



Executive Director's Recommendation

Commission Meeting: July 12, 2018

PROJECT US Naval Observatory New Master Clock Facility and Building Rehabilitations US Naval Observatory 3450 Massachusetts Avenue, NW Washington, DC	NCPC FILE NUMBER 7995
SUBMITTED BY United States Department of Defense Department of the Navy	NCPC MAP FILE NUMBER 71.20(38.00)44771
REVIEW AUTHORITY Federal Projects in the District per 40 U.S.C. § 8722(b)(1) and (d)	APPLICANT'S REQUEST Approval of preliminary site and building plans
	PROPOSED ACTION Approve of preliminary site and building plans with comments
	ACTION ITEM TYPE Staff Presentation

PROJECT SUMMARY

The United States Department of Defense, Department of the Navy, has submitted preliminary site and building plans for the construction of a new Master Clock Facility and the rehabilitation of several historic buildings on the United States Naval Observatory (USNO) campus in Washington, DC. The USNO Campus is comprised of approximately 72 acres of land and is located in the northwest quadrant of the District of Columbia, approximately one half mile west of Rock Creek, between Massachusetts Avenue and Wisconsin Avenue. It is surrounded by densely populated neighborhoods, with Woodley Park to the east, Georgetown to the south, Glover Park to the west, and the National Cathedral to the north. Four primary tenants occupy the USNO campus: United States Naval Observatory, Oceanographer of the Navy, United States Secret Service, and the Residence of the Vice President of the United States.

While the Commission approved a Master Plan for the USNO Campus in 2014, a new Master Clock facility was not captured in the Plan. However, an extensive Basic Facilities Requirements (BFR) and programming analysis was performed which identified the need for a new Master Clock Facility at USNO. The BFR also identified the need to rehabilitate Buildings 3 (old Clock House), 52, 52A, and 78 to accommodate the required functions and personnel for the project. Building 3 will continue to serve as the operations base and sleeping quarters for the astronomers.

The USNO performs an essential scientific role for the United States, the Navy, and the Department of Defense. Its mission includes determining the positions and motions of the earth, sun, moon, planets, stars and other celestial objects; providing astronomical data; maintaining precise time; determining the earth's orientation in space; and maintaining the Master Clock for the Department of the Defense. Observatory physicists, engineers, and technicians develop and maintain the Master Clock and its dissemination systems. This astronomical and timing data,

essential for accurate navigation and the support of communications on earth and in space, is vital to the Navy and Department of Defense. It is also used extensively by other agencies of the government and the public at large.

While consolidating many functions into one building, the design of the new Master Clock Facility has many conflicting requirements and constraints. It must meet the mission and project requirements, integrate into the existing site and landscape, and be compatible with the existing buildings and spatial organization of the USNO campus.

The Department of the Navy has identified a location for the new Master Clock Facility (Building 51) that is as close to the Observatory Center, Building 3, as possible, while addressing the other operational, functional, and security constraints imposed on the new facility. The one story new facility is comprised of 15,000 square feet, and will have a minimalist contemporary design expression, so as to not visually compete with the historic buildings on the campus.

KEY INFORMATION

- A Master Plan for the United States Naval Observatory (USNO) was approved by the Commission in March 2014; however, a new Master Clock Facility was not captured in the Master Plan, but identified in a later Basic Facilities Requirements analysis.
- The rehabilitation of Buildings 3, 52, 52A, and 78 is consistent with the strategies for renovating existing facilities in the Master Plan.
- The USNO campus has been determined eligible for the National Register of Historic Places, as a historic district, with buildings, structures, and landscape elements contributing to its historic significance. Buildings 3 and 78 are individually eligible for the National Register and Building 52 is a contributing building within the eligible district. Architect Richard Morris Hunt designed many of the historic buildings on the campus, the only known examples of his work in Washington, DC.
- The Department of the Navy identified many constraints imposed on the new Master Clock Facility, related to operational, functional, and security issues, that informed the proposed site and design of the new Master Clock Facility.
- A historic landscape survey compiled by the Navy in 2017, identifying significant historic landscape elements on the USNO campus, also informed the decision for the location of the new Master Clock Facility.

RECOMMENDATION

The Commission:

Approves the Navy's preliminary plans to consolidate the Master Clock functions into one new facility, and rehabilitate historic contributing buildings on the campus.

Notes that the Naval Observatory campus has been determined eligible for the National Register of Historic Places, and has contributing elements that include buildings, structures, and landscape design elements designed by architect Richard Morris Hunt.

Supports the Navy's proposed location for the new Master Clock facility at the Naval Observatory, as the site location is lower in grade than the historic Clock House (Building 3).

Notes that the site location was moved from an earlier discussed location north of the Clock House (Building 3), so the new Master Clock facility would not visually compete with the historic buildings centered on the Clock House, and the axial relationship established by architect Richard Morris Hunt.

Notes that there are constraints for the location of the new Master Clock facility, based on the operations of the clocks contained in the facility, the functional relationship to other existing buildings, security requirements based on the proximity to the Vice President's residence, and avoidance of sensitive archaeological sites and significant historic landscape elements.

Supports the design of the new Master Clock facility as its minimalist contemporary architectural expression does not compete with the architectural character of the historic contributing buildings designed by Hunt, while relating to its function as a structure to contain the "master clocks" for the Department of the Navy, similar to a computer server room.

Requests the Department of the Navy provide additional views and perspectives from the north side of the Clock House (Building 3) looking northwest, from the north entrance of Building 1, at the ceremonial drive looking northwest, and from the ceremonial drive at the circle looking northwest.

PROJECT REVIEW TIMELINE

Previous actions	May 1, 2014 – Commission received information presentation on lighting. March 6, 2014 – Commission approved Master Plan for United State Naval Observatory Campus. September 2, 1010 – Commission approved interior fence security installation.
Remaining actions (anticipated)	– final approval.

PROJECT ANALYSIS

Executive Summary

The design of the new Master Clock Facility balances highly constrained and specialized operational program requirements and historic preservation considerations. The site location, design expression, massing, and material palette of the proposed new building are compatible with the character of the existing historic buildings and the historic USNO campus while avoiding visually competing with the most significant of the historic buildings. The project is consistent with the Comprehensive Plan for the National Capital, in particular the Federal Workplace, Federal Environment, and Historic Preservation Elements. Therefore, staff recommends that the Commission **approves** Navy's preliminary plans to consolidate the Master Clock functions into one new facility, and rehabilitate historic contributing buildings on the campus.

Analysis

As stated previously, the Commission approved a Master Plan for the USNO Campus in 2014, while a new Master Clock facility was not captured in the Plan. However, an extensive Basic Facilities Requirements (BFR) and programming analysis was performed which identified the need for a new Master Clock Facility at USNO, identified as Building 51. The BFR also identified the need to rehabilitate Buildings 3 (old Clock House), 52, 52A, and 78 to accommodate the required functions and personnel for the project. Building 3 will continue to serve as the operations base and sleeping quarters for the astronomers.

The USNO performs an essential scientific role for the United States, the Navy, and the Department of Defense. Its mission includes determining the positions and motions of the earth, sun, moon, planets, stars and other celestial objects; providing astronomical data; maintaining precise time; determining the earth's orientation in space; and maintaining the Master Clock for the Department of the Defense. Observatory physicists, engineers, and technicians develop and maintain the Master Clock and its dissemination systems. This astronomical and timing data, essential for accurate navigation and the support of communications on earth and in space, is vital to the Navy and Department of Defense. It is also used extensively by other agencies of the government and the public at large.

For mission reasons, the Master Clock Facility (Building 51) is to be located as close to the Observatory Center, Building 3, as possible, while addressing the following identified constraints:

- Providing required security setback from the Vice President's residence located on the campus.
- Avoiding site locations containing geothermal fields.
- Avoiding site locations that interfere with the existing telescope buildings (Buildings 39 and 87) to not obstruct sight lines and views.

- Negotiating the topography. The site's high point is Building 3 and slopes down steeply in all directions. The new facility must minimize steep slopes and provide an accessible route to the new facility.
- Avoiding Explosive Safety Quantity Arcs that limit the placement of the new facility.
- Avoiding identified archaeological sites that limit the placement of the new facility.
- Locating the new facility as far as possible from Building 3 to not visually compete with the original Clock Building.

Site Selection and Description

Following several agency meetings and discussions, the applicant has selected to site the new Master Clock Facility (Building 51) slightly northeast of the historic Clock House (Building 3), as this location best addresses the identified site constraints. Vehicular access to Building 51 will be provided by extending Goldsborough Avenue east between Building 3 and 51 back to Newcomb Place. This extension will eliminate the existing dead street and enhance the overall vehicular circulation on the site while maintaining the meandering character of the site's road system. This new road will provide access to drop-off equipment at the building's entrance and mechanical areas. Therefore, staff recommends the Commission **supports** the Department of the Navy's proposed location for the new Master Clock facility at the Naval Observatory, as the site location is lower in grade than the historic Clock House (Building 3). Staff **notes** that the site location was moved from an earlier discussed location north of the Clock House (Building 3), so the new Master Clock facility would not visually compete with the historic buildings centered on the Clock house, and the axial relationship established by architect Richard Morris Hunt. However, staff does recommend the Commission **requests** the Department of the Navy provide additional views and perspectives from the north side of the Clock House (Building 3) looking northwest, from the north entrance of Building 1, at the ceremonial drive looking northwest, and from the ceremonial drive at the circle looking northwest.

Pedestrian access to the Observatory Center, at Building 3, will be from the existing network of sidewalks from the various buildings to the south of Building 3. A new sidewalk is planned along the loop road to provide ADA access to the new Master Clock Facility (Building 51). A new ADA access to Building 3 is included in that building's rehabilitation. Navy will also provide a vehicle charging station and parking spaces near Building 51 to replace the vehicle charging station and parking spaces that will be removed from Building 78.

Master Clock Facility (Building 51) Design

The function of the facility requires the building to be linear in plan, one-story, and approximately 15,000 square feet. It is served by redundant equipment rooms located at each end. For security reasons, a single central entrance is the sole ingress and egress point for the building with emergency exits combined with equipment room accesses at each end. The building's operational program requires there be no windows and therefore, the only other openings on the exterior are those required to support the mechanical systems, including louvers, exhaust manifolds, and vent pipes.

Following an agency design charrette, design for the new Master Clock facility evolved to reflect a minimalist contemporary expression, which quiets the building, allowing it to be in the background and not competing with the historic buildings on the campus. It is rectangular in form, with two wings that intersect to give way to the main entrance. The elevations are a single plane of cast stone panels with only necessary penetrations. The façade facing Building 3 has only three openings, the main entrance and combined emergency egress and service entrance on either side. These service entrances are recessed from the main plane of the building in a niche and read as the façade was cut and folded in to allow entry. The roofing material for the shed roof will be terne coated standing seam metal. The exterior finishes are intended to complement the other buildings and structures on the campus, especially the telescope structures.

The plan will be submitted to DOEE for stormwater management review and for Erosion and sediment control review and it will comply with DC DOEE regulations, which means vehicle access areas are required to have at least 50% of the SWR treated or retained. The rain garden on the front of the building will treat the road runoff and the raingarden in the back is to treat the building. More concrete information on the SWM will be available as the project progresses.

Therefore, staff recommends the Commission **supports** the design of the new Master Clock facility as its minimalist contemporary architectural expression does not compete with the architectural character of the historic contributing buildings designed by Hunt, while relating to its function as a structure to contain the “master clocks” for the Department of the Navy, similar to a computer server room.

Security Issues

The function of Building 51 as the Master Clock Facility requires special security features, including a perimeter personnel fence. The fence is required to be eight feet tall, and anti-climb and set a minimum of twenty-five feet from the buildings. The security fence will have a turnstile for pedestrian access, and a swing gate to provide ADA route and emergency egress. The security fence will also have a sliding gate to allow for the movement of clock equipment and to access the east end equipment room. An additional sliding gate for emergency egress and access to the west end equipment room and equipment yard is also proposed.

Historic Building Rehabilitations

The 2014 Master Plan outlined development strategies including renovating existing facilities that could still serve as viable facilities for similar uses (Buildings 3 and 78). The subsequent extensive Basic Facilities Requirements (BFR) and programming analysis also identified the need to rehabilitate Buildings 3, 52, 52A, and 78 to accommodate the required functions and personnel for the project. The rehabilitation component of the application is consistent with both the Master Plan and the BFR.

- Building 3 is the original Clock House designed by Richard Morris Hunt in 1893, providing a below ground vault into which the clock was moved. It will continue to serve as the operations base and sleeping quarters for the astronomers. Original historic interior elements such as crown moldings, flooring, and chair rails will be restored. The current vinyl siding on the exterior will be removed and wood siding will be installed with trim,

based original construction documents. The cut stone on the center portion of the building will be restored, through repair, repointing, and cleaning. The existing standing seam copper roof will be retained. A new ADA access lift will be included by removing existing elevated concrete walkways, and replacing with stoops similar to those originally designed for Building 3.

- The foundations for the historic Transit Houses (Buildings 6 and 7) will be stabilized once the existing elevated concrete walkways are removed.
- Buildings 52 and 52A will be rehabilitated, and is considered a major substantial improvement project per the 2013 DDOE stormwater rules. As such, stormwater management will be provided for the building. The bioretention facility will be located downstream of the buildings. The buildings existing non-original windows and exterior doors will be replaced to meet current antiterrorism protection requirements. The existing EFIS exterior will be patched and repaired where needed. New roofing will be provided.
- Building 78 consists of the original one-story Astrographic Laboratory, built in 1932, with a two-story addition completed in 1961, forming a T-shaped footprint. Exterior rehabilitation will consist of stone repairs, repointing, and cleaning. The existing non-original windows will be replaced with new ant-terrorist and force protection windows in the original window configuration. The items constitute a major substantial improvement project per the 2013 DDOE stormwater rules. As such, stormwater management will be provided for the building.

Landscape Plan

Landscape plantings will support bioretention areas and bioswales while maintaining sensitivity to the historic landscape. Plant materials will be selected from the USNO native plant palette. Shallow bioretention basins lined with turf grass will blend with the open lawn character. Native trees and herbaceous cover will be incorporated within the deeper basins, as appropriate.

The rehabilitations of Buildings 3, 52, 52A, and 78 are all considered major substantial improvements projects per the 2013 DDOE stormwater rule. Building 51 is new construction, and stormwater management will be provided for this location as well as the others.

CONFORMANCE TO EXISTING PLANS, POLICIES AND RELATED GUIDANCE

Comprehensive Plan for the National Capital

As noted above, the project is consistent with the policies in the *Federal Elements of the Comprehensive Plan for the National Capital*. In particular, the project meets the objectives of the *Historic Preservation and Workplace Elements*. The policies included in the Historic Preservation Element promote the adaptive reuse of historic properties; encourage additions to be compatible with the qualities and character of historic buildings and their settings, in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*. The project is also consistent with policies in the Federal Workplace Element, which encourages the government to

rehabilitate existing facilities before constructing new facilities and also locating offices within the District of Columbia. It promotes making primary pedestrian entrances at federal workplaces readily ADA accessible.

National Historic Preservation Act

All of the proposed work will take place within the Naval Observatory Historic District, a National Register of Historic Places-eligible district. In addition, Buildings 3 and 78 are National Register-eligible buildings, and Building 52 is a contributing building within the district. Many of the historic buildings and landscape elements were designed by renowned architect Richard Morris Hunt, and are the only examples of his work in Washington, DC.

The Department of the Navy and NCPC each have an independent responsibility to fulfill the requirements of Section 106 of the National Historic Preservation Act (NHPA). The Department of the Navy initiated the Section 106 consultation process with the District of Columbia State Historic Preservation Office (DCSHPO) and NCPC on April 4, 2017. The applicant, in consultation with the DCSHPO, NCPC, and other consulting parties, determined that the undertaking would cause adverse effects on historic resources. The Section 106 consultation is ongoing and will be concluded with an executed Memorandum of Agreement (MOA), which will include mitigation for the adverse effects to historic resources. The estimated timeline for the signed MOA is fall of 2018.

National Environmental Policy Act

The Department of the Navy and NCPC each have an independent responsibility to fulfill the requirements of the National Environmental Policy Act (NEPA). The Department of the Navy is preparing an Environmental Assessment (EA) for the project. NCPC served as a cooperating agency in the NEPA process.

The EA is analyzing the following environmental impact topic areas: 1) air quality; 2) water resources; 3) cultural resources; 4) biological resources; 5) noise; 6) infrastructure; 7) public health and safety; 8) hazardous materials and wastes. There are no significant impacts to air quality, water resources, biological resources, noise, infrastructure, public health and safety, or hazardous materials and waste. The final document is expected to be complete with a signed FONSI in December 2018.

CONSULTATION

Coordinating Committee

The Coordinating Committee reviewed the preliminary site and building plans at its July 20, 2018 meeting. Without objection, the Committee forwarded the proposed preliminary site and building plans to the Commission with the statement that the proposal has been coordinated with all participating agencies. DOEE notes that the project appears to meet the 2013 District stormwater

requirements, but asked if the roadway is treated by the adjacent bioretention or bioswale. Since this project is located within the MS4, vehicle access areas are required to have at least 50 percent of the stormwater treated or retained. The applicant has indicated the plan will be submitted to DOEE for stormwater management review and for erosion and sediment control review and it will comply with DC DOEE regulations, which means vehicle access areas are required to have at least 50% of the SWR treated or retained. The rain garden on the front of the building will treat the road runoff and the raingarden in the back is to treat the building. More concrete information on the SWM will be available as the project progresses. The SHPO is coordinating subject to the completion of the ongoing Section 106 review and the development of a memorandum of agreement. The participating agencies were: NCPC; the District of Columbia Departments of Transportation; District of Columbia Department of Energy and Environment; the General Service Administration; the District of Columbia State Historic Preservation Office; the National Park Service; and the Washington Metropolitan Area Transit Authority.

U.S. Commission of Fine Arts

The U.S. Commission of Fine Arts approved the concept design for the new Master Clock Facility at their June 21, 2018 meeting.

ONLINE REFERENCE

The following supporting documents for this project are available online at www.ncpc.gov:

- Submission Package

Prepared by Lee Webb
06/22/2018

POWERPOINT (ATTACHED)

NCPC File #: 7995

US Naval Observatory Master Clock Facility

3450 Massachusetts Avenue, NW
Washington, DC

United States Department of Defense, Department of the Navy

Preliminary

Commission meeting date: July 12, 2018

NCPC review authority: 40 USC 8722 (b) (1) and (d)

Applicant request: approval of preliminary site development plans

Delegated / consent / open / executive session: open

NCPC Review Officer: L. Webb

NCPC File number: 7995

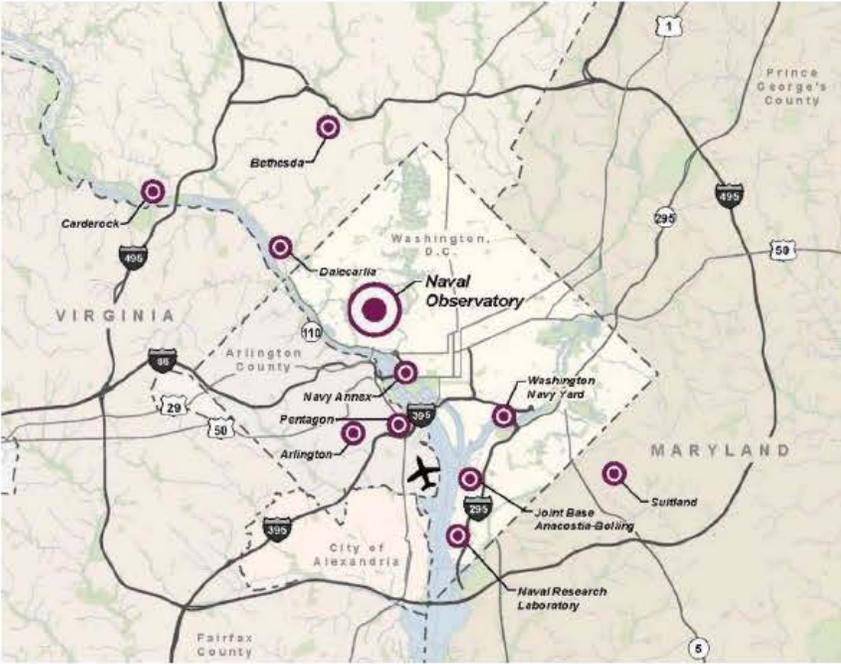
Project summary:

The Department of the Navy is requesting a preliminary site development review of the construction of a new master clocks facility and renovation of buildings at the U.S. Naval Observatory in Washington, DC.

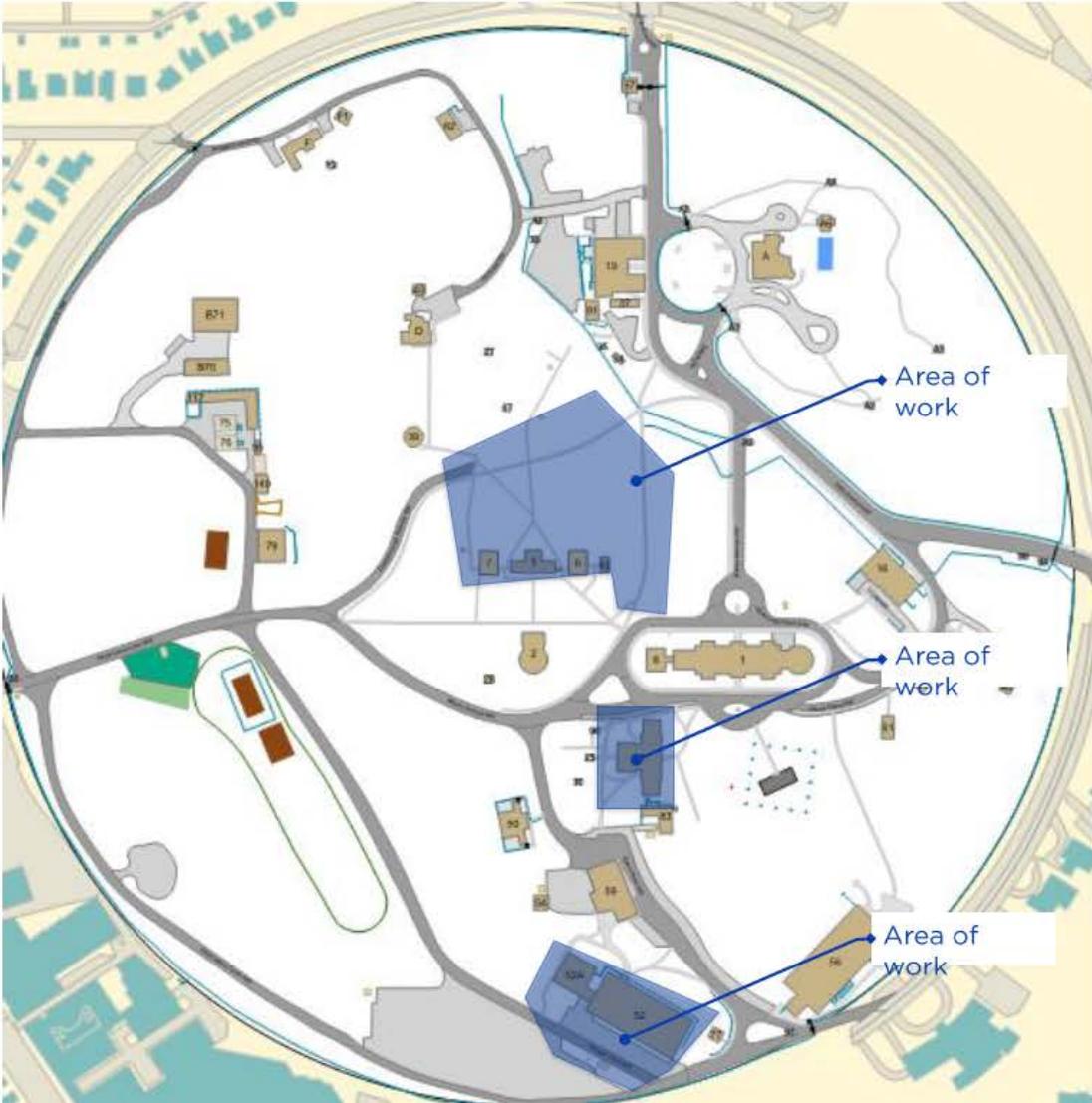
The new Master Clock building will be Building 51, and will be a one-story building with 15,000 square feet. The Navy has been working with agencies including the DCSHPO, CFA, and NCPC to develop a proposal that is appropriate for this National Register listed Historic District, with buildings designed by Richard Morris Hunt.

Other buildings at the Naval Observatory will be restored and rehabilitated, including, Buildings 3, 52, 52 A, and 78.

Introduction



Site Location



Site Map

History: Establishment of the Site

When the Barber estate was acquired for the new home of the U.S. Naval Observatory, Richard Morris Hunt of New York City was selected as the architect for the initial buildings. Hunt, one of the country's pre-eminent architects, was responsible for many of the significant buildings of the day and is perhaps best known as the designer of the Biltmore Estate near Ashville, NC. His

buildings at the U.S. Naval Observatory were his only designs in Washington, DC. Of the buildings designed by Richard Morris Hunt, those remaining are the Administration Building and the attached South Transit Building, the Great Equatorial Building, the Clock House, the foundations of the East and West Transit Houses, and the Boiler House, now part of Building 16. Of those, the Clock House (Building 3) and the foundations of the East and West

Transit Houses (Buildings 6 and 7), all National Register-eligible structures, are part of this project.



The Clock House (Building 3) under construction. The Barber Estate residence can be seen in the background.



The Clock House flanked by the two Transit Houses is on the right with the Great Equatorial Building on the left.



A drawing showing the Administration Building on the left and the Clock House and Transit Houses on the right.

History: Landscape Survey Summary



Original location (red) and proposed location (black) of Building 51



Contributing Roads



Contributing Paths



Contributing Trees



Contributing Lawns



Contributing Views



Composite

USNO Historic Landscape Survey Contributing Features

- The site is a NRHP-eligible district.
Development timeframes include
- Hunt Plan (1881-1897) era in Central Campus
 - Early 20th Century-Interwar Period (1898-1939)
 - World War II-Cold War Era (1940-1989)
 - Modern Period (1990-2016)
 - Period of significance is 1881-1954

Drawings, photos, text taken from the Historic Landscape Survey was prepared by Marstel-Day, LLC in May 2017

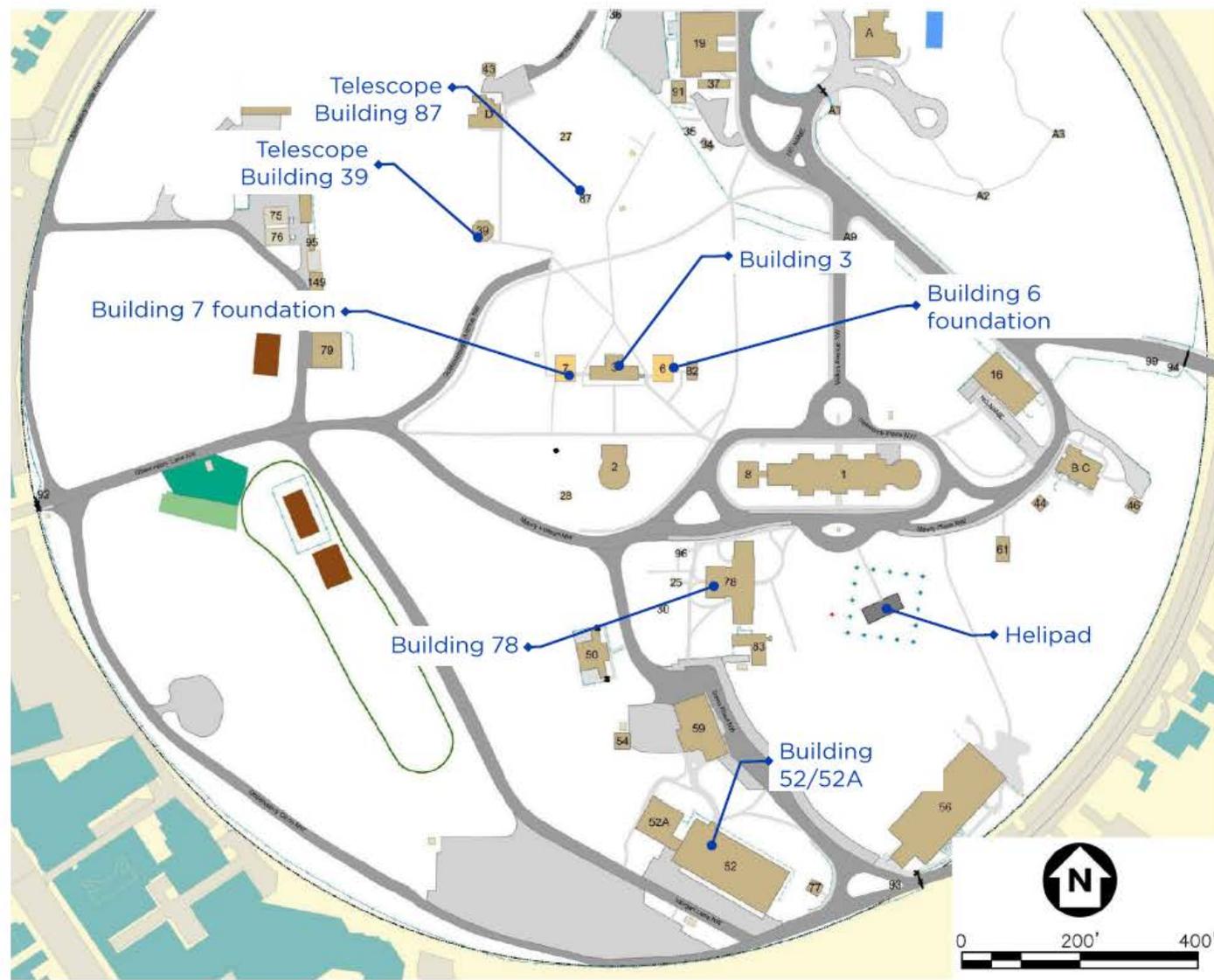


Historic aerial view looking southwest. Proposed location of Building 51 is indicated by the dashed red line



Historic image of the campus looking southwest toward Building 1; open lawns, few specimen trees and hedgerows characterize the landscape

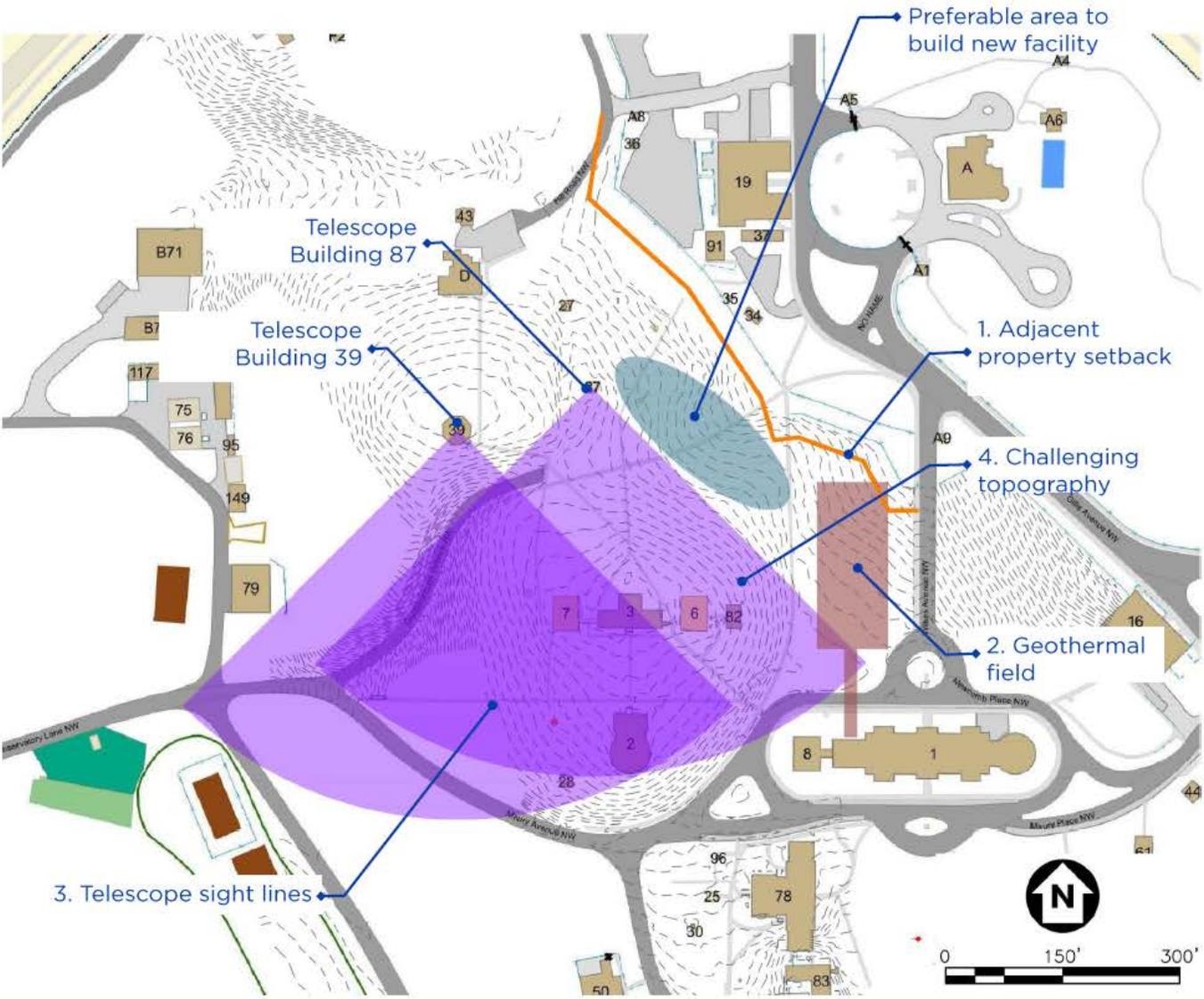
Overall Site: Existing Conditions Plan



The United States Naval Observatory campus is circular in plan with the original Clock House at its geographic center. Various telescope buildings, administrative buildings, support buildings, and residences populate the remainder of the site. Even with these numerous structures, the site remains very open with a variety of lawn and native landscape areas.

Surrounding the entire site is a secure perimeter. Vehicular access is via existing gates in the secure perimeter which lead to a network of internal roads providing access to the various facilities. Pedestrian access to the project is via a network of existing concrete sidewalks.

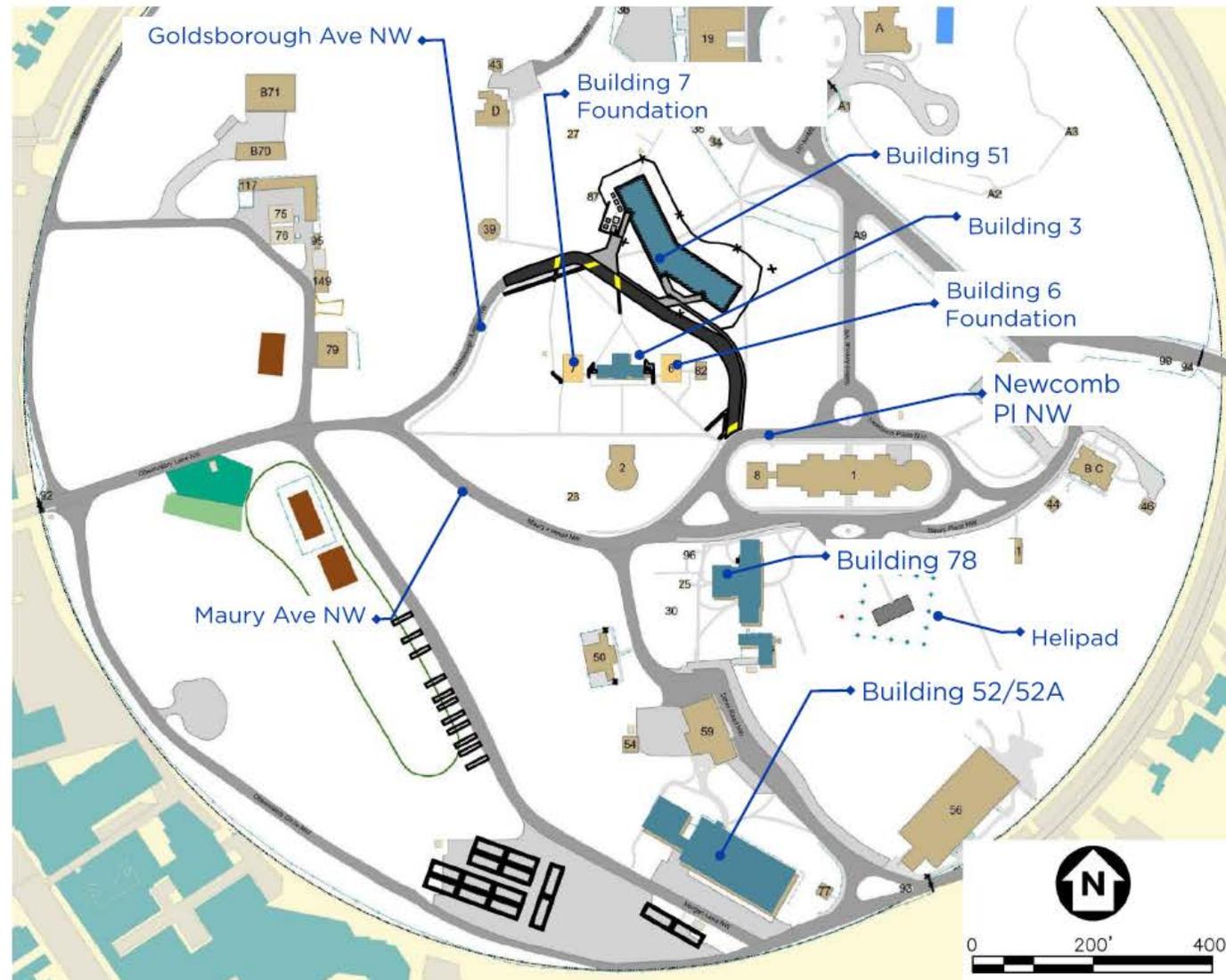
Overall Site: Constraints



The primary impact to the site from the proposed project is the construction of the new Master Clock Facility (Building 51). For mission reasons, Building 51 is to be located as close to the Observatory Center, Building 3, as possible. The below constraints led to the proposed placement of the building.

1. The orange setback shown provides clearance from the adjacent residence per AT/FP and other site security requirements.
2. This area contains a geothermal field that cannot be built on.
3. The new facility must avoid the existing telescope buildings 39 & 87 sight lines so not to obstruct the views.
4. The site high point is at Building 3 and slopes down steeply in all directions. The new work must minimize steep slopes and provide an accessible route to the building. The area Northwest of Building 3 is particularly steep toward Goldsborough Rd
5. There are Explosive Safety Quantity Distance (ESQD) arcs (not shown due to sensitivity) that limit the placement of the new facility.
6. There are existing archaeological sites (not shown) that limit the placement of the new facility.
7. The new Master Clock Facility needs to be as far from Building 3 as possible, to not overshadow the original clock building.

Overall Site: Concept Site Plan



The overall approach to the site plan is to have minimum disturbance to this historic site. The primary area of site development will be related to building 51 that is proposed to the north of building 3 along with restoration of building 3 itself. For the purposes of this report these two areas are combined into one and referenced as "Observatory Center". Work in buildings 52/52A and 78 will not require additional parking or roadway so site disturbance will be limited to improved stormwater management features.

Vehicular access to the building 51 will be provided by extending Goldsbrough Avenue east between building 3 and 51 back to Newcomb Place. This extension will eliminate the existing dead street and enhance the overall vehicular circulation on the site while maintaining the meandering character of the site's road system. This new road will provide access to drop-off equipment at the building's entrance and mechanical areas.

Pedestrian access to the Observatory Center will be from the existing network of sidewalks from the various buildings south of Building 3. New sidewalk is planned along the loop road to provide ADA access to building 51. New ADA access to building 3 is also included.

A vehicle charging station and parking space will be provided near Building 51 to replace the vehicle charging station and parking space that will be removed from Building 78.

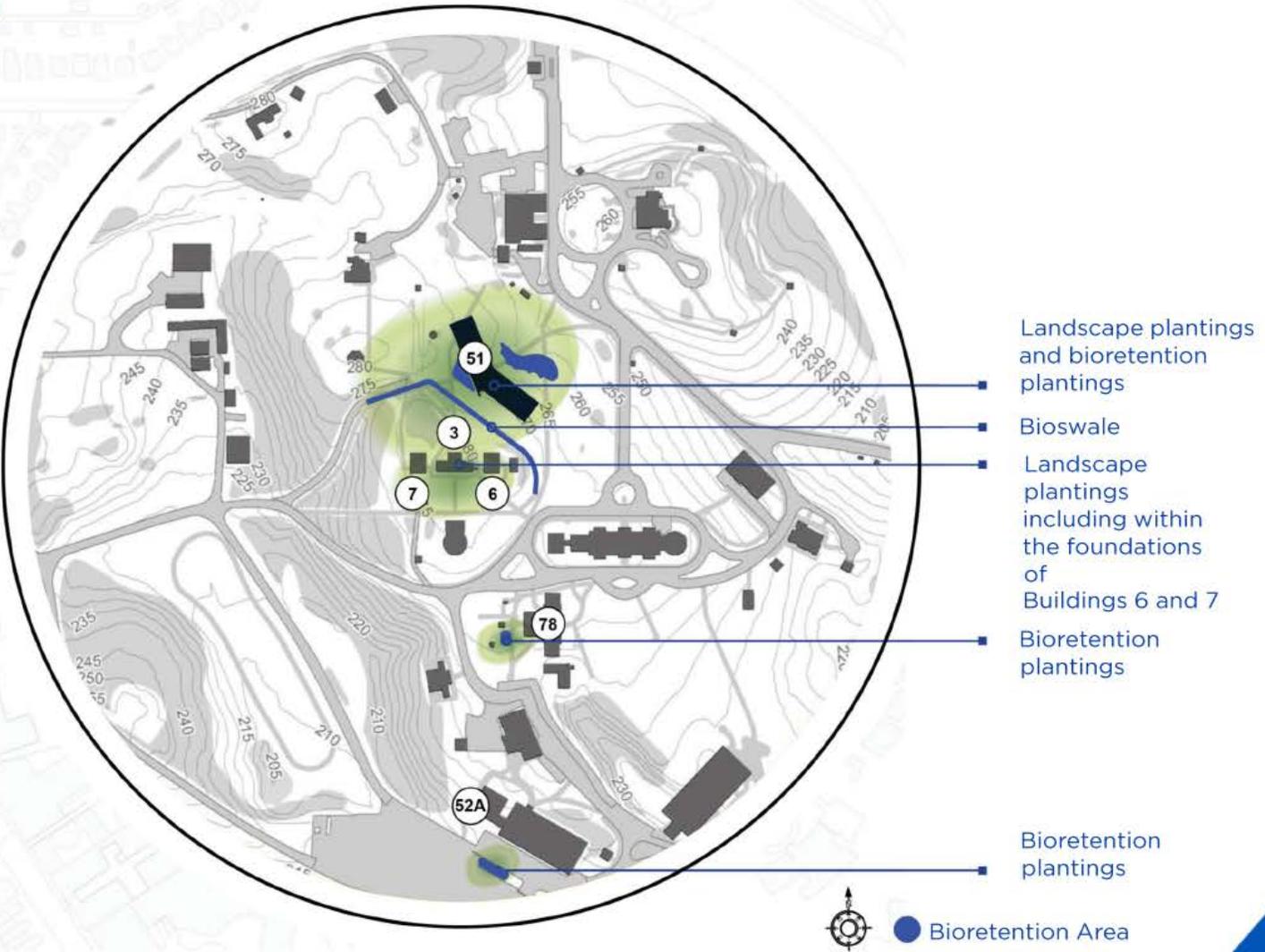
Overall Site: Concept Landscape Plan

Working as an integrated system, landscape plantings will support bioretention areas and bioswales while maintaining sensitivity to the historic landscape. Plant materials will be selected from the USNO native plant palette. Shallow bioretention basins lined with turf grass will blend with the open lawn character. Native trees and herbaceous cover will be incorporated within the deeper basins, as appropriate.

The renovations of Buildings 3, 52, 52A, and 78 are all considered major substantial improvement projects per the 2013 DDOE stormwater rule. Building 51 is new construction. Stormwater management will be provided for all of these sites, as indicated on the diagram to the right.

Building 3 is located at the high point of the USNO. Runoff from the site drains off in all directions, including towards Building 51. The road adjacent to Building 51 is sloped away from the building, so all runoff from near Building 3 will drain to the bioswale adjacent to the road. Building 51's roof will drain into a bioretention basin to the northeast. An emergency overflow will be provided to prevent flooding of any buildings for the 100-year design storm.

The bioretention facilities at Building 52 and 52A and Building 78 will be located downstream of the buildings so that no flooding of buildings will occur for the 100-year design storm. The entire USNO site is not in any 100-year or 500-year floodplain or floodway.

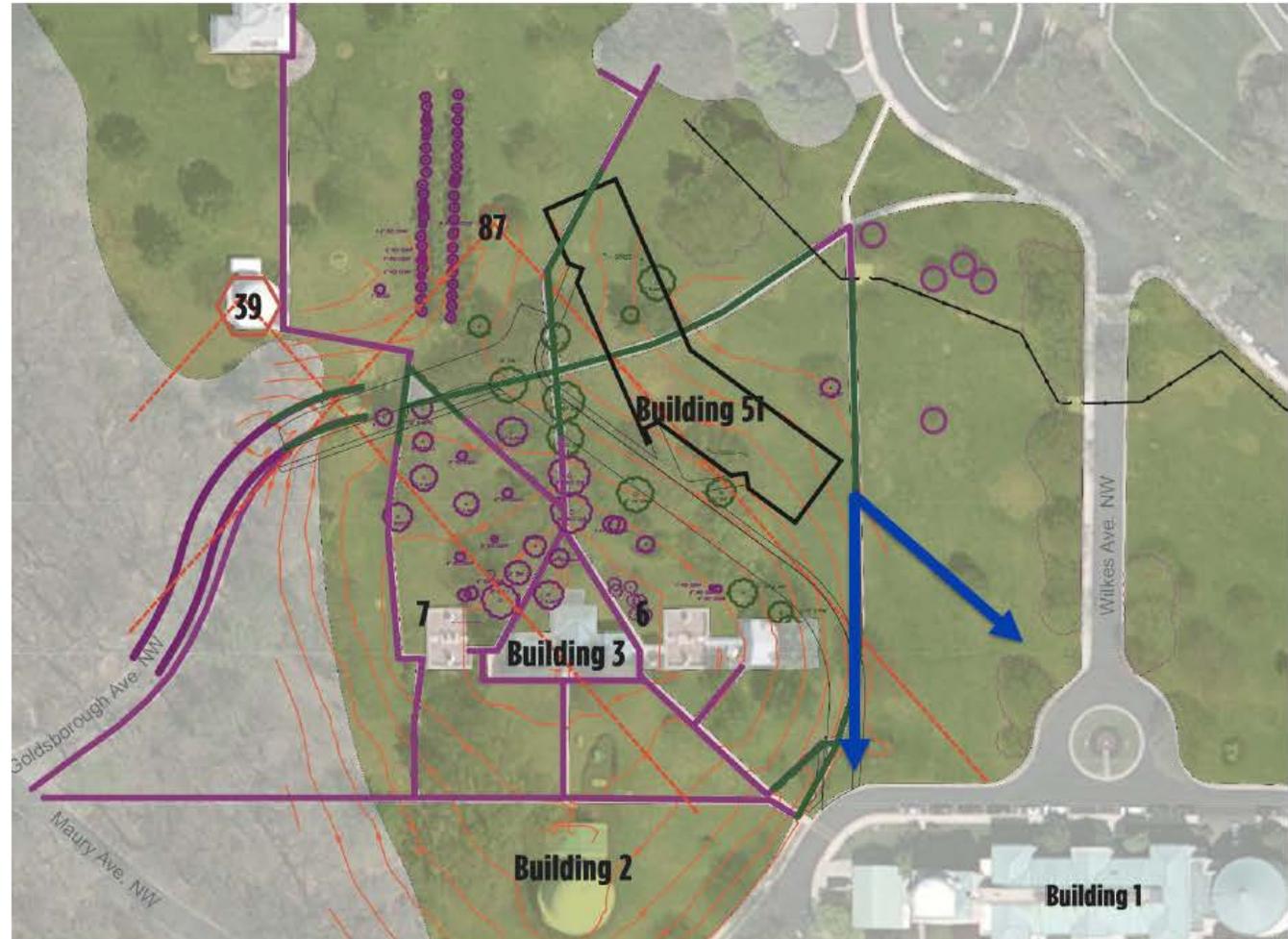


Observatory Center: Site Impact on Historic Landscape

This diagram provides a view of the impact on the features identified in the May 2017 Historic Landscape Survey (HLS) that serve as contributing features to the National Register of Historic Places eligible Historic District.

Key

-  Historic Landscape Contributing Feature - Disturbed
-  Historic Landscape Contributing Feature - Undisturbed
-  Contributing Lawns
-  Contributing Views and Viewsheds
-  Site Design Restrictions (view from Observatories, topography, underground utilities, security standards and setbacks, planting restrictions)



Proposed location of Building 51 and its affect on HLS identified contributing features

Classifications taken from the Historic Landscape Survey that was prepared by Marstel-Day, LLC in May 2017

Observatory Center: Photos - Buildings 3 and Foundations 6/7



Building 3 front south elevation



Building 3, hidden from view by overgrown plants



Building 7's foundation, overgrown



Building 7's stone foundation

Observatory Center: Photos - Future Building 51 Site



Looking northeast across proposed site for Building 51

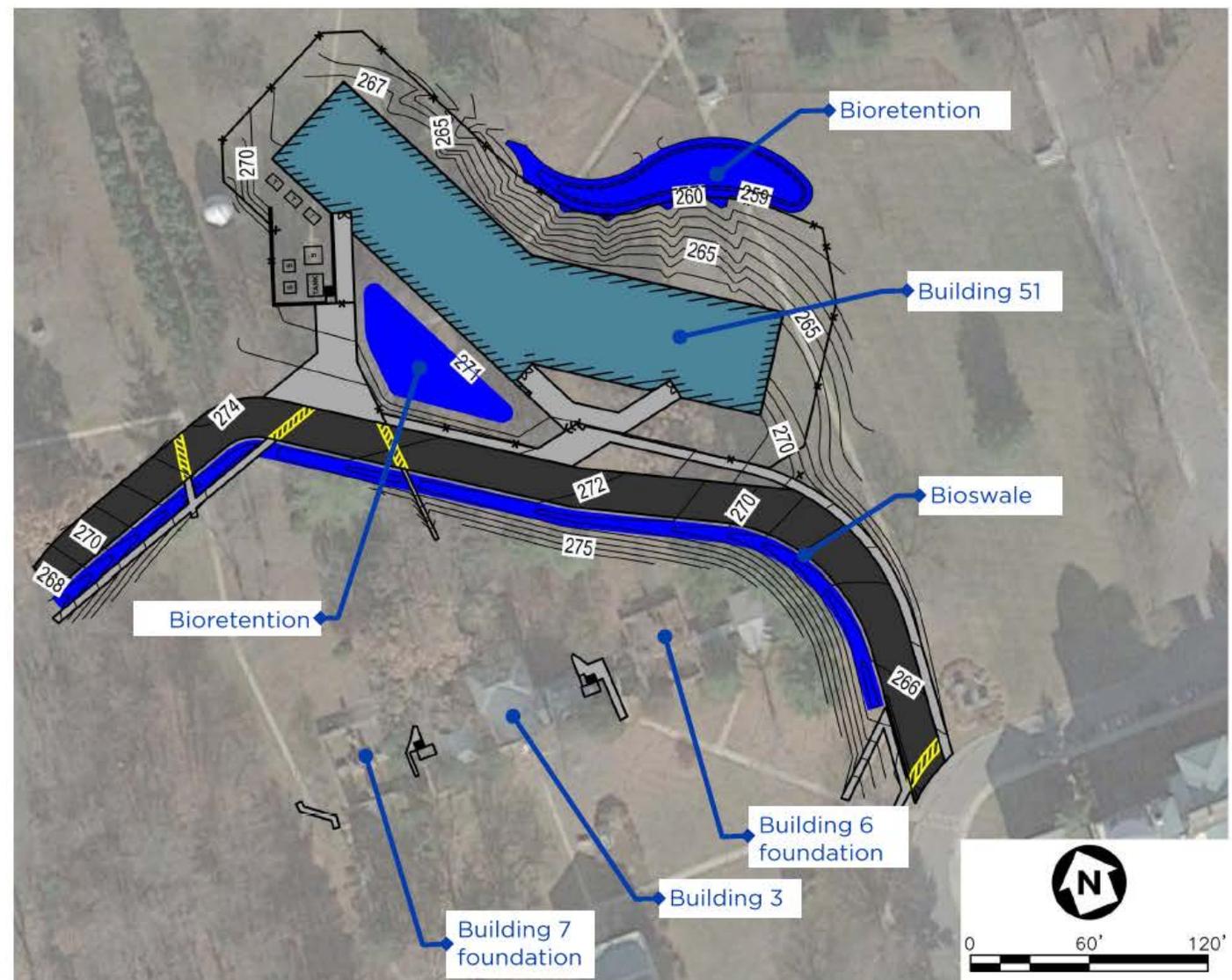


Deeper view, looking northeast across proposed site for Building 51



Looking northwest towards allee of evergreens and Observatory

Observatory Center: Concept Site Plan



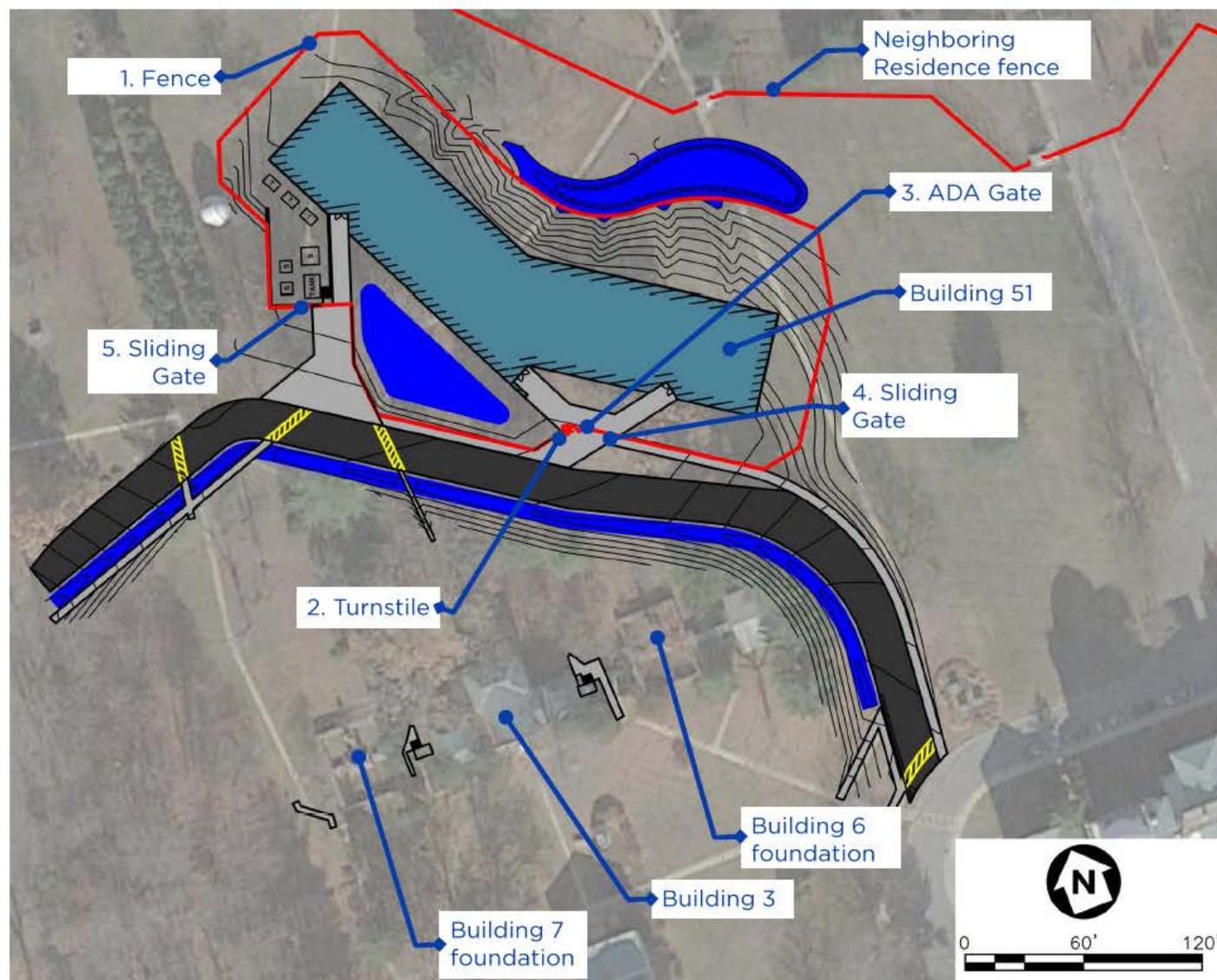
The building's location within the Observatory's ground is very purposeful. To minimize influences from surrounding urban activities the users requested it be located as close to the center of the grounds as possible. This located the building in the site's most historically significant place near Richard Morris Hunt's original clock building known as Building 3.

The area and height requirements of this new building are much larger than Hunt's building and it could easily overshadow its historic neighbor. Early schemes studied a building that would be directly north and on axis with Building 3. This study demonstrated that locating the building here would not only overwhelm Building 3 but also destroy many historically significant landscape features.

In lieu of siting the building on axis with Building 3, a location just to the north and east was selected. This location was chosen not only because it impacted much fewer historic elements but also because it eliminated the axial relationship between the old and new. Without such a direct relationship between them, a comparison in scale is diminished. This site is also down slope of Building 3 allowing the floor level to be lower and thereby visually lessening the building's mass.

The linear plan was broken in the center to follow the existing contours and allow the building to better fit within the various noted site constraints.

Observatory Center: Site Security Plan



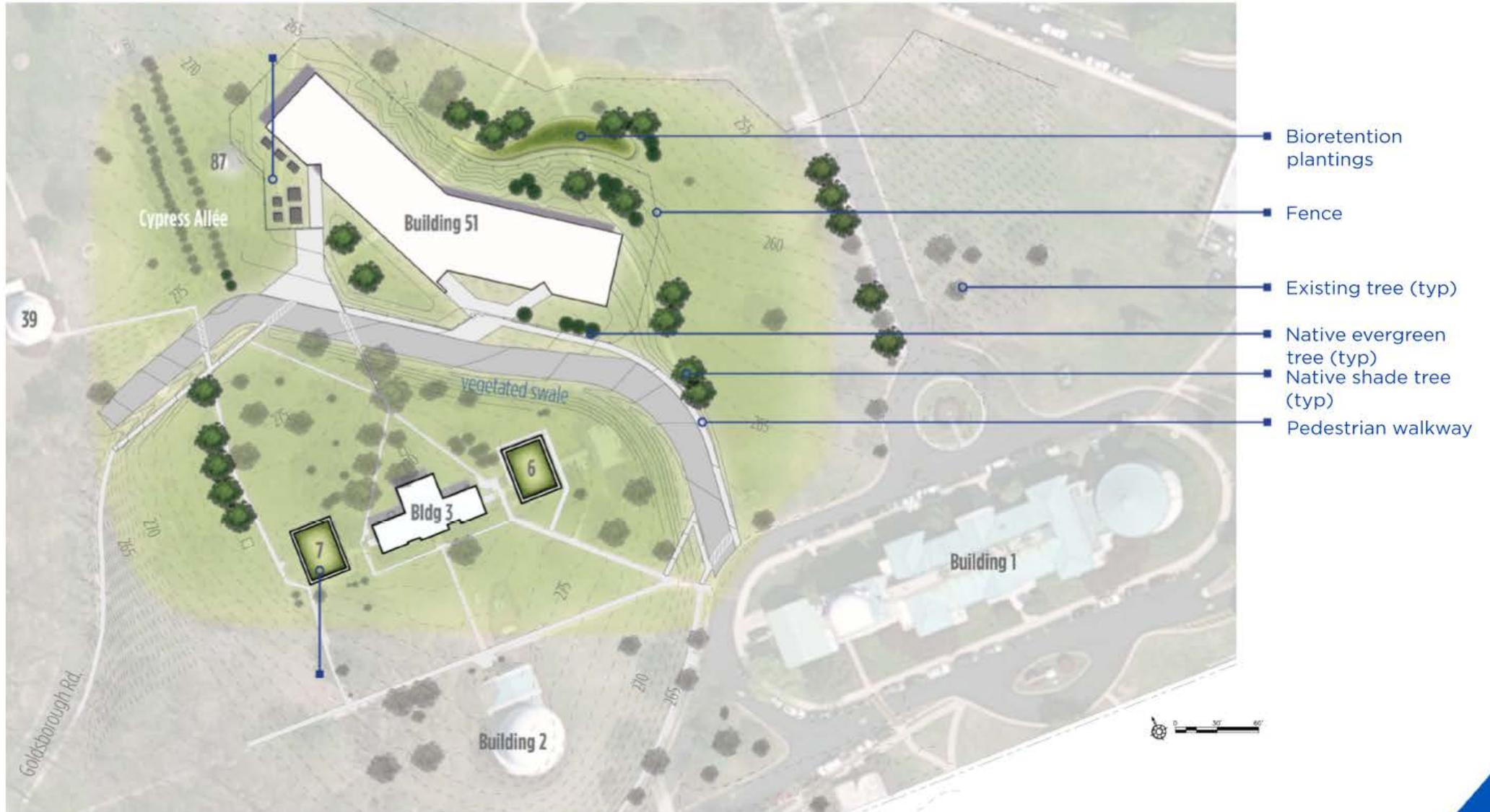
The mission of Building 51 requires special security features, most notable, a perimeter personnel fence. The following are the pertinent features of the perimeter fence.

1. 8' tall anti-climb fence set a minimum of 25 ft from Building 51
2. Pedestrian turnstile for access
3. Swing gate to provide ADA route and emergency egress
4. Sliding gate for clock equipment and to access east end equipment room
5. Sliding gate for emergency egress and access to west end equipment room and equipment yard

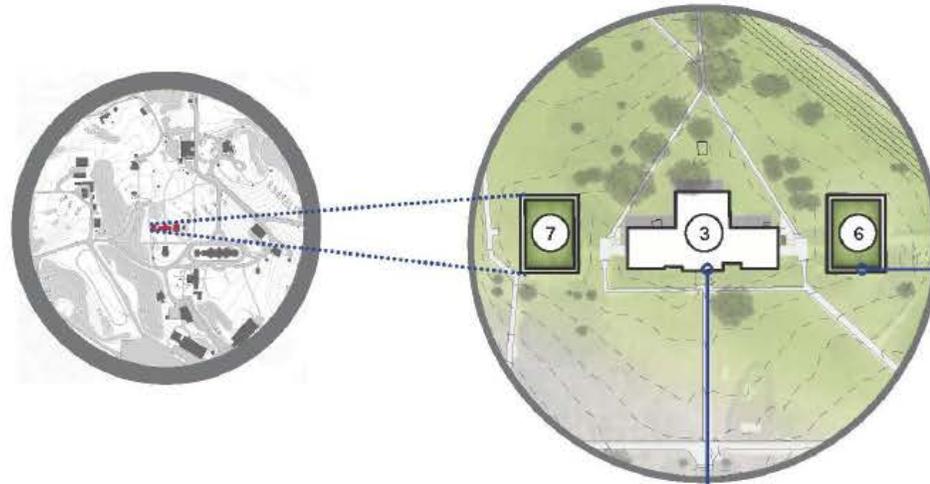


Anti-climb fence (Ameristar WireWorks Anti-Climb or approved equal)

Observatory Center: Concept Landscape Plan



Observatory Center: Landscape Concept - Buildings 3, 6, and 7



Plant native, low growing, dry meadow vegetation within stone foundations



View of Building 3's southern façade: mature plantings obscure building, encroach on paths and stain facade



Existing condition of vegetative cover within Building 7's foundation

Concept

- Remove noncontributing shrubs and trees between sidewalk and building wall
- Clear and remove debris and plant growth from Building 6 and 7 foundations and replace with low growing native, dry meadow vegetation
- Maintain the functional, pedestrian-oriented landscape
- Add path segments to the existing pedestrian circulation system to eliminate dead-end paths
- Provide ADA accessible pathway to Building 3
- Maintain AT/FP and other site security requirements



Asclepias tuberosa,
Common Butterfly-weed



Elymus virginicus,
Virginia Wild Rye



Eragrostis spectabilis,
Purple Lovegrass



Heliopsis helianthoides,
Smooth Oxeye

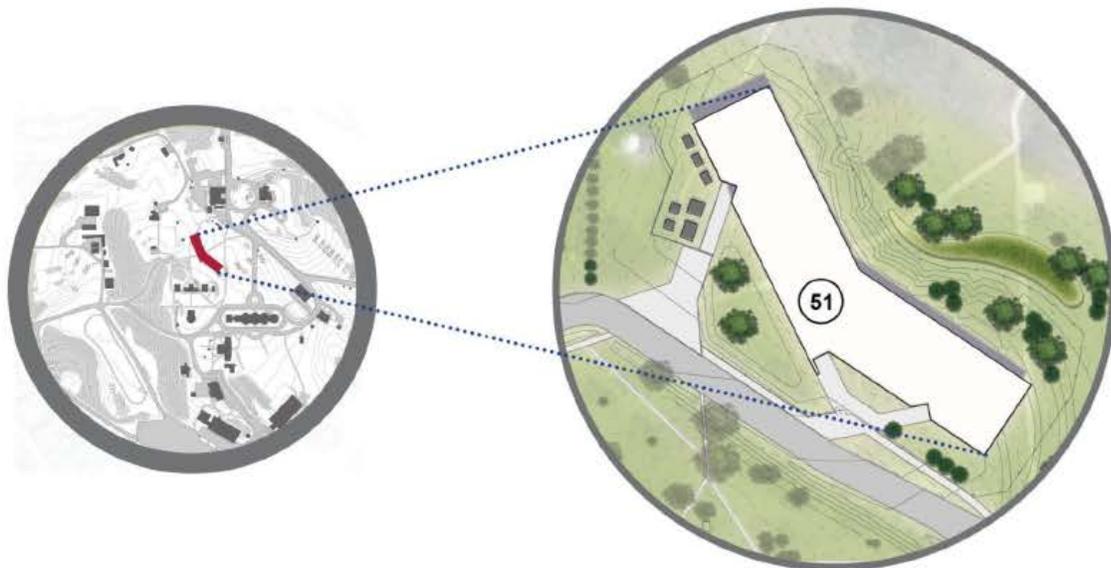


Schizachrium scoparium,
Little Bluestem



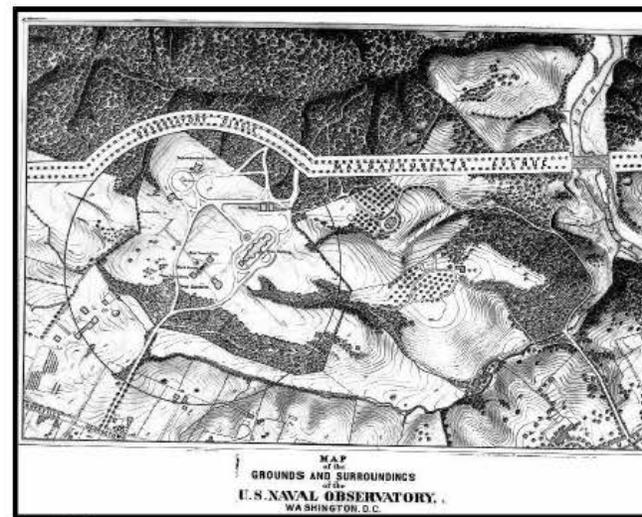
Solidago nemoralis,
Grey Goldenrod

Observatory Center: Landscape Concept - Building 51



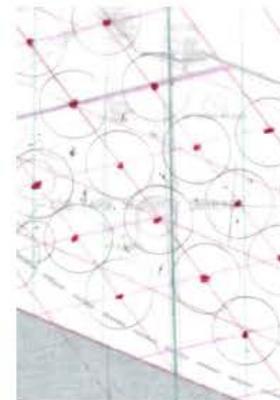
Concept

- Respond to the formal geometric structure of the existing historic landscape fabric on the building's southern face
 - Extend the canopy tree plantings along one side of the paths
 - Infill formal street tree plantings
- Respond to the informal landscape on the building's northern face
 - Extend the extensive lawns and informal groves of deciduous trees to visually connect the landscapes on both sides of the perimeter fence
- Stormwater management integrated within the landscape through use of grass swales and grassed bioinfiltration basins
- Site security requirements addressed through perimeter fencing
- Pavement to reflect site vocabulary and proportions



Source: USNO

Map of grounds and surroundings,
1896-1904



Geometric, gridded tree planting explorations

Observatory Center: Landscape Materials

Paving



Existing, very narrow concrete pedestrian paths



Examples of potential ways to reduce the visual impact of new drive paving, reflect proportions of existing concrete pedestrian paths

Native Tree Plant Material Palette



Quercus rubra,
Red Oak



Acer rubrum,
Red Maple



Cornus florida,
Flowering Dogwood



Juniperus virginiana,
Eastern Red Cedar

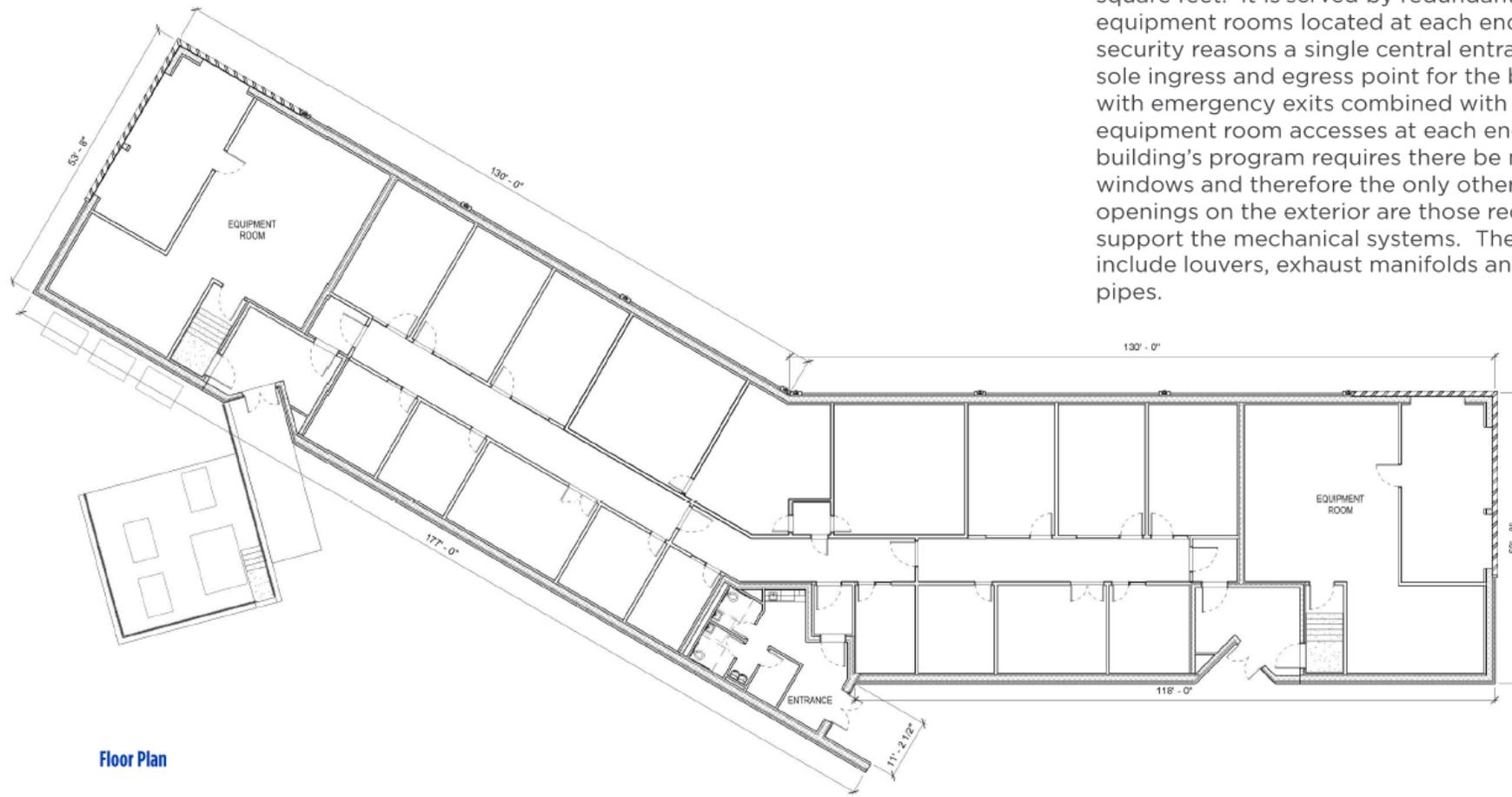


Thuja occidentalis,
American Arborvitae



Quercus phellos,
Willow Oak

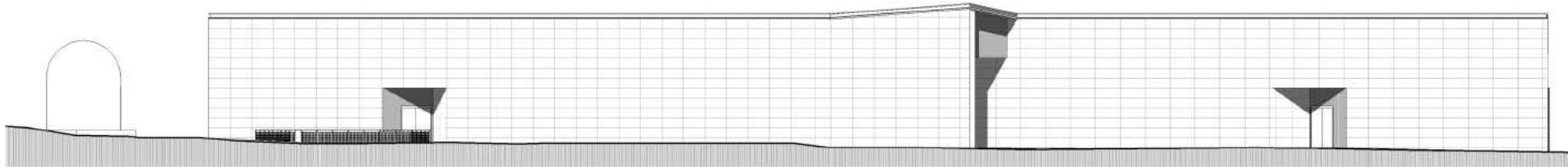
Building 51: Floor Plan



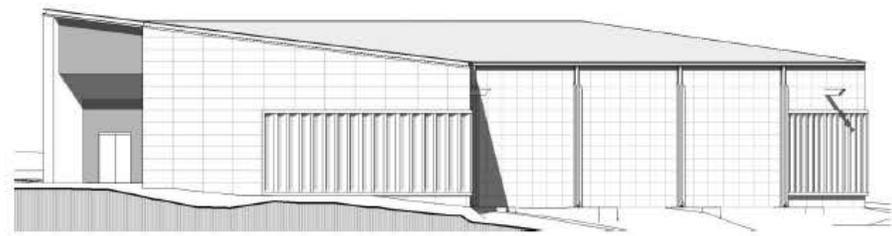
Floor Plan

Function requires the building to be linear in plan, one story and approximately 15,000 square feet. It is served by redundant equipment rooms located at each end. For security reasons a single central entrance is the sole ingress and egress point for the building with emergency exits combined with equipment room accesses at each end. The building's program requires there be no windows and therefore the only other openings on the exterior are those required to support the mechanical systems. These include louvers, exhaust manifolds and vent pipes.

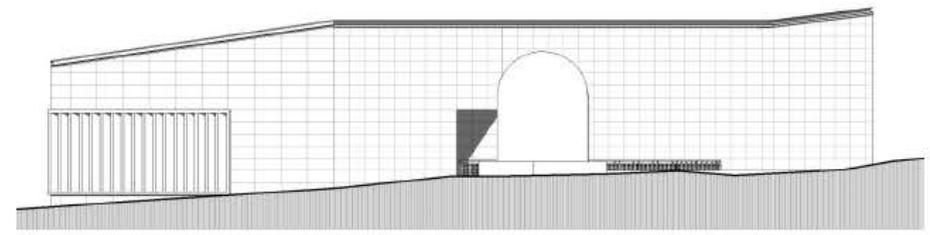
Building 51: Elevations



South Elevation



East Elevation

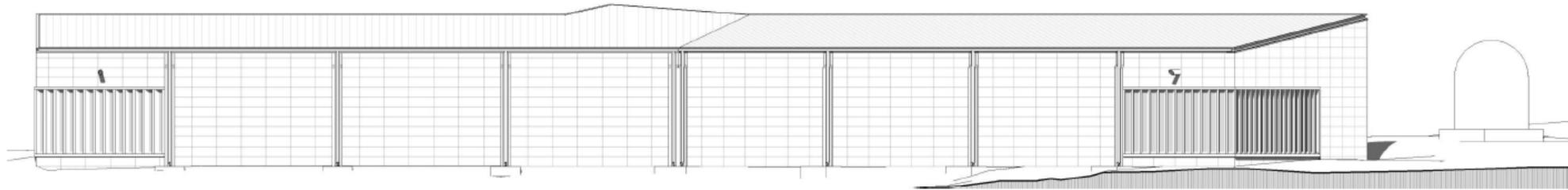


West Elevation

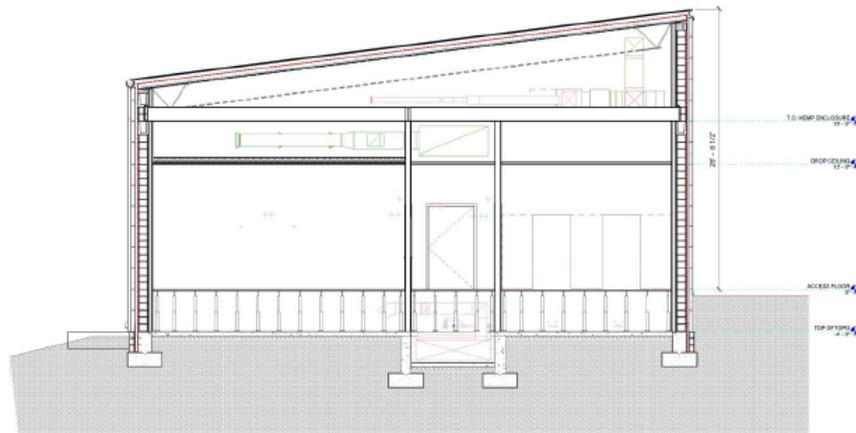
As the siting of the building continued to develop so did the overall design concept. Applying traditional roof lines and facade elements didn't actually portray what was happening in the building and would only be false ornaments. Instead, it was determined that the building should be minimalist in its detail. This quiets the building, allowing it to be in the background and not competing for attention, thereby allowing Building 3 to continue to be the focal point.

The resulting design is modern and minimal. It is a rectangular, bent in half to give way to the main entrance. The façade is a single plane of cast stone panels with only necessary penetrations. The primary façade facing Building 3 has only three openings, the main entrance and a combined emergency egress and service entrance to either side. These service entrances are recessed from the main plane of the building in a niche and read as the façade was cut and folded in to allow entry.

Building 51: Elevations



North Elevation



Building Section

All other openings are only those required in support of the mechanical equipment. The various intake and exhaust for each equipment room are located in close proximity to each other. These openings are concealed by a series of cast stone fins that extend down either side and wrap around to the rear elevation. These “gills” provide a unified appearance to what otherwise would be a random array of multiple openings of differing size shape and height. Compared to traditional louvers, they are oversized to work with the overall scale of the building to minimize the apparent scale of the building when viewed from afar.

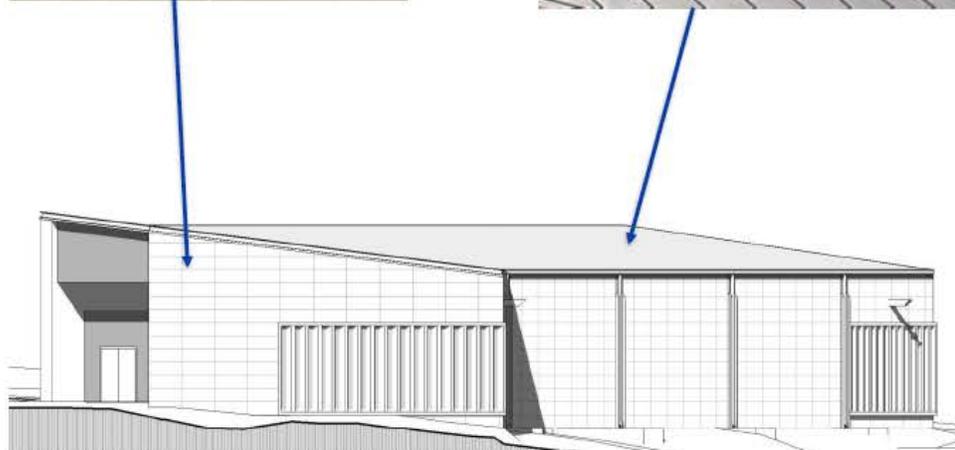
The roof is single sloped toward the north, devoid of any gables or changes in pitch with only plumbing vents allow to penetrate it. The rainfall drains into a continuous gutter that is concealed within the roof edge. Downspouts are evenly spaced and located within recesses in the cast stone façade. These recesses break up the long expansive elevation creating a subtle and pleasing rhythm.

Building 51: Exterior Materials Samples

Cast Stone Wall Panels



Terne Coated Standing Seam Metal Roof

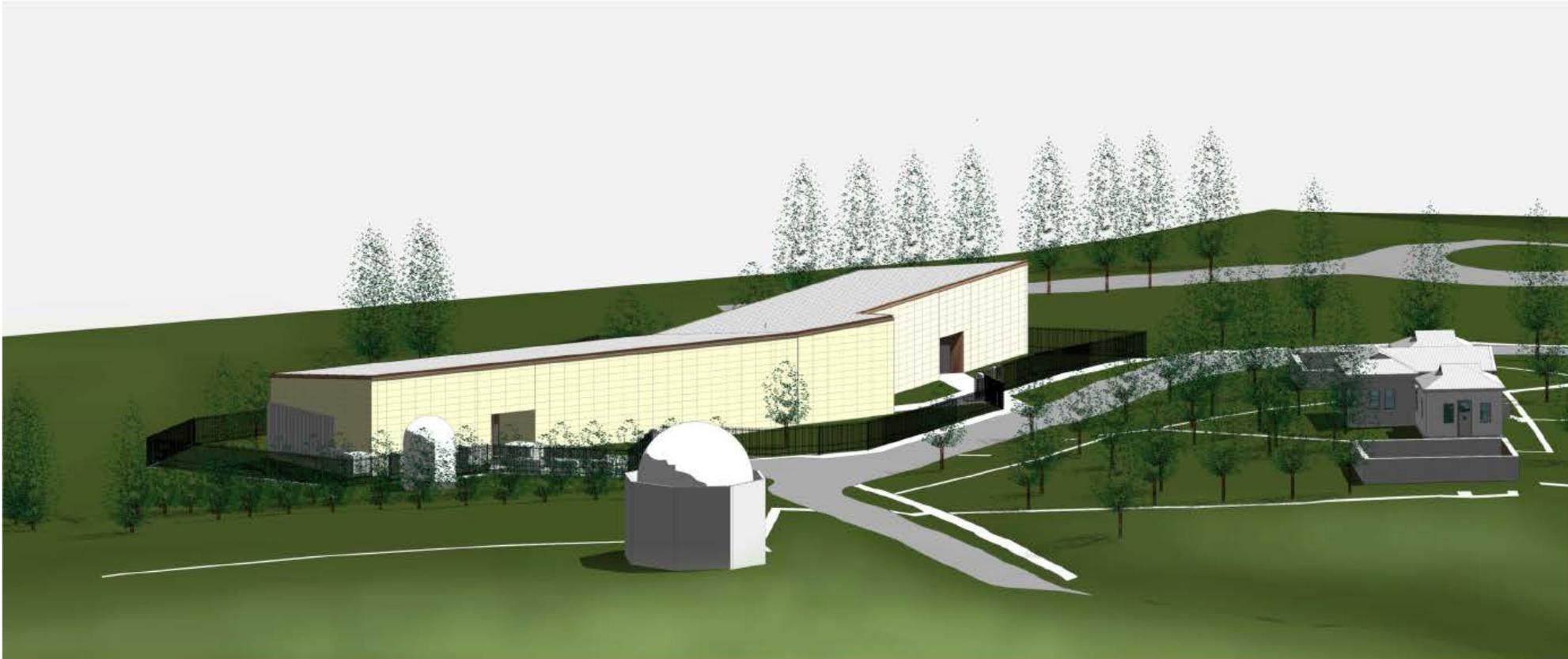


The exterior finishes are intended to complement other structures on the site and at the same time distinguish it as instrument and not a building. For this reason the materials selected relate to the various telescopes around the site and not the buildings. Cast stone panels are used for the wall to mimic the stone cladding used on many of the buildings, however, in lieu of the copper or green metal roofs typical of most of the buildings terne steel standing seam metal roof is proposed. This roofing material relates to the materials of the telescope domes while providing less visual contrast with the walls than the green roofs provide. The metal surrounds at the three entrance as well as roof edge will also be of terne steel. This material palette will support the overall minimalist design aesthetic..



Views of Telescopes on the sites

Building 51: Rendered Perspectives



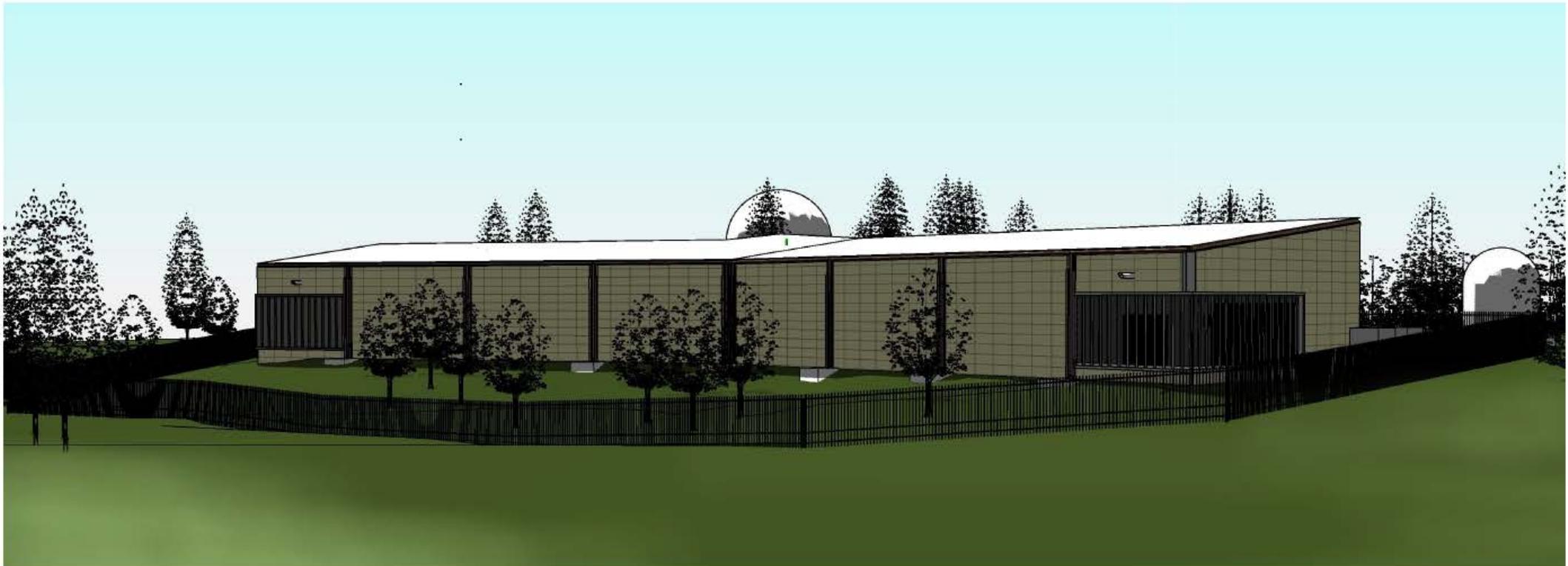
Aerial View From Southwest

Building 51: Rendered Perspectives



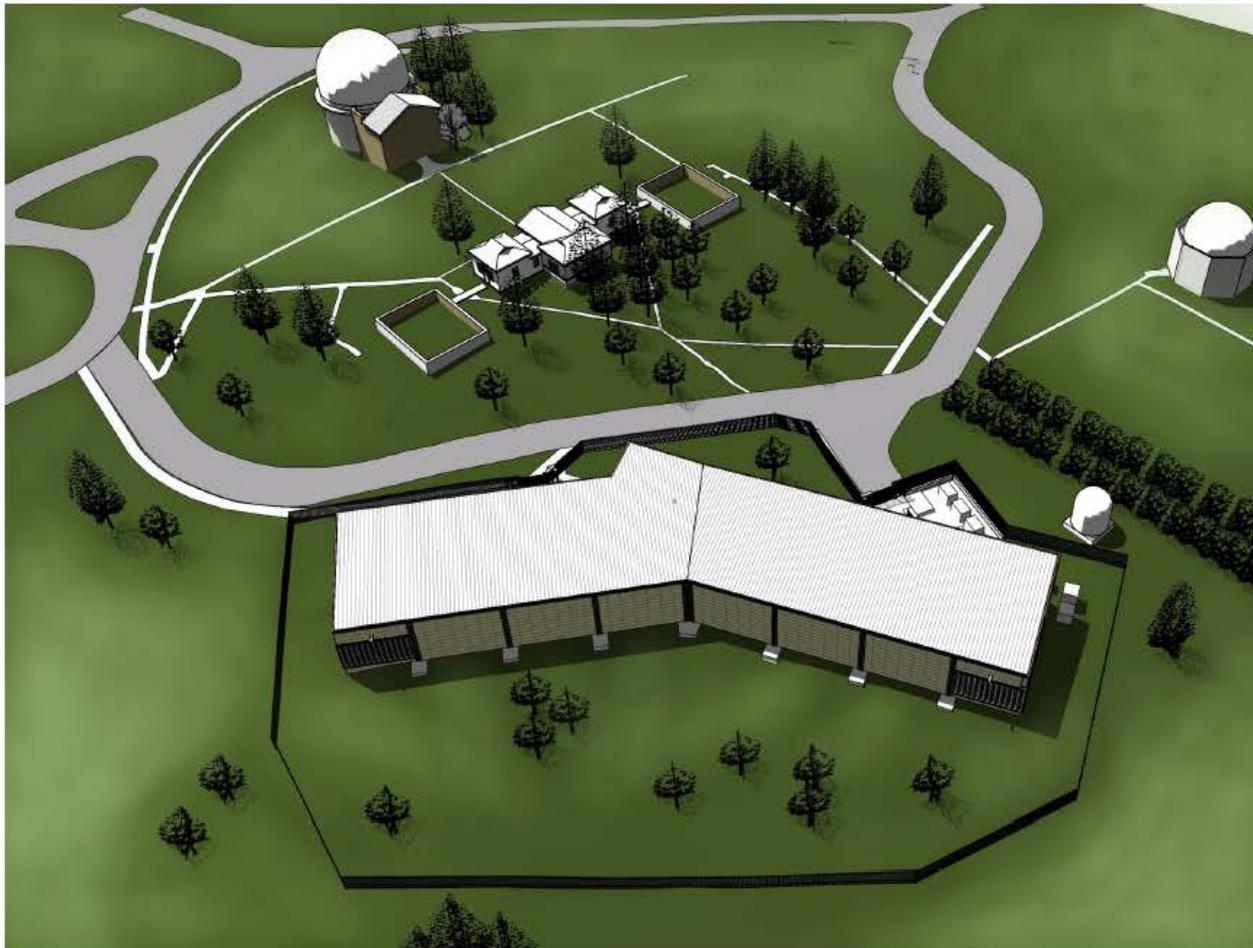
View From Southeast

Building 51: Rendered Perspectives



View From Northwest

Building 51: Rendered Perspectives



Aerial View From Northwest



Detail of Main Entry



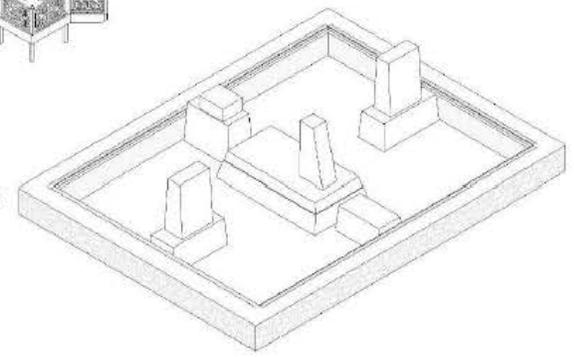
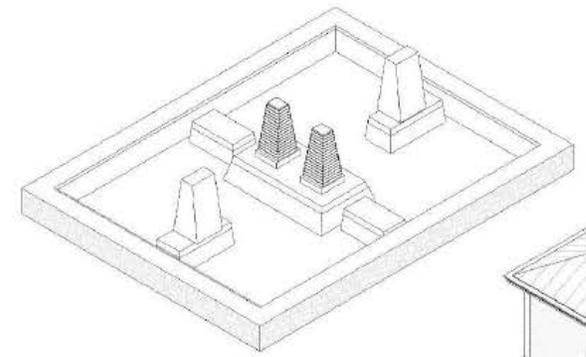
Detail of Corner Louver

Building 3, Clock House: Existing Photos



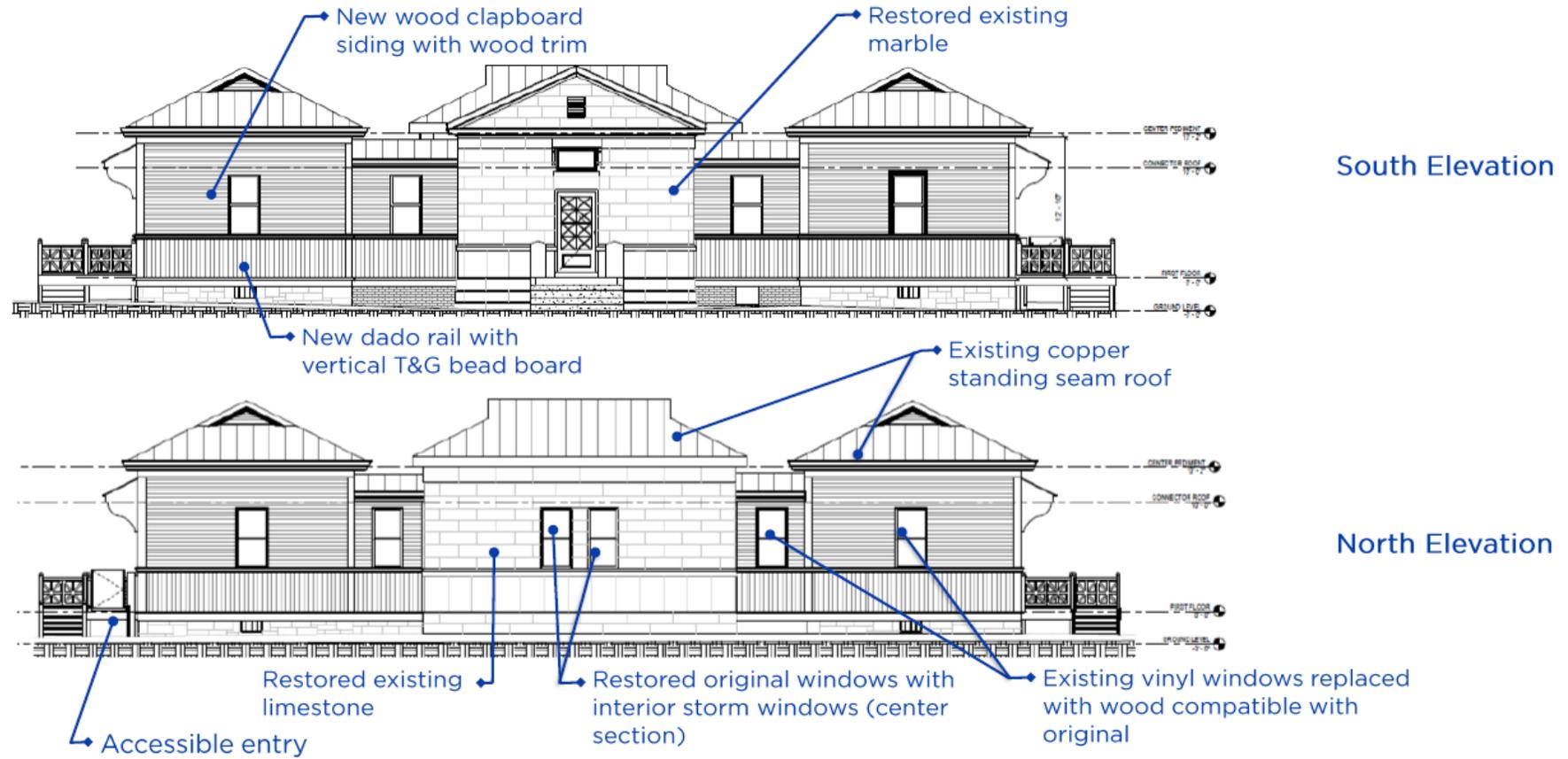
The Clock House (Building 3) is one of the original buildings designed by Richard Morris Hunt. It was built in 1893 with an addition built in 1932 which provided a below ground vault into which the clock was moved. The building is a National Register eligible structure.

Building 3, Clock House: Exterior Restoration



Restoration of the Clock House and the stabilization of the adjacent masonry foundations for the historic Transit Houses (Buildings 6 and 7) include the removal of the elevated concrete walkways that joined the Clock House to the Transit Houses and which were added during the period when the second generation of transit houses were installed. This removal allows for the construction of stoops at either end that replicate the original stoops. One of these provides an accessible entry to the building using a wheelchair lift.

Building 3, Clock House: Exterior Renovation



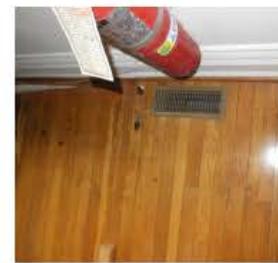
Restoration of the Clock House consists of the removal of the current vinyl siding and installation of wood siding and trim based on the original construction documents. The cut stone of the center portion of the building will be restored through repair, repointing, and cleaning. The existing standing seam copper roof will be left in place based on the fact that it should have approximately 50 years of life remaining.

Building 3, Clock House: Interior Renovations

The interior of this building has most of the original interior trim and woodwork including crown moldings, door casing, transom window casing, baseboards, window casing, sills, and chair rails. Much of the wood floors and plaster walls appear to be original to the building. These elements will be restored to the extent possible and renovated to meet the current building requirements. The historic basement of building 3 contains high levels of radon which will be remediated and sealed off from the first floor of the building with floor doors to seal off the stair, but still preserve the railing.



Renovation Plan



Building 52 & 52A: Renovations

Building 52 is a contributing building within the Naval Observatory Historic District. Therefore, any renovations are subject to Section 106 of the National Historic Preservation Act..

The Buildings existing non-original windows and exterior doors will be replaced to meet current Department of Defense Antiterrorism and Force Protection requirements as well as energy standards. The existing EFIS exterior will be patched, repaired and cleaned. New roofing will be provided for both buildings.

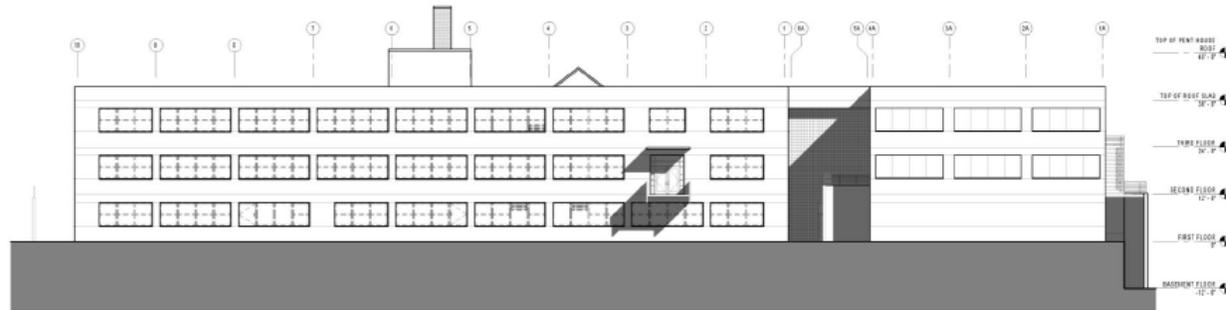


Building 52 & 52A: Site Improvements



The renovation of Building 52/52A is considered a major substantial improvement project per the 2013 DDOE stormwater rule. As such, stormwater management will be provided for this building. The bioretention facility will be located downstream of the buildings so that no flooding of buildings will occur for the 100-year design storm.

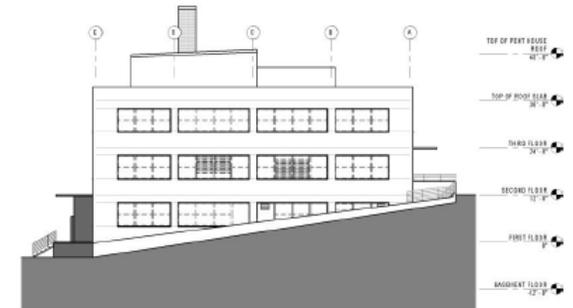
Building 52 & 52A: Elevations - Existing



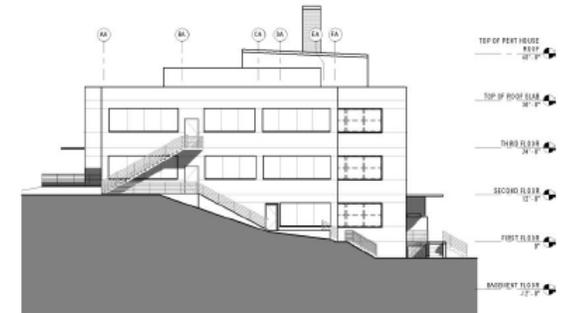
East Elevation



West Elevation



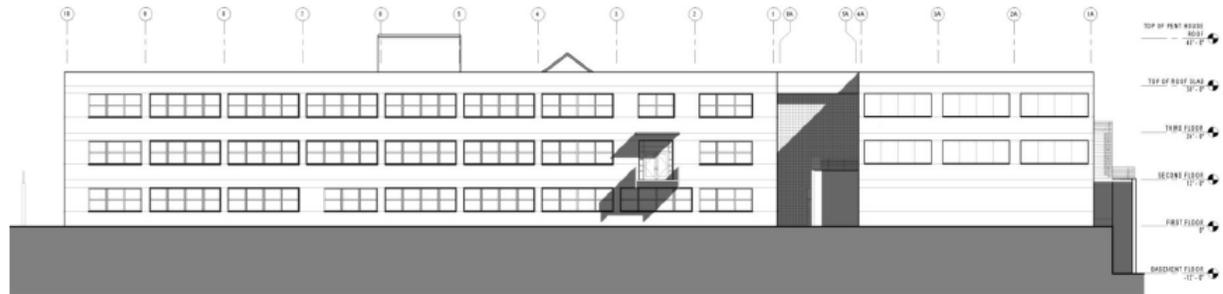
South Elevation



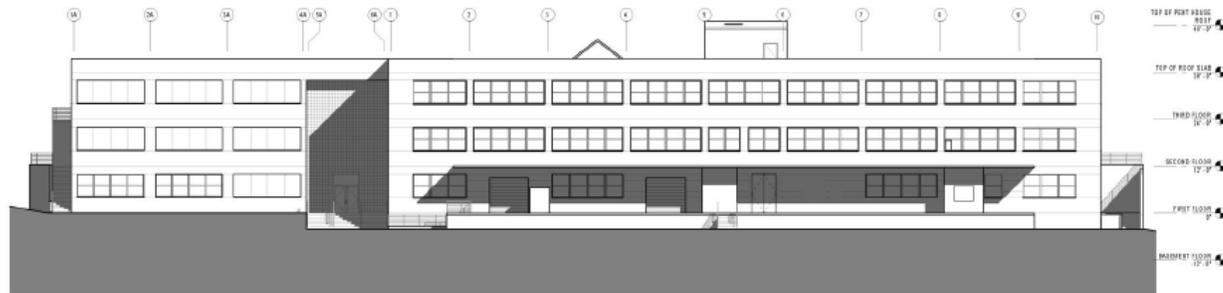
North Elevation

Existing windows and exterior doors will be replaced to meet current AT/FP and energy standards. The existing EFIS exterior will be patched, repaired and cleaned. New roofing will be provided for both buildings.

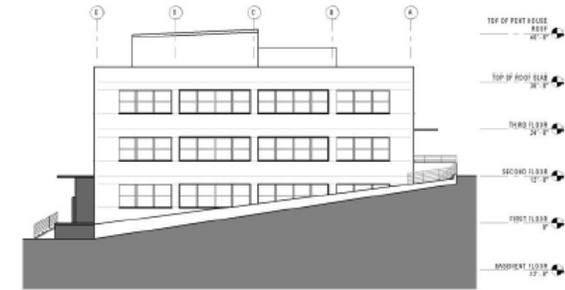
Building 52 & 52A: Elevations – New Work



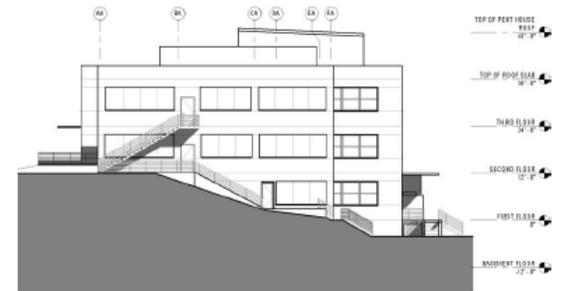
East Elevation



West Elevation



South Elevation



North Elevation

Existing windows and exterior doors will be replaced to meet current AT/FP and energy standards. The existing EFIS exterior will be patched, repaired and cleaned. New roofing will be provided for both buildings.

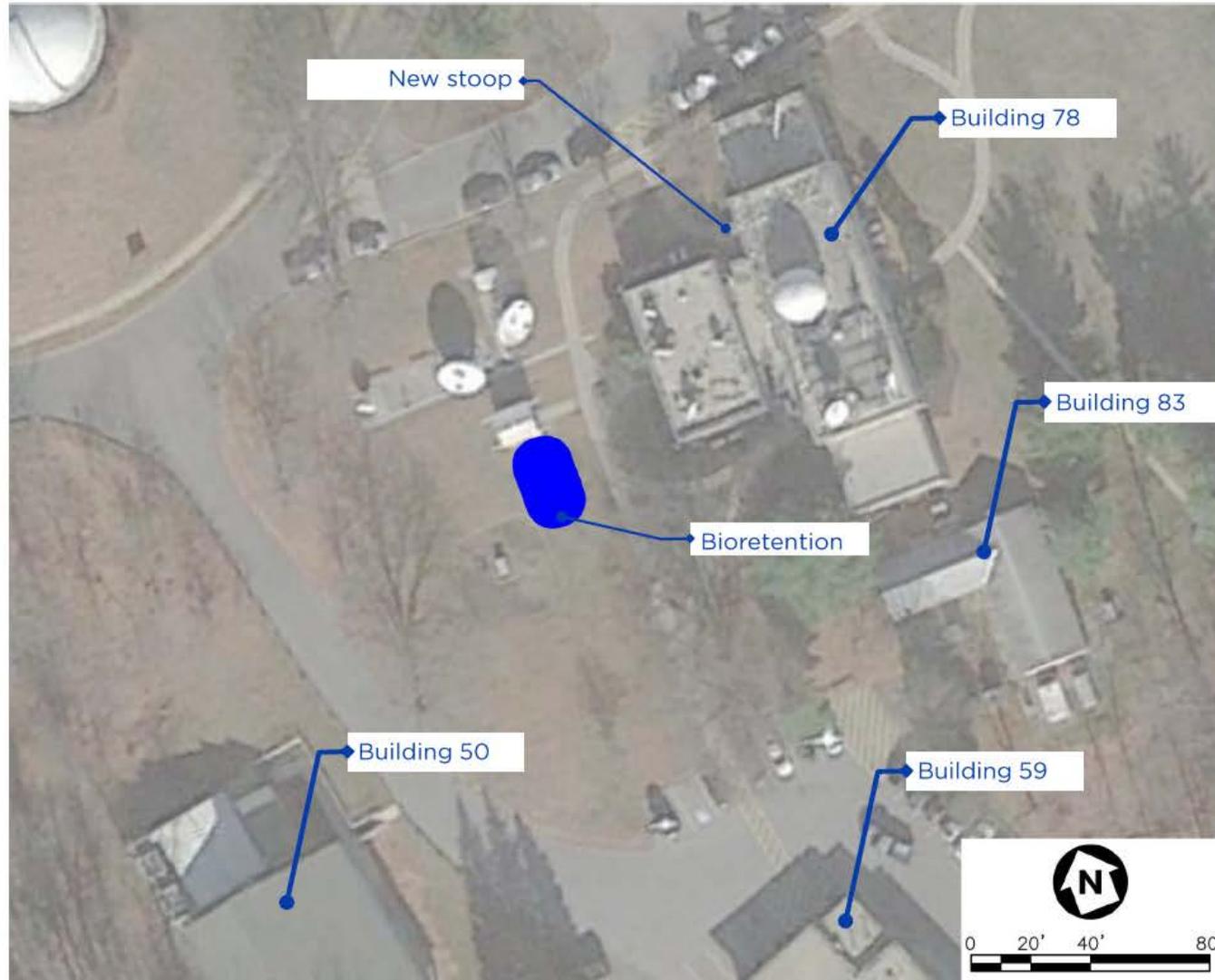
Building 78: Renovations



Building 78 consists of the original Astrographic Laboratory, a one-story structure designed by the Navy's Bureau of Yards and Docks and built in 1932 to which a two-story addition was attached in 1961 forming a building with a T-shaped footprint.

Restoration of the exterior envelope consists largely of stone restoration including repair of damaged stone, repointing, and cleaning. In addition, AT/FP compliant windows having the same configuration as the building's original windows will replace the existing non-original windows. Exterior doors will also be AT/FP compliant. An accessible entrance will be provided by making minor modifications to an existing exterior door

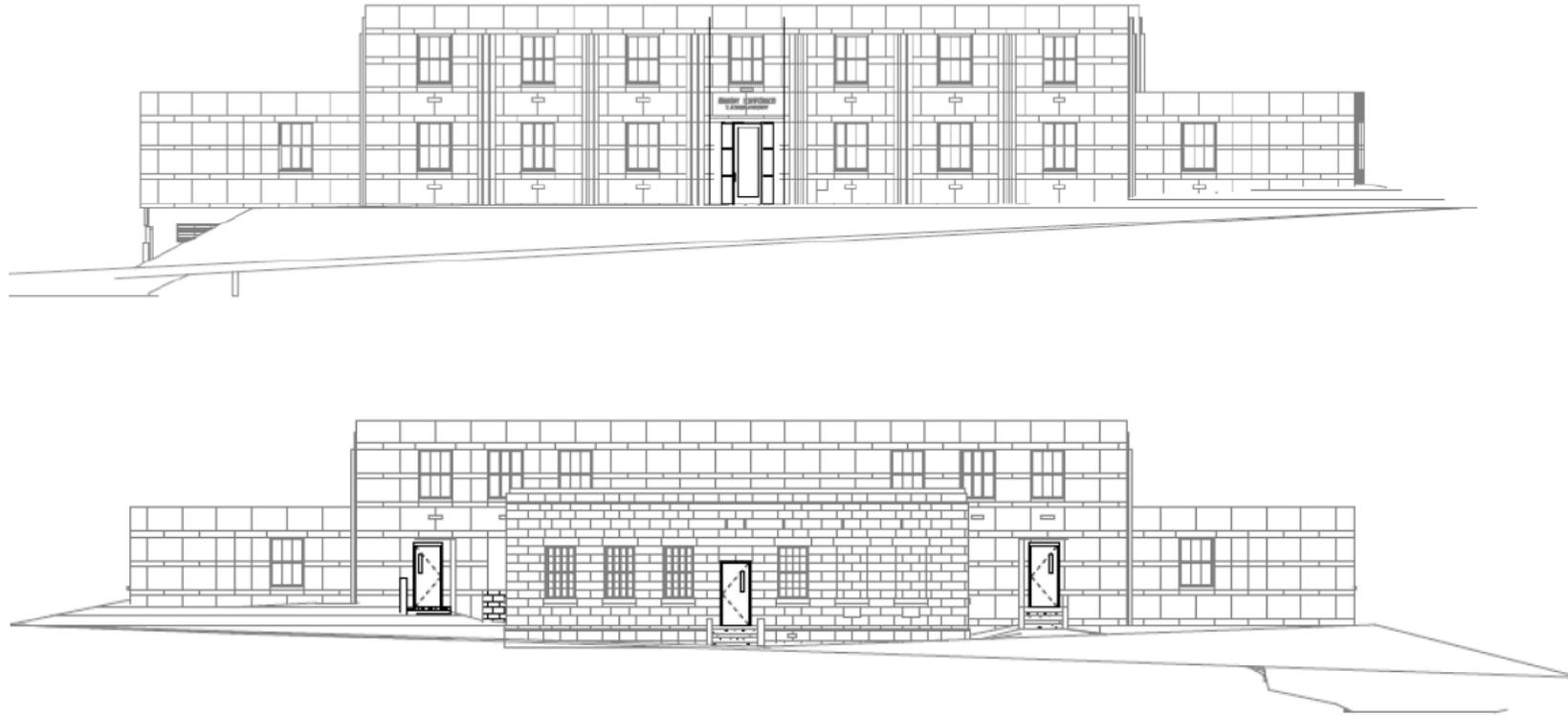
Building 78: Site Improvements



The renovation of Building 78 is considered a major substantial improvement project per the 2013 DDOE stormwater rule. As such, stormwater management will be provided for this building. The bioretention facility will be located downstream of the building so that no flooding of the building will occur for the 100-year design storm.

A new stoop will be constructed to provide an accessible route to the building.

Building 78: Elevation - Restoration



Restoration of the exterior envelope consists largely of stone restoration including repair of damaged stone, repointing, and cleaning. In addition, ATFP compliant windows having the same configuration as the building's original windows will replace the existing windows. Exterior doors will also be ATFP compliant. An accessible entrance will be provided by making minor modifications to an existing exterior door.