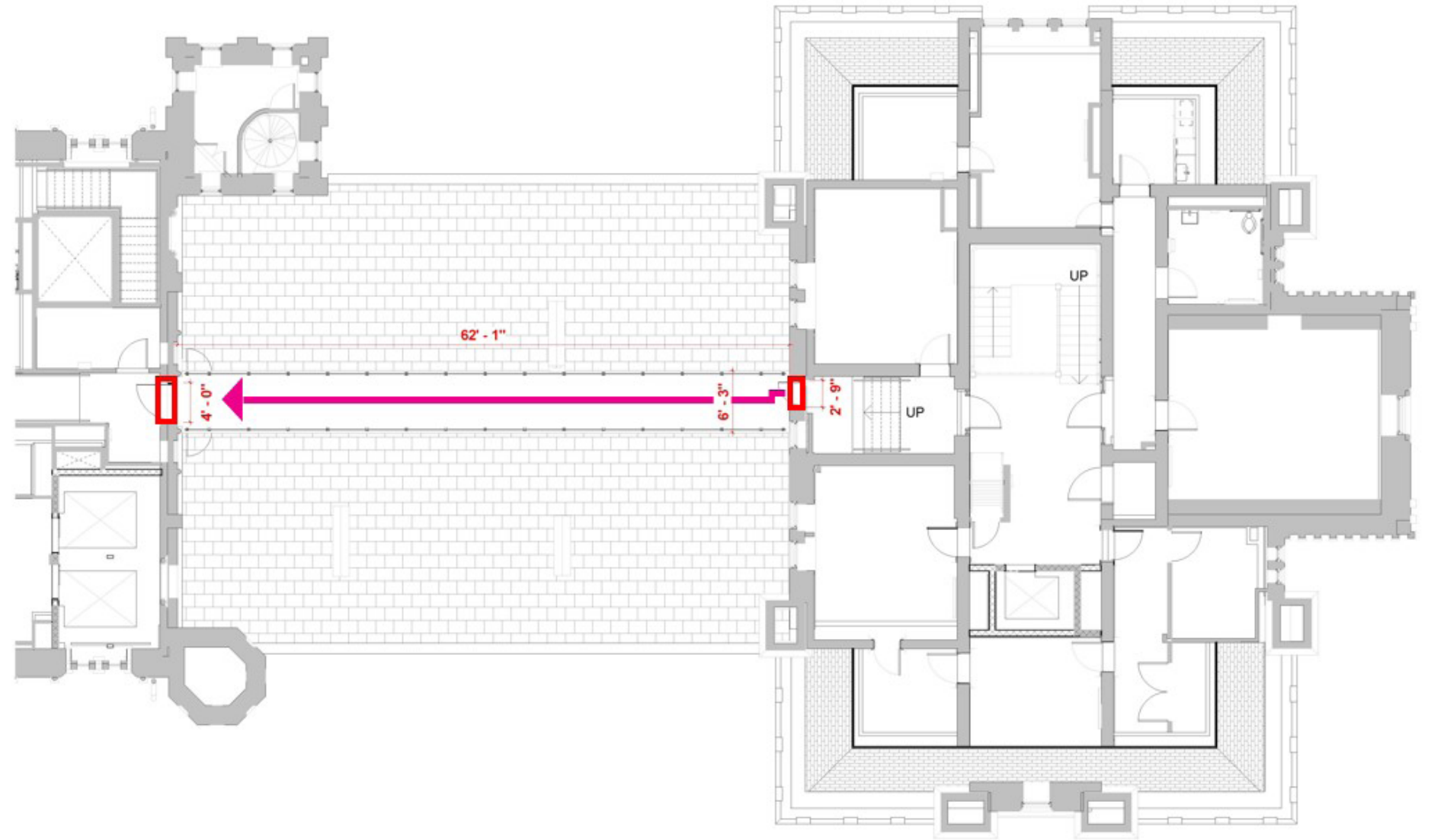


Figure 3.4.5.a – Plan of the proposed egress path from the East Wing across the East range roof to the Main Building

3. DETAILED PROJECT INFORMATION

3.4 ROOF AREA

3.4.5 EAST WING 4TH FLOOR EGRESS (CONTINUED)

Elevation and Guardrail Design

The proposed walkway will replace a non-historic louvered penthouse that will be removed from the East Range roof. The pathway will be an open walk with guardrails. The guardrail is approximately the same height as the cornice of the existing penthouse. The guardrail will be a simple design of vertical pickets.



Figure 3.4.5.b – Photograph of the East Range and the visibility of the 1973 mechanical penthouse; red dotted line indicates height of the 42” guardrail

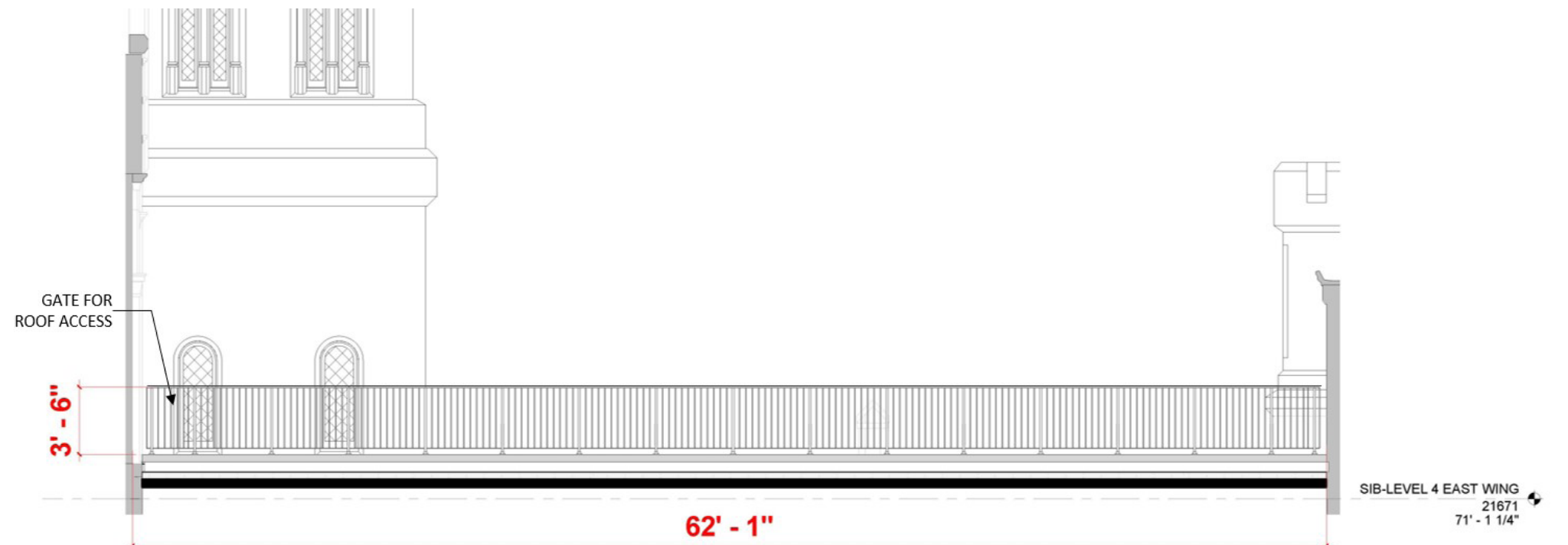


Figure 3.4.5.c – Elevation of the egress walkway and fall protection railing design

3. DETAILED PROJECT INFORMATION

3.4 ROOF AREA

3.4.5 EAST WING 4TH FLOOR EGRESS (CONTINUED)

Visibility

The new walkway will be visible from both the north and the south. The view from the Mall (north) will be the painted guardrail which will replace the solid louvered penthouse.



Figure 3.4.5.d – Walkway railing visibility from the middle of the National Mall

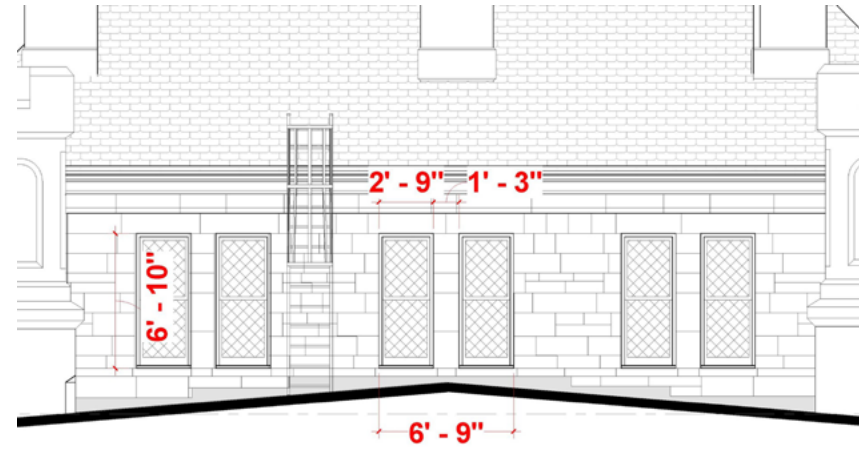
3. DETAILED PROJECT INFORMATION

3.4 ROOF AREA

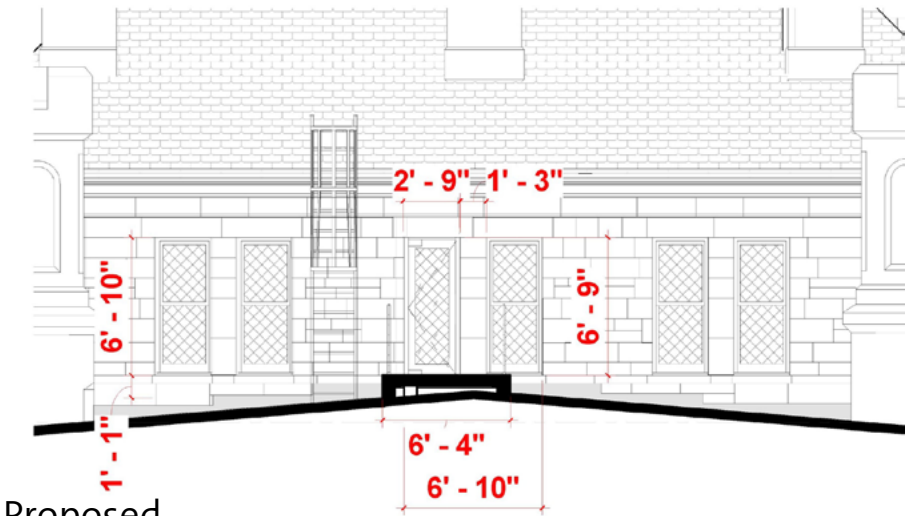
3.4.5 EAST WING 4TH FLOOR EGRESS (CONTINUED)

Window Modifications

Access to the egress walkway will be through existing window openings, which will be converted to doors. The window openings will not be modified, the new doors will be sized to fit the existing masonry openings.

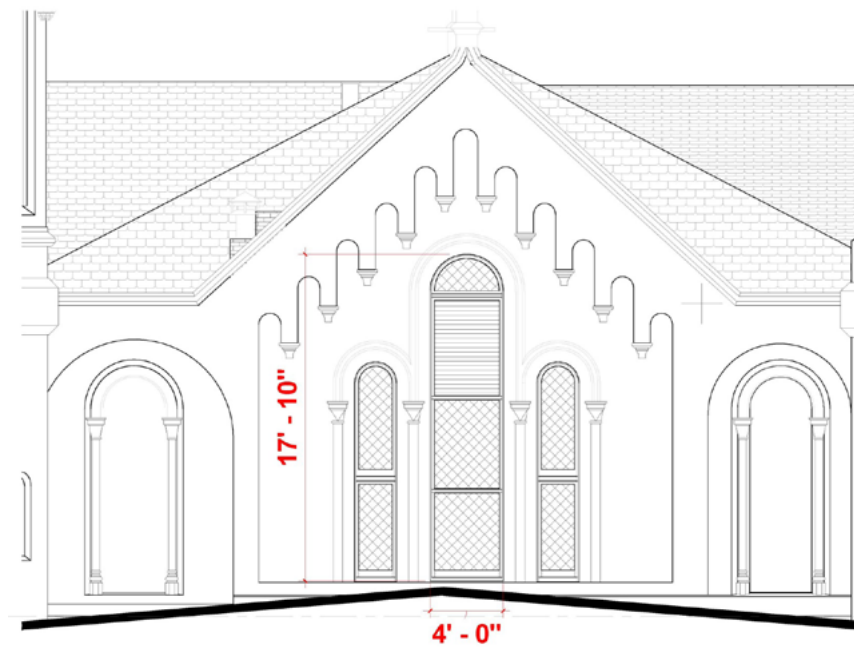


Existing

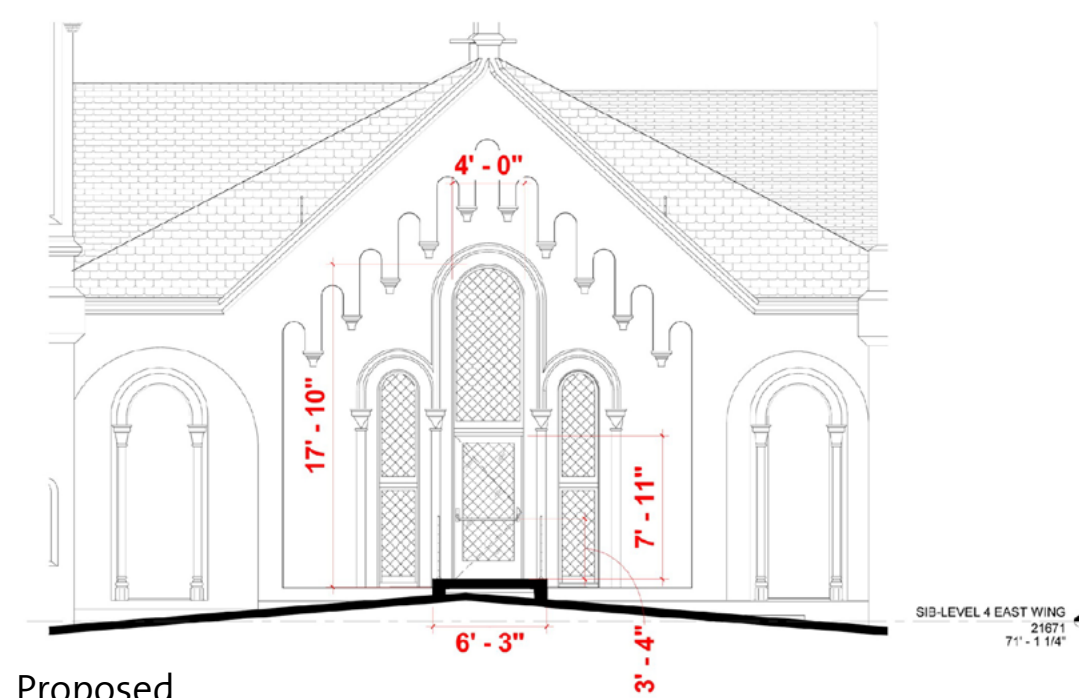


Proposed

Figure 3.4.5.e – 4th Level East Wing, west elevation; non-historic window sash will be replaced with a metal and glass egress door



Existing



Proposed

Figure 3.4.5.f – 4th Level Main Building, east elevation; non-historic window sash will be replaced with a metal and glass egress door with a fixed window above

3. DETAILED PROJECT INFORMATION

3.4 ROOF AREA

3.4.6 LIGHTNING PROTECTION

Visible Elements

The Castle has historically been equipped with lightning protection, but the system has not been comprehensive and damage from lightning strikes has occurred as recently as 2005. The system components, including air terminals and cables, have always been visible.



Figure 3.4.6.a – Historic image c.1930 of the West Tower with lightning protection



Figure 3.4.6.b – Southeast Tower damaged by a lightning strike in 2005

3. DETAILED PROJECT INFORMATION

3.4 ROOF AREA

3.4.6 LIGHTNING PROTECTION (CONTINUED)

Roof Layout

The proposed system is compliant with industry standards including a network of interconnected air terminals that are strategically located at the highest points of the roof. These are connected by copper cables which are then grounded at various locations around the building.

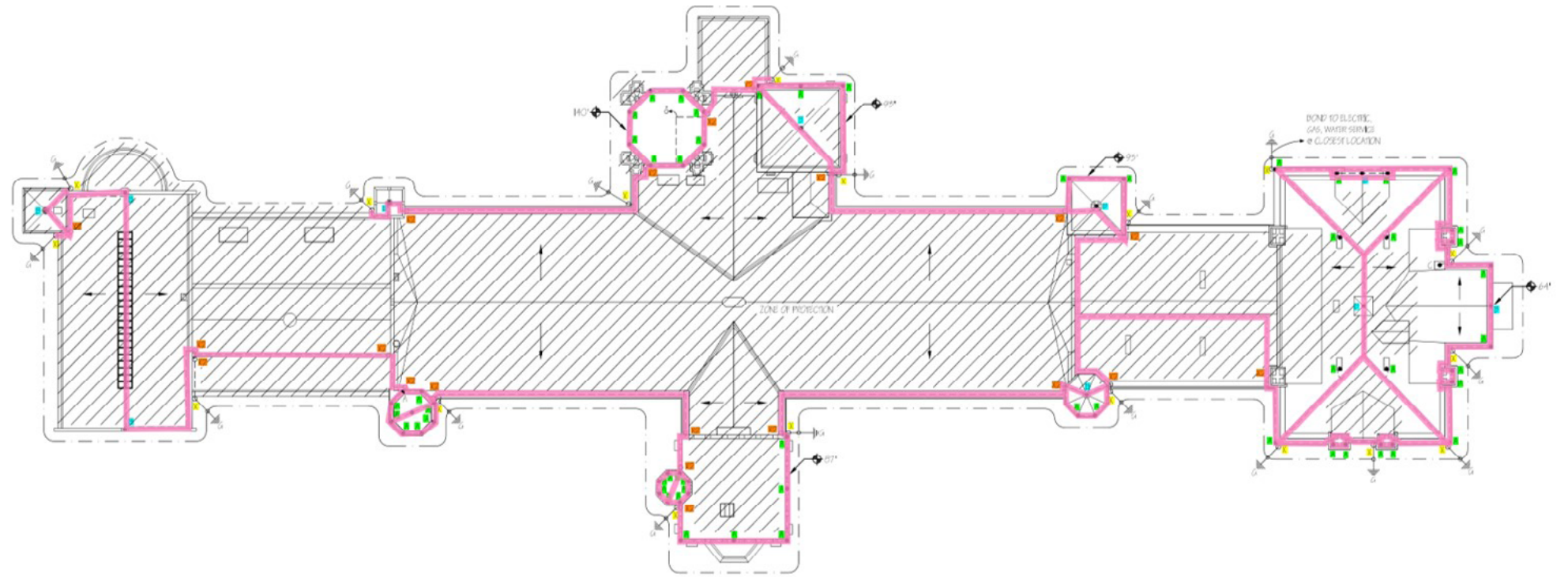


Figure 3.4.6.c – Proposed lightning protection plan with terminals and cables

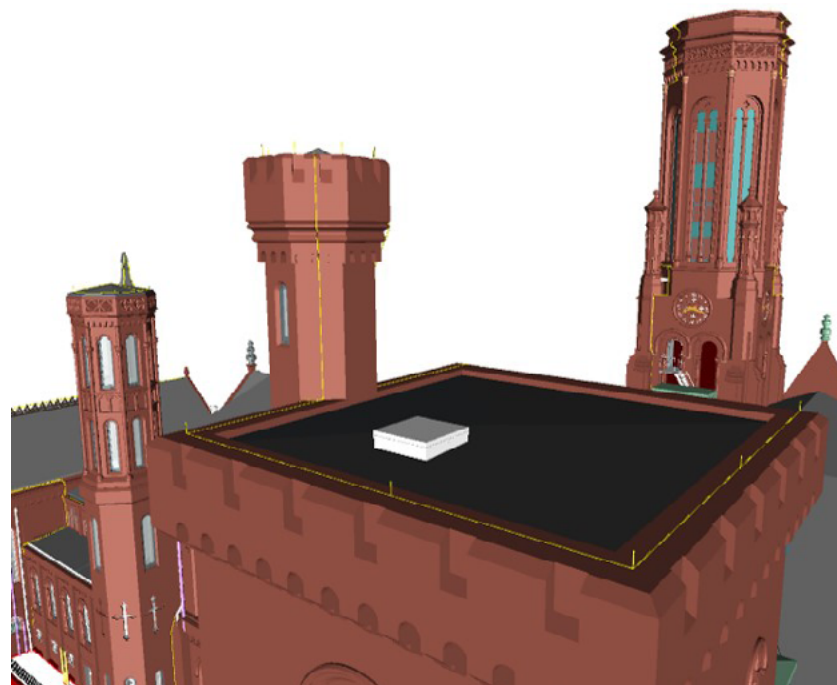


Figure 3.4.6.d – Axonometric view over the South Tower roof looking west

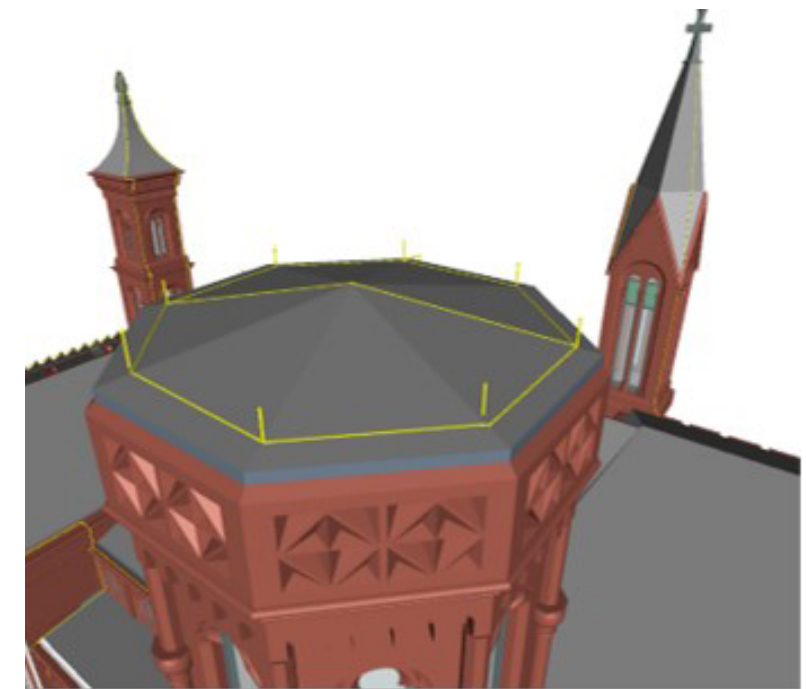


Figure 3.4.6.e – Proposed Octagon Tower air terminals and cables

3. DETAILED PROJECT INFORMATION

3.4 ROOF AREA

3.4.7 FALL PROTECTION

Visibility

Fall protection is a critical component of facilitating ongoing maintenance of the building. While the elements are not very large, they will be visible. The design has focused on locating the elements to utilize building elements to hide the system as much as possible.



Figure 3.4.7.a – Rendered view of the fall protection system looking south to the Castle

3. DETAILED PROJECT INFORMATION

3.4 ROOF AREA

3.4.7 FALL PROTECTION (CONTINUED)

Roof Plan

The system that will be utilized on the Castle has components similar to the system that was installed on the Arts and Industries Building when the roof on that building was replaced. The development of the

layout for the fall protection has been coordinated with the lightning protection system to minimize the overfall impact on the exterior view of the building.

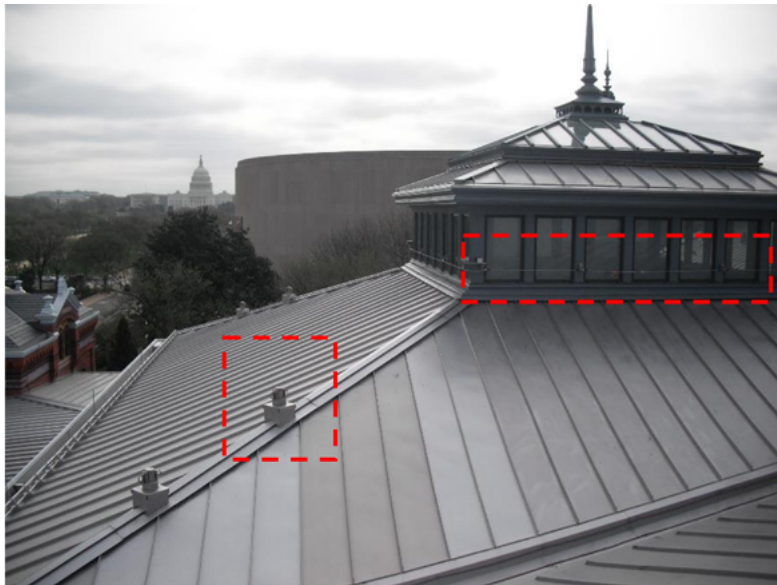


Figure 3.4.7.b – Similar fall protection system installed on the Arts & Industries Building.

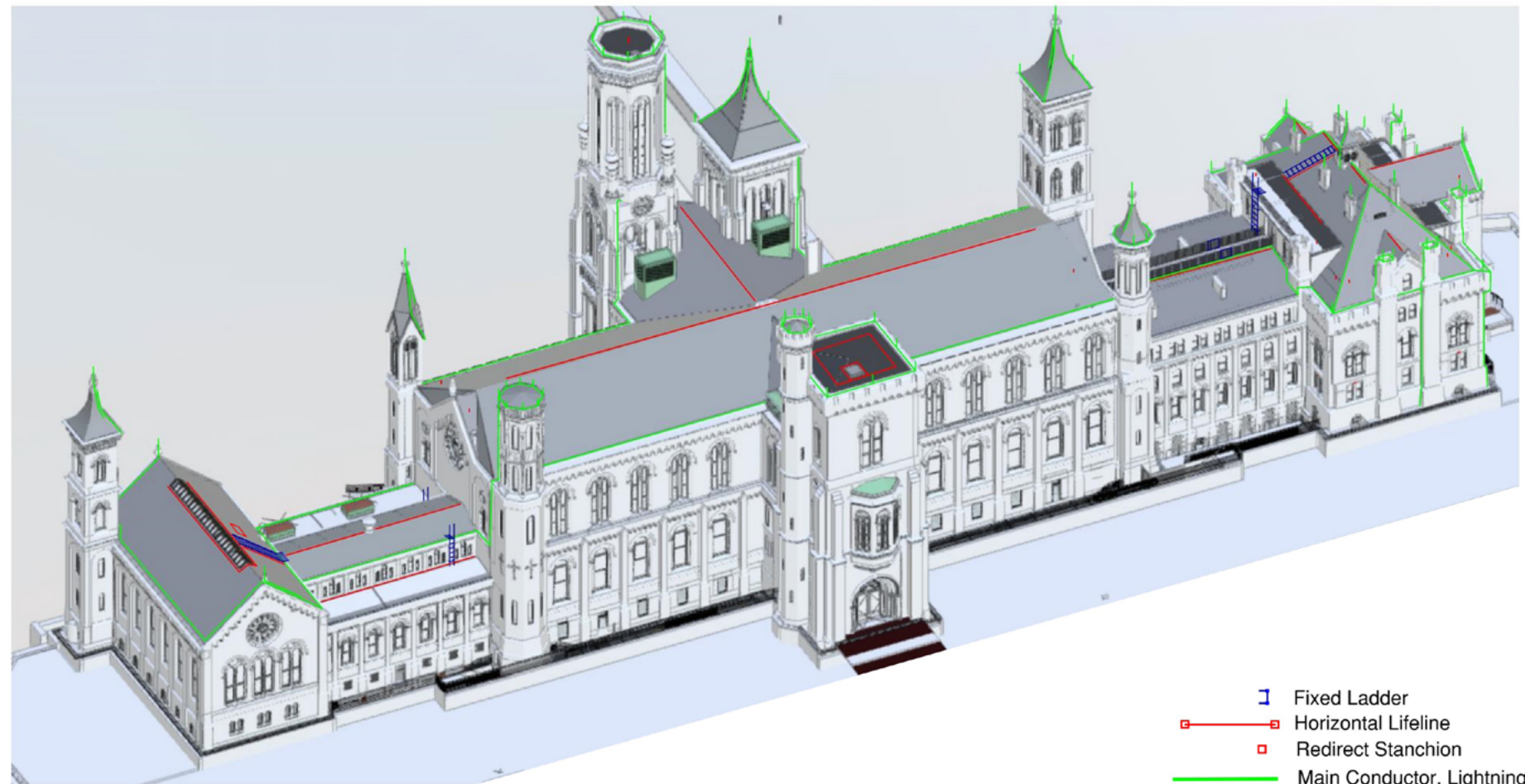


Figure 3.4.7.c – Axonometric drawing of proposed fall protection; red lines indicate the horizontal lifelines and green lines indicate the lightning protection system

3. DETAILED PROJECT INFORMATION

3.4 ROOF AREA

3.4.7 FALL PROTECTION (CONTINUED)

Roof Access

The fall protection system has also been coordinated with the roof access. In between the North and Flag Towers a new roof access hatch will be installed that will simplify access to the fall protection system and allow stairs and ladders on the south side of the towers to be eliminated.



Figure 3.4.7.d – Existing condition of roof access ladder and stairs at the south elevations of the Flag and North Towers

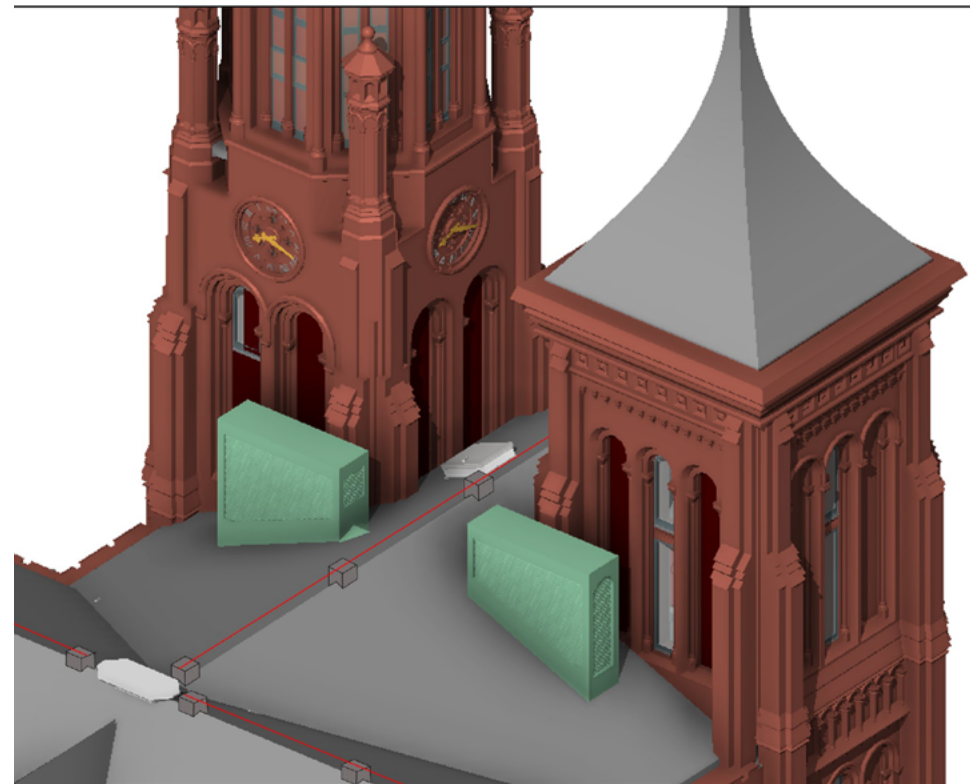


Figure 3.4.7.e – Proposed roof hatch shown in light gray between the towers; green rooftop additions represent mechanical penthouses with patina; red lines represent the fall protection system

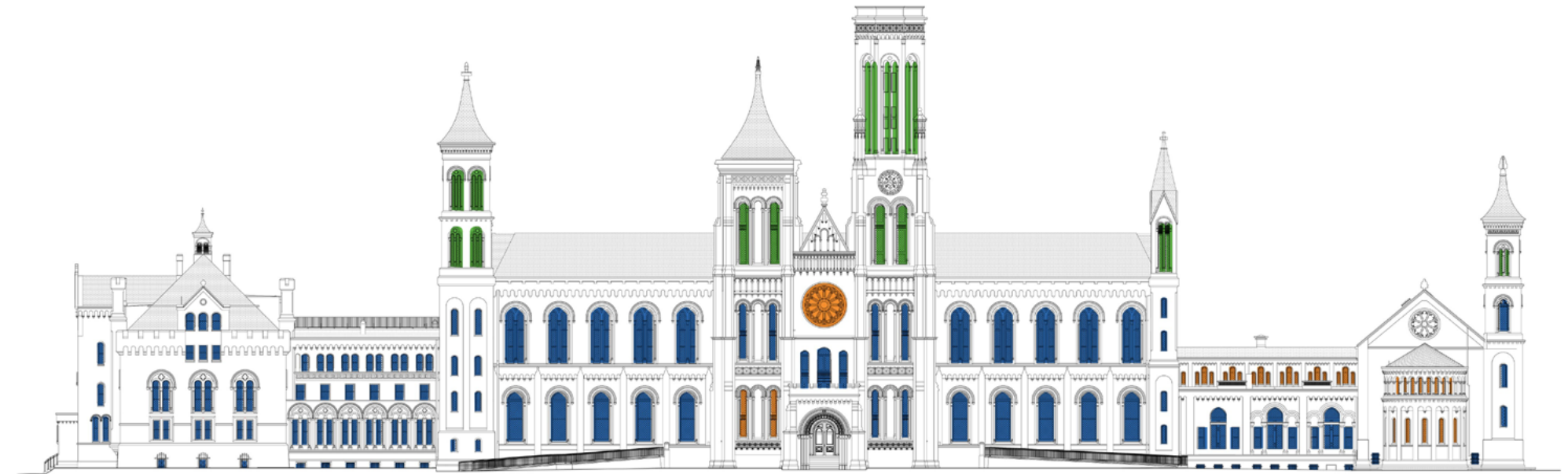
3. DETAILED PROJECT INFORMATION

3.5 EXTERIOR WALLS

3.5.1 REPLACEMENT AND RESTORATION OF WINDOWS

Window Replacement Strategy

Most of the windows in the Castle were replaced in the 1980s. Where older windows survive the windows will be repaired and new interior blast windows installed to provide the required level of protection. The 1980s windows will be replaced with new metal blast windows which match the historic profiles as closely as possible.



NORTH ELEVATION



SOUTH ELEVATION

Figure 3.5.1.a - Proposed Castle north and south elevation with window replacement types noted

- NEW STORM WINDOW AT INTERIOR SIDE OF EXISTING TO REMAIN
- NEW BLAST WINDOW, WITH OR WITHOUT ADDITIONAL WALL STRENGTHENING
- NEW NON-BLAST WINDOW (LEVEL 5 AND ABOVE – UNOCCUPIED)

3. DETAILED PROJECT INFORMATION

3.5 EXTERIOR WALLS

3.5.1 REPLACEMENT AND RESTORATION OF WINDOWS (CONTINUED)

Muntin Profiles

The new blast windows will require thicker glazing and muntins that are sized to meet the blast design criteria. The proposed profiles have been developed to maintain as much free glazing area as possible.

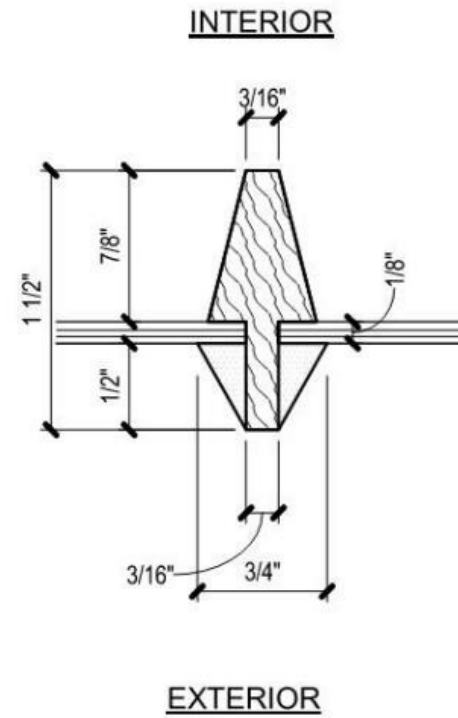


Figure 3.5.1.b - Existing window muntin profile

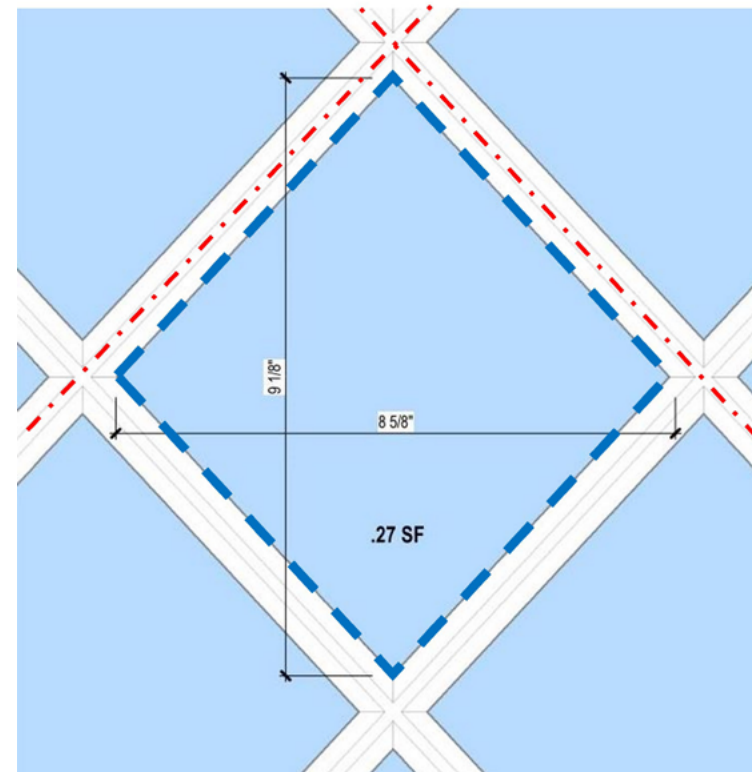


Figure 3.5.1.d - Free glass of typical diamond muntin, historic

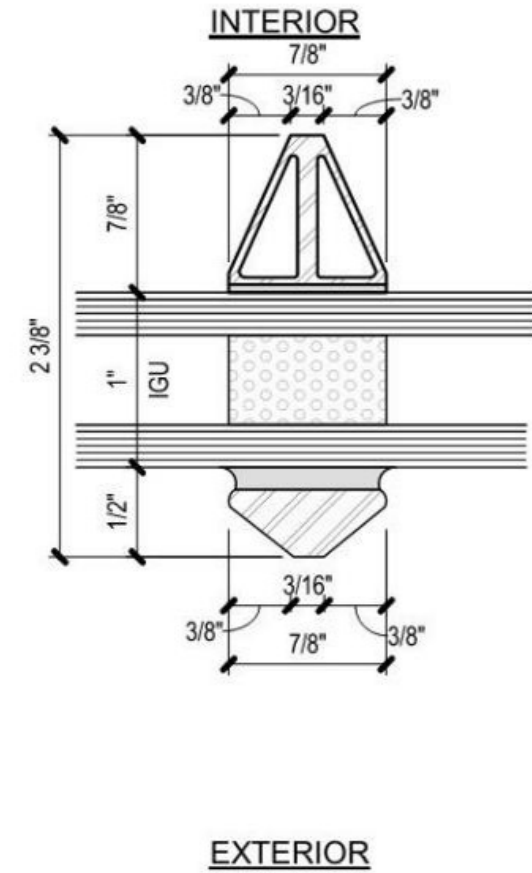


Figure 3.5.1.c - Simulated divided light muntin profile

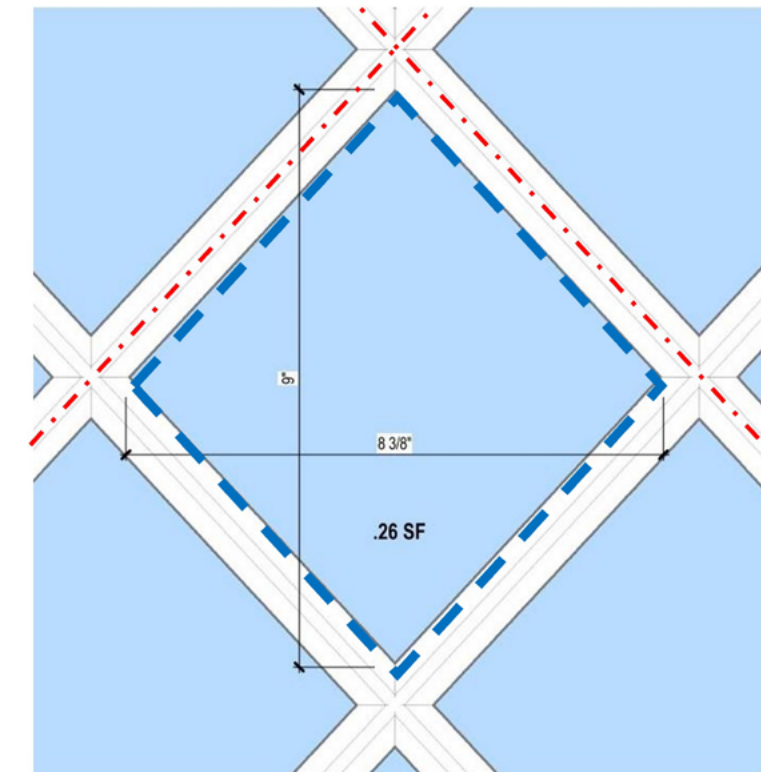


Figure 3.5.1.e - Free glass of simulated divided light muntin

3. DETAILED PROJECT INFORMATION

3.5 EXTERIOR WALLS

3.5.2 EXTERIOR MASONRY RESTORATION

Repairs and New Materials

A comprehensive repair program for the exterior masonry will utilize knowledge that has been gained by the Smithsonian on recent masonry repair projects. The Smithsonian has salvaged Seneca sandstone from other historic structures for use on the Castle. Additional material will be available as some elements of the existing building are removed, such as non-historic areaways. If additional replacement material is required a source has been identified, St. Bees sandstone.



Figure 3.5.2.a - St. Bees sandstone, replacement stone where existing sandstone cannot be reused

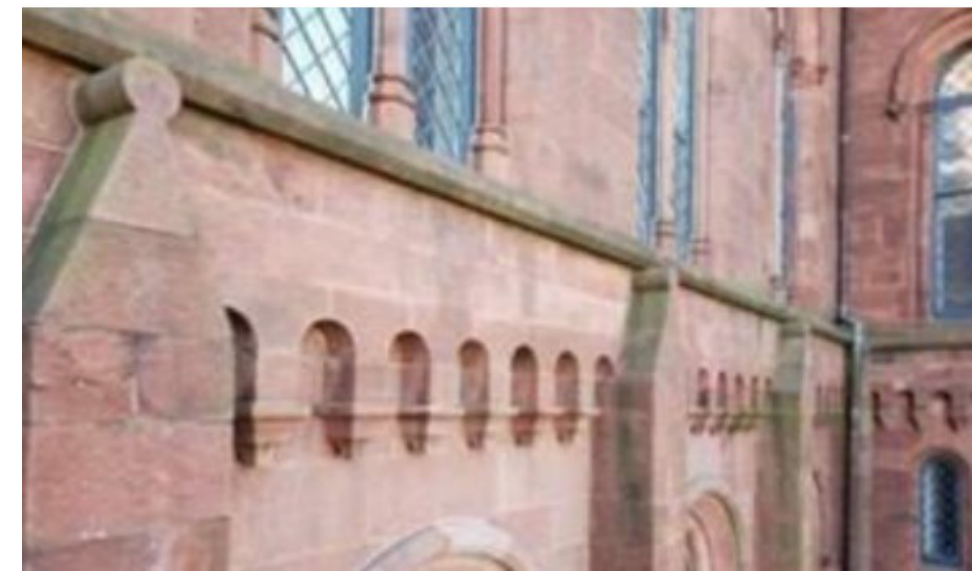


Figure 3.5.2.b

Upper left -Example of masonry spalling & detachment

Upper right - Seneca sandstone with biological growth staining

Lower left - Displaced Seneca sandstone masonry at the Octagon Tower



3. DETAILED PROJECT INFORMATION

3.5 EXTERIOR WALLS

3.5.3 NEW BASEMENT WINDOWS

Existing Window Openings

Some basement windows exist on the south elevation of the building. These windows are smaller and were designed to provide light to storage and back-of-house spaces.



Figure 3.5.3.a - Photograph of existing basement window at the southeast side of the Main Building; note the metal window security grille

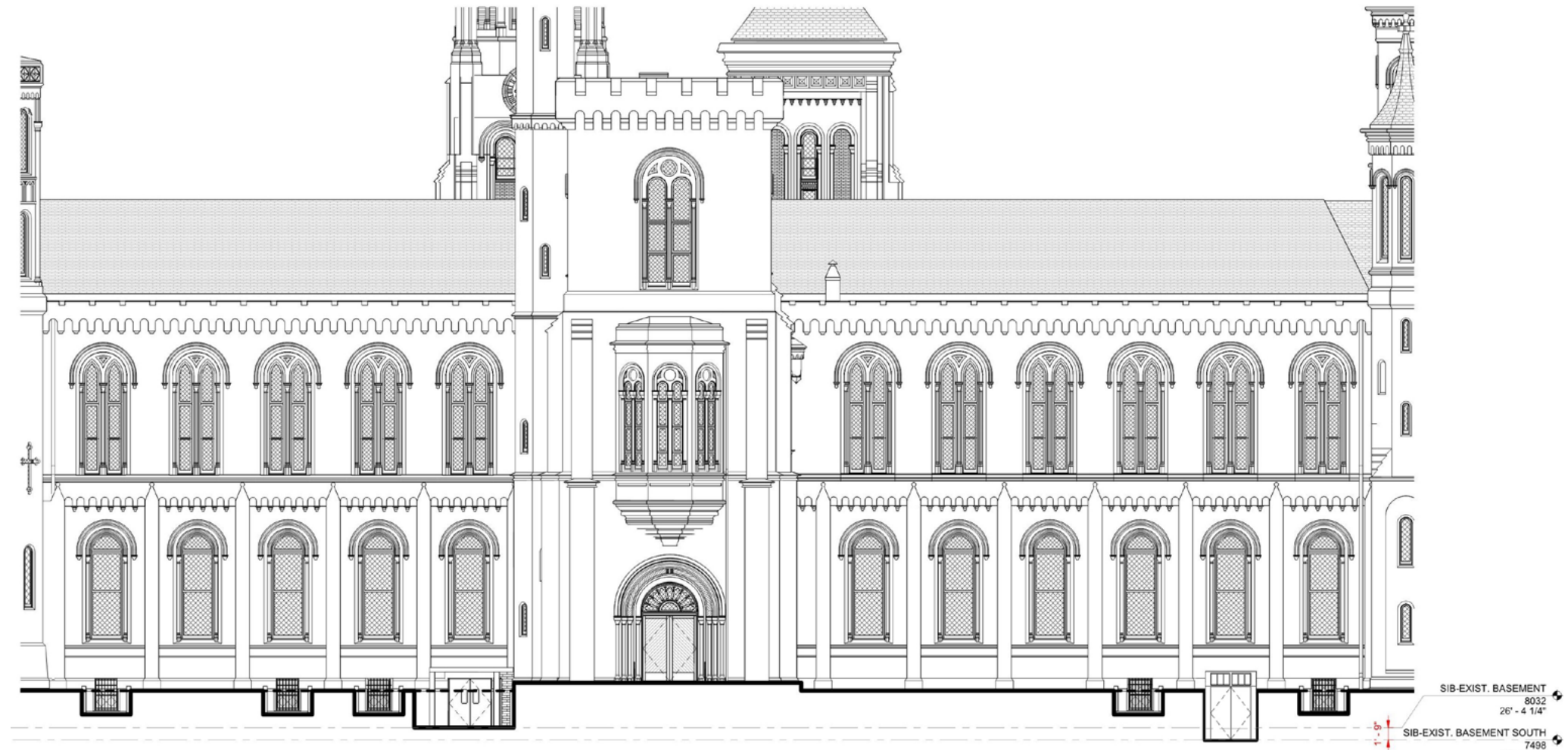


Figure 3.5.3.b - South elevation - existing

3. DETAILED PROJECT INFORMATION

3.5 EXTERIOR WALLS

3.5.3 NEW BASEMENT WINDOWS (CONTINUED)

Proposed Windows

Increased public use of the basement will benefit from additional outside light. Increasing existing window openings and creating new window openings will improve the quality of light in the basement spaces and reduce energy use for electric lighting.

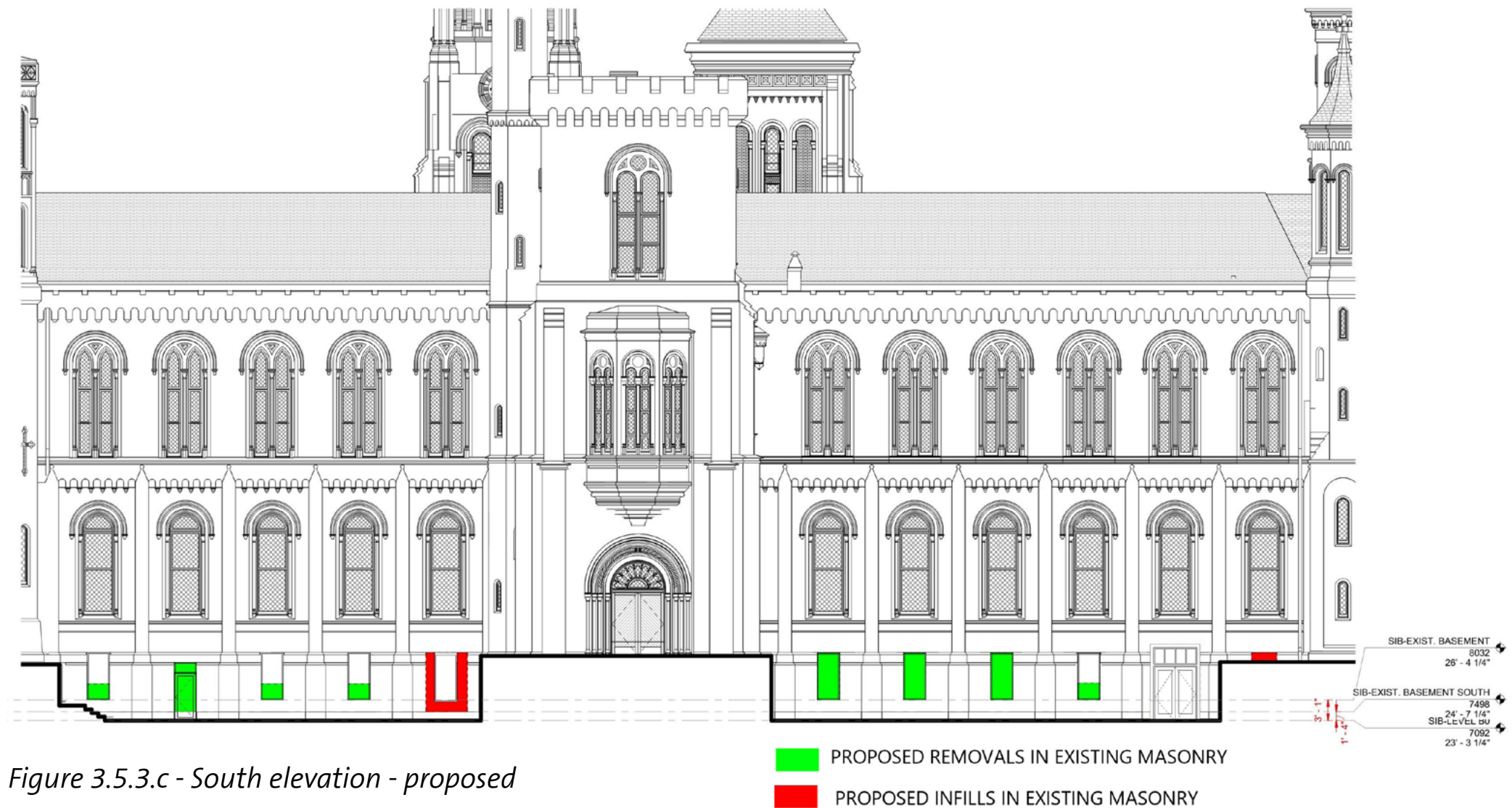


Figure 3.5.3.c - South elevation - proposed

3. DETAILED PROJECT INFORMATION

3.5 EXTERIOR WALLS

3.5.3 NEW BASEMENT WINDOWS (CONTINUED)

Window Sizes

The proposed windows will be the same width as the existing windows and the window heads will be in the same location as the existing windows. The sills will be lowered to 3'-1" above the new basement floor level. The upper sash will include diamond pattern muntins representing the existing window size and the bottom sash

will include a clear glazed pane representing the lowering of the window to the new sill height. The new basement windows will also receive an exterior window grille similar to grilles at the existing basement windows.

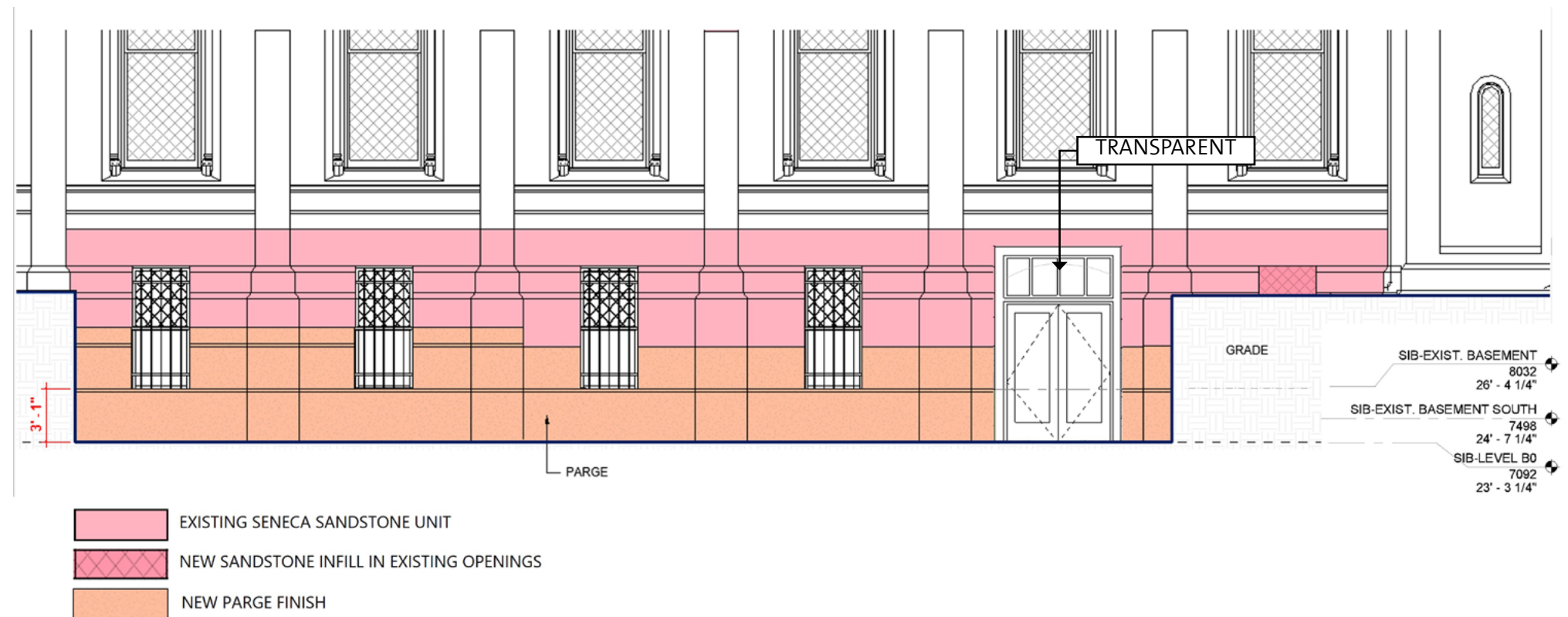
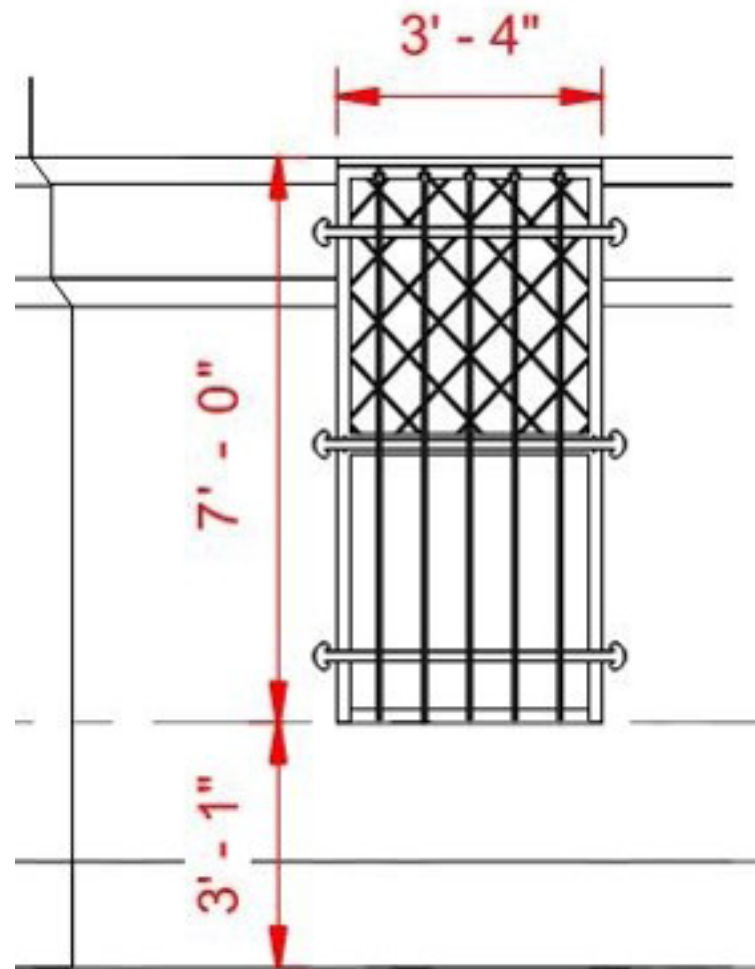


Figure 3.5.3.d - Detail elevation of proposed basement window dimensions; elevation depicts the proposed sash configuration and security grille

3. DETAILED PROJECT INFORMATION

3.5 EXTERIOR WALLS

3.5.4 BASEMENT EGRESS DOORS

Existing Doors

There are some existing doors at the basement level which access areaways or provide emergency egress from fire stairs. The existing door openings will be reused.



Figure 3.5.4.a - Existing egress door at the East Range south areaway

3. DETAILED PROJECT INFORMATION

3.5 EXTERIOR WALLS

3.5.4 BASEMENT EGRESS DOORS (CONTINUED)

New Door Openings

On the north side of the West Range an egress door is required. An existing window opening will be modified to accommodate the new door. An existing double door opening in the southeast areaway which was created c. 1871 will be reused.

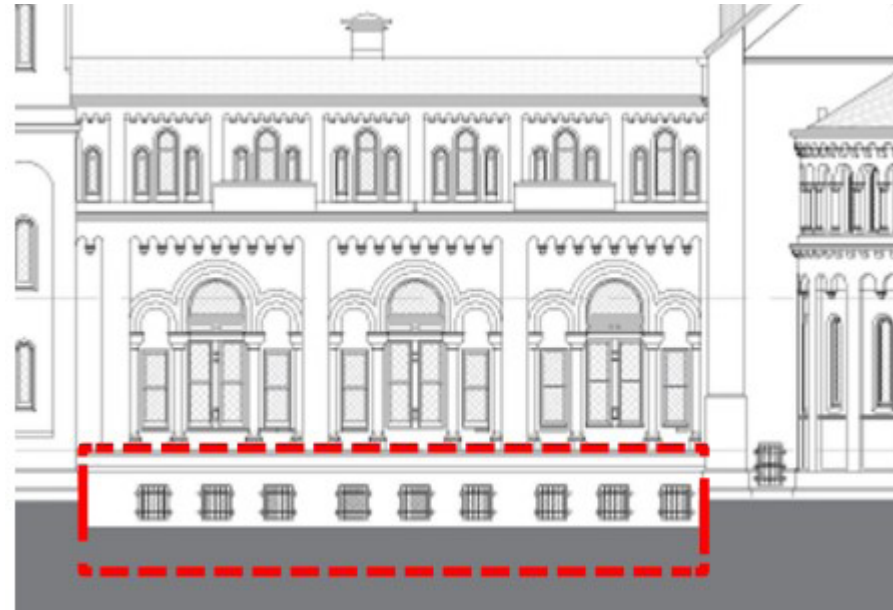


Figure 3.5.4.b - West Range, north areaway - existing

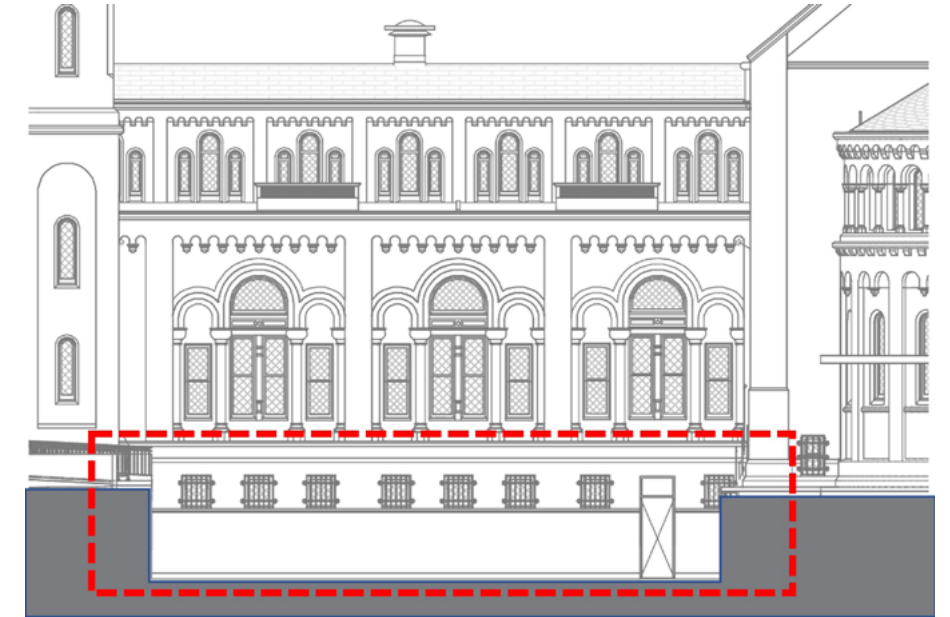


Figure 3.5.4.c - West Range, north areaway - proposed with new egress door

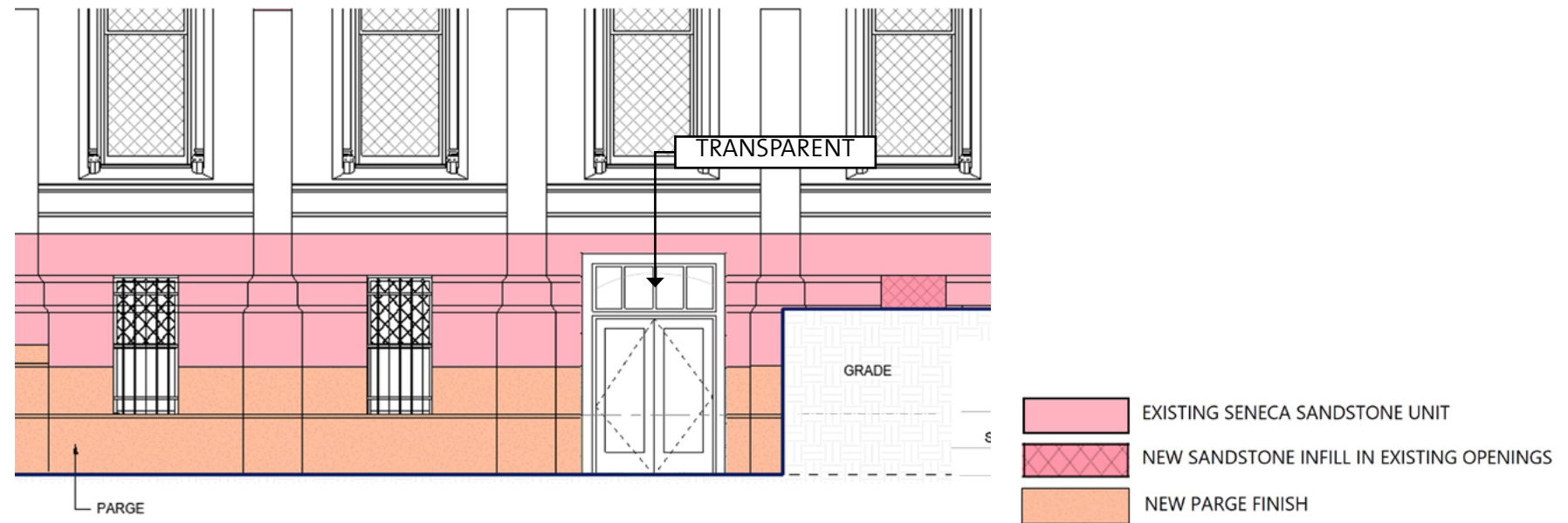


Figure 3.5.4.d - Detail elevation at the southeast basement level with the c. 1871 historic door opening and proposed egress infill

3. DETAILED PROJECT INFORMATION

3.5 EXTERIOR WALLS

3.5.5 BASEMENT LEVEL INTERIOR ALTERATIONS-EFFECTS

Window Openings

The modified basement window openings in the south elevation of the Main Building will retain the relationship between the window head and the vaulted ceiling. The lowering of the basement floor will be coupled with the lowering of the window sill height which result in maintaining a similar relationship to the floor as the existing.

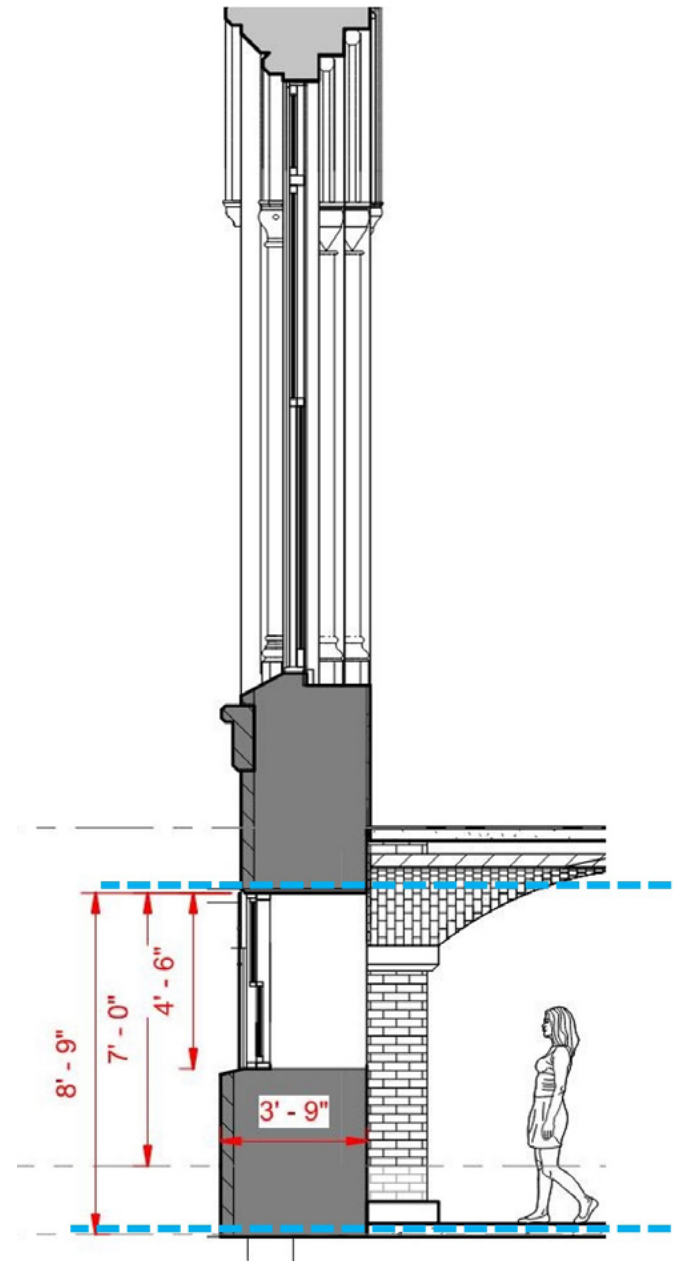


Figure 3.5.5.a - Existing Main Building section at existing basement window opening

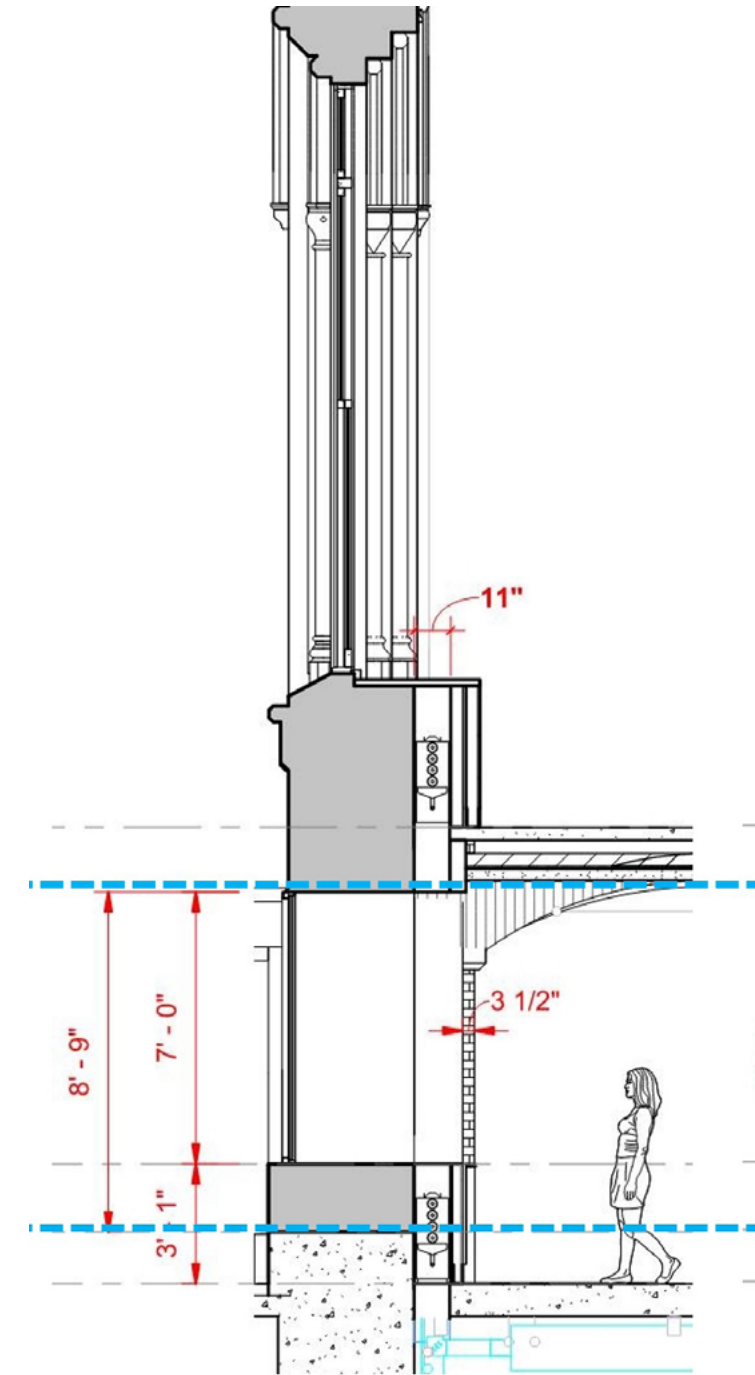


Figure 3.5.5.b - Proposed Main Building section at altered basement window opening