

National Park Service
U.S. Department of the Interior

Vanderbilt Mansion National Historic Site
Hyde Park, New York



Vanderbilt Mansion National Historic Site Historic Structure Report

Volume VIII: Appendix G - Record of Treatment Documents
Complete the Exterior Restoration of the Vanderbilt Mansion: PMIS 152373
October 2018

(Cover) The west portico during restoration. JGWA, 2015.

VANDERBILT MANSION NATIONAL HISTORIC SITE
HISTORIC STRUCTURE REPORT

VOLUME VIII

APPENDIX G - RECORD OF TREATMENT DOCUMENTS

COMPLETE THE EXTERIOR RESTORATION
OF THE VANDERBILT MANSION
PMIS 152373

JOHN G. WAITE ASSOCIATES, ARCHITECTS

384 BROADWAY, ALBANY, NY 12207 • 64 FULTON STREET, SUITE 402, NEW YORK, NY 10038

The architects thank the many National Park Service representatives from the

ROOSEVELT-VANDERBILT NATIONAL HISTORIC SITES

and the

NORTHEAST REGIONAL OFFICE

DRAFT HISTORIC STRUCTURE REPORT

Peggy Albee Vance
James Lee

JOHN G. WAITE ASSOCIATES, ARCHITECTS PLLC

384 BROADWAY, ALBANY, NEW YORK 12207 - 64 FULTON STREET, SUITE 402, NEW YORK, NEW YORK 10038

John G. Waite, FAIA
Clay S. Palazzo, AIA
Douglas G. Bucher
Matthew Scheidt, AIA
William Brandow
Chelle M. Jenkins
Jessica Lankston, RA
Edward Sehl

MT. IDA PRESS, LTD.

111 WASHINGTON AVE # 306, ALBANY, NY 12210

Diana S. Waite
Liz Marsh

KOHLER RONAN, LLC

93 LAKE AVENUE, DANBURY, CT 06810 - 171 MADISON AVE., NEW YORK, NY 10016

Robert V. Hedman, P.E.

JABLONSKI CONSERVATION ASSOCIATES

40 WEST 27TH STREET, FLOOR 12, NEW YORK, NY 10001

Mary Jablonski
Stephanie Hoagland
Danielle Pape

PUBLICATION CREDITS: Information in this publication may be copied and used, with the condition that full credit is given to the authors, their companies, and the National Park Service. Appropriate citations and bibliographic credits should be made for each use.

CONTENTS

VOLUME I: EXECUTIVE SUMMARY, HISTORY & RECORD OF TREATMENT

**VOLUME II: INTRODUCTION TO PHYSICAL INVESTIGATION
& EXTERIOR, SUB-BASEMENT, BASEMENT**

VOLUME III: FIRST FLOOR

VOLUME IV: SECOND FLOOR

VOLUME V: THIRD FLOOR & ATTIC

VOLUME VI: APPENDICES A-E

Appendix A - Measured Drawings (John G. Waite Associates, Architects)

Appendix B - Mechanical, Electrical, and Plumbing Systems Report (Kohler Ronan)

Appendix C - Limited Interior Finish Color Investigation (Jablonski Building Conservation)

Appendix D - Interior Paint Samples (Albee)

Appendix E - McKim, Mead & White Drawings

**VOLUME VII: APPENDIX F - RECORD OF TREATMENT DOCUMENTS
REHABILITATE FAILED VANDERBILT MANSION ROOF: PMIS 14806**

**VOLUME VIII: APPENDIX G
RECORD OF TREATMENT DOCUMENTS
COMPLETE THE EXTERIOR RESTORATION
OF THE VANDERBILT MANSION
PMIS 152373**

PMIS STATEMENT

**PREDESIGN REPORT: VANDERBILT MANSION NATIONAL HISTORIC SITE
REVISED JUNE 17, 2011**

JOHN G. WAITE ASSOCIATES, ARCHITECTS PLLC

CONSTRUCTION DRAWINGS, JUNE 1, 2014

**VOLUME IX: APPENDIX H - RECORD OF TREATMENT DOCUMENTS
REHABILITATE VANDERBILT MANSION FOUNDATION AND SUPPORT WALLS:
PMIS 161264**

APPENDIX G

RECORD OF TREATMENT DOCUMENTS

COMPLETE THE EXTERIOR RESTORATION OF THE VANDERBILT MANSION: PMIS 152373

PMIS Statement

Project Identification - PMIS 152373	
Project Title: Complete the Exterior Rehabilitation of the Vanderbilt Mansion	Project Total Cost: \$6,558,973.43
Park/Unit: Vanderbilt Mansion National Historic Site	Region: Northeast
States: NY	Congressional District: NY20
Related Parent FMSS Work Order Number: 1683573	Reference Number:
Project Type: Facility , Historic , Imported from PST	Financial System Package Number: VAMA 152373
Contact Person: H. Van Brookhoven	Contact Phone: 845-229-1524
Project Status - PMIS 152373	
Date Imported: 02/04/09	Review Status: WASO-Reviewed on 05/05/2009
Date of Last Update: 04/07/09	Updated By: Tim Mullins, Tmullins@Nps.Gov
Project Narratives - PMIS 152373	
Description This project would repoint the entire historic Vanderbilt Mansion Exterior to seal it from the elements and to staunch water infiltration and resulting damage to the structure and its historic interiors. Project work includes rehabilitation of the four porticos (North #1651710, South #1651691, East #1651686, West #1651705), including resetting all steps and replacement of 10 percent of the stone and steel; repair/repaint all exterior ironwork and; repair/repaint all exterior woodwork.	
Justifications The leaking roof system on the Vanderbilt Mansion is scheduled for replacement in FY 2009 (PMIS 14806 Emergency Replacement of Failed Vanderbilt Mansion Roof, \$2.547 million gross LIC appropriation). This project would complete the work started with the roof and address that same water infiltration problems on the remainder of the exterior envelope and renew the service life of this key character-defining historic structure, portions of which are now closed to the public because of the threat of falling building pieces. Execution of the project is critical to prevent further deterioration and failure of other building components, loss of historic fabric, and possible damage to the irreplaceable museum collections. The Vanderbilt Mansion is the primary historic resource of the Park (National Register, API=100). The Mansion's 54 fully-furnished rooms contain extremely ornate decorative finishes and collections. The Mansion was designed in the Beaux Arts style by the renowned American architects McKim, Mead and White, and was constructed in 1897. With more than 600 acres of landscaped property and a palatial Beaux-Arts mansion, the Hyde Park estate came to symbolize the enormous wealth accumulated by a privileged few during the Gilded Age and how their lifestyle influenced business, culture, architecture, and society in ways that still affect us today.	
Measurable Results The core historic resource of the Park is repaired to good condition, historic interiors are protected from further damage, and public access safety restrictions are lifted. Primary Park GPR goals (protection of historic structures and visitor satisfaction) are addressed.	

The historic Vanderbilt Mansion is a single asset with a very high Current Replacement Value (CRV). Since the total cost of correcting building deficiencies is divided by the CRV in computing the Facility Condition Index (FCI), rehabilitation of the building exterior does not result in a dramatic reduction in the FCI that would be commensurate with the importance of this work to the preservation of the structure.

DOI Categories of Facilities Maintenance and Construction Needs - PMIS 152373

Total Project Score/Ranking (imported from PST) — 775		DOI Ranking Factor Score — 700	
Deferred Maintenance Needs		Capital Improvement Needs	
Critical Health and Safety Deferred Maintenance Need	0%	Critical Health and Safety Capital Improvement Need	0%
Critical Resource Protection Deferred Maintenance Need	100%	Critical Resource Protection Capital Improvement Need	0%
Critical Mission Deferred Maintenance Need	0%	Energy Policy, High Performance Sustainable Building Capital Improvement Need	0%
Other Deferred Maintenance Need	0%	Code Compliance Capital Improvement Need	0%
		Other Capital Improvement Need	0%

Project Activities, Assets, Emphasis Areas and GPRA Goals - PMIS 152373

Activities - Maintenance - Rehabilitation - Restoration	Assets Building
Emphasis Areas	GPRA Goals and Percent Values - Historic Structures, 80% - Visitor satisfaction overall, 20%

Project Prioritization Information - PMIS 152373

Unit Priority: 48 IN FY 2010	Unit Priority Band: HIGH
--	---------------------------------

Project Capital Asset Accounting Determination Results Summary - PMIS 152373

Capital Asset Accounting Determination (CAAD) has been done, and all accounting beginning with pre-design planning must be in accordance with the following rules:

Vanderbilt Mansion

Account coded as "Heritage Assets" is REQUIRED to track these assets separately from other assets and costs, beginning with Pre-Design. Heritage Asset Accounts are established by coding "HP" in the G/L Post Type field and "HA" in the PROJ GROUP field of the FFS PROJ table when they are established.

Project Assistance Needs - PMIS 152373					
Is Assistance Needed: Yes [From Service Center]					
Project Assistance Needed in the Following Areas: - Architectural and Engineering Services - Project Management/Coordination - On-site Inspection /COTR - Contracting					
Project Funding Component - PMIS 152373A					
Funding Component Title: Complete the Exterior Rehabilitation of the Vanderbilt Mansion			Funding Component Request Amount: \$6,558,973.43		
Funding Component Reference Number (Multi-purpose):			Funding Component Type: Non-recurring		
Funding Component Description: This component represents work covered by child work orders of FMSS Parent WO 1683573 with target start dates in FY 2009.					
Initial Planned FY: 2009			Requested Funding FY: 2009		
Review Status: WASO-reviewed on 09/16/2009			Funded Amount:		
Date of Park Submission: 03/09/2009			Submitted By: Henry J. Van Brookhoven (Hvbvama)		
Upper-level Review Status:			Fee-demo Submission Number:		
Formulated FY: 2011			Funded FY:		
Formulated Program: 5 Year Plan			Funded PWE Accounts:		
Formulated Funding Source: Line Item Construction			Funded Funding Source:		
Related PEPC Information					
Related PEPC Project Number		Compliance Status		Expected Compliance Date	
No Related PEPC Project Numbers Specified.					
Component Cost Estimates					
Labor Cost Type: Not Requested					
Estimated By: Imported From PST			Date of Estimate: 02/04/2009		
Estimate in 2009 dollars			Class of Estimate: C		
Item	Description	Qty	Unit	Unit Cost	Item Cost

Estimated Labor Cost	Imported from PST	1	Lump	\$2,197,821.80	\$2,197,821.80
Estimated Material Cost	Imported from PST	1	Lump	\$1,732,807.75	\$1,732,807.75
Estimated Equipment/Tool Cost	Imported from PST	1	Lump	\$150,898.77	\$150,898.77
Estimated Service Cost	Imported from PST	1	Lump	\$250,000.00	\$250,000.00
Component Net Construction					\$4,331,528.32

Escalation Adjustments

Item	Description	Item Cost
Escalation 4% per year		\$353,452.71
Net Construction Estimate (Escalated)		\$4,684,981.03

Grossing Adjustments

Item	Description	Item Cost
Compliance Default(%): 5% Default(\$): \$234,249.05	Imported from PST as (5%) of Project Net Construction by default	\$234,249.05
Pre-design Default(%): 5% Default(\$): \$234,249.05	Imported from PST as (5%) of Project Net Construction by default	\$234,249.05
Final Design Default(%): 10% Default(\$): \$468,498.10	Imported from PST as (10%) of Project Net Construction by default	\$468,498.10
Supplemental Services Default(%): 2% Default(\$): \$93,699.62	Imported from PST as (2%) of Project Net Construction	\$93,699.62
Construction Management Default(%): 8% Default(\$): \$374,798.48	Imported from PST as (8%) of Component Net Construction by default	\$374,798.48
Construction Contingency Default(%): 10% Default(\$): \$468,498.10	Imported from PST as (10%) of Component Net Construction	\$468,498.10
Component Funding Request (Net Construction Estimate + Total Add-on Amount)		\$6,558,973.43

Eligible Funding Sources and Funding Priorities

Funding Source	Unit Priority at Formulation	Regional Priority	National Priority	Year Unit-Prioritized
2009 Economic Recovery - Construction	49			2009
2009 Economic Recovery - Deferred Maintenance	49			2009
Line Item Construction	49			2009

Line Item Construction CBA Factors - PMIS 152373A [Total Importance of Advantages: 0] [Advantage to Cost Ratio: 0]

API value [1 - 100]: 100

Current Average FCI value of all assets: 0.205

Projected Average FCI value of all assets: 0.143

Current Annual Operating Cost: 0

Projected Annual Operating Cost: 0

Factor: Provide Safe Visits and Working Conditions
[Importance of Advantage score: 0]

Description of Current Conditions/Deficiencies

1. What basic facilities and services (such as comfort stations, shelter, orientation/safety information, and safe access) are currently available in the park and/or sub-area affected by the project?

This project involves the core historic structure which is the primary visitor destination of the park.

2. What is the existing situation with respect to public health, safety, and welfare, especially for park visitors? How many visitors or other members of the public are affected by the existing situation? What would be the result for park visitors and other members of the public if this project were not completed?

Over 360,000 visitors per year are affected by the project. If the project is not carried out, the building will become unsafe for use.

3. What are the specific risks to the public health and/or safety? What is the probability, immediacy, and/or timeframe associated with these risks? What would result if the risk were not eliminated? How serious and extensive would the effects be?

The direct risk to public safety is twofold. The primary risk is the danger of falling masonry that has led us to rope off some areas of the building. The secondary risk is the crumbling portico steps; which, if work is not done, will prevent the public from safely entering the building.

4. What basic administrative facilities (such as restrooms, shelter, efficient workspace, and safe access) are currently available in the park and/or sub-area affected by the project?

Portions of the structure are used as offices and support areas for the curatorial staff. There is also a universally accessible bathroom within the structure.

5. What is the existing situation with respect to employee health, safety, and welfare? How many employees are affected by the existing situation? What would be the result for them if this project were not funded?

The employees are affected by the same access and falling stone building pieces as the general public. This affects approximately 15 staff members on a daily basis and 67 staff members over the course of the year.

6. What are the specific risks to employee health and/or safety? What are the probability, immediacy, and/or timeframe associated with these risks? What would result if the risks were not eliminated? How serious and extensive would the effects be?

The specific risks to the staff are the same as the general public: falling portions of the building and crumbling, unsafe entrance areas. The risks already exist and are becoming worse with each passing season. If the problems are not addressed, it will become unsafe to enter the structure.

7. Upon what information or authority have these predictions been made?

Park Facility Operations Specialist. Independent report from A&E Einhorn, Yaffee and Prescott.

8. What citations, court orders or other legal direction has the park received based on violation of regulations, codes or other legal standards of health, safety?

None as yet.

Project advantages in protecting public health, safety, and welfare

9. How will the proposed project provide basic visitor facilities and services and/or allow the park to meet established standards of health, safety, and welfare? How many visitors or other members of the public would be effected?

The project will permit the Park staff to carry out its most basic mission of making the core historic facility available to the public. Without repair, over 360,000 annual visitors will be denied access to the core park feature.

10. What alternatives have been considered to address these issues without construction (such as closing a given park area), outside the park, or through a non-NPS source (such as another public agency or commercial facility)?

There are no alternatives to preservation of our core historic resource other than transfer of ownership or abandonment and closure of the park.

Project advantages in protecting employee health, safety, and welfare

11. How will the proposed project provide basic administrative facilities and/or allow the park to meet established standards of health, safety, and welfare? How many employees would be effected?

The employees are affected by the same access and falling stone building pieces as the general public. Therefore, remediation would allow staff the same safe access as the public. This affects approximately 15 staff members on a daily basis and 67 staff members over the course of the year.

12. What alternatives have been considered to provide comparable facilities and services without construction, outside the park, or through a non-NPS source (such as rental housing or another public agency or commercial facility)?

There are no alternatives. This structure is the reason for the park's existence.

Factor: Protect Natural and Cultural Resources
[Importance of Advantage Score: 0]

Description of Resources

13. What is (are) the nature, extent, quantity, and complexity of the resource(s) (e.g., specific species, watershed, ecosystem, archeological resources, cultural landscape, historic structures, museum objects, ethnographic resources, etc.)?

The Vanderbilt Mansion is the core historic structure of the Vanderbilt Mansion National Historic Site. In terms of architecture, interiors, mechanical systems, road systems and landscape, it is a remarkably complete example of a gilded-age country place, illustrating the political, economic, social, cultural, and demographic changes that occurred as America industrialized in the years after the Civil War.

The Mansion contains extremely ornate finishes, furnishings, collections and exhibits and is one of the finest intact surviving Beaux Arts style great homes in America. It is also surrounded by one of the oldest continuously managed cultural landscapes in America.

14. What is the significance (local, state, regional, national) of the resource(s), including any special designation(s) (e.g., wilderness, World Heritage site, National Natural Landmark, Biosphere Reserve, federally listed threatened or endangered species, National Historic Landmark, listed on National Register of Historic Places, etc.)?

The Vanderbilt Mansion is of national significance and is listed on the National Register. Typical features of Beaux-Arts buildings include a large and grandiose appearance; symmetrical facade (both sides of the central entrance are identical); exterior columns or pilasters (rectangular columns attached to a wall); wall surfaces embellished with floral patterns, garlands, medallions, or similar details; and a flat, low-pitched roof.

15. How is (are) the resource(s) comparable to others in the region or National Park System either ecologically or in cultural associations?

This resource is unique in the National Park Service inventory.

16. What policy or legal mandates or park goals for resources management are related to the resource(s)?

NPS 28, Vanderbilt Mansion Master and Management Plans.

Project advantages in preventing the loss of resources (e.g., stabilization)

17. What is the specific threat to the resource(s)?

Entropy and deferred maintenance. The exterior shell, particularly the porticos suffer from over 70 years of deferred maintenance. Portions are crumbling and falling off the building. Three of the four porticos have been roped off for safety reasons. The steps on the fourth are becoming dislodged and will shortly become unuseable without remediation.

Water intrusion has already caused extensive 3rd floor ceiling and wall damage (including damage to silk wallpaper) and threatens exhibits housed on the 2nd floor.

18. What will result if the threat is not eliminated?

In the near term, the structure will not be able to be entered safely by visitors and staff. There will be eventual loss of the structure if the openings in the outer walls are not repaired.

Water infiltration is causing extensive damage to the structure, collections and fragile historic decor.

19. What is the immediacy or timeframe of the threat?

Current and ongoing. See response #17.

20. What is the probability that the resource(s) will be lost?

Inevitable without intervention.

21. Upon what information or authority have these predictions been made?

Park Facility Operations Specialist, NER Building Conservation Branch and A&E.

22. How will the proposed project reduce or eliminate the threat?

It will renew the exterior envelope for at least a generation while permitting safe entry and exit of the core historic feature of the park. Will also remove threats to historic interiors, furnishings, objects, collections and exhibits.

Project Advantages in maintaining or improving the condition of resources

23. What is the current condition of the resource(s)?

Poor (FCI = 0.205).

24 How will the proposed project affect the condition of the resource(s) (e.g., species or ecosystem restoration, disturbed land restoration and revegetation, preservation of an archeological resource, rehabilitation or restoration of a historic structure, or conservation of a museum object -- including preventative conservation provided by a museum collection storage facility)?

It will restore the exterior envelope of the core historic structure to good condition and restore the access and egress points to good and safe condition and stem water infiltration that is currently the chief source of damage to the structure.

Factor: Improve Visitor Enjoyment Through Better Service and Educational and Recreational Opportunities

[Importance of Advantage Score: 0]

Description of Current Visitor Experience

25. What is (are) the nature, extent, and complexity of the current visitor (e.g., park and/or subarea visitation -- annual total as well as average peak-season day, type and nature of access to park and/or subarea, available park facilities and services, available educational and recreational opportunities, type and nature of visitor activities, availability of alternative facilities and services outside the park, etc.)?

Annual visitation to the park is over 360,000 with a peak daytime average around 700. Visitation is primarily from the northeastern United States for most of the year with significant continental and overseas visitation from late spring through mid autumn.

26. What is the current situation regarding visitor facilities (e.g. condition and functional adequacy, current use vs. capacity, long-term sustainability of use, etc.)?

The resource is in poor condition but currently mostly functional. Long term sustainability is not possible without this work.

27. What is the current situation regarding visitor experience(s) of the park and/or subarea affected by the project (e.g., available services and opportunities vs. park goals, visitor satisfaction with services and opportunities, etc.)?

Visitors have commented upon and question the poor condition of the exterior of the structure and the damage water infiltration has caused to the interior and decor.

28. What is the significance of the visitor experience? How does it compare to others in the region or national park service?

The experience is unique in the National Park Service.

29. How is visitor use expected to change without the project (e.g., projected visitation, new use trends or activities, etc.)? Upon what information or authority have these predictions been made?

Without repair of the porticos, visitors will eventually not be able to enter the structure; therefore, the core reason for the park's existence will not be available to the public. Park Facility Operations Specialist.

30. What policies, legal mandates, and/or park goals for visitor enjoyment are related to the proposal (e.g., approved plans, agreements with other entities, environmental deficiencies, code violations, regulatory actions, court orders, etc.)?

Park GMP and enabling legislation, originally proposed by President Franklin D. Roosevelt.

Project advantages in improving visitor services and educational and recreational opportunities

31. How will the proposed project change the condition of facilities and/or the visitor experience(s) of the park and/or subarea -- upon completion and in the future (e.g., the type, quality, and availability of services or educational/recreational opportunities; current and projected visitation -- capacity, use patterns, and activities; deficiencies or visitor satisfaction; access to the park or subarea; services and facilities outside the park; etc.)?

It will allow us to continue to support the current level of visitor access and visitor experience as well as reopening currently closed portions of the structure.

32. How many visitors will be affected by these changes?

Over 360,000 each year.

Factor: Improve The Efficiency, Reliability And Sustainability Of Park Operations
[Importance of Advantage Score: 0]

Description of Current Conditions

33. What is the nature, extent, and complexity of the current park and/or subarea operation affected by the project (e.g., new area or established park, existing facilities and services, budget and staffing, locational factors such as remoteness or proximity to alternative facilities and services, etc.)?

The project involves the exterior envelope of the core historic structure of the park. Vanderbilt Mansion NHS was established in 1940. ONPS funding currently totals \$1.2 million and FTE is authorized at 23. Vanderbilt visitation was placed at 412,270 in 2007 (Source: FY 2009 Green Book). Hyde Park, NY is home to three National Historic Sites with separate stand-alone enabling legislation: Eleanor Roosevelt NHS, Home of Franklin D. Roosevelt NHS and Vanderbilt Mansion NHS. Although physically disconnected, all three Sites are administered by the same superintendent.

The Vanderbilt Estate in Hyde Park, New York is perhaps the best, most intact example of the types of estates constructed by wealthy industrialists in the 19th century. The fully-furnished, 54-room mansion is placed in a wondrous landscape with breathtaking views of the Hudson River and distant Catskill Mountains. It offers a glimpse into a past world known by only an elite few.

The mission of the Park is to preserve the estate of Frederick W. Vanderbilt which is representative and illustrative of the Gilded Age and significant in the economic, sociological and cultural history of the United States.

34. What is the existing situation for park and/or subarea operations and facilities (e.g., costs, staffing, energy use, functional adequacy, environmental deficiencies, long-term maintainability and/or sustainability of operations, etc.)?

Operations are currently curtailed in some portions of the structure due to the threat of falling portions of the structure. Operations will eventually not be sustainable without this project as entry will become impossible due to the crumbling steps and supports of the entry portico.

35. How are park operations expected to change without the project (e.g., new operating methods or practices, projected budget and staffing, etc.)? Upon what information or authority have these predictions been made?

The core historic feature and focus of the park will no longer be available to the public or staff. Park Facility Operations Specialist.

36. What policies, legal mandates, or park goals for park operations are related to the project (e.g., approved plans, agreements with other entities, environmental deficiencies, code violations, regulatory actions, court orders, etc.)?

This building and collections is the focus and core mission of the park as established by the enabling legislation and all subsequent management documents.

Project advantages in improving operational efficiency, reliability, and sustainability

37. How will the proposed project change park and/or subarea operations and facilities - upon completion and in the future (e.g., costs, staffing, energy use, the quality and availability of services, environmental effects, maintainability, sustainability, etc.). How much will operational costs and staffing be reduced or increased with the project completed?

Operational costs and staffing will not increase. There should be a slight decrease in costs and staff needs as the entrance areas will be more maintainable once rehabilitated.

38. What alternatives have been considered to provide comparable facilities and services without construction, outside the park, or through a non-NPS source (such as another public agency or commercial facility)?

There are no alternatives beyond transfer or abandonment of the core historic structure (and reason for being) of the park.

Factor: Provide Cost-effective, Environmentally Responsible, and otherwise Beneficial Development for the National Park System
[Importance of Advantage Score: 0]

Other project advantages provided to the National Park System

39. What other benefits or advantages to the park, the national park system, or other entities, not addressed in the responses above, would result from completion of the proposed project?

A rehabilitated and accessible structure would allow the park to serve a greater role in building national and international tourism into the region.

40. How would the project provide continuity with or help obtain maximum benefit from previous line-item construction projects or other capital investments?

It would complete the rehabilitation of the building exterior started with the rehabilitation of the roof system (funded via FY 2009 LIC appropriation).

41. How would the project improve long-term institutional capability to accomplish the park or NPS mission?

It would allow us to continue to carry out the core mission of the NPS at this site. Without the project, carrying out the core mission has become difficult and will eventually become impossible.

42. How would the project demonstrate extraordinary organizational leadership or demonstrate innovative approaches that promote conservation and preservation values within and/or beyond the national park system?

The project promotes the core mission of the park through rehabilitation of its most important resource.

43. How would the project improve park and/or NPS organizational credibility by fulfilling legal mandates, agreements, or other commitments?

We would finally be meeting our legal mandate to preserve and maintain this key feature.

44. What benefits or advantages would the project provide to partners, neighbors, communities, or other entities that are not described above?

Aside from the positive results cited in #39, closure of the structure would probably reduce area tourism and have a significant impact on the regional economy as the Vanderbilt Mansion draws two thirds of the total visitation to the National Park Service sites in the area and is considered by many outside groups to be the linch pin of the tourism industry in the mid-Hudson Valley region. Following is excerpted from MGM2/Michigan State U. "Economic Impacts of Visitor Spending by Parks, 2003": Total visitor spending was \$ 11.63 million dollars in 2003. The direct effects of this spending covers sales, income and jobs in businesses selling goods and services directly to park visitors. The direct effects of the \$ 11.63 million spent by Vanderbilt Mansion NHS visitors were \$ 9.07 million in sales, \$ 3.47 million in personal income (wages and salaries), \$ 5.23 million in value added and 211 jobs. The largest direct effects were \$ 1.32 million in the hotel sector, \$ 3.04 million in food and drinking places, \$ 1.66 million in amusements and \$ 1.85 million in retail trade. As visitor spending circulates through the local economy, secondary effects created an additional \$ 1.76 million in personal income and 61 jobs. In sum, visitors to Vanderbilt Mansion NHS spent \$ 11.63 million dollars in 2003 which supported a total of \$ 13.89 million in sales, \$ 5.23 million in personal income, 272 jobs, and \$ 8.23 million in value added.

Component Completion Report

Component Start Date:	Component Completion Date:
Completion Report Date:	Created By:
Change in Condition:	Report Last Updated By:
As Built Drawing or Report Number:	As Built Drawing or Report Title:
Location of Original As Built Drawing or Report:	As Built Drawing or Report Author:
Superintendent Approval Date:	Superintendent Certification:
Brief Quantified Description of Final Product/Outcome:	

APPENDIX G

RECORD OF TREATMENT DOCUMENTS

COMPLETE THE EXTERIOR RESTORATION OF THE VANDERBILT MANSION: PMIS 152373

Predesign Report: Vanderbilt Mansion National Historic Site

Revised June 17, 2011

John G. Waite Associates, Architects PLLC

Predesign Report



Vanderbilt Mansion National Historic Site

**Draft
April 20, 2011**

**Revised
June 17, 2011**

Prepared by John G. Waite Associates, Architects, PLLC

Table of Contents

Predesign Report	3
Contextual Analysis Template	11
NPS Project Sustainability Checklist	13
Basis of Estimate Statement	23
Cost Estimate	24

Appendices

Vanderbilt Mansion Construction History
Mt. Ida Press

Structural Engineer's Field Report & Schematic Design Report
Robert Silman Associates

Vanderbilt Mansion Exterior Cleaning Tests
Frances Gale, Architectural Conservator

Measured Drawings

Conditions Survey Drawings

Investigative Building Probes Drawings

John G. Waite Associates, Architects PLLC
John G. Waite, FAIA
Clay S. Palazzo, AIA
Matthew K. Scheidt, AIA

Robert Silman Associates, Structural Engineers
Nicole Ferran, PE

Fran Gale, University of Texas at Austin

Summary of Predesign Investigation

Additional research did not produce any unknown drawings or specifications of the original construction period of the Vanderbilt Mansion. Original documents were examined in detail at the NPS ROVA archives. Construction photographs were examined and digitally scanned.

Refer to the Materials History Report in the Appendix for information on the stone and ironwork used in the building.

Research indicates that the steel framing and reinforcement system used in the Mansion was manufactured by the Columbian Fireproofing Company of New York City.



The entire exterior of the building was documented through field notes and photographs during the fall of 2010. A 65' aerial lift was used to access all parts of the building. Measured drawings were developed and are attached to this report.



The entire exterior of the building was directly surveyed and all conditions recorded with field notes and over 1,000 photographs. Drawings were developed to record stone damage as well as biological growth, staining and soiling, cracked, pitted, or eroded masonry. Refer to drawings attached to this report.

The first step of the east portico was discovered to be a concrete overpour to a damaged stone stair tread that had fractured in several locations.

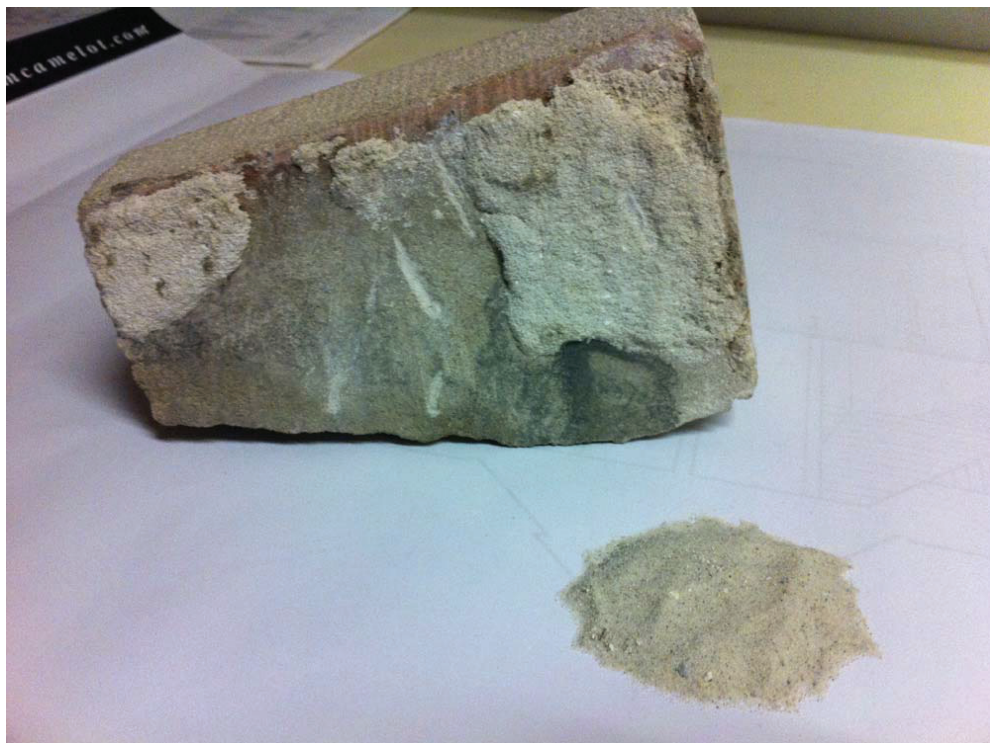
The four areawells at the subbasement windows on the east and west elevations were surveyed. Brick and stone deterioration was noted.

Most cracking patterns found on the exterior are attributable to normal thermal movement coupled with extremely tight joint tolerances. With the exception of the five portico stairs, no significant settlement cracking was noted.

Upon careful visual examination, all pollution deposits were found to be straightforward gypsum encrustations. No laboratory analysis is recommended.



Masonry cleaning test were performed December 2010 in several locations. The preliminary report is attached. Follow up testing will be completed in April 2010. A large portion of the staining on the building is attributable to biological growth.



A preliminary mortar analysis of bedding mortar samples indicates the primary defining feature of the mortar used at the Mansion is the use of extremely fine sand as the aggregate. This unusually fine sand is in almost powder form.

All accessible windows were surveyed and conditions noted on the conditions survey drawings attached.



The wood shutters stored in the subbasement of the Mansion appear to be largely present and intact. Most wood components are in sound condition. A complete piece by piece survey was not conducted to difficult access conditions. Numerous heavy layers of paint build-up should be removed as part any restoration program.

The construction of the portico ceilings was investigated through several borescope probes in multiple locations. Some aspects of the configuration and construction techniques were discovered, however some critical aspects were not accessible and remain unknown. The suspension system of the decorative medallions was not determined. Loose areas of plaster around cracks were discovered in areas corresponding to concealed steel framing members that are corroded.



Probes were performed in several locations on the east, north, and west porticos to discover hidden conditions. Refer to the attached probes plan.



A comprehensive visual inspection of exposed steel at the west portico indicates nearly all steel framing and reinforcing is not salvageable for continued use. No laboratory testing is recommended.



Several below grade probes were conducted to establish typical footing conditions at the west portico.



A probe was performed at a window architrave where substantial stone cracking has occurred. A steel floor framing beam was exposed and found to be in excellent condition. An interior probe at a basement window revealed lightly corroded steel angle lintels.



A planned probe to determine typical stone thickness was not able to be carried out without causing significant damage to the historic fabric. Veneer stones at the cheek walls of the north portico stairs represent the thinnest stone section verified on the building at approximately 6" thick.

Recommendations (Project Program)

1. Chemically clean exterior masonry to remove soil and crusts, staining, and biological growth.
2. Disassemble and reset steps of north, west, south and east porticos, reconstruct masonry backup and foundations as required.
3. Grit blast decorative ironwork. Survey cleaned ironwork for necessary repairs. Repair ironwork, prepare and re-paint. Remove ironwork where stone masonry has been cracked or broken as a result of oxide jacking; repair masonry and ironwork; reinstall ironwork.
4. Replace broken, eroded, and spalled stone paving. Replace precast concrete paving with stone paving.
5. Repair or replace reinforced concrete decking, providing flashing and waterproofing beneath stonework as required. Provide positive slope for drainage of paving.
6. Reinforcement of some existing portico steel framing is required.
7. Reset displaced stonework.
8. Repoint and rebuild brick piers beneath west portico as required.
9. Repoint mortar and replace spalled brick as required beneath north portico.
10. Repair cracks in stone masonry at lintels of basement window openings.
11. Repoint all vertical and horizontal joints of stone masonry.
12. Provide positive drainage away from base of building at grade level. *Note: This item is out of scope but highly recommended.*
13. Provide limited underground footing drains and piping. Provide foundation waterproofing at the north portico. *Note: This item is out of scope but highly recommended.*
14. Provide subsurface storm water drainage system. *Note: This item is out of scope but highly recommended.*
15. Restore windows and doors, including storm windows and doors.
16. Restore masonry chimney construction and chimney caps. *Note: This item is out of scope but highly recommended.*
17. Restore historic light fixtures.
18. Restore and reinstall historic window shutters.
19. Re-set shifting cornice stones at north and south porticos. *Note: This item is out of scope but highly recommended.*
20. Provide sheet metal flashing at all projecting cornices. *Note: This item is out of scope but highly recommended.*
21. Re-set or pin third floor corner blocks and cornices. *Note: This item is out of scope but highly recommended.*

Contextual Analysis Template



NPS

National Park Service

Park/Unit - Project Identification-PMIS No: VAMA 152373

Project Title: Complete the Exterior Rehabilitation of the Vanderbilt Mansion

Park Purpose and Significance: Vanderbilt Mansion National Historic Site

Interpretive Plan Summary: The Vanderbilt Mansion is open for guided tours year round. The Park grounds are open year round.

Description of Existing

Description of Proposed

Site Character

Historic landscaped grounds	No alterations proposed

Building Character

Limestone Beaux Arts style Mansion	No alterations proposed except re-installation of historic wood shutters.

NPS Project Sustainability Checklist

Building Projects

(For New Construction or Major Renovation)



Project Title: Vanderbilt Mansion Exterior Restoration

Description: Park/PMIS: VAMA/PMIS 152373

Architect/Engineer Firm: John G. Waite Associates, Architects

Date: 6/3/2011

Fund Source: 2010

Pre-design Begin Date: FY of Const. Funding: VAMA

Park: NY

State: NY

Gross Project Construction Cost: \$6,558,973

Gross Building Construction Cost: \$4,684,981

Gross Non Building (i.e. Site) Cost: \$0

Region: Northeast

Type of Building: Historic

LEED Certification Level Sought:

% Federal Regulations Achieved	0%	28%	3%	3%	3%
Total LEED-NC Credits	Missed Prereq.	Missed Prereq.	Missed Prereq.	Missed Prereq.	Missed Prereq.
LEED Certification Level	Not Certified/Missing Prereq.	Not Certified/Missing Prereq.	Not Certified/Missing Prereq.	Not Certified/Missing Prereq.	Not Certified/Missing Prereq.

Sustainable Sites (SS)

14 LEED-NC Credits

Sustainability Features	PMIS Submission		Pre-design		Schematic Design		Design Development		Construction Documents		Construction	
	Y/N	Concisely explain how credit/requirement is met at this milestone.	Y/N	Concisely explain how credit/requirement is met at this milestone.	Y/N	Concisely explain how credit/requirement is met at this milestone.	Y/N	Concisely explain how credit/requirement is met at this milestone.	Y/N	Concisely explain how credit/requirement is met at this milestone.	Y/N	Concisely explain how credit/requirement is met at this milestone.
SS Prereq 1 Construction Activity Pollution Prevention			Y	Construction activity pollution prevention plan will be specified in CD phase								
SS Credit 1 Site Selection			Y	Existing Site								
SS Credit 2 Development Density & Community Connectivity			Y	Meets "Community Connectivity" requirements by having basic services within a 1/2 mile radius of the building.								
SS Credit 3 Brownfield Redevelopment			N	Not applicable								
SS Credit 4.1 Alternative Transportation, Public Transportation Access			Y	Meets "Public Transportation Access" requirement by being located a 1/4 mile from a public transit stop.								
SS Credit 4.2 Alternative Transportation, Bicycle Storage & Changing Rooms			N	None provided								
SS Credit 4.3 Alternative Transportation, Low-Emitting & Fuel-Efficient Vehicles			N	None provided								

Sustainability Features		PMIS Submission		Predesign		Schematic Design		Design Development		Construction Documents		Construction	
		Y/N	Concisely explain how credit/requirement is met at this milestone:	Y/N	Concisely explain how credit/requirement is met at this milestone:	Y/N	Concisely explain how credit/requirement is met at this milestone:	Y/N	Concisely explain how credit/requirement is met at this milestone:	Y/N	Concisely explain how credit/requirement is met at this milestone:	Y/N	Concisely explain how credit/requirement is met at this milestone:
SS Credit 4.4	Alternative Transportation, Parking Capacity			N	None provided								
SS Credit 5.1	Site Development, Protect or Restore Habitat			Y	Existing natural areas to be conserved. Protective measures will be taken during the construction process.								
SS Credit 5.2	Site Development, Maximize Open Space			Y	Area of vegetated open space far exceeds area of building footprint per Option 2.								
SS Credit 6.1	Stormwater Design, Quantity Control (See EISA Section 4.38)			Y	Site drainage will be directed to drywell								
SS Credit 6.2	Stormwater Design, Quality Control (See EISA Section 4.38)			N	Not applicable								
EISA 2007, Section 4.38	Protect Hydrology			N	Not applicable								
SS Credit 7.1	Heat Island Effect, Non-Roof			N	Not applicable								
SS Credit 7.2	Heat Island Effect, Roof			N	Not applicable								
SS Credit 8	Light Pollution Reduction			N	Not applicable								
2006 NPS Mgmt. Policies (Para. 4.9)	Soundscape Preservation			N	Not applicable								
2006 NPS Mgmt. Policies (Para. 4.10)	Dark Sky Preservation			Y	All light fixtures included in this project are within confines of porticos and necessary for "security" and "basic human safety"								
14	LEED-NC Subtotal	Missed Prereq.		6		Missed Prereq.		Missed Prereq.		Missed Prereq.		Missed Prereq.	

Sustainability Features		PMIS Submission		Predesign		Schematic Design		Design Development		Construction Documents		Construction	
		Y/N	Concisely explain how credit/requirement is met at this milestone:	Y/N	Concisely explain how credit/requirement is met at this milestone:	Y/N	Concisely explain how credit/requirement is met at this milestone:	Y/N	Concisely explain how credit/requirement is met at this milestone:	Y/N	Concisely explain how credit/requirement is met at this milestone:	Y/N	Concisely explain how credit/requirement is met at this milestone:
Water Efficiency (WE) 5 LEED-NC Credits													
Sustainability Features		PMIS Submission		Predesign		Schematic Design		Design Development		Construction Documents		Construction	
		Y/N	Concisely explain how credit/requirement is met at this milestone:	Y/N	Concisely explain how credit/requirement is met at this milestone:	Y/N	Concisely explain how credit/requirement is met at this milestone:	Y/N	Concisely explain how credit/requirement is met at this milestone:	Y/N	Concisely explain how credit/requirement is met at this milestone:	Y/N	Concisely explain how credit/requirement is met at this milestone:
WE Credit 1.1	Water Efficient Landscaping. Reduce by 50% [see Guiding Principle III - Protect and Conserve Water]			Y	No irrigation will be used								
WE Credit 1.2	Water Efficient Landscaping. No Potable Use or No Irrigation			Y	No irrigation will be used								
WE Credit 2	Innovative Wastewater Technologies			N	Not applicable								
NPS Policy	Water Metering			Y	Building water use is and will continue to be metered								
EPACT 2005, Section 109	Water Used for Energy Conservation			N	Not applicable								
WE Credit 3.1	Water Use Reduction, 20% Reduction [see Guiding Principle III - Protect and Conserve Water]			N	Not applicable								
WE Credit 3.2	Water Use Reduction, 30% Reduction			N	Not applicable								
LEED-NC Subtotal		0		2		0		0		0		0	
Energy & Atmosphere (EA) 17 LEED-NC Credits													
Sustainability Features		PMIS Submission		Predesign		Schematic Design		Design Development		Construction Documents		Construction	
		Y/N	Concisely explain how credit/requirement is met at this milestone:	Y/N	Concisely explain how credit/requirement is met at this milestone:	Y/N	Concisely explain how credit/requirement is met at this milestone:	Y/N	Concisely explain how credit/requirement is met at this milestone:	Y/N	Concisely explain how credit/requirement is met at this milestone:	Y/N	Concisely explain how credit/requirement is met at this milestone:
EA Prereq 1	Fundamental Commissioning of the Building Energy Systems. * [see Guiding Principle I - Employ Integrated Design Principles]			N	Not applicable								
15													

Sustainability Features		PMIS Submission		Predesign		Schematic Design		Design Development		Construction Documents		Construction	
		Y/N	Concisely explain how credit/requirement is met at this milestone:	Y/N	Concisely explain how credit/requirement is met at this milestone:	Y/N	Concisely explain how credit/requirement is met at this milestone:	Y/N	Concisely explain how credit/requirement is met at this milestone:	Y/N	Concisely explain how credit/requirement is met at this milestone:	Y/N	Concisely explain how credit/requirement is met at this milestone:
EA Prereq 2	Minimum Energy Performance (See Guiding Principle II Optimize Energy Performance)			N	Not applicable								
EA Prereq 3	Fundamental Refrigerant Management (See Guiding Principle V - Reduce Environmental Impact of Materials)			Y	There is no refrigerant involved in this project								
EA Credit 1 (Prereq.)	Optimize Energy Performance: ** 10.5% New Buildings or 3.5% Existing Building Renovations			N	Not applicable								
EA Credit 1 (Prereq.)	Optimize Energy Performance: ** 14% New Buildings or 7% Existing Building Renovations (Min. LEED req)			N	Not applicable								
EA Credit 1 (cont'd)	Optimize Energy Performance:** 17.5% New Buildings or 10.5% Existing Building Renovations			N	Not applicable								
EA Credit 1 (cont'd)	Optimize Energy Performance:** 21% New Buildings or 14% Existing Building Renovations			N	Not applicable								
EA Credit 1 (cont'd)	Optimize Energy Performance:** 24.5% New Buildings or 17.5% Existing Building Renovations			N	Not applicable								
EA Credit 1 (cont'd)	Optimize Energy Performance:** 28% New Buildings or 21% Existing Building Renovations (Federal Regulations require 30% for New Construction and 20% for Existing Building Renovation) (See Guiding Principle II Optimize Energy Performance)			N	Not applicable								
EA Credit 1 (cont'd)	Optimize Energy Performance:** 31.5% New Buildings or 24.5% Existing Building Renovations			N	Not applicable								
EA Credit 1 (cont'd)	Optimize Energy Performance:** 35% New Buildings or 28% Existing Building Renovations			N	Not applicable								
EA Credit 1 (cont'd)	Optimize Energy Performance:** 38.5% New Buildings or 31.5% Existing Building Renovations			N	Not applicable								

Sustainability Features		PMIS Submission		Predesign		Schematic Design		Design Development		Construction Documents		Construction	
		Y/N	Concisely explain how credit/requirement is met at this milestone:	Y/N	Concisely explain how credit/requirement is met at this milestone:	Y/N	Concisely explain how credit/requirement is met at this milestone:	Y/N	Concisely explain how credit/requirement is met at this milestone:	Y/N	Concisely explain how credit/requirement is met at this milestone:	Y/N	Concisely explain how credit/requirement is met at this milestone:
EA Credit 1 (cont'd)	Optimize Energy Performance** 42% New Buildings or 35% Existing Building Renovations			N	Not applicable								
EISA 2007, Section 433	Reduce Fossil Fuel Derived Energy			N	Not applicable								
EO 13423, Sec. 2(h)	Energy Efficient Electronic Products (Select EPEAT) (Predominantly relates to purchases of desktop/laptop computers and peripherals)			N	Not applicable								
CFR Title 10, Part 436.4	Procure Energy Star or FEMP designated products			N	Not applicable								
EPACT 2005, Section 104	Premium Efficiency Electric Motors			N	Not applicable								
EISA 2007, Section 523	On-Site Renewable Energy*** Solar Thermal for Hot Water (Choose NA if proven not life cycle cost effective)			N	Not applicable								
EA Credit 2	On-Site Renewable Energy*** 2.5% Renewable Energy			N	Not applicable								
EA Credit 2 (Cont'd)	On-Site Renewable Energy*** 7.5% Renewable Energy			N	Not applicable								
EA Credit 2 (Cont'd)	On-Site Renewable Energy*** 12.5% Renewable Energy			N	Not applicable								
EA Credit 3	Enhanced Commissioning [required for projects with building net construction cost > \$2 million] (see Guiding Principle I - Employ Integrated Design Principles)			N	Not applicable								
MOU Guiding Principles & EO 13423	Building Commissioning in accordance with ASHRAE 0-2005			N	Not applicable								
EA Credit 4	Enhanced Refrigerant Management (see Guiding Principle V - Reduce Environmental Impact of Materials)			N	Not applicable								

Sustainability Features		PMIS Submission		Pre-design		Schematic Design		Design Development		Construction Documents		Construction	
		Y/N	Concisely explain how credit/requirement is met at this milestone:	Y/N	Concisely explain how credit/requirement is met at this milestone:	Y/N	Concisely explain how credit/requirement is met at this milestone:	Y/N	Concisely explain how credit/requirement is met at this milestone:	Y/N	Concisely explain how credit/requirement is met at this milestone:	Y/N	Concisely explain how credit/requirement is met at this milestone:
EA Credit 5	Measurement & Verification (see Guiding Principle II - Optimize Energy Performance)			N	Not applicable								
NPS Policy	Energy Metering			Y	Building electric use is and will continue to be metered.								
MOU Guiding Principles & EO 13423	Benchmarking - Develop (and execute) a plan to verify that the building energy performance (one year after construction) meets or exceeds the design target			N	Not applicable								
EA Credit 6	Green Power			N	Not applicable								
LEED-NC Subtotal		Missed Prereq.		Missed Prereq.		Missed Prereq.		Missed Prereq.		Missed Prereq.		Missed Prereq.	

Materials & Resources (MR)
13 LEED-NC Credits

Sustainability Features		PMIS Submission		Pre-design		Schematic Design		Design Development		Construction Documents		Construction	
		Y/N	Concisely explain how credit/requirement is met at this milestone:	Y/N	Concisely explain how credit/requirement is met at this milestone:	Y/N	Concisely explain how credit/requirement is met at this milestone:	Y/N	Concisely explain how credit/requirement is met at this milestone:	Y/N	Concisely explain how credit/requirement is met at this milestone:	Y/N	Concisely explain how credit/requirement is met at this milestone:
MR Prereq 1	Storage & Collection of Recyclables			Y	The collection of recyclables is currently available to park staff and visitors								
MR Credit 1.1	Building Reuse, Maintain 75% of Existing Walls, Floors & Roof			Y	Existing building								
MR Credit 1.2	Building Reuse, Maintain 95% of Existing Walls, Floors & Roof			Y	Existing building								
MR Credit 1.3	Building Reuse, Maintain 50% of Interior Non-Structural Elements			Y	Existing building								

Sustainability Features		PMIS Submission		Predesign		Schematic Design		Design Development		Construction Documents		Construction	
		Y/N	Concisely explain how credit/requirement is met at this milestone:	Y/N	Concisely explain how credit/requirement is met at this milestone:	Y/N	Concisely explain how credit/requirement is met at this milestone:	Y/N	Concisely explain how credit/requirement is met at this milestone:	Y/N	Concisely explain how credit/requirement is met at this milestone:	Y/N	Concisely explain how credit/requirement is met at this milestone:
MR Credit 2.1	Construction Waste Management, Divert 50% from Disposal. <u>See Guiding Principle V - Reduce Environmental Impact of Materials</u>			Y	Existing stone portico paving will be stored on site upon removal. Demolished concrete substrate may be recycled. Steel to be removed will be recycled.								
MR Credit 2.2	Construction Waste Management, Divert 75% from Disposal			Y	Existing stone portico paving will be stored on site upon removal. Demolished concrete substrate may be recycled. Steel to be removed will be recycled.								
MR Credit 3.1	Materials Reuse, 5%			N	Not applicable								
MR Credit 3.2	Materials Reuse, 10%			N	Not applicable								
MR Credit 4.1	Recycled Content, 10% (post-consumer + ½ pre-consumer). <u>Use EPA's CPG for designated products to use</u>			N	Not applicable								
MR Credit 4.2	Recycled Content, 20% (post-consumer + ½ pre-consumer)			N	Not applicable								
MR Credit 5.1	Regional Materials, 10% Extracted, Processed & Manufactured Regionally			N	Not applicable								
MR Credit 5.2	Regional Materials, 20% Extracted, Processed & Manufactured Regionally			N	Not applicable								
<u>EO 13423, Sec. 2(d)</u>	<u>Biopreferred Products</u>			N	Not applicable								
MR Credit 6	Rapidly Renewable Materials			N	Not applicable								
MR Credit 7	<u>Certified Wood</u> <u>See Guiding Principle V - Reduce Environmental Impact of Materials</u>			N	Not applicable								
19	LEED-NC Subtotal			5								Missed Prereq.	

Sustainability Features		PMIS Submission		Pre-design		Schematic Design		Design Development		Construction Documents		Construction	
		Y/N	Concisely explain how credit/requirement is met at this milestone:	Y/N	Concisely explain how credit/requirement is met at this milestone:	Y/N	Concisely explain how credit/requirement is met at this milestone:	Y/N	Concisely explain how credit/requirement is met at this milestone:	Y/N	Concisely explain how credit/requirement is met at this milestone:		
Indoor Environmental Quality (EQ)													
15 LEED-NC Credits													
Sustainability Features		PMIS Submission		Pre-design		Schematic Design		Design Development		Construction Documents		Construction	
		Y/N	Concisely explain how credit/requirement is met at this milestone:	Y/N	Concisely explain how credit/requirement is met at this milestone:	Y/N	Concisely explain how credit/requirement is met at this milestone:	Y/N	Concisely explain how credit/requirement is met at this milestone:	Y/N	Concisely explain how credit/requirement is met at this milestone:		
EQ Prereq 1	Minimum IAQ Performance (See Guiding Principle IV, Enhance Indoor Environmental Quality)			N	Not applicable								
EQ Prereq 2	Environmental Tobacco Smoke (ETS) Control			Y	No smoking is allowed in the building.								
EQ Credit 1	Outdoor Air Delivery Monitoring			N	Not applicable								
EQ Credit 2	Increased Ventilation			N	Not applicable								
EQ Credit 3.1	Construction IAQ Management Plan, During Construction (See Guiding Principle IV, Enhance Indoor Environmental Quality)			N	Not applicable								
EQ Credit 3.2	Construction IAQ Management Plan, Before Occupancy (See Guiding Principle IV, Enhance Indoor Environmental Quality)			N	Not applicable								
EQ Credit 4.1	Low-Emitting Materials, Adhesives & Sealants (See Guiding Principle IV, Enhance Indoor Environmental Quality)			Y	Low emitting sealants will be specified.								
EQ Credit 4.2	Low-Emitting Materials, Paints & Coatings (See Guiding Principle IV, Enhance Indoor Environmental Quality)			N	Not applicable								
EQ Credit 4.3	Low-Emitting Materials, Carpet Systems (See Guiding Principle IV, Enhance Indoor Environmental Quality)			N	Not applicable								
EQ Credit 4.4	Low-Emitting Materials, Composite Wood & Agrifiber Products			N	Not applicable								
		20											

Sustainability Features		PMIS Submission		Predesign		Schematic Design		Design Development		Construction Documents		Construction	
		Y/N	Concisely explain how credit/requirement is met at this milestone:	Y/N	Concisely explain how credit/requirement is met at this milestone:	Y/N	Concisely explain how credit/requirement is met at this milestone:	Y/N	Concisely explain how credit/requirement is met at this milestone:	Y/N	Concisely explain how credit/requirement is met at this milestone:		
EQ Credit 5	Indoor Chemical & Pollutant Source Control			N	Not applicable								
MOU Guiding Principles & EO 13423	Moisture Control (See ASHRAE Fundamentals 2005 and/or Moisture Control Handbook (Lstiburek and Carmody 1991) for recommended practices.)			Y	The entire project is essentially a moisture control project.								
EQ Credit 6.1	Controllability of Systems, Lighting (See Guiding Principle IV, Enhance Indoor Environmental Quality)			N	Not applicable								
EQ Credit 6.2	Controllability of Systems, Thermal Comfort			N	Not applicable								
EQ Credit 7.1	Thermal Comfort, Design (See Guiding Principle IV, Enhance Indoor Environmental Quality)			N	Not applicable								
EQ Credit 7.2	Thermal Comfort, Verification			N	Not applicable								
EQ Credit 8.1	Daylight & Views, Daylight 75% of Spaces (See Guiding Principle IV, Enhance Indoor Environmental Quality)			N	Not applicable								
EQ Credit 8.2	Daylight & Views, Views for 90% of Spaces			N	Not applicable								
LEED-NC Subtotal		Missed Prereq.		Missed Prereq.		Missed Prereq.		Missed Prereq.		Missed Prereq.		Missed Prereq.	
Innovation & Design Process (ID) 5 LEED NC Credits													
Sustainability Features		PMIS Submission		Predesign		Schematic Design		Design Development		Construction Documents		Construction	
		Y/N	Concisely explain how credit/requirement is met at this milestone:	Y/N	Concisely explain how credit/requirement is met at this milestone:	Y/N	Concisely explain how credit/requirement is met at this milestone:	Y/N	Concisely explain how credit/requirement is met at this milestone:	Y/N	Concisely explain how credit/requirement is met at this milestone:		
ID Credit 1.1	Innovation in Design: Provide Specific Title			Y	Restore historic structure								

Sustainability Features		PMIS Submission		Predesign		Schematic Design		Design Development		Construction Documents		Construction	
		Y/N	Concisely explain how credit/requirement is met at this milestone:	Y/N	Concisely explain how credit/requirement is met at this milestone:	Y/N	Concisely explain how credit/requirement is met at this milestone:	Y/N	Concisely explain how credit/requirement is met at this milestone:	Y/N	Concisely explain how credit/requirement is met at this milestone:	Y/N	Concisely explain how credit/requirement is met at this milestone:
ID Credit 1.2	Innovation in Design: Provide Specific Title			Y	Restore historic structure								
ID Credit 1.3	Innovation in Design: Provide Specific Title			Y	Restore historic structure								
ID Credit 1.4	Innovation in Design: Provide Specific Title			Y	Restore historic structure								
ID Credit 2	LEED® Accredited Professional			Y	Project Architect is LEED certified								
LEED-NC Subtotal		0		5		0		0		0		0	

Non-LEED-NC Federal Requirements

Sustainability Features		PMIS Submission		Predesign		Schematic Design		Design Development		Construction Documents		Construction	
		Y/N	Concisely explain how credit/requirement is met at this milestone:	Y/N	Concisely explain how credit/requirement is met at this milestone:	Y/N	Concisely explain how credit/requirement is met at this milestone:	Y/N	Concisely explain how credit/requirement is met at this milestone:	Y/N	Concisely explain how credit/requirement is met at this milestone:	Y/N	Concisely explain how credit/requirement is met at this milestone:
MOU Guiding Principles & EO 13423 (pg. 3)	Complete Integrated Design Narrative During Predesign Only	NA		Y	An integrated design team has been established for the project.	Y	N/A	Y	N/A	Y	N/A	Y	N/A

Fulfillment of Guiding Principles for HPSS completes 24 LEED NC credits and 7 prerequisites.

LEED Certification Rating System

Certified: 26-32 points, **Silver:** 33-38 points, **Gold:** 39-51 points, **Platinum:** 52-69 points

For more information on LEED Certification and credits, visit www.usgbc.org

* For projects of net construction equal to or greater than \$2 million, contract with an independent Commissioning Authority and comply with ASHRAE 0-2005, "The Commissioning Process". For projects with a lower net construction value, comply with the requirements of LEED NC 2.2. EA Prerequisite 1, "Fundamental Commissioning of the Building Energy Systems" (which allows the commissioning authority to be an employee of the design firm)

** For projects of net construction equal to or greater than \$2 million, perform whole building energy simulation(s) in accordance with ASHRAE 90.1, 2007 (or IECC 2006 for residential) to show performance at least 30% better (20% for major renovations) than a code compliant similar building. If it can be shown that meeting the 30% performance standard for new construction (or 20% for major renovations) is not life cycle cost effective (over 40 years) then the project must incorporate the maximum energy savings that can be shown to be life cycle cost effective. For projects with a lower net construction value, meet or exceed the minimum requirements prescribed by the ASHRAE Advanced Energy Design Guide (a much simpler prescriptive method for achieving the target) appropriate for the project's building. For buildings without an appropriate Advanced Energy Design Guide perform whole building energy simulation(s).

*** The federal requirement (from EISA 2007) that relates to these LEED-NC credits is "Where life cycle cost effective, design systems to provide not less than 30 percent of the hot water demand through the installation and use of solar hot water heaters." The LEED credits for this item stipulates a percentage of total energy consumption to be provided by on site renewable sources. In some cases meeting the federal requirement will also meet the LEED requirement for these credits.

Class C Construction Cost Estimate

Project: Rehabilitate The Exterior of the Vanderbilt Mansion

Park: Vanderbilt Mansion National Historic Site

Location: Hyde Park, New York

PMIS: 152373

Basis of Estimate

Date of Estimate: draft 04/15/2011
revised 6-03-11

Estimated By: John G. Waite Associates, Architects
384 Broadway
Albany, NY 12207

Supporting Material: Pre-Design Documents

Cost Data: Square Foot Cost Data
Unit Prices based on 2011 Cost data

Mark-ups and Add-ons: **Published Location Factor:** not applicable
Project Remoteness: not applicable
Federal Wage Rate Factor: 6 percent on labor costs (assumed 65% of total cost)
Design Contingency: 10 percent
Taxes: included in Unit Costs
Standard General Conditions: 11 percent
Government General Conditions: 7 percent
Bonds and Permits: 1.5 percent bond included in General Conditions. No permit costs.
Historic Preservation Factor: Not Applicable
Overhead: 12 percent
Profit: 10 percent
Contracting Method Adjustment: 0% Assume competitive negotiation
Inflation Escalation: 2.5% annually. Assume start of construction to be spring, 2012.
24 months to midpoint of 2013.

Comments:

Construction Cost Estimate

Project: Vanderbilt Mansion Exterior Restoration
Park: Vanderbilt Mansion National Historic Site
PMIS:

Estimate By: JGWA
Date: 04/15/11
Reviewed By: JGWA
Date: 04/15/11
Revised: 06/03/11

Estimate is based on 2011 costs

Item No.	Description			Total	
	Cost Estimate Summary				
	Exterior Restoration			\$4,301,896	
	Option #1- Portico Shoring			\$132,046	
	Total Estimated NET Cost of Construction			\$4,433,943	
	Exterior Restoration			\$4,301,896	
	Option #2- Portico Repair / In-Kind Replacement			\$1,074,611	
	Total Estimated NET Cost of Construction			\$5,376,508	
	Exterior Restoration			\$4,301,896	
	Option #3- Replace Portico Structure			\$2,166,442	
	Total Estimated NET Cost of Construction			\$6,468,338	
	All markup adjustments included above.				

General Notes:

1. Local costs have been used. No location factor required.
2. There are no significant access issues at this site. No remoteness factor required.
3. Historic preservation concerns have been addressed in the design. No adjustment required.
4. No allowance has been made for cost of archaeological investigation.

Construction Cost Estimate

Project: Exterior Restoration (Excluding Portico Paving)
Park: Vanderbilt Mansion National Historic Site
PMIS:

Estimate By: JGWA
Date: 04/15/11

Reviewed By: JGWA
Date: 04/15/11

Estimate is based on 2011 costs

Item No.	Description	Quantity	Unit	Cost/Unit	Total
	Demolition & Site Work				
2.1	Selective Removals	1	ALLOW	\$20,000	\$20,000
2.2	Landscape Repair	1	ALLOW	\$20,000	\$20,000
2.3	Scaffold Entire Building	1	ALLOW	\$100,000	\$100,000
	Masonry				
4.1	Masonry Cleaning	34,500	SF	\$10	\$345,000
4.2	Stone Dutchman Repairs	100	SF	\$200	\$20,000
4.3	Plastic Stone Repairs	50	SF	\$150	\$7,500
4.4	Stone Crack Repair	200	LF	\$100	\$20,000
4.5	Brick Repair	100	SF	\$100	\$10,000
4.6	Repoint Entire Building	34,500	SF	\$15	\$517,500
4.7	Re-set Portico Cornice Corners	4	EA	\$20,000	\$80,000
4.8	Re-set Portico Copings	70	EA	\$500	\$35,000
4.9	Re-set Third Floor Corners	8	EA	\$0	\$0
4.1	Re-set Areaway Copings	4	EA	\$1,000	\$4,000
	Metals				
5.1	Restore Decorative Window Grilles	67	EA	\$1,000	\$67,000
5.2	Restore Iron Balconies	3	EA	\$25,000	\$75,000
5.3	Restore Areaway Grates	4	EA	\$1,000	\$4,000
5.4	Replace Areaway Railing	1	EA	\$10,000	\$10,000
	Wood				
6.1	Minor Repairs & Paint Wood Balcony Floors	3	ALLOW	\$1,500	\$4,500
	Thermal & Moisture Protection				
7.1	Replace Large Lead T-Caps	80	EA	\$200	\$16,000
7.2	Provide Small Lead T-Caps	80	EA	\$100	\$8,000
7.3	Portico Cornice Flashing	1,800	SF	\$40	\$72,000
	Windows and Doors				
8.1	Restore & Paint Large Wood Windows	82	EA	\$3,000	\$246,000
8.2	Restore & Paint Small Wood Windows	32	EA	\$2,000	\$64,000
8.3	Restore & Paint Large Wood Storm Windows	82	EA	\$2,000	\$164,000
8.4	Restore & Paint Small Wood Storm Windows	32	EA	\$1,000	\$32,000
8.5	Restore & Paint Wood Window Frames	114	EA	\$1,000	\$114,000
8.6	Restore & Paint Wood Shutters	164	EA	\$1,000	\$164,000
8.7	Restore Wood Doors	3	EA	\$10,000	\$30,000
8.8	Restore Stained Glass Windows	2	EA	\$10,000	\$20,000
	Finishes				
9.1	Repair Portico Ceiling Plaster	2,020	SF	\$50	\$101,000
9.2	Paint Portico Ceilings	2,020	SF	\$20	\$40,400
	Electric				
10.1	Restore Historic Light Fixtures	4	EA	\$2,500	\$10,000
10.2	Provide Reproduction Light Fixtures	3	EA	\$7,500	\$22,500

Construction Cost Estimate

	Subtotal Direct Construction Costs				\$2,443,400
	Published Location Factor (0%) Not Applicable				\$0
	Remoteness Factor (0%) Not Applicable				\$0
	Federal Wage Rate Factor (6%)				\$146,604
	Design Contingency (10%)				\$244,340
	Total Direct Construction Costs				\$2,834,344
	Standard General Conditions (11%)				\$311,778
	Government General Conditions (7%)				\$198,404
	Historic Preservation Factor (0%) Not Applicable				\$0
	Subtotal NET Construction Cost				\$3,344,526
	Overhead (12.5%)				\$418,066
	Profit (10%)				\$334,453
	Estimated NET Construction Cost				\$4,097,044
	Contracting Method Adjustment (0%) Not Applicable				\$0
	Inflation Escalation (5%) to midpoint of 2013				\$204,852
	Total Estimated NET Cost of Construction				\$4,301,896

Construction Cost Estimate

Project: Option #1: Portico Temporary Shoring
Park: Vanderbilt Mansion National Historic Site
PMIS:

Estimate By: JGWA
Date: 04/15/11

Reviewed By: JGWA
Date: 04/15/11

Estimate is based on 2011 costs

Item No.	Description	Quantity	Unit	Cost/Unit	Total
	Demolition & Site Work				
2.1	Selective Removals	1	ALLOW	\$5,000	\$5,000
2.2	Provide Temporary Shoring At East Portico	1	ALLOW	\$10,000	\$10,000
2.3	Provide Temporary Shoring At North Portico	1	ALLOW	\$20,000	\$20,000
2.4	Provide Temporary Shoring At West Portico	1	ALLOW	\$25,000	\$25,000
2.5	Provide Temporary Shoring At South Portico	1	ALLOW	\$15,000	\$15,000
	Subtotal Direct Construction Costs				\$75,000
	Published Location Factor (0%) Not Applicable				\$0
	Remoteness Factor (0%) Not Applicable				\$0
	Federal Wage Rate Factor (6%)				\$4,500
	Design Contingency (10%)				\$7,500
	Total Direct Construction Costs				\$87,000
	Standard General Conditions (11%)				\$9,570
	Government General Conditions (7%)				\$6,090
	Historic Preservation Factor (0%) Not Applicable				\$0
	Subtotal NET Construction Cost				\$102,660
	Overhead (12.5%)				\$12,833
	Profit (10%)				\$10,266
	Estimated NET Construction Cost				\$125,759
	Contracting Method Adjustment (0%) Not Applicable				\$0
	Inflation Escalation (5%) to midpoint of 2013				\$6,288
	Total Estimated NET Cost of Construction				\$132,046

Construction Cost Estimate

Project: Option #2: Repair or Replace In-Kind Portico Structure

Park: Vanderbilt Mansion National Historic Site

PMIS:

Estimate By: JGWA

Date: 04/15/11

Reviewed By: JGWA

Date: 04/15/11

Estimate is based on 2011 costs

[illegible]

Construction Cost Estimate

	Subtotal Direct Construction Costs			\$610,360
	Published Location Factor (0%) Not Applicable			\$0
	Remoteness Factor (0%) Not Applicable			\$0
	Federal Wage Rate Factor (6%)			\$36,622
	Design Contingency (10%)			\$61,036
	Total Direct Construction Costs			\$708,018
	Standard General Conditions (11%)			\$77,882
	Government General Conditions (7%)			\$49,561
	Historic Preservation Factor (0%) Not Applicable			\$0
	Subtotal NET Construction Cost			\$835,461
	Overhead (12.5%)			\$104,433
	Profit (10%)			\$83,546
	Estimated NET Construction Cost			\$1,023,439
	Contracting Method Adjustment (0%) Not Applicable			\$0
	Inflation Escalation (5%) to midpoint of 2013			\$51,172
	Total Estimated NET Cost of Construction			\$1,074,611

Construction Cost Estimate

Project: Option #3: Replace Portico Structure
Park: Vanderbilt Mansion National Historic Site
PMIS:

Estimate By: JGWA
Date: 04/15/11

Reviewed By: JGWA
Date: 04/15/11

Estimate is based on 2011 costs

Item No.	Description	Quantity	Unit	Cost/Unit	Total
	Demolition & Site Work				
2.1	Selective Removals East Portico	216	SF	\$50	\$10,800
2.2	Selective Removals North Portico	550	SF	\$50	\$27,500
2.3	Selective Removals West Portico	888	SF	\$50	\$44,400
2.4	Selective Removals West Loggia	50	SF	\$100	\$5,000
2.5	Selective Removals South Portico	503	SF	\$50	\$25,150
	Concrete				
3.1	Provide Concrete Slab East Portico	216	SF	\$150	\$32,400
3.2	Provide Concrete Slab North Portico	550	SF	\$150	\$82,500
3.3	Provide Concrete Slab West Portico	888	SF	\$150	\$133,200
3.4	Repair Concrete Slab West Loggia	50	SF	\$150	\$7,500
3.5	Provide Concrete Slab South Portico	503	SF	\$150	\$75,450
	Masonry				
4.1	Provide New Stone Paving East Portico	254	SF	\$100	\$25,400
4.2	Provide New Stone Paving North Portico	601	SF	\$100	\$60,100
4.3	Provide New Stone Paving West Portico	1,200	SF	\$100	\$120,000
4.4	Provide New Stone Paving South Portico	601	SF	\$100	\$60,100
4.5	Re-Set Stone Cheekwalls & Steps East Portico	492	SF	\$100	\$49,200
4.6	Re-Set Stone Cheekwalls & Steps North Portico	206	SF	\$100	\$20,600
4.7	Re-Set Stone Cheekwalls & Steps West Portico	190	SF	\$100	\$19,000
4.8	Re-Set Stone Cheekwalls & Steps South Portico	206	SF	\$100	\$20,600
4.9	Re-set Water Table North Portico	1	EA	\$1,000	\$1,000
4.1	Re-set Water Tables West Portico	5	EA	\$1,000	\$5,000
	Metals				
5.1	Restore & Reinstall Stair Railings North Portico	2	EA	\$5,000	\$10,000
5.2	Restore & Reinstall Stair Railings West Portico	2	EA	\$5,000	\$10,000
5.3	Restore & Reinstall Stair Railings South Portico	2	EA	\$5,000	\$10,000
5.4	Prepare & Paint Steel Beams West Loggia	1	ALLOW	\$2,000	\$2,000
	Thermal & Moisture Protection				
7.1	Provide Waterproof Membrane East Portico	254	SF	\$100	\$25,400
7.2	Provide Waterproof Membrane East Stairs	492	SF	\$50	\$24,600
7.3	Provide Waterproof Membrane North Portico	601	SF	\$100	\$60,100
7.3	Provide Waterproof Membrane North Stair	206	SF	\$50	\$10,300
7.3	Provide Waterproof Membrane West Portico	1,200	SF	\$100	\$120,000
7.3	Provide Waterproof Membrane West Stairs	190	SF	\$50	\$9,500
7.3	Provide Waterproof Membrane South Portico	601	SF	\$100	\$60,100
7.3	Provide Waterproof Membrane South Stairs	206	SF	\$50	\$10,300
	Finishes				
9.1	North Areaway Plaster Ceiling	550	SF	\$50	\$27,500
9.2	Wine Cellar Plaster Ceiling	216	SF	\$50	\$10,800
	Plumbing				
11.1	Portico Drainage Piping	1	ALLOW	\$15,000	\$15,000

Construction Cost Estimate

	Subtotal Direct Construction Costs			\$1,230,500
	Published Location Factor (0%) Not Applicable			\$0
	Remoteness Factor (0%) Not Applicable			\$0
	Federal Wage Rate Factor (6%)			\$73,830
	Design Contingency (10%)			\$123,050
	Total Direct Construction Costs			\$1,427,380
	Standard General Conditions (11%)			\$157,012
	Government General Conditions (7%)			\$99,917
	Historic Preservation Factor (0%) Not Applicable			\$0
	Subtotal NET Construction Cost			\$1,684,308
	Overhead (12.5%)			\$210,539
	Profit (10%)			\$168,431
	Estimated NET Construction Cost			\$2,063,278
	Contracting Method Adjustment (0%) Not Applicable			\$0
	Inflation Escalation (5%) to midpoint of 2013			\$103,164
	Total Estimated NET Cost of Construction			\$2,166,442

**Vanderbilt Mansion
Hyde Park, New York**

**Report on the Construction of
Exterior Masonry, Porticos, and Ironwork**

Prepared by
Mount Ida Press
Albany, New York

Prepared for
John G. Waite Associates, Architects
Albany, New York

May 2011

Contents

The Langdon Mansion and the Design of the Vanderbilt Mansion	3
Erecting the Vanderbilt Mansion at Hyde Park	9
Norcross Brothers, Contractors for the Vanderbilt Mansion	11
Indiana Limestone, the Vanderbilts, and Norcross Brothers	13
Bluestone, Marble, and Ironwork	17
The National Park Service at the Vanderbilt Mansion	18
End Notes	21

The Langdon Mansion and the Design of the Vanderbilt Mansion

After his father's death in 1885, Frederick W. Vanderbilt had inherited a share of the unprecedented fortune that had been amassed by his grandfather Cornelius "Commodore" Vanderbilt and then nurtured by his father, William Henry Vanderbilt. Frederick and his siblings used their inheritances to build large country houses in such places as Westchester County, New York; Newport, Rhode Island; Burlington, Vermont; Morris County, New Jersey; and Asheville, North Carolina, many in the 1890s.

Plans for the Hudson River estate now known as the Vanderbilt Mansion, however, began on a considerably smaller scale than the present building would suggest. In May 1895 Frederick Vanderbilt purchased property in Hyde Park, New York, that had been put on the market in 1894 after the death of its owner, Walter Langdon Jr., whose wife, Catherine Livingston, and son had predeceased him. The property had once belonged to the esteemed Manhattan physicians Samuel Bard and David Hosack. The house that was on the property in 1894 was said to have been built for Walter and Dorothea Langdon by her father, John Jacob Astor, before his death in 1848. The construction date has traditionally been given as 1847; when this house was being demolished, a board marked with that date was discovered and interpreted as the date of construction. Dorothea and Walter's son Walter Langdon Jr. was the builder of the Haughwout Building, one of Manhattan's finest cast-iron commercial buildings. One report later stated that cast iron was also used on the exterior of the Langdon house; photographs show that there was at least a cast-iron piazza on the west side of the house and cast-iron railings on the south and east façades.¹

In reporting the news of the sale to Frederick Vanderbilt, the *Poughkeepsie Sunday Courier* reported that there had been "little in the way of improvement undertaken on the Langdon estate for some years," but "its delightful situation, its natural beauty and the unusually fine views which it commands have made it one of the most notable country seats on the Hudson."² Another article stated that Vanderbilt

had acquired the property for a somewhat modest \$125,000 but that “the place was somewhat neglected, and run down”:

Mr. Vanderbilt found a beautiful park all grown up to underbrush. The lawns were covered with the wild growth that nature puts forth under forest trees, and stone walls appeared in all sorts of inappropriate places,—the product of tramp labor, for Mr. Langdon was very fond of providing employment for these gentry. There were hot-houses ample but empty; the stables and farm-buildings were in a state of extreme dilapidation; and the stately old mansion, of purest Greek architecture, was painted a light pink! ³

The house had brick walls, which had been stuccoed, and a timber frame of Michigan pine.⁴ An oil painting dating from 1856 by Johann Hermann Carmiencke, who painted landscapes in the Hyde Park vicinity, shows the Langdon house with a three-bay wide portico on the two-story central block of the east facade and two story wings to the north and south. The painting shows the house with a rosy colored façade, bathed in golden light.⁵ It was said that Frederick and his wife, Louise, were especially fond of the semi-circular portico on the west façade, which enjoyed splendid views of the Hudson River and the Catskills.⁶

Within a month of the purchase date, the Vanderbilts had had the furniture from the house removed and shipped to New York and had hired the New York architectural firm of McKim, Mead and White to alter and add to the house. The architects soon had dispatched staff to Hyde Park to measure the house so that drawings of the existing conditions could be prepared. On June 18 Charles F. McKim, the partner who would oversee the project, wrote Frederick Vanderbilt that the firm’s staff had left for Hyde Park the prior evening, were then “at work, and will remain upon it until sufficient data is gained to set it up on paper.” McKim thought that it would take three to four days to complete the measuring and “a week more in drawing them out.” As soon as the drawings were ready, he would notify Vanderbilt and “then arrange for such improvements and alterations as you may deem desirable.” The *Poughkeepsie Sunday Courier* predicted that the “work of remodeling the property will be started this fall and completed next spring.”⁷

The *Courier* also reported that the Vanderbilts planned to retain the central block of the house but to demolish the north and south wings and have “additions built where they stand,” a scheme not unlike that being followed by Ogden Mills at his nearby mansion at Staatsburg. The *Courier* pointed out that Mills had “respected the historical associations of the site which it occupies by leaving untouched the walls of the old house in which his wife, Maturin Livingston’s daughter, was born, and which had been in her family for many years.” While the “old rooms retain their original shape,” the story continued, the “old walls have been so completely enclosed and adapted to new conditions that nobody would suspect their existence.” The exterior walls of the Mills house, including the column and capitals, were built of brick covered with stucco “made from imported cement”; they were three feet thick on the first story, two feet on the second floor, and 20 inches thick on the third floor. According to the same newspaper account, “Mr. Mills’ new house has been looked over several times by Mr. Vanderbilt during its erection.”⁸

A week after McKim sent his June 18 letter to Vanderbilt, he wrote to his Thomas Newbold, who also had a house in Hyde Park, that “indeed we have done pretty well considering the time. The whole house has been measured and drawn out at a quarter scale, and we are now struggling over the alterations, which you will either like or dislike extremely.” “I am sure you will be glad to hear,” he continued, “that our men found the walls of the old house in good condition and that we shall therefore have no excuse for tearing them down.” In terms of the design, McKim was confident that “the wings are going to greatly improve the house without disturbing its character,” and he wanted “to study the house more thoroughly.”⁹

A lengthy article published in the *Sunday Courier* in September 1895 provided more details about the dwelling, which stood “on the highest point of the property, and from its west porch commands a view up and down the river for many miles, and of the mountains scenery across the river.” On the river side, the article continued, the house had a “semi-circular veranda, upheld by graceful Corinthian columns, while the “portico on the east side is supported by Ionic columns” and a “broad,

brownstone staircase” led down “to a fine lawn.” The house was said to have “about forty rooms, most of which look upon one or the other of these beautiful lawns.” “The dining room at the north and the library on the south end of the building,” the story continued, “both have a fine view of the river.”¹⁰

In July 1895 McKim explained in a letter that he had “returned with F. W. Vanderbilt (and the plan on which we have been engaged for him) on his yacht to the landing place at Hyde Park on the Hudson which he has recently purchased” and “then, after further discussion of the plans, to the office.”¹¹

Apparently there were some delays, however, for the architectural drawings of the alterations and additions were not completed for several weeks: they were dated September 23 and September 26, 1895. Additional drawings were prepared by the Wells and Newton Company, a New York engineering and contracting firm, and dated October 28, 1895.¹² Meanwhile, by October, Norcross Brothers, the contractors who had been selected to carry out the demolition and construction work, were busy at the property. Their workers had nearly completed building the Pavilion, which the Vanderbilts would use as a residence during the winter and while awaiting completion of the main house.¹³

Evidently the Vanderbilts had approved McKim’s plans that fall, for in mid-December the *Poughkeepsie Sunday Courier* reported that the “work of repairing the Vanderbilt mansion has been commenced.”¹⁴ McKim, Mead and White’s financial records from December 1895 indicate that Norcross Brothers then held a contract for \$125,000 for the “Additions & Alterations to House at Hyde Park.”¹⁵

However, the project soon ran into trouble. On December 29, 1895, the *Sunday Courier* reported that although work on the Mills mansion was nearing completion, the Vanderbilts had been forced to change course: Vanderbilt was now “having the old house on the bluff torn down,” the reporter observed, “and will replace it with a modern mansion 193 feet long and 86 feet wide to cost between \$400,000 and

\$500,000.” The paper predicted that “preparations are so far advanced that it is likely Mr. Vanderbilt’s big house will be started this winter.”¹⁶ On January 26, 1896, the paper noted that “work on the Vanderbilt Mansion has been suspended for a time.”¹⁷

Charles McKim, meanwhile, had undergone surgery and on December 7, 1895, had left for the Mediterranean to recuperate, making visits to Egypt, Athens, and Rome and not returning until the spring of 1896. In February his business partner William Mead wrote to McKim explaining the current situation at Hyde Park:

Fred Vanderbilt’s job has met with a serious delay, but he has acted very nicely about it and I think on the whole is glad it has turned out so. When we came to tear the old house apart, it was found to be in as bad a condition as the annex—no strength to the mortar, walls out of plumb, etc., etc.; in fact, so bad that it seemed foolish to attempt to build anything on it. . . .Vanderbilt hesitated on the ground that if he had not thought there was something to save in the old building he would not have built on these lines. As matters stand now, we are rearranging the center on virtually the same lines but with certain changes in plan, and keeping the exterior just as you left it. There has been a good deal of a fight to do this, because when it was found the old house had to come down Mrs. Vanderbilt kicked over the traces and was disposed to build an English house as she called it. We have, however, used your name pretty freely as being much interested in this design and likely to be very much disappointed if anything happened to it, etc., etc., and when you come home you will find that you are still master of the job and to hell with White and Mead! I gave Fred Vanderbilt your address in Rome care of Lord yesterday, and he will perhaps write you by this same steamer.¹⁸

The same day that Mead wrote this letter, he sent another one to McKim that included the news that Vanderbilt come to their office and had “taken his revised plan with which he seems satisfied.” Vanderbilt had promised to write McKim, and he was true to his word, dispatching a letter to Rome on February 25 to let McKim “know how we are getting on at Hyde Park.” He and Louise had had a comfortable stay in the Pavilion despite the cold weather, but, he continued, “we came to grief almost as soon as we started to tear out the old house finding the walls & beams in very bad shape.” Norcross’s representative, a Mr. Riley, had “pronounced the walls

unsafe to go on with the proposed addition & not capable of sustaining the extra weight of the third story.” Vanderbilt continued:

Nothing would do but to pull the old house all down & start fresh, so the work came to a standstill as we were not willing to build a new house on the same lines of the old one built 40 years ago. Your office then drew up some new sketches &c for a brick house but now we are back again on the old plans modified somewhat & are nearly ready to receive Rileys bids for a new house the front to remain the same as the sketch you had drawn except to make ceilings same height throughout first floor & get better windows on second & to make the building of brick with stucco trim & columns instead of all stucco. Improve the hall by making it much larger & changing position of staircase, but the wings to remain same as you proposed. Mead said he would write you. Of course all this means delay & giving up all idea of getting in next Winter.¹⁹

The McKim, Mead and White office moved ahead with the drawings for the new building. Those dated March 27, 1896, were done while McKim was still abroad; they included five sheets of small-scale plans for the sub-basement, basement, and the first through third stories, as well as five sheets of larger-scale drawings—a sheet of transverse and longitudinal sections and four elevations delineating a house with brick and stucco facades.²⁰ In mid-June 1896 the architects calculated their fee at \$3,110.69 for “charges at cost for Designs, Working Drawings, Specifications and details for Proposed House at Hyde Park from June 1895 to May 1896.”²¹

The *Poughkeepsie Sunday Courier* published an article in mid-July 1896 giving an update on the work to be done: “The old Greek mansion, with its thirty rooms will soon be a thing of the past. It seems a pity to destroy the portico—one of the most perfect specimens of the Greek portico in the country—but investigation has shown that the foundations are insecure, and the improvements at first contemplated are out of the question.” Instead, “an elegant mansion, rivaling the far famed Biltmore place, will be erected on the old site during the coming months” (Biltmore was owned by Frederick’s brother George). Work at the Hyde Park property was expected to “be started in about six weeks.”²²

Another set of drawings, this time for the house as it would be built, was prepared during that summer and dated from August 10 through August 17, 1896; this set was presumably done under McKim's direction, since he had returned from Europe in May.²³

Erecting the Vanderbilt Mansion at Hyde Park

In July 1896 barges from the Staples brickyard, located just across the Hudson River at Rondout, New York, had begun delivering the three million bricks that would be used in the mansion and the outbuildings.²⁴ The *Sunday Courier* reported on September 7, 1896, that "work on the Vanderbilt mansion has been commenced"; annotations on a construction photograph indicate that the work of demolishing the old house had begun a few days earlier, on September 3.²⁵ On September 13 it was reported that there were indeed "about 20 Italian laborers employed in tearing down the old Langdon house."²⁶ The excavation work for the very deep basements was being "done by hand and with horses," and it was determined that the hill on which the mansion would stand was "a mass of conglomerate glacial deposit," which was considered to be "excellent for foundations."²⁷

In late September, the *Sunday Courier* announced, the project would "soon be ready for the masons, who will come from N.Y.," and by October 18 "a number of masons" were "at work laying the foundation."²⁸ A photograph, probably dating from later that fall, shows a large crew of workmen posing on top of the brick and stone foundations; annotations on the photo state that the new construction had actually begun on October 3.²⁹ "The first lot of cut stone," presumably the limestone, arrived during the first week of November.³⁰ As the weather got colder and as perhaps only the more skilled artisans were needed, Norcross Brothers laid off the local workers: a December 1896 news article related that "in fact but two residents of this place are now employed on the building."³¹ Later that month a derrick was "being put in place," another indication that the walls were rising.³² McKim, meanwhile, traveled to Hyde Park for weekends with the Vanderbilts and undoubtedly to inspect the construction work. He had sent them a perspective drawing, presumably of the

house, in late October.³³ By January 1897 McKim, Mead and White had begun billing the Vanderbilts for the firm's 2.5 percent commission on the portions of the contract that had been completed.³⁴

A photograph dated May 29, 1897, shows the two-story limestone walls and window trim in place, more pieces of cut stone ready to be installed, and a large Corinthian column capital for a portico on the ground.³⁵ The stone carving—for the “columns, pilasters, pediments, and brackets in the windows”—was reportedly carried out by a German worker, Leon Buller. According to John Clermont, the superintendent of building for Norcross Brothers, a derrick would lift the uncarved stone for a capital into place, and a plaster model of the capital then “would be hoisted up along side the uncarved cap and Buller would carve from there.”³⁶

Bricklayers were also still at work in the spring of 1897, along with the stonemasons.³⁷ The work did not always go smoothly. The *Sunday Courier* reported in early April that “the rigger who has charge of the derricks at the Vanderbilt mansion, fell from the boom of one of the derricks to the ground, a distance of about thirty-five feet,” suffering severe cuts to his head and breaking his ankle; in June another worker was “seriously injured by the falling of one of the derricks” on the property.”³⁸ In mid-August the *Courier* reported that the “sculptors” who had been at work on the property went out strike, but it may have been the plasterers who walked out. Clermont, Norcross's superintendent, wrote that an Englishman, John Davies, “had been sent up from N.Y. City to do the work” on the ceiling of the west portico and that the “plasterers struck because they objected to Davies doing this work.” The plaster for the portico ceiling was said to have been made using portland cement.³⁹

The *Courier* reported on September 12, 1897, that “with the exception of the porches, the stone work on the Vanderbilt mansion” had been completed and that on November 7 the brickwork was done.⁴⁰ In early September 1898 a stone carver was injured when he fell from a scaffold; it is not clear from the report whether he

was working on the exterior or on the interior of the house or perhaps on some other part of the property.⁴¹ Photographs taken late in the fall of 1897 or in the early spring of 1898 show the exterior of the house nearly complete but without the iron railings and grilles yet in place.⁴² Finally, the paper reported that on December 1, 1898, “Norcross Bros. finished their part of the work on the Vanderbilt mansion.”⁴³

Just two weeks earlier Charles McKim had supplied a letter of recommendation for the construction superintendent, John Clermont. McKim wrote that Clermont had “faithfully performed his duties, not only to the satisfaction of his employers but to this office.” He had “always found Mr. Clermont to be efficient, zealous and prompt in the discharge of his duties, clear and accurate in the interpretation of plans, and possessing to an unusual degree, readiness and ingenuity in overcoming difficulties”; he was as well “obliging and desirous to please” and “trustworthy.”⁴⁴

Work by others on the interior of the mansion, however, continued. In the spring of 1899 the furniture was moved in, some of it acquired in Europe by Stanford White, and the Vanderbilts held their “first house party” on May 12, 1898. During the summer of that year the *Sunday Courier* reported that “H. Myers has a force of men at work cleaning the stones in the Vanderbilt mansion,” but again it is not clear whether this was interior or exterior work.⁴⁵

Norcross Brothers, Contractors for the Vanderbilt Mansion

Just as the choice of McKim, Mead and White as the architects of the Hyde Park house was not surprising, given their many connections with the Vanderbilt family, the choice of Norcross Brothers as the general contractor for the house was also not unpredictable. Norcross Brothers was a leading American contractor at the time the Vanderbilt mansion was being constructed. McKim, Mead and White’s financial records indicate that Norcross Brothers held a contract for construction for the new house in the amount of \$331,412.⁴⁶

Although based in Worcester, Massachusetts, Norcross Brothers also maintained an office in New York, which by 1895 had moved to the Mohawk Building at 160 Fifth Avenue at 21st Street, the same building and the same floor that housed McKim, Mead and White's offices. Norcross had worked very closely with architect H. H. Richardson on large and small projects, including Trinity Church in Boston, many libraries and railroad stations, Albany City Hall, Allegheny County Buildings in Pittsburgh, and Glessner House in Chicago.⁴⁷ By the time Norcross signed the contracts for the Vanderbilt projects in Hyde Park, the firm had also constructed or was then working on monumental buildings that had been designed by McKim, Mead and White, including the Rhode Island State Capitol and the physics building, Schermerhorn Hall, and Low Library at Columbia University.⁴⁸ Furthermore, McKim, as well as his partner Stanford White, would have been familiar with Norcross Brothers as a result of having earlier worked in Richardson's office.⁴⁹

Norcross Brothers had also built many large residences before tackling the Vanderbilt property in Hyde Park, and they had constructed at least three for members of the Vanderbilt family. Among them was 640 Fifth Avenue in Manhattan, built for Frederick's father, William H. Vanderbilt, which Frederick had inherited after his father's death in 1885. Two of Frederick's older sisters and their husbands had started new houses just before the Vanderbilts began their house at Hyde Park, so they could have had the benefit of his sisters' and brother-in-laws' firsthand experience: Margaret and Elliott Shepard were building Woodlea (1892-1895, now the Sleepy Hollow Country Club) in Scarborough, Westchester County, New York, and Florence and Hamilton Twombly were constructing Florham Farms (1894-1897, now owned by Fairleigh Dickinson University) in Morris County, New Jersey. Not only were both of his sisters' mansions constructed by Norcross Brothers; they were also both designed by McKim, Mead and White.⁵⁰

Norcross Brothers' construction business was unusual at that time in that they were general contractors who would assume the responsibility for all trades people involved in a project and who would supply "almost all of the raw and worked

materials” needed in the building. Glenn Brown, later the secretary-treasurer of the American Institute of Architects, worked as a young man with Norcross Brothers on Richardson’s buildings in Boston and Hartford and described how Orlando W. Norcross, the brother who was the field manager for the company, operated:

Richardson relied without ever regretting it upon him for construction and practical details. His method of carrying the work on the Cheney Building I have never known carried out by another contractor. He employed the workmen in the various crafts, carpenters, stone cutters, stone masons, bricklayers, plasterers, and painters, having a capable foreman for each branch. Stone and slate came from his own quarries, and millwork was fabricated in the Worcester shop.⁵¹

Norcross Brothers was successful because the firm had “assembled an immense force of skilled tradesmen, a vast reserve of building materials resources, and the management necessary to efficiently erect buildings” on an unprecedented scale and “level of quality and finish.”⁵² Because Norcross held the general contract for the Vanderbilt mansion, there is no detail about the work done by the various trades in the McKim, Mead and White bill books. Norcross Brothers reportedly received the customary “3% fee on and over all expenses for constructing the mansion at Hyde Park and the other buildings on the estate.”⁵³

Norcross Brothers’ superintendent of building at Hyde Park was John Clermont, who had begun work there on August 4, 1895, when he was 22 years old, and continued in that post through March 27, 1899, when the company’s work was finished. Norcross Brothers, according to Clermont, was responsible for and had “completed all of Vanderbilt Mansion with the exception of the interior decoration,” which was done under contracts with firms that specialized in interiors; the outbuildings, however, Norcross had “finished down to the last detail and ready for habitation.”⁵⁴

Indiana Limestone, the Vanderbilts, and Norcross Brothers

A sheet of Norcross Brothers letterhead from 1895 indicated that the firm dealt in “Sandstones, Granites and Marbles.”⁵⁵ In the mid-1870s the firm had opened its own

quarries for Dedham, Massachusetts, and Westerly, Rhode Island, granite and for Longmeadow, Massachusetts, freestone in connection with the construction of Trinity Church in Boston. The firm expanded its holdings with the acquisition of East Longmeadow sandstone quarries in 1876 and put up a “stonecutting and dressing plant beside the railroad line along with buildings to house a hundred or more workers.” The firm later acquired stone quarries in Georgia, Connecticut, Maine, New Hampshire, New York, and Vermont.⁵⁶ An advertisement published in 1895 stated that the firm also handled “Blue and Buff Indiana Limestone,” but it does not appear that they acquired any quarries in Indiana.⁵⁷

While it is generally accepted that the Hyde Park house was built of Indiana limestone, the earliest textual historical documentation located that confirmed the use of that stone dates only from 1934, when a man in Missouri had written to McKim, Mead and White requesting a copy of floor plans for the house; he made a hobby of “collecting house plans,” he wrote, and needed “one large residence” in order to complete his “collection” of plans. He had noticed an illustration of the Vanderbilt house in a “book from the Indiana Limestone Company, showing houses built from their product.”⁵⁸

At least four of Frederick Vanderbilt’s siblings had already built houses using Bedford oolitic limestone from south central Indiana. In the early 1880s his older brother William Kissam Vanderbilt and his wife Alma had commissioned Richard Morris Hunt to design a mansion at the corner of 660 Fifth Avenue and 52nd Street, and its light colored limestone facades stood out in strong contrast to its brownstone neighbors. This famous house was in fact said to have been the first mansion in the United States to have been built of Indiana limestone; the 25 railroad cars of limestone needed for the house came from the Blue Hole quarry.⁵⁹ The “blue” limestone used in that house was described in a state report in 1890 as being “a pleasing shade of color, fine-grained, even in texture and easily carved.”⁶⁰

The Shepard house in Westchester County had been designed by McKim, Mead and White and completed by Norcross Brothers in 1895 for Frederick's sister Margaret using limestone from the Hoosier quarry in Indiana. At about the same time, two other family members were building mansions of Indiana limestone. At Biltmore, the extravagant North Carolina estate designed by Richard Morris Hunt for Frederick's younger brother, George, the limestone came from the Hallowell quarry. At the 1879-1882 residence of Frederick's older brother Cornelius, designed by George B. Post and located on Fifth Avenue at 57th Street in Manhattan, the "main body" had limestone from the Blue Hole quarry used as trim with the red brick, and the limestone for its "large carved pilasters" had come from the C. S. Norton quarry. In addition, Cornelius's Newport mansion, The Breakers, was constructed of buff Indiana limestone.⁶¹

The stone for the Vanderbilt houses and for the Hyde Park house may have been cut and finished at the Norcross Brothers' Charles River Stone Company in Cambridgeport, Massachusetts. This large steam stone-working plant was described as being "among the largest in New England" and was said to be "thoroughly equipped with the latest and most improved machinery for doing the work in a first-class manner." The plant was connected by rail "with all railroads entering Boston, and was equipped with a large steam and electric plant to cut and polish stone"; it was said the "product of these works is well known everywhere, and has been very extensively used in the buildings erected by the Norcross Brothers and other large builders."⁶² In 1894 and 1896 O. W. Norcross, one of the partners, was awarded two U.S. patents for saws for cutting stone.⁶³

An article in *Stone* magazine published in 1891, just a few years before the construction of the Hyde Park mansion, stated that the limestone from the Bedford, Indiana, region was already "well known to contractors and builders." The Bedford oolitic limestone was described in the annual report filed by the Indiana state geologist in 1896 as "probably the best known building stone in the United States at the present time," having already been used in 23 states. Its many attributes, the

report stated, would “probably keep it in the list among the best building stones”: there was “no other stone as soft and as easily worked that is, at the same time, as durable and strong.” “It is more easily cut and carved than any other well known building stone in this country,” the report continued, “and it will retain the carving in good preservation longer than any other stone of equal softness.”⁶⁴ The Indiana Limestone Company, the source mentioned in the 1934 letter, was reportedly opening a new quarry near Bedford in 1896.⁶⁵

The Bedford stone was classified as blue, buff, or mixed, according to the Indiana state geologist’s 1896 annual report:

The blue is evidently the original color of at least the greater part of the stone, and is thought to be caused by iron in the protoxide form and organic matter, the buff being largely, if not entirely, derived from the blue by oxidation of the iron to the peroxide, and of the organic matter to some volatile form, or some stable form, in which it unites with mineral matter in colorless stable form. The oxidation is a continuous process, not yet complete...⁶⁶

The report also pointed out that “with the exception of the bituminous varieties, the general tendency of the stone is to be come lighter colored on exposure” and noted that “much of the buff stone has a dull yellow color when first quarried, that becomes much lighter on exposure.”⁶⁷ The report also mentioned that the market in the 1890s was changing. “A few years ago,” the report explained, “the blue stone was the highest priced and most sought after.” More recently, although there was “good demand for both colors, the buff is most sought after and most quarried.” The prices for both were “about the same.”⁶⁸ It was especially fitted “for decorative carving on the fronts or exterior of buildings.”⁶⁹

A promotional booklet published by the Indiana Limestone Quarrymen’s Association stated that once the buff limestone had been quarried, it “quickly changes to a beautiful yellowish gray which never alters thereafter, except for the better.” Blue, or gray, limestone came from the lower part of the quarry and would change over time to “a silvery, hazy gray very pleasing to the eye.” Both types had,

the booklet stated, “an indescribably softness” and a “wonderful depth of tone which belongs to Indiana Limestone alone.” Where these two types of stone had been joined in the quarry, a variegated, or mixed, limestone resulted.⁷⁰

Bluestone, Marble, and Ironwork

The bluestone at the Hyde Park house may have come from New York State and perhaps from the quarries west of the Hudson River, since Norcross Brothers had advertised in 1895 that they handled “New York State Bluestone.” An 1890 report stated that there was a “steady demand” for bluestone used in construction and that “for lintels, sills, caps, water-tables, platforms and steps, the bluestone has no superior, for tensile strength and durability.”⁷¹

Norcross Brothers had at least two sources for marble available during the 1890s and may have supplied the marble for the paving of the porticos from those quarries. Since 1889 they had held a partial interest in quarries at Marble Hill in Pickens County, Georgia, which produced white Georgia marble. Located much closer to the Hyde Park house was the Stewart quarry at Tuckahoe, New York, which A. T. Stewart once owned in order to supply the white marble needed for his Fifth Avenue mansion in Manhattan; Norcross Brothers acquired this quarry in the early 1890s and maintained an extensive stone working facility there.⁷²

Norcross Brothers had an “extensive ironworking shop” at their headquarters in Worcester, Massachusetts, and the iron railings and grilles may have been made there.⁷³ It is also possible that the ironwork was produced by the New York City firm of John Williams, for that name appears in the McKim, Mead and White bill books between December 1898 and June 1899. The firm advertised in the 1896-1897 New York City directory as manufacturers of “Brass, Bronze & Wrought Iron Work, Gas Fixtures, Grills &c.”⁷⁴

The window sash and exterior doors for the Vanderbilt mansion may also have been made at Norcross's technologically advanced Worcester planing mill, whose efficiency enabled Norcross to underbid its competitors.⁷⁵

The National Park Service at the Vanderbilt Mansion

Louise Vanderbilt had died in Paris in August 1926, and Frederick Vanderbilt died in June 1938 at Hyde Park. Margaret Van Allen, a niece of Louise, inherited the Hyde Park property and soon put it on the market; when she was not able to sell it, she donated the estate to the U. S. Government two years later. Few references were located pertaining to maintenance carried out in the mid-twentieth century before the Park Service took over. One of the few references stated that in July 1925 the mansion's windowsills were painted, and other exterior painting may have been done in August 1926.⁷⁶

The Secretary of the Interior designated Hyde Park as a National Historic Site on December 18, 1940. A report filed in September 1940 by Ralph W. Emerson, a National Park Service architect, stated that the mansion "seems to be structurally sound in all respects, and since it has been occupied and heated, at least partially, no signs of serious deterioration are evident." Maintenance and minor repairs, "such as painting, caulking, and pointing" would be required "at periodic intervals," he noted, and installing weather stripping "to reduce heat loss" was proposed.⁷⁷

The primary sources of information for the years when the mansion has been under the care of the National Park Service include the reports filed by the superintendents of the Vanderbilt Mansion National Historic Site and usually sent to the director of the Park Service. In her report for October 1943, for instance, Superintendent Gertrude S. Cooper stated that the "outside window sash and frames at the Mansion [are] in very bad shape." "The old paint has peeled up and the putty is falling away from the glass," she continued, "but we are glad to say we have been authorized to have a certain part of the work performed and have asked for an additional small amount to complete the job." Her report for November 1943 stated

that “the painting of the outside window sash, frames and iron grille work on the second and third floor” had been completed; the work had proved taxing because “no painting had been accomplished in several years and most every window had to have new putty.” Work on the first and second floors continued in December. About “80% of the windows in the Mansion were reglazed and given two coats of paint” in 1951, and more trim was painted in the spring of 1952. Four years later “much needed” painting of the iron grill work on the mansion was undertaken.⁷⁸

In the fall of 1944 a mason was hired “to do some of the most important mason work on the buildings,” but it is not clear whether his tasks included work on the mansion. Specifications for pointing at the mansion and gatehouse were prepared and bids solicited in 1948, but no bids were received. The specifications were revised, and the contract was awarded to the Standard Waterproofing Company of New York. That work began in September and was completed in October at a cost of \$8,700; the superintendent noted that the staff was “well pleased with the execution of the contract.”⁷⁹ Meanwhile, in September 1945 the superintendent reported that the “window shutters have been removed from the windows of the Mansion & stored away until such time fund[s] are available to put them in first class condition.”⁸⁰

The Superintendent’s report for October 1949 stated that “prints from original plans” of the mansion had been obtained from McKim, Mead and White.⁸¹ Nine sheets of measured drawings of the mansion were finished in June 1942; five of the drawings were made by D. M. C. Hopping, later a well known restoration architect.⁸²

A contract for weather stripping the mansion was awarded in October 1949 to the Frank Paterson Company of White Plains, and the work was completed in December; the staff reported that the firm had done “very good work” and that the “improved conditions in the mansion were well worth the cost.”⁸³ On the work list for May 1959 were the tasks of repairing and pointing the porch steps at the mansion.⁸⁴

In 1962 the roofs of the porticos were repaired using an asphalt primer and what the specifications termed the equal of the “Monoform” roofing material, made by the Flintkote Company of New York; the work was done by Sun Contractors of Middletown, New York, at a cost of \$6,580.⁸⁵ The portico steps were rebuilt in 1978 or 1978, and pointing work was done at the same time.⁸⁶

In the spring of 1981 the Park Service contracted with Drums Sash and Door Company of Drums, Pennsylvania, to fabricate and deliver two storm doors and 74 storm windows for the mansion at a cost of \$10,121. The sash was to be made using kiln-dried pine and 3/16-inch float glass. The storm doors were to have ¼-inch “clear, plate or float glass.” The wood was to be treated with a preservative and painted. Windows with wrought-iron grills were to have two-piece units. Photographs from July 1981 show the window sash being prepared and painted, evidently in anticipation of the installation of the storm windows.⁸⁷ A second contract, carried out in 1983 by the same firm, authorized the fabrication of eight storm windows for the first floor, all made with two pieces. Drawings of storm windows were prepared in 1979 by Lynch and Cornacchini Architects.⁸⁸

In 1983 drawings were made of the portico railings, and the railings on the west portico were replaced with aluminum components in 1984. This work was done by Joel A. Schwartz of Schwartz’s Forge and Metalworks of Deansboro, New York. As-built drawings of the railings were submitted in April 1985.⁸⁹ Drawings were made of the portico roofs in 1984.⁹⁰

A report prepared in 1992 detailed longstanding problems with the porticos and other masonry:

The four porticos of the Mansion have received virtually no maintenance in the past nine decades and are in need of attention to insure their survival into the 21st century. There are extensive cracks in the ceilings and decks, evidence of possible failures in the underlying structural steel, lost sections

of masonry, and questionable stability in the brick supporting structures. The mortar joints of the brickwork and limestone of the exterior shell are original fabric. Emergency work has been undertaken over the years; however, lack of staff and funds has precluded timely inspections and repairs before the occurrence of water infiltration.⁹¹

In 2010 the firm of John G. Waite Associates Architects was hired to provide predesign and schematic design services for the exterior rehabilitation of the Vanderbilt Mansion.

Abbreviations used in end notes

CFM	Charles Follen McKim
CFMP	Charles Follen McKim Papers, Library of Congress
FWV	Frederick W. Vanderbilt
HRN	Historians Research Notes Files, Box 3, Series V [Vanderbilt Mansion], [Hyde Park History], compiled by C. W. Snell, RVNHSA
MMW	McKim, Mead and White
MMW BB	Transcription of the McKim, Mead & White Bill Books, The New-York Historical Society, Appendix 1 in Vance
MMW Collection	McKim, Mead and White Collection, New-York Historical Society
MNR	Monthly Narrative Reports, RVNYS RMR 1930-1966, RVNHSA
N-YHS	New-York Historical Society
PSC	<i>Poughkeepsie Sunday Courier</i>
RB	Research Binder, Frederick W. Vanderbilt National Historic Site, Historic Resource Study, RVNHSA
RVNHS	Roosevelt Vanderbilt National Historic Site
RVNHSA	Roosevelt Vanderbilt National Historic Site Archives
Vance	Peggy Albee Vance, Vanderbilt Mansion, Historic Structure Report (draft report), Historic Architecture Program, Northeast Region, National Park Service, U.S. Dept. of the Interior, Lowell, Mass. Copy provided by RVNHS.

End Notes

¹ Cuyler Reynolds, *Genealogical and Family History of Southern New York and the Hudson River Valley*, 3 (New York: Lewis Historical Publishing Co., 1914), 1121-1122. *New York Times*, Sept. 18, 1894. John B. Clermont, "The Construction of Vanderbilt Mansion," *Hyde Park Historian* (Jan. 1955), n.p. Margot Gayle and Edmond V. Gillon Jr., *Cast-Iron Architecture in New York* (New York: Dover

Publications, 1974), 142. Margot Gayle to Donald H. McTernan, Sept. 6, 1974, annotation, perhaps by McTernan, General Files, VAMA, Folder: History, Hyde Park Estate. Photograph of Langdon house, Nov. 1895, V-328, RVNHSA. PSC, May 12, 1895; for this report the citations in HRN were used to locate the original newspaper articles.

² PSC, Sept. 15, 1895.

³ PSC, July 19, 1896.

⁴ Clermont, n. p.

⁵ Elizabeth Donaghy Garrett, *At Home, The American Family 1750-1870* (New York: Harry N. Abrams, Inc., 1990), 208. PSC, July 19, 1896; May 12, 1895, cited in HRN, card 962.

⁶ Clermont, n.p.

⁷ CFM to FWV, June 18, 1895, CFMP, copy in RB. PSC, June 23, 1895; Aug. 4, 1895. Braman's Scrap Book, Vol. 5, p. 6; cited in HRN, card 962. Charles Snell, Preliminary Report of the Frederick W. Vanderbilts, April 1, 1954, General Files, File: VAMA, History, Hyde Park Estate, 26. Snell points out that F. W. Vanderbilt had visited Ogden Mills in 1894, when Mills was having his house remodeled.

⁸ PSC, Dec. 29, 1895.

⁹ CRM to TN, June 26, 1895, CFMP, copy in RB..

¹⁰ PSC, Sept. 15, 1895.

¹¹ Moore, 148.

¹² [Inventory of architectural drawings, "by Dinneen"] Jan. 29, 1957, copy in General Files, Folder: VAMA, Architectural Drawings, 1. New-York Historical Society Research, Aug. 9, 1977, copy in General Files, Folder: VAMA, McKim, Mead & White. The drawings are in the McKim, Mead and White Collection, Tube 410, N-YHS.

¹³ Snell, Preliminary Report, 26.

¹⁴ PSC, Dec. 22, 1895.

¹⁵ MMW, BB, p. 345.

¹⁶ PSC, Dec. 29, 1895.

¹⁷ PSC, Jan. 26, 1896.

¹⁸ Charles Moore, *The Life and Times of Charles Follen McKim* (Boston and New York: Houghton Mifflin Co., 1929), 268-269.

¹⁹ FWK to CFM, Feb. 25, 1896, Maloney Collection, New York Public Library, copy in RB.

²⁰ [Inventory of architectural drawings], Jan. 29, 1957, p. 1. The March 1896 drawings are in the collection of RVNHSA.

²¹ MMW, BB, Vol. 5, 458.

²² PSC, July 19, July 26, 1896.

²³ [Inventory of architectural drawings], Jan. 29, 1957, p. 1. The August 1896 drawings are in the MMW Collection, Tube 409B, N-YHS.

²⁴ PSC, July 19, 1896. Braman's Scrapbook, Vol. 5, p. 34, cited in HRN, card 968. Clermont, n. p. Charles W. Snell, Master Plan Development Outline, VMNHS, Documentation of the Mansion Floor Plans, Feb. 28, 1957, ROVA RM with NPS VAMA-132, VAMA 4613, Folder, Vanderbilt Mansion Master Plan, 1951-1952.

-
- ²⁵ *PSC*, Sept. 7, 1896. Photograph by C. S. Piersaull of Hyde Park, labeled "F. W. Vanderbilt Mansion in course of construction begun Oct. 3, 1896, Old Mansion Torn down from Sep 3," V-61.b, VRNHSA.
- ²⁶ *PSC*, Sept. 13, 1896.
- ²⁷ Clermont, n.p.
- ²⁸ BSB, Vol. 5, p. 37, HRN, card 968. *PSC*, Oct. 18, 1896.
- ²⁹ Photograph by C. S. Piersaull of Hyde Park, labeled "F. W. Vanderbilt Mansion in course of construction begun Oct. 3, 1896. Old Mansion Torn down from Sep 3," V-61.b, VRNHSA.
- ³⁰ *PSC*, Nov. 8, 1896.
- ³¹ *PSC*, Dec. 6, 1896.
- ³² *PSC*, Dec. 20, 1896.
- ³³ CFK to TN, Oct. 27, Oct. 29, 1896; CFK to "R", Dec. 3, 1896, CFMP.
- ³⁴ MMW, BB, Vol. 6, 65, 110.
- ³⁵ Photograph by George W. Burger of Poughkeepsie, "East Elevation, F. W. Vanderbilt Mansion, May 29, 1897," V-62, RVNHSA; see also photographs V-66 and V-63. The *PSC* reported on June 6, 1897, that Burger's photographs of the house were then "on exhibition in W. R. Farrington's window."
- ³⁶ Charles W. Snell, Master Plan Development Outline, VMNHS, Documentation of the Mansion Floor Plans, Feb. 28, 1957, ROVA RM with NPS VAMA-132, VAMA 4613, Folder, Vanderbilt Mansion Master Plan, 1951-1952. Clermont, n.p. See also Memorandum, Charles W. Snell to Superintendent, RVNHS, Oct. 14, 1954, General Files, VAMA, Folder: Clermont, John
- ³⁷ *PSC*, May 23, 1897.
- ³⁸ *PSC*, April 11, June 27, 1897.
- ³⁹ *PSC*, Aug. 15, 1897.
- ⁴⁰ *PSC*, Sept. 12, Nov. 7, 1897.
- ⁴¹ *PSC*, Sept. 4, 1898, cited in HRN, card 970.
- ⁴² Photograph, "North & East Elevation, F. W. Vanderbilt Mansion, Hyde Park, N.Y.," V-68, RVNHSA.
- ⁴³ *PSC*, Dec. 4, 1898. Clermont, however, reported that he had left on March 27, 1899, "when the construction firm had completed all of their work on the Vanderbilt estate"; perhaps there was work still to be done on the outbuildings.
- ⁴⁴ CFM, letter of recommendation for John B. Clermont, Nov. 18, 1898, CFMP.
- ⁴⁵ *PSC*, April 23, 1899; July 1, 1900. *PSC*, May 14, 1898, cited in HRN, card 970. MMW to FWV, Sept. 17, 1897, Stanford White Correspondence and Architectural Drawings, 1887-1922, Box 19, File 2, Avery Architectural and Fine Arts Library.
- ⁴⁶ MMW, BB, Vol. 6, 57.
- ⁴⁷ James F. O'Gorman, "O. W. Norcross, Richardson's 'Master Builder': A Preliminary Report," *Journal of the Society of Architectural Historians* 32:2 (May 1973), 108. Leland M. Roth, *McKim, Mead & White Architects* (New York: Harper and Row, 1983), 371, n. 6.
- ⁴⁸ Christopher F. Girr, "Mastery in Masonry: Norcross Brothers, Contractors and Builders, 1864-1924." Master's thesis, Columbia University, 1996, 83, 84.
- ⁴⁹ Girr, 23. Moore, 268.

⁵⁰ John Foreman and Robbe P. Stimson, *The Vanderbilts and the Gilded Age, Architectural Aspirations* (New York: St. Martin's Press, 1991), 204. Girr, 87. Leland M. Roth, *The Architecture of McKim, Mead & White, A Building List* (New York and London: Garland Publishing, 1978), 140, 152. John B. Clermont, the superintendent of building at the Hyde Park house stated that Norcross Brothers had "built two mansions for William H. Vanderbilt prior to 1895" but did not identify them; Clermont, n.p.

⁵¹ G. Brown, *Memories 1860-1930* (Washington, D.C.: 1931), 23ff, quoted in O'Gorman, 105, 109-110.

⁵² Girr, 2.

⁵³ Clermont, n.p.

⁵⁴ John B. Clermont to Superintendent Palmer, Sept. 22, 1954, transcription in HRN, card 1147-a. Clermont, n.p.

⁵⁵ Norcross Brothers to MMW, Jan. 3, 1895, MMW Collection, Box 502, Folder: Jobs M-3.

⁵⁶ Girr, 21, 35-44.

⁵⁷ Girr, p. 45, gives the date of an advertisement with this language as 1895; O'Gorman, in note 25 on p. 110 gives the date of an ad with this language as 1899.

⁵⁸ William L. Hutchinson to MMW, Oct. 26, 1934, MMWC, Box 514, Folder: Vanderbilt Mansion; the book from the stone company was not located. The Indiana Limestone Company was established in 1926; Batchelor, 220.

⁵⁹ Foreman and Stimson, 23, 30, 313. Donald H. McTernan to Craig H. Long, Oct. 5, 1979, General Files, VAMA, Folder: McKim, Mead and White. Blatchley, 425. Joseph A. Batchelor, *An Economic History of the Indiana Oolitic Limestone Industry*, Indiana Business Studies, Study No. 27 (Bloomington: School of Business, Indiana Univ., 1944), 29.

⁶⁰ John C. Smock, "Building Stone in New York," *Bulletin of the New York State Museum* 2 (Sept. 1890), 305. Batchelor, 62.

⁶¹ pT. C. Hopkins and C. E. Siebenthal, "The Bedford Oolitic Limestone of Indiana," in W. S. Blatchley, Indiana Department of Geology and Natural Resources, *Twenty-First Annual Report, 1896* (Indianapolis: Wm. B. Burford, 1897), 414, 425. Smock, 305.

⁶² Girr, 45.

⁶³ Girr, 91. Norcross held several other patents related to building construction. Many of the Indiana quarries sold limestone to contractors and therefore did not know where it would be used, although in 1896 New York was known to be the primary market; Hopkins and Siebenthal, 413.

⁶⁴ Hopkins and Siebenthal, 291.

⁶⁵ "Bedford, or Oolitic Limestone," *Stone* 4 (May 1891), 15-16.

⁶⁶ Hopkins and Siebenthal, 309.

⁶⁷ Hopkins and Siebenthal, 310.

⁶⁸ Hopkins and Siebenthal, 310.

⁶⁹ Hopkins and Siebenthal, 337.

⁷⁰ *Indiana Limestone, The Aristocrat of Building Materials*, Vol. 1 (Bedford, Ind.: Indiana Limestone Quarrymen's Association, 1919), 11, 13, accessed through Google Books, May 18, 2011.

-
- ⁷¹ Batchelor, 304.
- ⁷² Girr, 40-41, 45, 50. Labor troubles shut down this quarry in 1895, but an 1896 strike was averted; Girr. 46.
- ⁷³ Girr, 50, 92.
- ⁷⁴ New York City Directory, 1896-1897. MMW BB, Vol. 6, pp. 437, 466, 501-502,
- ⁷⁵ Girr, 50.
- ⁷⁶ Shears' Account Books, July 1925; Aug. 1926; cited in Historian's Files, Series V, Shears' Account Books, RVNHSA.
- ⁷⁷ Ralph E. Emerson, Report to the Regional Landscape Architect, Region One, Sept. 25, 1940, RVNHS, RMR 1939-1940, Folder ROVA-VAMA Initial Planning for the Use and Development of VMNHS, 1939-1940, Cooper-Ronalds.
- ⁷⁸ Superintendent to Director, NPS, Nov. 9, 1943; Dec. 13, 1943; Jan. 11, 1943; report for Oct. 1951, April 1952, July 1956, MNR.
- ⁷⁹ Superintendent to Director, NPS, Feb. 12, 1948; April 13, 1948; Aug. 16, 1948; Sept. 14, 1948; Oct. 7, 1948; Nov. 15, 1948; Feb. 14, 1949; RVNHS, RMR, 1939-1966, Box 1, Folder MNR, Sept. 1940-1949.
- ⁸⁰ Superintendent to Regional Director, Sept. 4, 1945, cited in HRN, Box 3, Series V, B (no card number). A letter of Oct. 24, 1958, in the Facilities Manager's files stated that the shutters had been in storage in sub-basement since 1940-1941.
- ⁸¹ Superintendent to Director, NPS, Report for Oct. 1949, summary, MNR.
- ⁸² Charles W. Snell, Master Plan Development Outline, VMNHS, Documentation of the Mansion Floor Plans, Feb. 28, 1957, ROVA RM with NPS VAMA-132, VAMA 4613, Folder: Vanderbilt Mansion Master Plan, 1951-1952. Copies of the measured drawings are in the files of the facilities manager at RVNHS.
- ⁸³ Superintendent to Director, NPS, Report for Oct. and Nov. 1949, MNR.
- ⁸⁴ Work for Month of May 1959, attached to Superintendent to Director, NPS, Report for May 1959, MNR.
- ⁸⁵ Announcement, RVNHS, April 11, 1962, RVNHS, RMR, Box 3, File 8, I. Contract Files, VAMA 6253. Notice to Proceed, Superintendent to Sun Contractors, June 5, 1962, RVNHS, RMR, Box 3, File 8, I. Contract Files, VAMA 6253.
- ⁸⁶ Interview of Henry Van Brookhoven by Matthew Scheidt, JGWAA, May 4, 2011.
- ⁸⁷ Photographs of windows, July 9, 1981, Facilities Manager's files, RVNHS.
- ⁸⁸ Solicitation Offer and Award, NPS to Drums Sash and Door Co., April 2, 1981, and Addendum 1, May 20, 1981, RVNHS, RMR, Box 18, Folder 5, I. Contract Files, VAMA 6253. Purchase Order, PX 1790-3-0327, Aug. 9, 1983, RVNHS, RMR, Box 20, File 25, I. Contract Files, VAMA 6253. Lynch and Cornacchini Architects, Drawings of storm windows, June 14, 1979, Facilities Manager's Files, RVNHS.
- ⁸⁹ National Park Service, Drawings of portico railings, April 1983, April 11, 1985; Memorandum, Dec. 12, 1985; Facilities Manager's files, RVNHS. Walter Sedovic to Joel A. Schwartz, Sept. 13, 1984, Facilities Manager's files, RVNHS.
- ⁹⁰ National Park Service, Drawing of west portico roof, Jan. 1984 (subsequently drawings of other porticos were done), Facilities Manager's files, RVNHS.
- ⁹¹ Executive Summary, Restoration, Rehabilitation and Development, Roosevelt-Vanderbilt National Historic Sites, Sept. 1992, p. 4, General Files, Folder: VAMA Plan—Master, RVNHSA.



FIELD REPORT

PRINCIPALS
Robert Silman
Joseph F. Tortorella
Kirk Mettam
Nat Oppenheimer
Edmund Meade

1053 31st Street, NW
Washington, DC 20007
P 202.333.6230
F 202.318.3015
www.silman.com

Date:	06-02-2011	Dates on Site:	04-04-2011 & 04-05-2011
Attention:	Matt Scheidt	Project Name:	Vanderbilt Mansion – Exterior Repairs
Company:	John G. Waite Associates	RSA Project #:	W2451.1
Report:	Probe Investigation	Location:	81 Vanderbilt Park Road Hyde Park, NY 12538
Owner:	National Park Service	Contractor:	-
Weather:	Temperature was 40-50°F. Both days were overcast with some minor precipitation throughout the day.	Present at Site:	Matt Scheidt (JGW), Clay Palazzo (JGW), Nathan Hicks (RSA) & Nicole Ferran (RSA)
Submitted By:	Nathan Hicks	cc:	Nicole Ferran

THE FOLLOWING WAS NOTED:

BACKGROUND

The primary purpose of RSA's site visit to Vanderbilt Mansion (Photo 1) in early April 2011 was to investigate probes opened up along the exterior of the mansion. This report provides RSA's observations of the structure exposed at the probes. Observations include documentation of the geometry, layout and condition of structural elements that had previously been hidden. Reference the attached key plan (See A1) for the location and identification of the various probes discussed within the findings section.

FINDINGS

During our site investigation, RSA noted:

Exterior Probe 1

A probe was taken at the west portico by removing the paving stones and demolishing a small section of the concrete slab (Photo 2). Based on measurements taken at the probe; the portico assembly includes 3 inch stone pavers, a 2 inch sand setting bed and a 4 inch one-way concrete slab. The slab is supported by steel wide flange beams which range in depth from 9 to 12 inches. The top flange is embedded in the concrete slab. At the probe location the steel beam was 9 inches deep, with a flange 4-1/2 inches wide x 3/8 inch thick.



Photo 1 – Northwest View of the Main Mansion



Photo 2 – Probe Below West Portico Pavers

The concrete slab is reinforced with a proprietary system from the Columbian Fireproofing Company. The reinforcement is spaced at 18-3/4 inches and is supported at the beams by a stirrup system hung off of the top flange (Photo 3). The slab reinforcement is 2 inches deep and varies in width from 1/4 to 7/8 inch. Much of the steel framing and reinforcement shows signs of severe corrosion and is in poor condition. The concrete is in fair to poor condition with substantial material loss in several areas and a high susceptibility to spalling.

Exterior Probe 2 & 3

A set of probes was initially proposed below the stone treads at the stairs leading up to the west portico. However, due to concerns expressed by the owner regarding the ability to perform the probes without damaging the stone treads and iron railings, no probes were opened up at this location.

Exterior Probe 4

A probe was made below a first floor window on the west façade. In this area, significant cracking was observed in the stone veneer and the intent of the probe was to identify potential causes of this cracking. The stone and brick masonry was removed the end of a steel wide flange floor beam bearing on the brick masonry wall (Photo 4).

The steel section is set back approximately 5 inches from the interior face of the lower stone. Field measurements show the section is 5 inches wide x 12-1/2 inches deep. The flange thickness is tapered from 3/8 inch at the edge to 3/4 inch at the web, while the web is 3/8 inch thick (Photo 5). Bricks are packed tightly around the steel section. The section was in surprisingly good condition given its proximity to the building envelope and is not the cause of the cracking in the stone veneer.



Photo 3 – Exposed Concrete Slab Reinforcement



Photo 4 – Probe at Window Sill



Photo 5 – Steel Framing Exposed at Window Sill Probe

Exterior Probe 5

At the north portico several paving stones were removed to expose the structure below. The probe showed a concrete slab supported by steel beams. Rough measurements show the slab assembly is approximately 13 inches thick, including 3 inch pavers with an inch of bedding sand and a 9 inch concrete slab. It is believed that the slab consists of a sloped topping slab with a minimum depth of 4 inches above a 4-3/4 inch one-way structural slab. The steel beams run in the north-south direction and are embedded such that the top flange is flush with the topping slab. The flange width is 4-1/8 inches and has substantial corrosion due to the moisture trapped below the pavers (Photo 6).

Below the north portico there is cracking in the plaster ceiling in line with the steel beams above. The cracking is the result of rust on the bottom flange displacing the concrete cover below the beams and subsequently the plaster below the concrete (Photo 7). It should also be noted that the stone lintel at the east end of the north portico appears to be overstressed under the load from the large marble blocks (Photo 8). Further analysis of the condition is required to determine appropriate repair options.

Exterior Probe 6

Stone treads at the stairs leading up to the north portico were removed to expose the brick vault and cheek walls below. A 1 inch diameter drilled hole through the masonry vault showed it to be 7-1/2 inches thick (Photo 9). Above the vault the stair assembly consists of 22-1/2 inch wide x 6 inch deep stair treads bearing on up to 12 inches of brick infill. In some areas the brick infill is mortared in place, while in other it is loose with sand between bricks. Overall the masonry at the vault is in fair good condition.



Photo 6 – Slab at North Portico



Photo 7 – Cracking in Ceiling Below North Portico



Photo 8 – Crack at Stone Lintel



Photo 9 – Core Hole through Brick Vault

Looking at the stone treads many do not appear to be uniformly supported by the brick below and several show signs of significant displacement. The joints between treads show this movement and provide further evidence of no anchorage. Many of the joints are in excess of one inch wide, with layers of repairs attesting to a worsening condition (Photo 10). The movement has likely been the result of a freeze-thaw cycle for the water infiltrating the poorly maintained joints. Overall, the stone treads at all the porticos are in poor condition.



Photo 10 – Probe at North Portico Stairs

Exterior Probe 7

At the east portico several paving stones were removed to reveal the portico slab. The structural slab at the probe is supported on the bottom flange of steel wide flanges. Above the structural slab there is a topping slab flush with the top flange of the steel beam. Portions of the topping slab include brick infill, which when removed revealed the structural slab below (Photo 11). The total assembly is approximately 14 inches thick, with 3 inch paving stones on a one inch setting bed of sand, above a 10 inch slab. It is believed that the slab consists of a 4-1/2 inch structural one-way slab, below a sloped topping slab that is at a minimum 5-1/2 inches. Steel beams with a depth of 10 inches run in the east-west direction. Overall the slab is in good condition, but the exposed top flange of steel show signs of corrosion.



Photo 11 – Probe at East Portico Floor

Exterior Probe 8

A probe was opened up at the base of the east portico stairs leading up to the main entrance of Vanderbilt Mansion. The stairs are supported by an extensive brick vault system, which at the probe had a height of 17 inches over a 30 inch run (Photo 12). The condition and profile of the stone treads/brick infill were similar to what was observed below the north portico stairs. The treads are loose, displaced and non-



Photo 12 – Probe at Base of East Portico Stairs

uniformly supported. The brick infill above the arch is not mortared but rather laid in loose sand. Overall the brick arch is in fair to good condition, but the brick infill and stone treads are in fair to poor condition.

Interior Probe 1

At the basement level of the structure a probe was opened up above a window on the west façade (Photo 13). Beyond the face of plaster three lintels were visible, made up of steel angles supporting the masonry above. This differed from the cast iron box sections called out on the original building drawings. The steel angles ranged in width from 4-1/4 to 4-1/2 inch with 4 inch vertical legs. There was a 1-1/4 inch gap between the interior and center lintel, and a 1/4 inch gap between the center and exterior lintel. The total width of the wall section was approximately 2'-10" from the interior to exterior face. Overall the lintels are in fair condition, in spite of the significant water damage evident in the adjacent walls. Along the span the lintels appear to be in good condition; however there is some corrosion at the bearing ends (Photo 14).

Interior Probe 2

At the upper floor level a probe was opened to reveal the framing at the interface between the east portico and the main building. The opening at the base of the wall shows a 2-3/4 inch gap between the face of plaster and the face of brick. Embedded in the brick masonry are two steel wide flange sections. Although only the top half of the sections was exposed, much of the geometry could still be documented (Photo 15). Based on site observations it is believed that the portico framing perpendicular to the wall is hung off of and supported by the two wide flange beams. The sections are each 7 inches wide with a 3/4 inch thick web and a flange tapered from 5/8 to 3/4 inch.

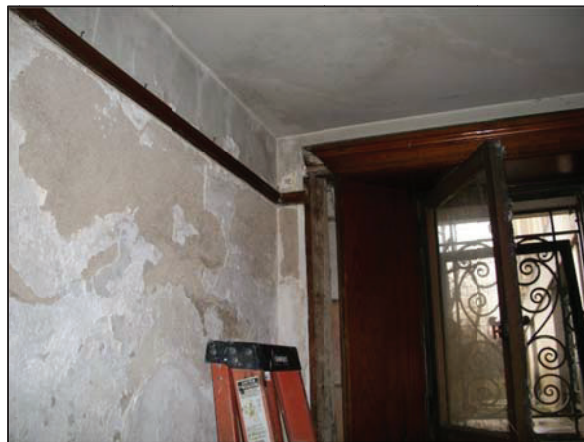


Photo 13 – Probe Above Basement Window



Photo 14 – Corrosion at Bearing of Steel Lintels



Photo 15 – Steel Framing at Exterior Wall/Portico Interface

Interior Probe 3

A third interior probe was taken at the upper level of the mansion in the southwest corner (Photo 16). The purpose of the opening at the base of the wall was to reveal the framing at the interface of the main building with the south portico. Although there was limited access, RSA was able to make some observations at the chase. A steel outrigger for the south portico was embedded in the masonry wall (Photo 17). The outrigger consists of a 1-3/8 inch wide x 3/4 inch thick channel, with a 5/16 inch thick plate at the top flange. The total depth of the plate and channel is 12 inches and it appeared to be in fair condition even with the evidence of water damage in the surrounding area.

Interior Probe 4

A final interior probe was made at the second level in a bathroom on the west side of the building. An existing opening had previously been made in the exterior wall at the top of the room exposing the steel framing at the west portico. Although there was a steel section bearing on the wall, measurements could not be taken due to accessibility issues (Photo 18).

RECOMMENDATIONS

Associated with our findings above, RSA recommends the following repairs:

Recommendations are to be provided in a supplementary schematic design report.

If you should have any questions or concerns related to the content of this report, please feel free to contact us at (202) 333-6230. We thank you for your consideration.

Site observation visits are conducted for the purpose of observing the general nature of and the technical progress of the work and do not replace regular quality control inspections.



Photo 16 – Interior Probe at Southwest Corner of Upper Floor



Photo 17 – Steel Outrigger at South Portico



Photo 18 – Steel Section Embedded in Masonry

**INVESTIGATIVE BUILDING PROBES
FIRST FLOOR PLAN**

Interior Probe 1

Interior Probe 2

Interior Probe 3

Interior Probe 4



SCHEMATIC DESIGN REPORT

PRINCIPALS
Robert Silman
Joseph F. Tortorella
Kirk Mettam
Nat Oppenheimer
Edmund Meade

1053 31st Street, NW
Washington, DC 20007
P 202.333.6230
F 202.318.3015
www.silman.com

Date: 06-09-2011
Attention: Matt Scheidt
Company: John G. Waite Associates
Report: Schematic Design
Owner: National Park Services
Submitted By: Nathan Hicks

Project Name: Vanderbilt Mansion – Exterior Repairs
RSA Project #: W2451.1
Location: 81 Vanderbilt Park Road
Hyde Park, New York 12538
cc: Nicole Ferran, File

BACKGROUND

As a part of the schematic design phase for Vanderbilt Mansion (Figure 1), RSA was asked to investigate several structural issues at the exterior. Specifically those issues included:

- Portico framing options
- Portico cornice stones
- Stone cracking/movement

During RSA's investigation, several site visits were made to Vanderbilt Mansion between June 2010 and April 2011 to record observations. Visual observations of exposed elements were made and probes were opened up at both at the interior and exterior of the building to expose much of the underlying structure (see field report from April 4, 2011). The purpose of this schematic design report is to summarize RSA's analysis and provide recommendations for the above structural issues.

ANALYSIS & RECOMMENDATIONS

Associated with the above structural issues, RSA recommends the following work:

Portico Framing Options

While observations of the portico framing are described in detail in the above-mentioned field report, a brief summary is provided here to provide background information for the evaluation of the new framing options.



Figure 1: Southwest Corner of Vanderbilt Mansion



Figure 2: Framing in Crawlspace Below West Portico

In general, the portico floor framing consists of steel beams supporting a concrete slab. At the west portico a 4 inch structural slab is supported from the top flange of the beams (Figure 2). At the north, south and east porticos the slab is approximately 9 inches thick with a 5 inch topping slab above a 4 inch structural slab (Figure 3). The structural slabs are reinforced with a proprietary system from the Columbian Reinforcing Company (Figure 4). Above the slabs there is a one inch setting bed and 3 inch thick stone pavers (Figure 7).



Figure 3: Exposed Top Flange at North Portico Probe

Probes, cracking patterns and observations in crawlspaces showed that at the north, south and east porticos the beam is fully embedded in the slab with only the top and bottom flanges exposed. At the west portico only the top half of the steel beam is embedded in the slab, leaving the bottom half and the top flange exposed.



Figure 4: Proprietary System Used for Slab Reinforcement, West Portico

Without any waterproofing or shelter from the elements, the exposed steel has consistently been in the presence of moisture. The moisture has caused rust to build up along large portions of these members and has displaced surrounding finishes, fireproofing and stones. The most significant deterioration of steel beams was observed at the west portico, where in some places holes were observed in the beam web (Figure 5). Cracking of surrounding materials due to rust jacking was observed at the west portico, where fireproofing has fallen in many locations, and is pronounced at the underside of the north and south porticos (Figure 6).



Figure 5: Deterioration at West Portico Steel Wide Flanges

During schematic design, several framing options were explored at each portico. The three options consisted of repair of the existing slab, replacement in-kind and construction of a new slab.

Option #1: Repair of Existing Slab

The existing portico framing is in varying states of deterioration that will need to be addressed if the slab is to remain.

Overall, while the slabs are in fair condition, the deterioration and rust at the embedded steel beams will need to be addressed. Paving stones and plaster ceilings will need to be removed as appropriate to expose the beam flanges. The steel should then be cleaned of any loose rust and painted, before patching the slab, resetting the paving stones and repairing plaster ceilings. At the west portico the deterioration at much of the framing is so severe that the slab and steel beams will likely need to be replaced in-kind (Figure 5). At the remaining porticos, reinforcement may be required in certain instances depending on the level of deterioration observed at the flange. In isolated areas, concrete repair of the slab will be required to address spalling (Figure 6).

Option #2: Replacing in Kind

For this option, new stainless steel beams to match the existing would be used to support the concrete slab at all of the porticos. Although the strength of stainless steel is typically less than that of modern carbon steel, it would likely be comparable to the steel used at the time the porticos were constructed. A preliminary analysis showed that a lightweight concrete slab could be designed to match the depth of the existing slab, while still supporting the code-mandated live load requirements. In order to prevent further moisture-related deterioration of the structure a waterproof membrane is recommended above the slab.

Option #3: new slab

For this option, it was assumed that lightweight concrete would be used and that the existing assembly at the porticos (limestone paving, bedding sand, plaster ceiling, topping slab) would still be in place at the new slab (Figure 7). Given a 100 pound per square foot live loading, the new slab was designed as both a one-way slab without any beams and a one-way slab with integral concrete beams. It was assumed that the location of the concrete beams would match that of the original steel beams.



Figure 6: Spalling at the Underside of South Portico



Figure 7: Portico Assembly Above Slab

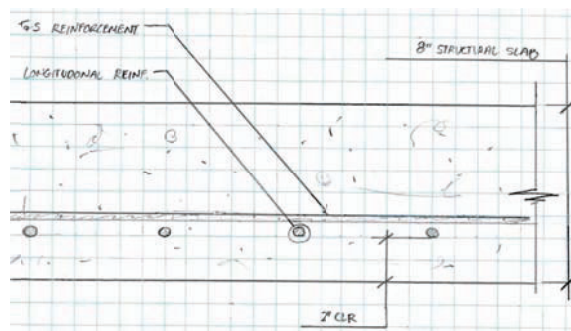


Figure 8: Proposed One-Way Slab without Beams

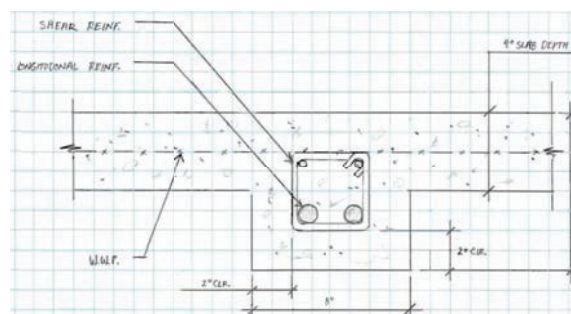


Figure 9: Proposed One-Way Slab with Beams

Based on these assumptions, it was found that at the north, south and west porticos the slab without beams would need to be 8 inches thick (Figure 8). The slab with concrete beams would only need to be 4 inches thick with concrete beams 8 inches wide x 9 inches deep. At the west portico RSA's analysis showed that the slab could be limited to a depth of 4 inches, with 8 inch wide x 9 inch deep east-west running concrete beams and 8 inch wide x 12 inch deep north-south running concrete beams (Figure 9).

Portico Cornice Stones

Several of the corner cornice stones at both the north and south porticos have been displaced and are rotating away from their ledge support (Figure 10 & 11). If a cornice stone were to ever fail and fall off of its support, it would present a serious life safety hazard.

RSA was asked to investigate the cornice to help determine what is causing this rotation and evaluate whether the stone is likely to be anchored or merely gravity set. An analysis of the geometry showed that the cornice could in fact be gravity set. Even using conservative estimates, the coping stones proved adequate in holding down the cornice assembly. While probes and further investigation at the cornice will be needed to determine if anchors are in place, the calculation illustrates that strictly from a statics perspective the anchors are not required. It should also be noted that there was no evidence of spalling at the cornice stone, which could have provided evidence for a hidden steel element.

With that being said, the center of mass of the cornice assembly was only a few inches from the edge of its bearing support (Figure 12). The continued lateral displacement and rotation of the stone would lead to a shift in that center of mass and potentially an unstable condition. Until there is conclusive evidence otherwise, it must be assumed that there are no anchors and therefore it becomes even more imperative that the freeze-thaw



Figure 10: Cornice Stone at West End of North Portico



Figure 11: Rotation and Displacement at Cornice Joint

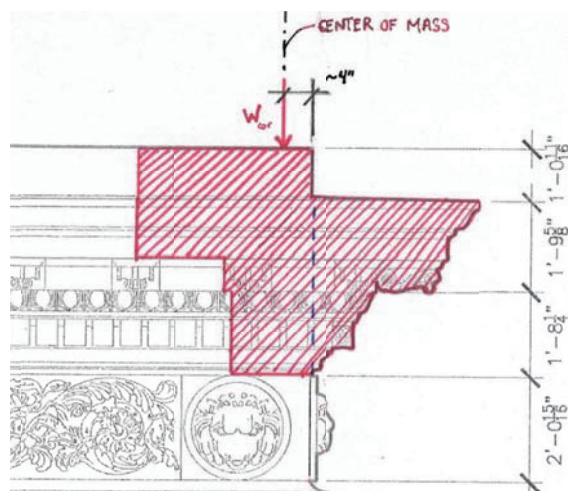


Figure 12: Corner Cornice Stone Center of Mass



Figure 13: Stone Cracking Near Window on West Façade

cycle that is pushing the cornice stone off of its bearing support be stopped. Measures will need to be put into place to help prevent water infiltration at the masonry joints. It is also recommended that epoxy anchors to the masonry below be provided at the corner cornice stones.

Stone Cracking/Movement

At several areas around the exterior of the mansion there are issues with the stone displacing and developing cracks due to this movement. The issue is highlighted at areas such as the portico stairs, around window sills (Figure 13) and at the top story corners of the structure (Figure 15).

Based on initial observations, it was believed that the cause of this movement was potentially a combination of rust jacking and freeze-thaw cycles at open joints. The bearing ends of steel framing members near the building envelope were thought to be exposed to moisture, leading to rust build-up at the steel and displacement of the surrounding masonry. Eventually the force exerted by the expanding rust would be enough to move and in some cases crack the surrounding masonry.

However, when probes were opened up near a distressed window sill at the first floor, the exposed steel did not show signs of moisture infiltration (Figure 14). The steel was in relatively good condition and is likely not the source of the surrounding movement in the stone. Although rust jacking may be the cause of movement in other areas of structure, the probe did raise questions about how much it is actually contributing.

In the case of the cracks in the window jambs, it is thought that the cause may be a combination of building movements and tight mortar joints. When the building is subjected to lateral wind loading, the massive masonry walls act as shear walls resisting these loads. This causes some lateral movement of the walls. Where tolerances in the masonry joints are tight and masonry elements attempt to

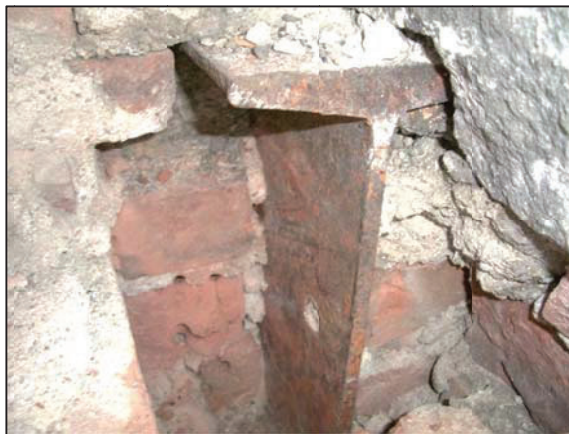


Figure 14: Steel Framing Exposed at Window Sill Probe

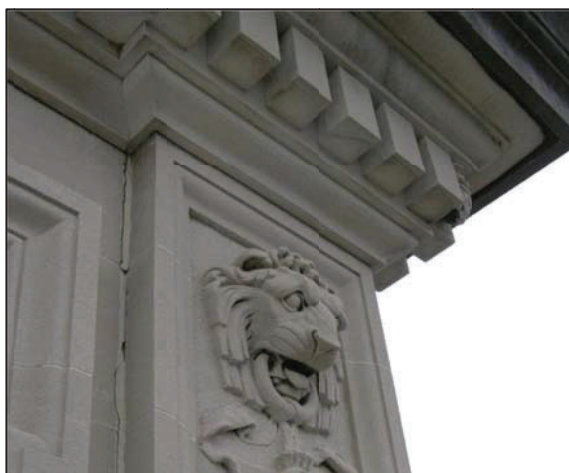


Figure 15: Cracking at Northwest Corner Stone



Figure 16: Joint Separation & Spalling at Portico Stairs

rotate relative to each other, the likelihood of cracking at these locations increases.

In other areas, the likely culprit for the stone movement is the freeze-thaw cycle. Many of the mortar joints between stone blocks have been poorly maintained over the years, allowing water to accumulate in the open joints. When the temperature falls, the frozen water occupies more volume than the liquid and the resulting expansion forces can displace and crack the surrounding materials. This is the likely source of the movement at the stone blocks at the third floor corners as well as the stair tread pavers. Many of the joints at the portico stairs are in excess of one inch wide, with layers of repairs attesting to a worsening condition. In addition, many of the cast iron stair railings have caused spalling where embedded into the stone pavers.

Overall, RSA recommends that displaced stones be reset wherever possible. A large portion of the mortar joints will need to be raked out and repointed. In addition, many of the previously repaired cracks should be repointed to prevent water infiltration. The joints will need to be consistently and properly maintained to ensure that the effects of the freeze-thaw cycle do not resume. Pinning of displaced stones can also be considered where resetting is not an option due to the geometry of surrounding materials. However, if water continues to infiltrate and exert force on these stones during the course of freeze-thaw cycles, localized failures of the stone at the pin locations are possible.

If you should have any questions or concerns related to the content of this report, please feel free to contact us at (202) 333-6230. We thank you for your consideration.

FRANCES GALE
ARCHITECTURAL CONSERVATOR
4213 SHOALWOOD AVENUE
AUSTIN, TX 78756

VANDERBILT MANSION
EXTERIOR CLEANING TESTS

INTRODUCTION

At the request of John G. Waite Associates, Architects, Frances Gale visited Vanderbilt Mansion National Historic Site in Hyde Park, New York, on December 2-3, 2010. Temperatures were in the low 40s, with sunny skies on December 2nd and cloudy conditions on December 3rd. The site visit provided an opportunity to briefly assess exterior conditions of Vanderbilt Mansion and to conduct preliminary cleaning tests on exterior limestone. Clay Palazzo of John G. Waite Associates Architects was present on December 2 and JGWA architects Matthew Scheidt and Bill Brandow were present on both days. Frank Thierbecker of Chapman Waterproofing Company assisted with the cleaning tests.

EXISTING CONDITIONS:

According to the National Park Service Historic Resource Study for Vanderbilt Mansion National Historic Site, the Indiana Limestone Company provided exterior limestone that was used to construct the Mansion. The Historic Resources Study report describes the Mansion as a three-story structure with full basement and a two-story semi-circle portico on the west elevation and two-story porches on north, east and south elevations. The limestone wall cladding is over brick masonry with concrete and steel floor framing.

During our site visit, exterior limestone of the Mansion was inspected from the ground level with binoculars. An aerial lift enabled close-up inspection of some areas, including upper walls and entablature on the east elevation and test area locations on the north end of the west elevation.

Although limestone of the Mansion is in generally good condition, slight erosion affects the limestone surface throughout. In some areas, erosion is severe. Examples include the modillions and other ornamental elements of the cornice on the east elevation. During our close-up inspection of the cornice, we noticed more severe erosion of dentils and egg-and-dart moldings in some areas with associated moisture-related deterioration. Surface pitting is present in several locations. Cracks are occasionally present on the vertical wall surfaces and some have been patched with what appears to be a hard Portland cement mortar that is not well adhered in some locations.

Slight general soiling is present throughout. Biological growth affects limestone in shaded locations and in areas where moisture collects. Most of the biological growth is dark-colored and detracts from the intended appearance of the Mansion. (During warmer months when weather conditions favor growth of micro-organisms, the biological growth is often green colored.) Examples of areas where biological growth is present include projecting elements such as the window hoods, belt course, cornice and balustrade. Biological growth on the ornamental stonework above the portico on the east elevation is severe, particularly at the carved lion's head

where the growth is green in color. Because biological growth holds in moisture and often produces acidic products of metabolism, its presence can also accelerate limestone deterioration.

There is dark-colored atmospheric soiling in most protected areas and weathering crusts are sometimes present. Locations of the latter include ornamental stonework of the cornice and window hoods. These conditions result from the transformation of calcium carbonate minerals present in limestone to gypsum (calcium sulfate dihydrate). Atmospheric pollution triggers this reaction. The gypsum that forms is soluble in rainwater, and erosion is a resulting condition. In locations that are protected from contact with rainwater, a weathering “crust” of gypsum forms and soiling becomes entrapped in the crust. Its detachment can lead to significant surface losses.

Our brief inspection focused on soiling conditions. The JGWA Pre-Design Documents provide a more complete description of existing masonry conditions of Vanderbilt Mansion, including conditions affecting horizontal limestone paved floors of the porches, porch stairs, and original and repointing mortars.

SELECTION OF CLEANERS:

Vanderbilt Mansion is a National Historic Site managed by the National Park Service. Located in Hyde Park, New York, the Mansion is on a bluff above the Hudson River. Vanderbilt Mansion NHS also includes large landscaped gardens and several other historic structures. Because of the Mansion’s significance and its location, care was taken in selecting cleaning materials and techniques that would have no adverse effects on the limestone and minimal impact on the environment.

On-site testing included cleaning to remove general soiling, biological growth and weathering crusts. Water washing was evaluated for removing general soiling. Because the temperature was around 40 degrees on both days, hot water was used for the water washing and for rinsing. For removing biological growth, we selected an antimicrobial cleaning solution with a quaternary ammonium compound. The cleaner that we evaluated is biodegradable and safe to use near grass and most landscape plantings. In one area, the antimicrobial cleaning solution was used in conjunction with water washing. Chemical cleaners were also evaluated for removing general soiling and in tests conducted on limestone where weathering crusts have formed. For these tests, the chemical cleaners were mildly alkaline with detergents and an oxidizing agent.

TEST AREAS:

Cleaning tests were conducted on exterior limestone of the Mansion, in areas with representative soiling conditions on the west elevation, north of the portico.

Test area #1 – Vertical wall below 1st story at the stairway at the north end of the portico. Soiling included biological growth.

Test area #2 – 1st story, northernmost window, south side of the window hood. Soiling included biological growth and atmospheric soiling with slight weathering crust.

Test area #3 – Capstone above portico entablature with moderate atmospheric soiling and biological growth.

Test areas were approximately 6” x 8” in size. An aerial lift was used to access limestone in Test areas #2 and #3. Cleaning materials and techniques are described below. Product data sheets and Material Data Sheets for cleaning products are attached.

PRODUCTS:

Test Area # 1	Product	Preparation	Description
Left	Hot water	N/A	N/A
Right	D/2 Biological Solution	Concentrate	Detergent with quaternary ammonium compound

Test Area # 2	Product	Preparation	Description
Left	Hot water	N/A	N/A
to	942 Limestone & Marble Cleaner	Concentrate	Mildly alkaline gel
Right	D/2 Biological Solution	Concentrate	Detergent with quaternary ammonium compound

Test Area # 3	Product	Preparation	Description
Left	Hot water/ D/2 Biological Solution	N/A Concentrate	Detergent with quaternary ammonium (D/2)
to	MasonRe B All Purpose Cleaner	Concentrate	Gel cleaner with mild oxidizer
Right	2010 All Surface Cleaner	Diluted 1:10 with water	Mildly alkaline detergent
Horizontal	D/2 Biological Solution	Concentrate	Detergent with quaternary ammonium

APPLICATION:

D/2 Biological Solution was spray applied to the dry surface, and agitated with soft brushes during a 10-minute dwell period.

Cleaning with hot water was evaluated using the procedure described below for rinsing.

A thick uniform coating of 942 Limestone & Marble Cleaner was brush applied to the dry surface and allowed to dwell for approximately 2 ½ hours.

A thick uniform coating of MasonRe B All Purpose Cleaner was brush applied to prewet surface and allowed to dwell for approximately 2 ½ hours.

2010 All Surface Cleaner, diluted 1:10 with water, was applied to the prewet surface and agitated with soft brushes during the dwell period of approximately 10 minutes.

RINSING:

At the end of the dwell period, the test areas were rinsed with hot water (approximately 180 degrees F.) applied at approximately 1000 psi. A 25-degree fan tip was used, maintaining a distance of 8-10 inches from the limestone surface. Test areas were evaluated following drying.

RESULTS:

Test Area # 1	Product
Left	Hot water
Right	D/2 Biological Solution

In Test area #1, D/2 Biological Solution was approximately 70% effective in removing biological soiling. Hot water washing was slightly more effective. The difference in cleaning effectiveness may reflect slightly different levels of soiling present in the test area.

Test Area # 2	Product
Left	Hot water
to	942 Limestone & Marble Cleaner
Right	D/2 Biological Solution

In Test area #2, hot water washing was tested on the upper moldings of the window hood, near the center. Hot water washing was approximately 80% effective in this test area. D/2 Biological Solution was tested on a corner area at the top of the window hood. Results were similar to those achieved with hot water washing. 942 Limestone & Marble Cleaner was tested in a protected area of the console bracket at the south end of the window hood with atmospheric soiling and a slight gypsum crust. 942 Limestone & Marble Cleaner was judged approximately 70% effective in removing soiling.

Test Area # 3	Product
Left	Hot water/ D/2 Biological Solution
to	MasonRe B All Purpose Cleaner
Right	2010 All Surface Cleaner
Horizontal	D/2 Biological Solution

In Test #3, hot water washing was evaluated in removing biological growth from limestone of the capstone. Hot water washing was 80% effective. D/2 Biological Solution was applied to a portion of the hot water washing test area, and the cleaner seemed to slightly improve results achieved with hot water washing. MasonRe B All Purpose Cleaner was evaluated to remove soiling from the capstone in Test area #3. This cleaner was only moderately effective in the test conducted. Better cleaning results were achieved in Test area #3 with 2010 All Surface Cleaner, but cleaning was somewhat uneven. D/2 Biological Solution was also evaluated on a horizontal surface where biological growth was severe. In this area, the effectiveness was approximately 50%.

RECOMMENDATIONS FOR ADDITIONAL TESTING:

Our cleaning tests were conducted in early December when the temperature was in the 40s. Because the effectiveness of chemical cleaners is greatly reduced in low temperatures, weather conditions were less than ideal for on-site testing. Given the cold weather conditions, the results of the cleaning tests conducted on December 2-3 were surprisingly good. It was clear that using hot water for water washing and for rinsing was critical to our success. In warmer weather, it may not be necessary to use hot water, and we expect that the chemical cleaning solutions will be more effective in removing biological growth, atmospheric soiling and weathering crusts. Based on the results of the on-site testing that we conducted in December, our recommendations for cleaning exterior limestone are as follows:

- Biological growth – D/2 Biological Solution
- Atmospheric soiling – Low pressure water washing, using 2010 All Surface Cleaner in areas where soiling is more severe
- Weathering crust formation – 942 Limestone & Masonry Cleaner

We plan to return for additional testing in April when the weather is warmer. This second site visit will provide an opportunity to conduct on-site cleaning in areas where conditions appear to be more severe. Test locations may include biological growth on ornamental stonework on the east elevation and atmospheric soiling with weathering crust formation on the east elevation cornice. Regarding the latter, we have considered other techniques that have been used on historic buildings, including micro-abrasive blasting and intermittent water misting (nebulous spray).

Micro-abrasive blasting is a technique for removing many types of difficult-to-remove soiling, including weathering crusts. For wet aggregate blasting, an inert, micro-fine mineral powder is the abrasive. To effectively clean masonry without damaging the surface, the operator must carefully control the air pressure and flow rate of the abrasive and the nozzle distance and water volume and pressure. The Rotec Vortex system, manufactured by Quintek Corporation, Ontario, Canada, has been used to clean exterior limestone of several historic buildings in North America. Their website <http://www.quintek.net/clients.html> provides information.

On a previous project, we evaluated the Rotec Vortex system for removing weathering crusts. The aggregate was #80-140 glass (silica) powder abrasive, applied at an air pressure of 40-45 psi. Orifice tips were 7 mm and 9 mm. We used wet blasting with 10-15 gallons of water per hour at 200 psi. Following wet blasting, the limestone surface was rinsed with water at city water pressure. Although results of the on-site testing that we conducted were good, we decided not to use micro-abrasive blasting on the project. The cleaning process is labor intensive, sometimes requiring an hour or more to clean 40 square feet. In addition, the equipment is expensive (\$10,000 to \$12,000) and contractor training is required.

A more promising cleaning technique for our project is intermittent water misting. This technique uses a system of flexible nozzles that produce a fine spray or mist of water that is directed at the soiling to be cleaned. Repeated “on” and “off” intervals of water misting soften the soiling. It can then be removed with gentle scrubbing and low pressure water rinsing. Testing determines optimum “on” and “off” intervals as well as the time required to soften the soiling.

Intermittent misting uses less water than water washing, minimizing the risk of adverse effects such as surface losses and staining. On a previous project with similar soiling conditions, on-site tests indicated that intermittent misting was an effective cleaning method for Indiana limestone. We recommended a moveable framework for mounting spray nozzles with flexible adapters and pumps that allowed for adjustment of water pressure. The 25-degree tip nozzles provided a fine

mist at 25-50 psi. They were spaced 12-16 inches apart, 10-12 inches from the limestone surface. On this project, four to six “cycles” were recommended, with each cycle consisting of 20-30 minutes on, then 20-30 minutes off. An automatic timing device was useful in setting up the intermittent spray cycles.

Our second site visit provides an opportunity to conduct tests to evaluate intermittent water missing for removing weathering crusts from limestone of Vanderbilt Mansion. With assistance from Chapman Waterproofing Company, our tests will determine the effectiveness of this method, equipment required, and establish misting intervals and the number of cycles required.

Frances Gale
February 11, 2011

FRANCES GALE
ARCHITECTURAL CONSERVATOR
4213 SHOALWOOD AVENUE
AUSTIN, TX 78756

VANDERBILT MANSION
EXTERIOR CLEANING TESTS

INTRODUCTION

At the request of John G. Waite Associates, Architects, Frances Gale returned to Vanderbilt Mansion National Historic Site in Hyde Park, New York, on April 28-29, 2011. Temperatures ranged from 60 to 70 degrees, with periods of rain and thunderstorms on April 28th and partly sunny skies on April 29th. Our second site visit provided an opportunity to conduct additional on-site cleaning tests on exterior limestone. Matthew Scheidt of John G. Waite Associates Architects was present both days and JGWA architect Clay Palazzo was present on April 29th. Frank Thierbecker of Chapman Waterproofing Company assisted with the cleaning tests. The report below provides information about the cleaning products and techniques that we evaluated. Photographs show soiling conditions before and after cleaning. Based on the test results, recommendations are provided for cleaning exterior limestone of Vanderbilt Mansion.

CLEANING PRODUCTS AND TECHNIQUES

Cleaning tests were conducted using the promising products that were identified during our December site visit, including D/2 Biological Solution, 2010 All Surface Cleaner and 942 Limestone & Masonry Cleaner. Prestor Preservation & Restoration Gel, a thickened cleaner containing ethanol and sodium hydroxide, was also tested. In addition, we also evaluated intermittent water misting, a technique that uses a system of flexible nozzles to produce a fine spray or mist of water that is directed at the soiling to be cleaned. Chapman Waterproofing Company provided the system for intermittent misting described below in the Products and Techniques section.

TEST AREAS:

Cleaning tests were conducted on exterior limestone of the Mansion on the west elevation, north of the portico in Test areas #1 and #3 where preliminary testing was conducted in December –

Test area #1 – Vertical wall below 1st story at the stairway at the north end of the portico with severe biological growth. Two additional tests were conducted on limestone just south of the December tests.

Test area #3 – Capstone above portico entablature with moderate atmospheric soiling and biological growth.

Tests were also conducted in a new area at the cornice level below the Test area #3 capstone –

Test area #4 – Cornice with biological growth in exposed areas above the modillions with severe atmospheric soiling and a blackened weathering crust in protected areas.

Test areas were approximately 6" x 8" in size. An aerial lift was used to access limestone in Test areas #3 and #4. Cleaning materials and techniques are described below. Product data sheets and Material Data Sheets for cleaning products are attached.

PRODUCTS AND TECHNIQUES:

Test Area # 1	Product/Technique	Preparation	Description
Left	D/2 Biological Solution	Concentrate	Detergent with quaternary ammonium compound
Right	Hot water/ D/2 Biological Solution	Concentrate	180° water at ~1000 psi/ Detergent with quaternary ammonium compound

Test Area # 3	Product	Preparation	Description
	942 Limestone & Marble Cleaner	Concentrate	Mildly alkaline gel

Test Area # 4	Product/Technique	Preparation	Description
Left	Intermittent misting/ Hot water		18 cycles/ 180° water at ~1000 psi/
	Intermittent misting/ Scrubbing/ Hot water		18 cycles/ Hand scrubbing/ 180° water at ~1000 psi/
to	Hot water		180° water at ~1000 psi/
	942 Limestone & Marble Cleaner	Concentrate	180° water at ~1000 psi/ Mildly alkaline gel
	Hot water/ 2010 All Surface Cleaner	Concentrate	180° water at ~1000 psi/ Mildly alkaline detergent
Right	Hot water/ D/2 Biological Solution	Concentrate	180° water at ~1000 psi/ Detergent with quaternary ammonium compound

D/2 Biological Solution was spray applied to the dry surface, and agitated with soft brushes during a 10-15 minute dwell period.

Water washing was evaluated using hot water (approximately 180 degrees F.) applied at approximately 1000 psi. A 25-degree fan tip was used, maintaining a distance of 8-10 inches from the limestone surface.

A thick uniform coating of **942 Limestone & Marble Cleaner** was brush applied to the dry surface and allowed to dwell for approximately 2 ½ hours.

Intermittent misting was evaluated using 15 and 25-degree tip spray brass nozzles that were connected to flexible adapters. Eight nozzles, aimed alternately up and down, were spaced 6 inches apart. The adaptors were tied to a railing of the aerial lift, with the nozzles approximately 10-12 inches from the limestone surface, providing misting at a 120-degree angle. An automatic timer was used to set up misting cycles of 10 minutes on and 50 minutes off. Intermittent misting was begun at 4 PM on April 28 and continued for 18 hours.

2010 All Surface Cleaner, diluted 1:10 with water, was applied to the prewet surface and agitated with soft brushes during the dwell period of approximately 10 minutes.

Note: **Prestor** was also applied to a modillion exhibiting severe atmospheric soiling with a black crust in Test area #4. Because of the location of black crusts, it was not possible to apply this gel cleaner in the recommended thickness and, once hardened, the cleaner was difficult to remove. The cleaner was not effective in removing the soiling; its use was not further evaluated.

RINSING:

At the end of the dwell period, chemical cleaning solutions were rinsed as described above for water washing with hot water. A 25-degree fan tip was used, maintaining a distance of 8-10 inches from the limestone surface. Test areas were evaluated following drying.

RESULTS:

Test Area # 1	Product/Technique	Soiling	Effectiveness
Left	D/2 Biological Solution	Biological growth	85%
Right	Hot water/ D/2 Biological Solution	Biological growth	>95%

Test Area # 3	Product	Soiling	Effectiveness
	942 Limestone & Marble Cleaner	Gray soiling	90%

Test Area # 4	Product	Soiling	Effectiveness
Left	Intermittent misting/ Hot water	Atmospheric and biological soiling with black crusts in protected areas	85%, with some removal of black crusts
	Intermittent misting/ Scrubbing/ Hot water	Atmospheric and biological soiling with black crusts in protected areas	90%, with best removal of black crusts
to	Hot water	Atmospheric and biological soiling with black crusts in protected areas	75%, with minimal removal of black crusts

	942 Limestone & Marble Cleaner	Atmospheric and biological soiling with black crusts in protected areas	70%, with minimal removal of black crusts
	Hot water/ 2010 All Surface Cleaner	Atmospheric and biological soiling with black crusts in protected areas	80%, with minimal removal of black crusts
Right	D/2 Biological Solution	Atmospheric and biological soiling with black crusts in protected areas	85%, with minimal removal of black crusts

COMMENTS

In Test area #1, the effectiveness of D/2 Biological Solution was improved when hot water washing was used prior to application of the chemical cleaner. Hot water washing seems to soften the biological growth facilitating its removal with D/2.

In Test area #2, 942 Limestone & Marble Cleaner was effective in removing the gray-colored soiling. Based on the testing conducted in December and April, this soiling may include the residue of a previously applied water repellent treatment as well as atmospheric soiling.

In Test area #4, intermittent misting was effective in softening soiling including black crusts. Best results were achieved when intermittent misting was followed by gentle scrubbing and water washing using hot water.

RECOMMENDATIONS:

Our April site visit to Vanderbilt Mansion National Historic Site provided an opportunity to conduct additional cleaning tests on exterior limestone. As expected, the effectiveness of chemical cleaners improved in warmer weather. However, as with the tests conducted in December, hot water that was used for water washing and rinsing appeared to improve cleaning results. Based on the results of on-site testing conducted in April, our recommendations for cleaning exterior limestone are as follows:

- General soiling (atmospheric and light biological soiling) – Water washing applied at approximately 1000 psi with a 25-degree fan tip, maintaining a distance of 8-10 inches from the limestone surface. Note: Hot water (approximately 180 degrees F.) may improve effectiveness
- Biological growth – Water washing followed by D/2 Biological Solution. Manufacturer's product data is attached.
- Gray soiling such as that present on the capstone – 942 Limestone & Masonry Cleaner. Manufacturer's product data is attached.
- Weathering crust formation – Intermittent misting using 15 and 25-degree tip spray brass nozzles spaced 6 inches apart and connected to flexible adapters. The nozzles should be

approximately 10-12 inches from the limestone surface, providing misting at a 120-degree angle. Misting cycles of 10 minutes on and 50 minutes off during an 18-hour period were effective in the tests that we conducted. Because exterior limestone conditions are variable, the technique may require slight adjustments when cleaning is carried out. Following intermittent misting, hand scrubbing with a soft brush and water washing should be used to remove the soiling that was loosened during intermittent misting.

Frances Gale
May 3, 2011

PHOTOGRAPHS



Test area #1, biological growth before cleaning with D/2



Test area #1, (left to right) December pressure washing, December D/2, April D/2, April, hot water washing followed by D/2



Test area #3, before cleaning with 942



Test area #3, rinsing 942 following dwell period



Test area #4, cornice conditions before cleaning



Test area #4, cornice modillion conditions with black crust in protected area



Test area #4, intermittent misting set-up



Test area #4, intermittent misting set-up



Test area #4, (left to right) intermittent misting followed by hot water washing, intermittent misting followed by scrubbing and hot water washing, hot water washing



Test area #4, intermittent misting following by hot water washing



Test area #4, intermittent misting following by scrubbing and hot water washing



Test area #4, hot water washing



Test area #4, (left to right) 942 (modillion only), hot water washing followed by 2010, Hot water washing following by D/2



Test area #4, (left to right)

Intermittent misting followed by hot water washing

Intermittent misting followed by scrubbing and hot water washing

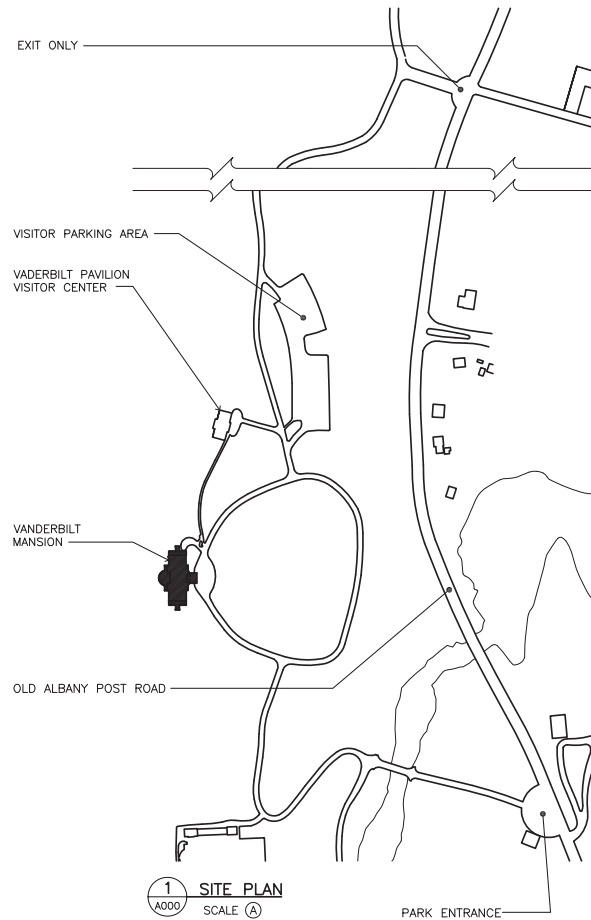
Hot water washing

942 (modillion only)

Hot water washing followed by 2010

Hot water washing following by D/2

Measured Drawings of the Historic Vanderbilt Mansion Vanderbilt National Historic Site, Hyde Park, NY



SHEET	SUB SHEET	TITLE OF SHEET
1.	A000	TITLE SHEET & SITE PLAN
MEASURED DRAWINGS		
2.	MD10	SUBBASEMENT PLAN
3.	MD11	BASEMENT PLAN
4.	MD12	FIRST FLOOR PLAN
5.	MD14	SECOND FLOOR PLAN
6.	MD13	THIRD FLOOR PLAN
7.	MD15	ROOF PLAN
8.	MD16	REFLECTED CEILING PLAN
9.	MD20	EAST ELEVATION
10.	MD21	EAST ELEVATION
11.	MD22	SOUTH ELEVATION
12.	MD23	SOUTH ELEVATION
13.	MD24	WEST ELEVATION
14.	MD25	WEST ELEVATION
15.	MD26	NORTH ELEVATION
16.	MD27	NORTH ELEVATION
17.	MD28	MISCELLANEOUS ELEVATIONS

SCALE (A) 100 0 100 200
SCALE OF FEET



ARCHITECT
JOHN G. WAITE ASSOCIATES
384 BROADWAY, ALBANY, NY 12207

64 FULTON ST., SUITE 402
NEW YORK, NY 10038

PRE-DESIGN 100% SUBMITTAL 04/20/11

Mark	Sheet	REVISION	Date	Initial

QUALITY DESIGN CERTIFICATION

☐ Prepared in Accordance with Design Development (Title I) Drawing No. _____

OR

☐ Variance from Design Development (Title I) Approved by Superintendent on _____ Date _____

OR

☐ Construction Drawing Not Preceded by Design Development (Title I)

Project Manager _____ Date _____



CONSTRUCTION DRAWINGS

UNITED STATES
DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE
DENVER SERVICE CENTER

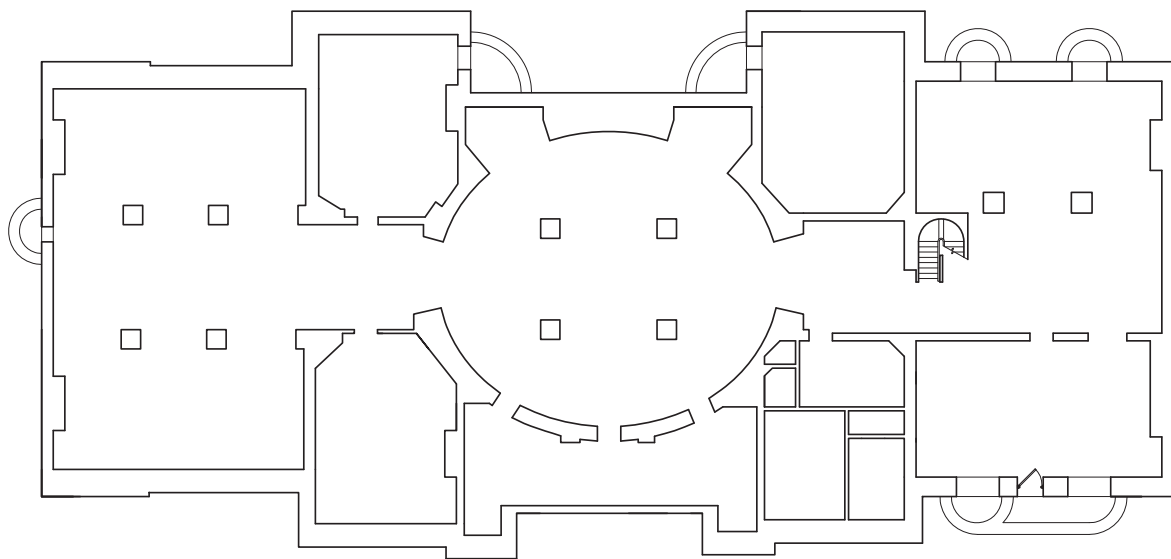
TITLE OF DRAWING
VANDERBILT MANSION

LOCATION WITHIN PARK
VANDERBILT MANSION

NAME OF PARK
VANDERBILT MANSION NATIONAL HISTORIC PARK
REGION COUNTY STATE
NER DUTCHESS NEW YORK

DRAWING NO. _____

PKG. NO. _____ SHEET
1 OF 17



NOTE: INTERIOR PORTIONS OF THIS PLAN ARE NOT BASED ON FIELD SURVEY. THE PLAN DOES NOT EXACTLY MATCH EXISTING CONDITIONS.

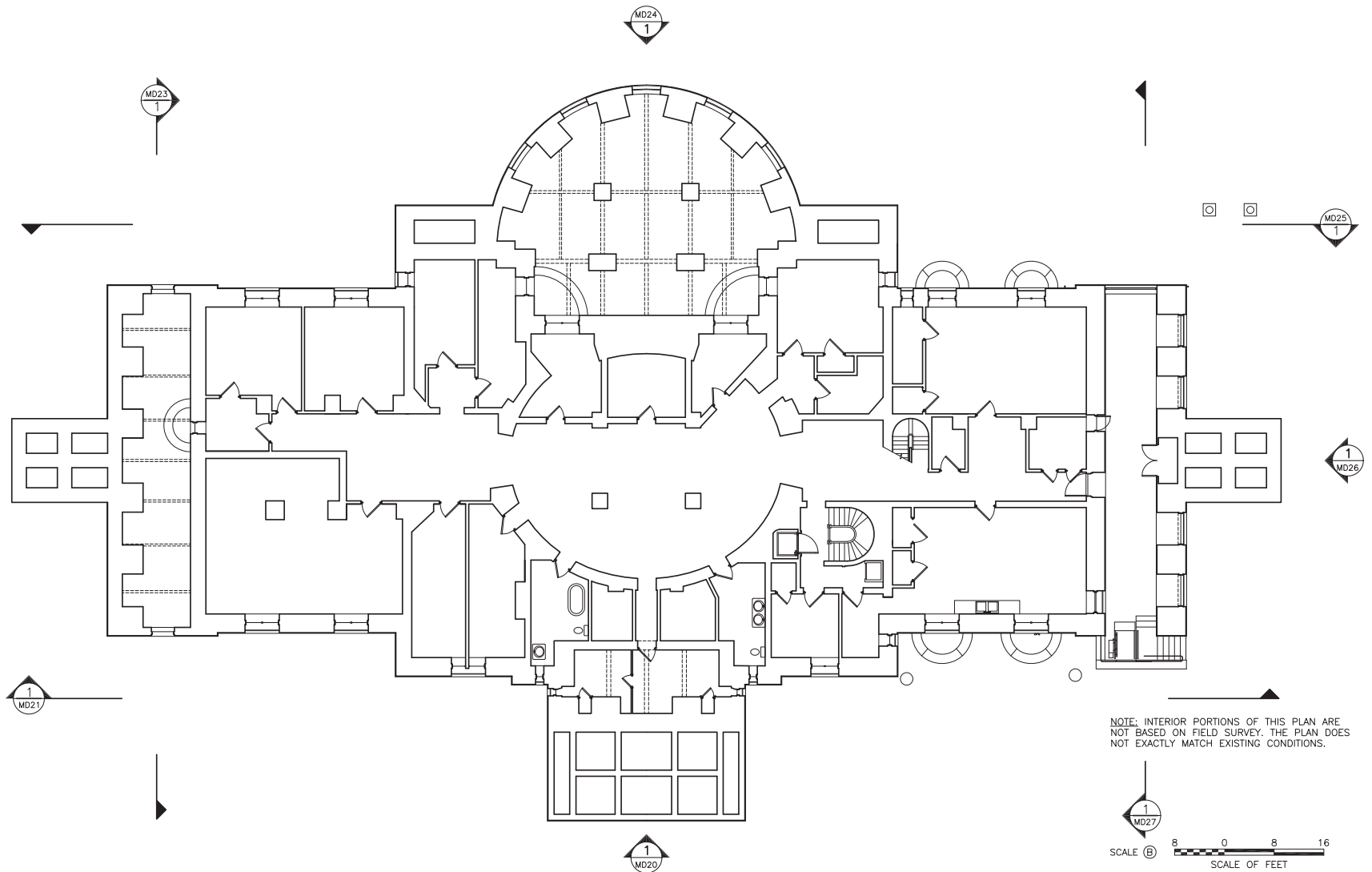
SCALE (B) 8 0 8 16
SCALE OF FEET



1 SUBBASEMENT PLAN
MD10 SCALE (B)

PRE-DESIGN 100% SUBMITTAL

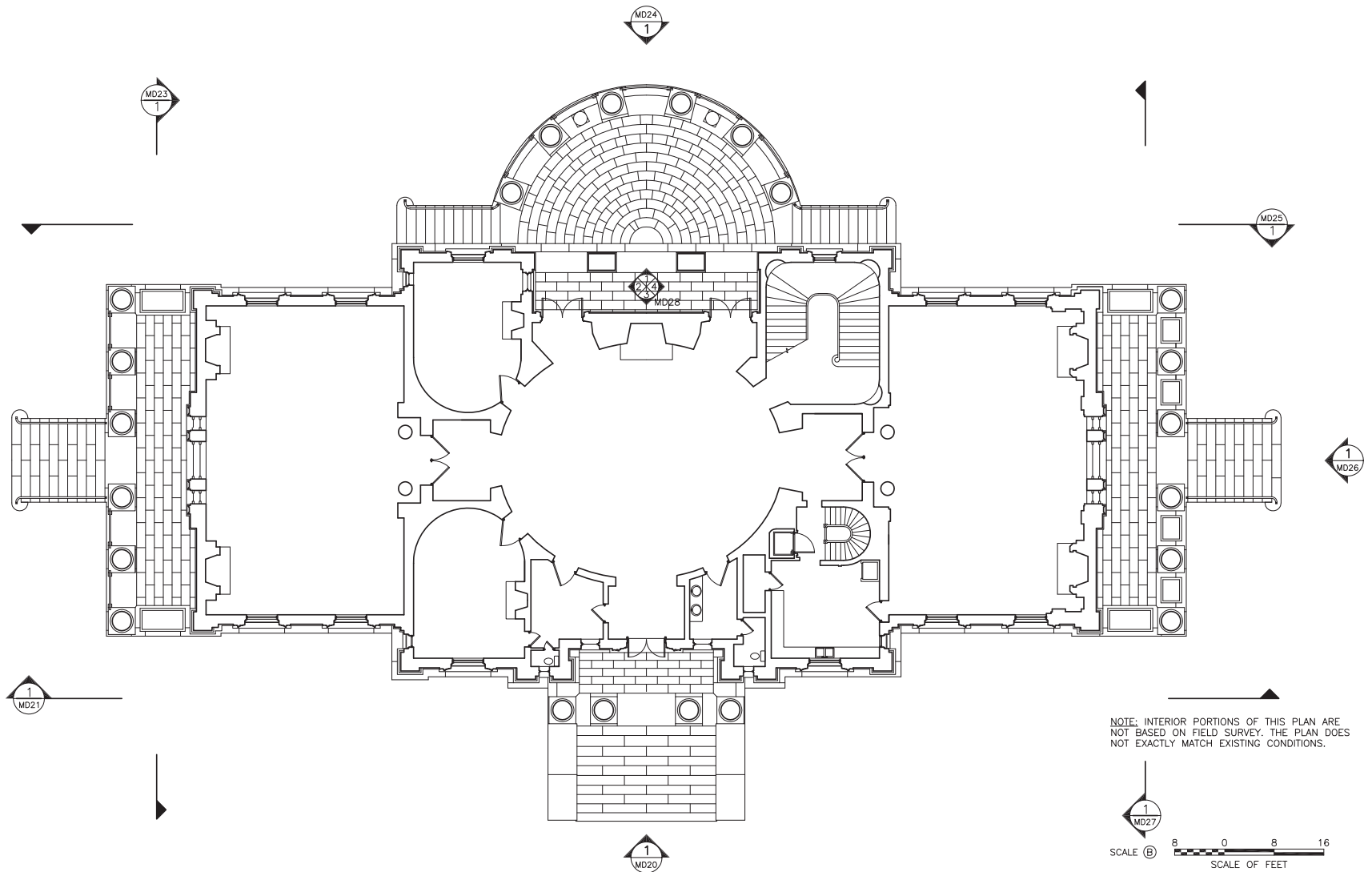
DESIGNED:	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
JGWA	MD10	REHABILITATE VANDERBILT MANSION EXTERIOR	—
—	—	VANDERBILT MANSION	—
TECH. REVIEW:	—	SUBBASEMENT PLAN	PMIS/PKG NO.
—	—	VANDERBILT MANSION NATIONAL HISTORIC SITE	—
DATE:	04/20/11	HYDE PARK, NEW YORK	SHEET
			2 OF 17



1 BASEMENT PLAN
MD11 SCALE (B)

PRE-DESIGN 100% SUBMITTAL

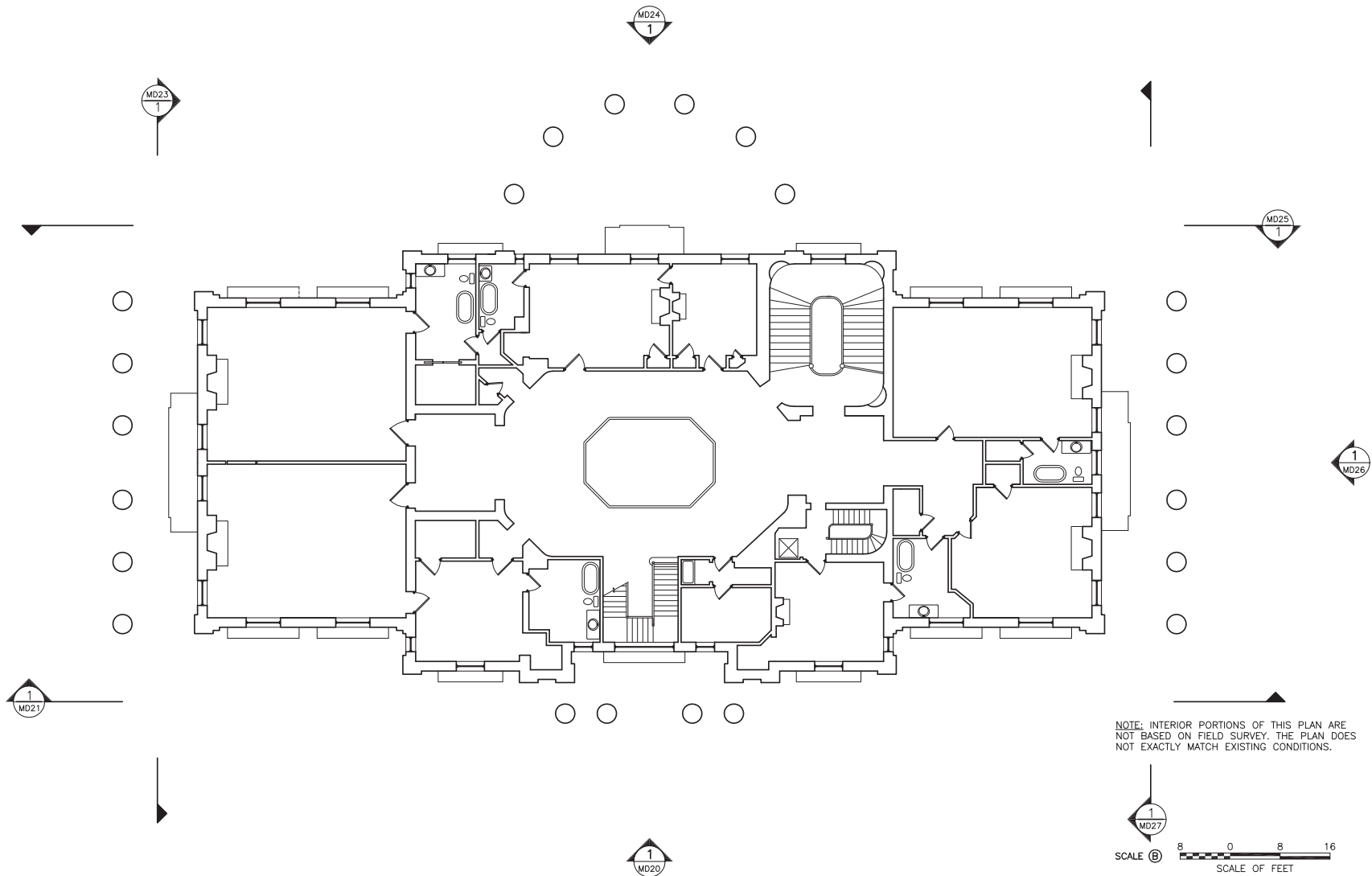
DESIGNED:	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
JGWA	MD11	REHABILITATE VANDERBILT MANSION EXTERIOR	—
—	—	VANDERBILT MANSION	—
TECH. REVIEW:	—	BASEMENT PLAN	PMIS/PKG NO.
DATE:	04/20/11	VANDERBILT MANSION NATIONAL HISTORIC SITE	—
—	—	HYDE PARK, NEW YORK	SHEET
—	—	—	3 OF 17



1 FIRST FLOOR PLAN
MD12 SCALE (B)

PRE-DESIGN 100% SUBMITTAL

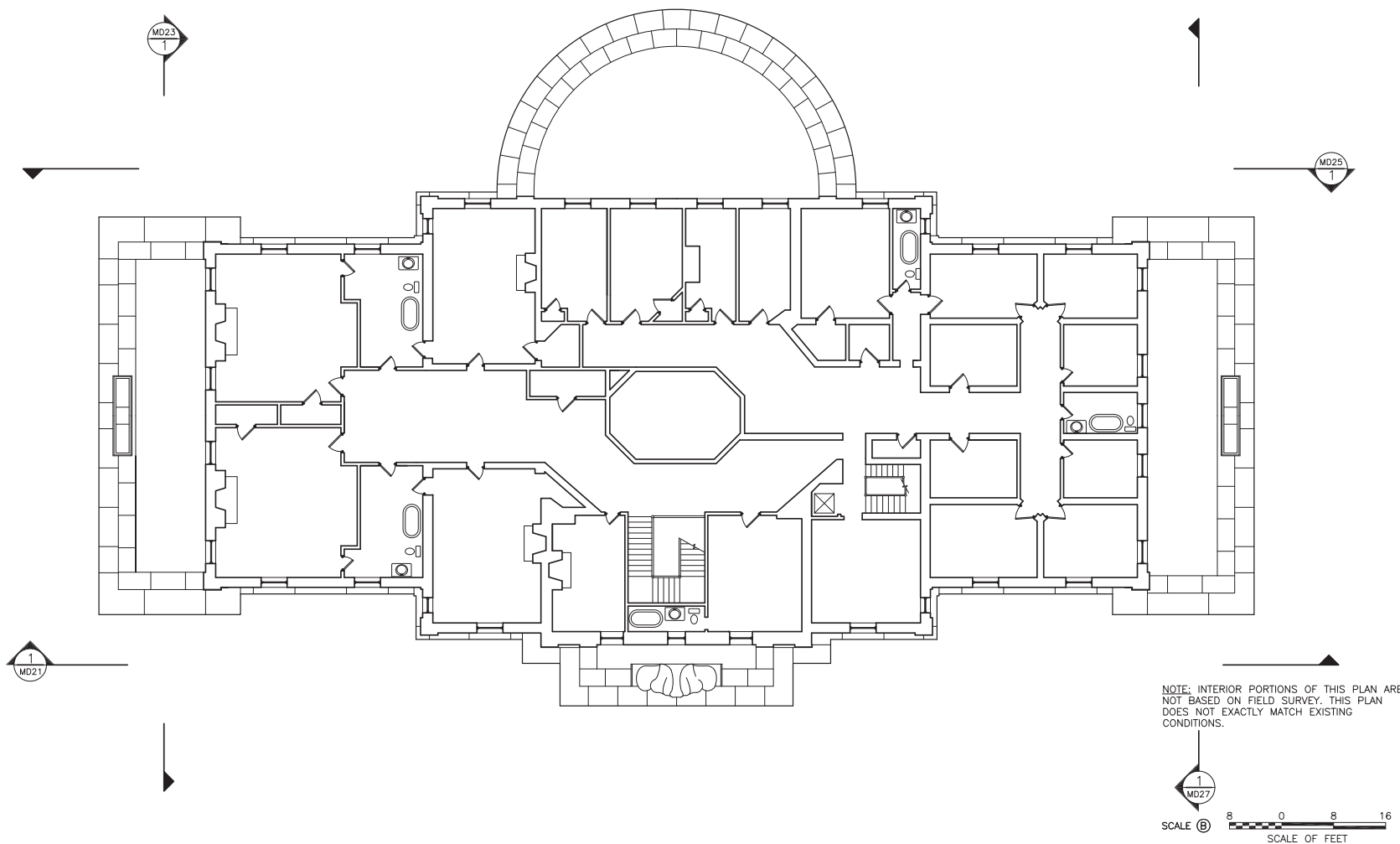
DESIGNED: JGWA	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
MD12		REHABILITATE VANDERBILT MANSION EXTERIOR	—
TECH. REVIEW:		VANDERBILT MANSION	PMIS/PKG NO.
DATE: 04/20/11		FIRST FLOOR PLAN	—
		VANDERBILT MANSION NATIONAL HISTORIC SITE	SHEET
		HYDE PARK, NEW YORK	4 OF 17



1 SECOND FLOOR PLAN
MD13 SCALE (B)

PRE-DESIGN 100% SUBMITTAL

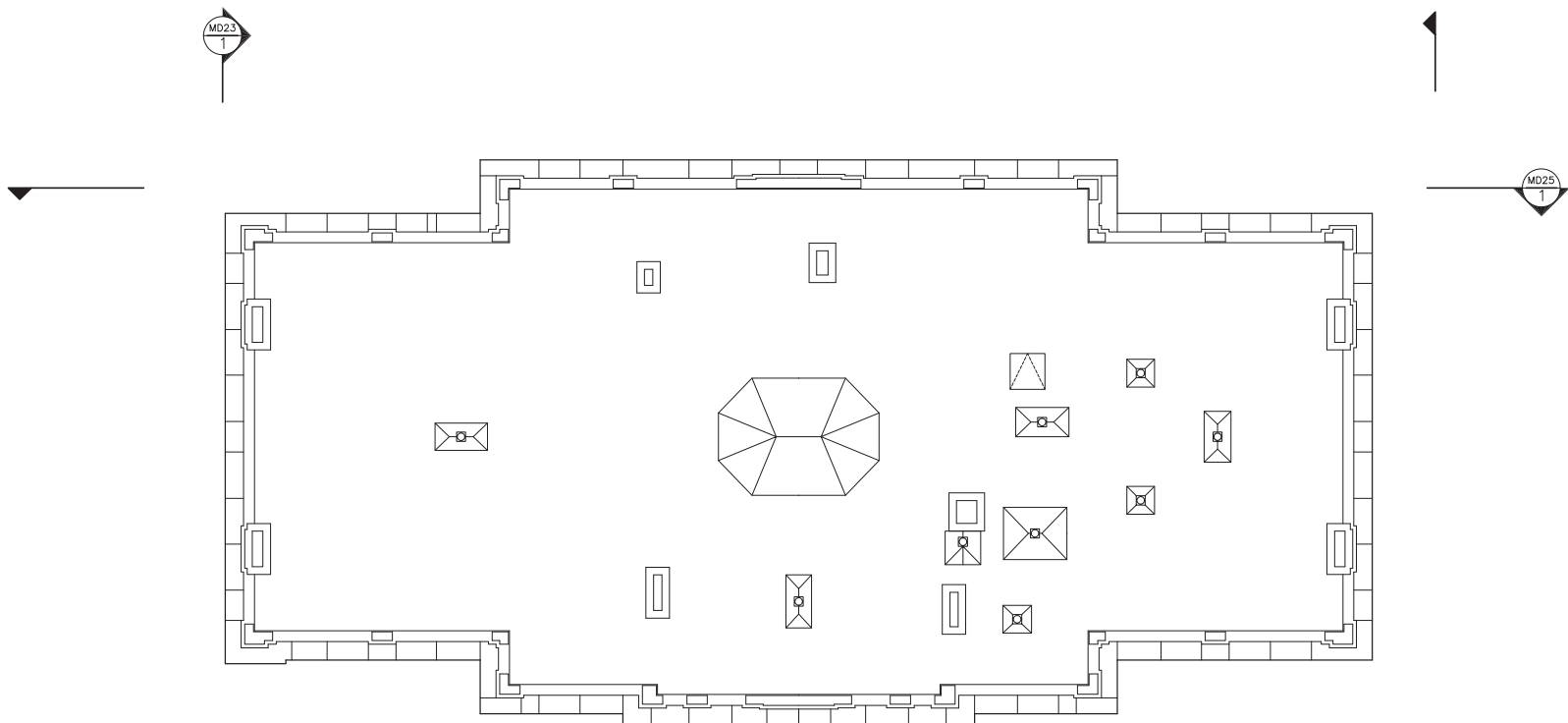
DESIGNED:	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
JGWA		REHABILITATE VANDERBILT MANSION EXTERIOR	—
—		VANDERBILT MANSION	—
—	MD13	SECOND FLOOR PLAN	PMIS/PKG NO.
TECH. REVIEW:		VANDERBILT MANSION NATIONAL HISTORIC SITE	—
—		HYDE PARK, NEW YORK	SHEET
DATE:	04/20/11		5 OF 17



1 THIRD FLOOR PLAN
MD14 SCALE (B)

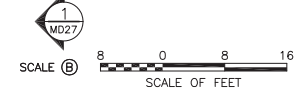
PRE-DESIGN 100% SUBMITTAL

DESIGNED:	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
JGWA		REHABILITATE VANDERBILT MANSION EXTERIOR	—
MD14		VANDERBILT MANSION	—
TECH. REVIEW:		THIRD FLOOR PLAN	PMIS/PKG NO.
DATE:		VANDERBILT MANSION NATIONAL HISTORIC SITE	—
04/20/11		HYDE PARK, NEW YORK	SHEET
			6 OF 17



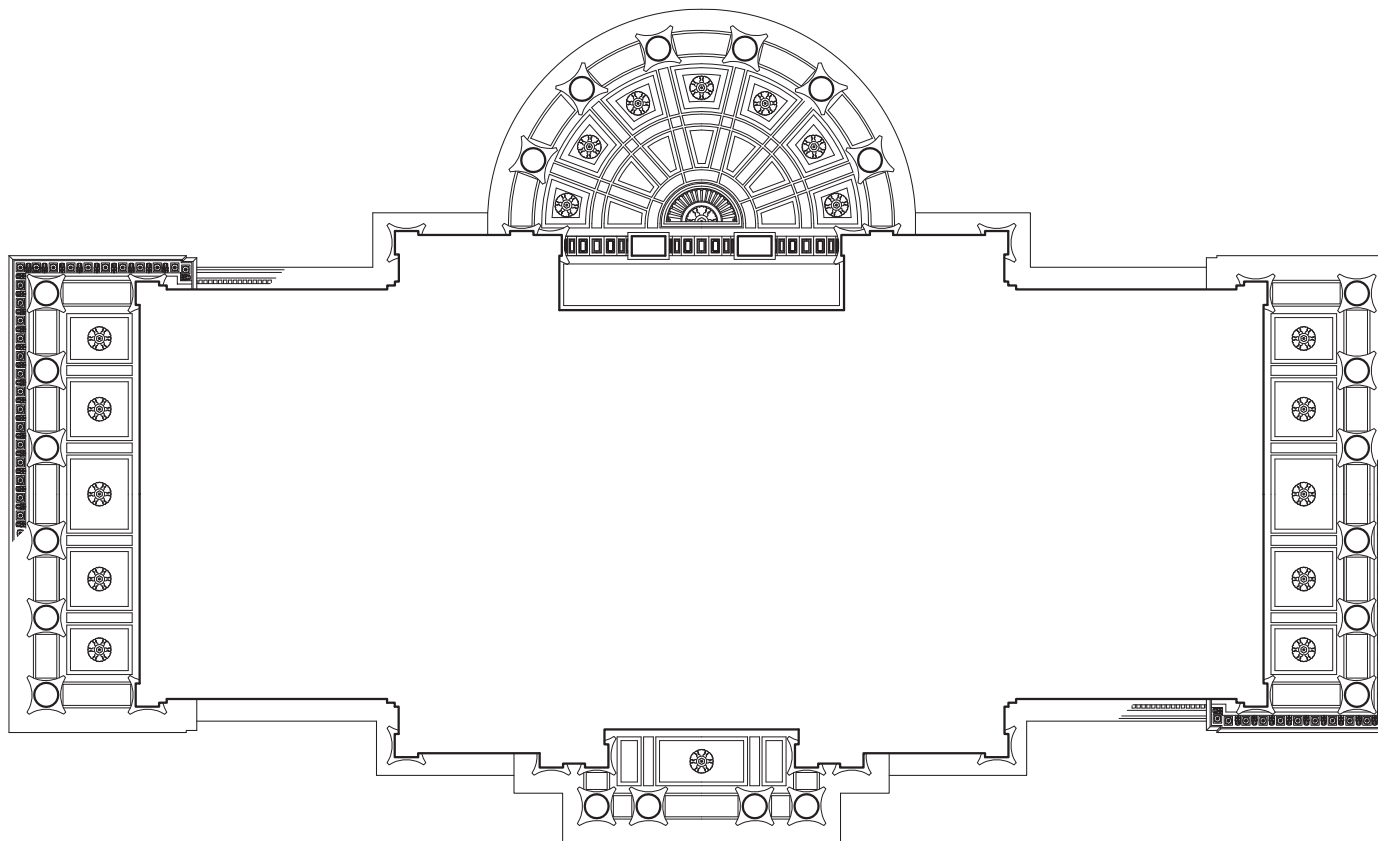
NOTE: SKYLIGHTS AND ROOF VENTS ON THIS PLAN ARE NOT BASED ON FIELD SURVEY. THIS PLAN DOES NOT EXACTLY MATCH EXISTING CONDITIONS.

1 ROOF PLAN
MD15 SCALE (B)



PRE-DESIGN 100% SUBMITTAL

DESIGNED: JGWA	SUB SHEET NO. MD15	TITLE OF SHEET REHABILITATE VANDERBILT MANSION EXTERIOR VANDERBILT MANSION ROOF PLAN	DRAWING NO. —
—	—	—	PMIS/PKG NO. —
TECH. REVIEW: —	—	—	SHEET 7 OF 17
DATE: 04/20/11	—	VANDERBILT MANSION NATIONAL HISTORIC SITE HYDE PARK, NEW YORK	—



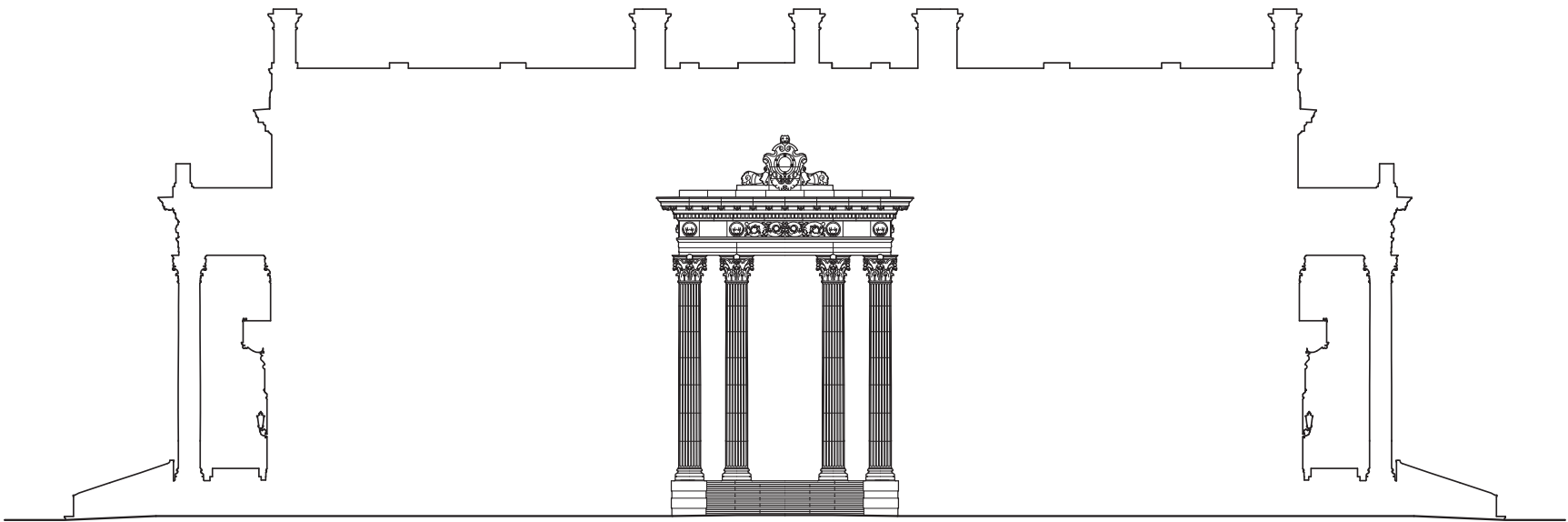
SCALE (B) 8 0 8 16
SCALE OF FEET



1 REFLECTED CEILING PLAN
MD16 SCALE (B)

PRE-DESIGN 100% SUBMITTAL

DESIGNED: JGWA	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
—	MD16	REHABILITATE VANDERBILT MANSION EXTERIOR	—
TECH. REVIEW:		VANDERBILT MANSION	PMIS/PKG NO.
—		REFLECTED CEILING PLAN	—
DATE:		VANDERBILT MANSION NATIONAL HISTORIC SITE	SHEET
04/20/11		HYDE PARK, NEW YORK	8 OF 17



SCALE (B) 8 0 8 16
SCALE OF FEET

1 EAST PORTICO ELEVATION
MD20 SCALE (B)

PRE-DESIGN 100% SUBMITTAL

DESIGNED: JGWA MD20	SUB SHEET NO. MD20	TITLE OF SHEET REHABILITATE VANDERBILT MANSION EXTERIOR VANDERBILT MANSION EAST ELEVATION VANDERBILT MANSION NATIONAL HISTORIC SITE HYDE PARK, NEW YORK	DRAWING NO. — — PMIS/PKG NO. — — SHEET 9 OF 17
TECH. REVIEW: —	DATE: 04/20/11		

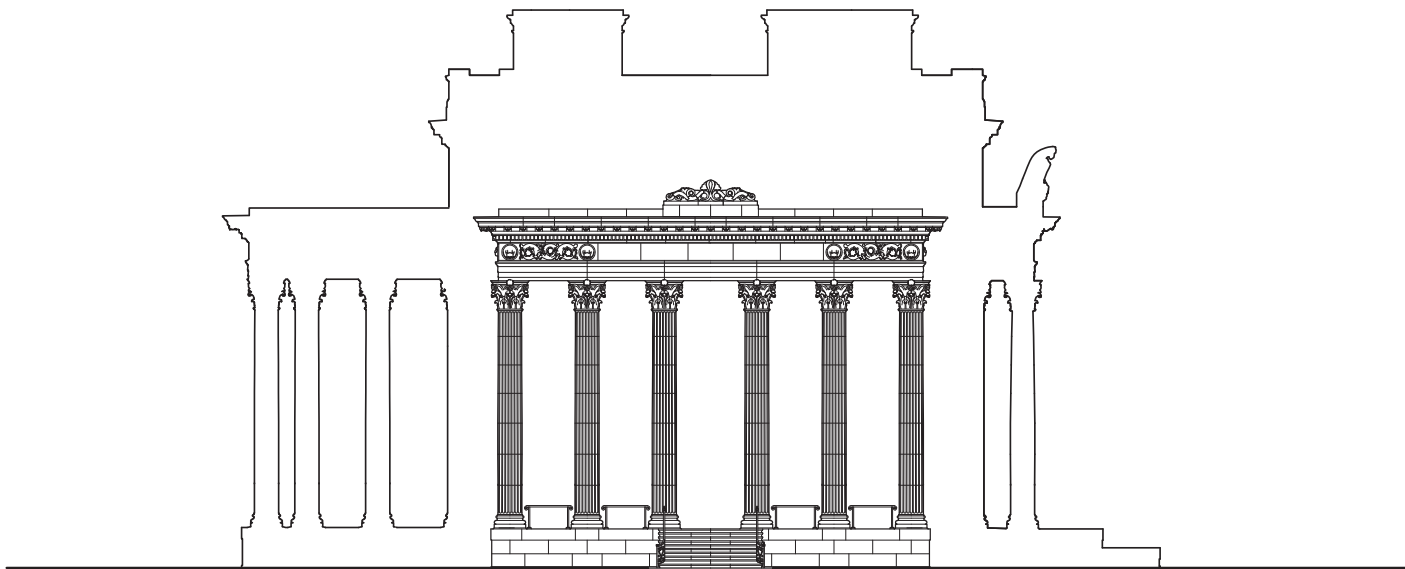


SCALE (B) 8 0 8 16
SCALE OF FEET

1 EAST ELEVATION
MD21 SCALE (B)

PRE-DESIGN 100% SUBMITTAL

DESIGNED: JGWA	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
MD21		REHABILITATE VANDERBILT MANSION EXTERIOR	—
TECH. REVIEW:	MD21	VANDERBILT MANSION	PMIS/PKG NO.
DATE:		EAST ELEVATION	—
04/20/11		VANDERBILT MANSION NATIONAL HISTORIC SITE	SHEET
		HYDE PARK, NEW YORK	10 OF 17

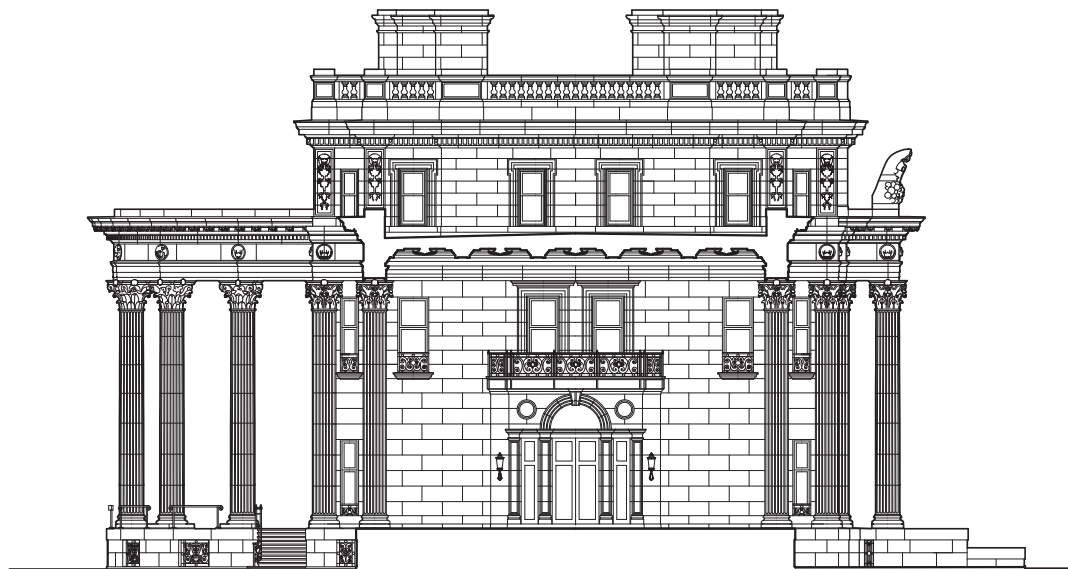


SCALE (B)  SCALE OF FEET

1 SOUTH PORTICO ELEVATION
MD22 SCALE (B)

PRE-DESIGN 100% SUBMITTAL

DESIGNED: JGWA	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
MD22	MD22	REHABILITATE VANDERBILT MANSION EXTERIOR	—
TECH. REVIEW:		VANDERBILT MANSION	PMIS/PKG NO.
DATE:		SOUTH ELEVATION	—
04/20/11		VANDERBILT MANSION NATIONAL HISTORIC SITE	SHEET
		HYDE PARK, NEW YORK	11 OF 17

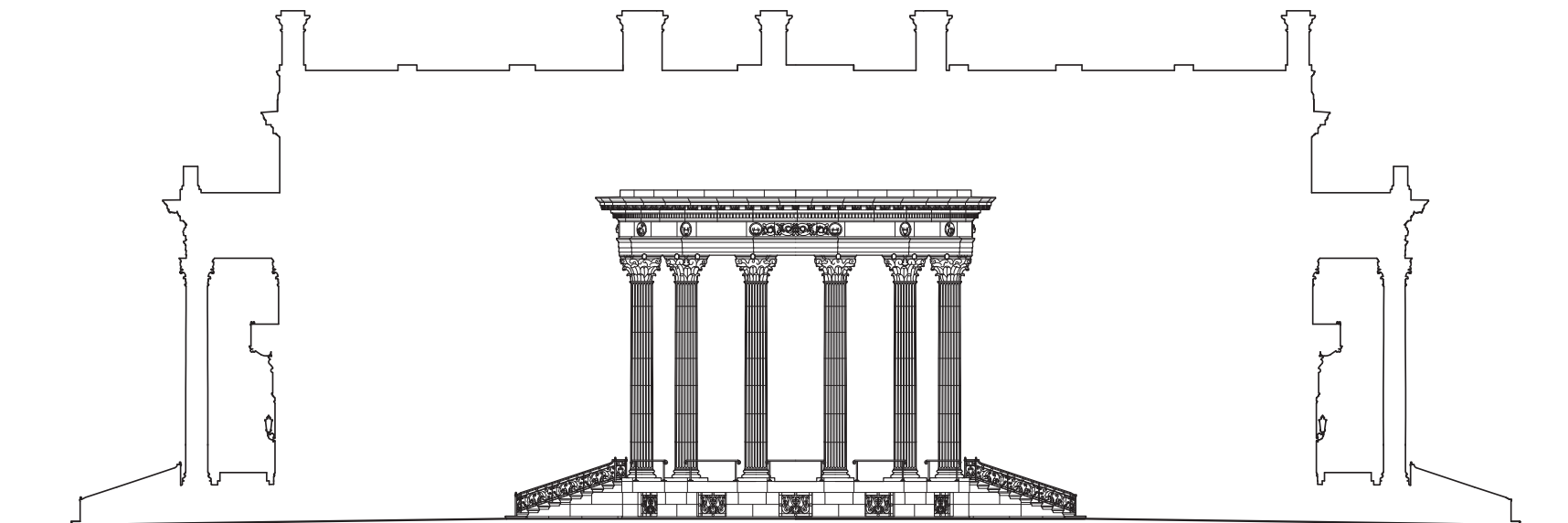


SCALE (B) 
SCALE OF FEET

1 SOUTH ELEVATION
MD23 SCALE (B)

PRE-DESIGN 100% SUBMITTAL

DESIGNED: JGWA	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
MD23	MD23	REHABILITATE VANDERBILT MANSION EXTERIOR	—
TECH. REVIEW:		VANDERBILT MANSION	PMIS/PKG NO.
DATE:		SOUTH ELEVATION	—
04/20/11		VANDERBILT MANSION NATIONAL HISTORIC SITE	SHEET
		HYDE PARK, NEW YORK	12 OF 17

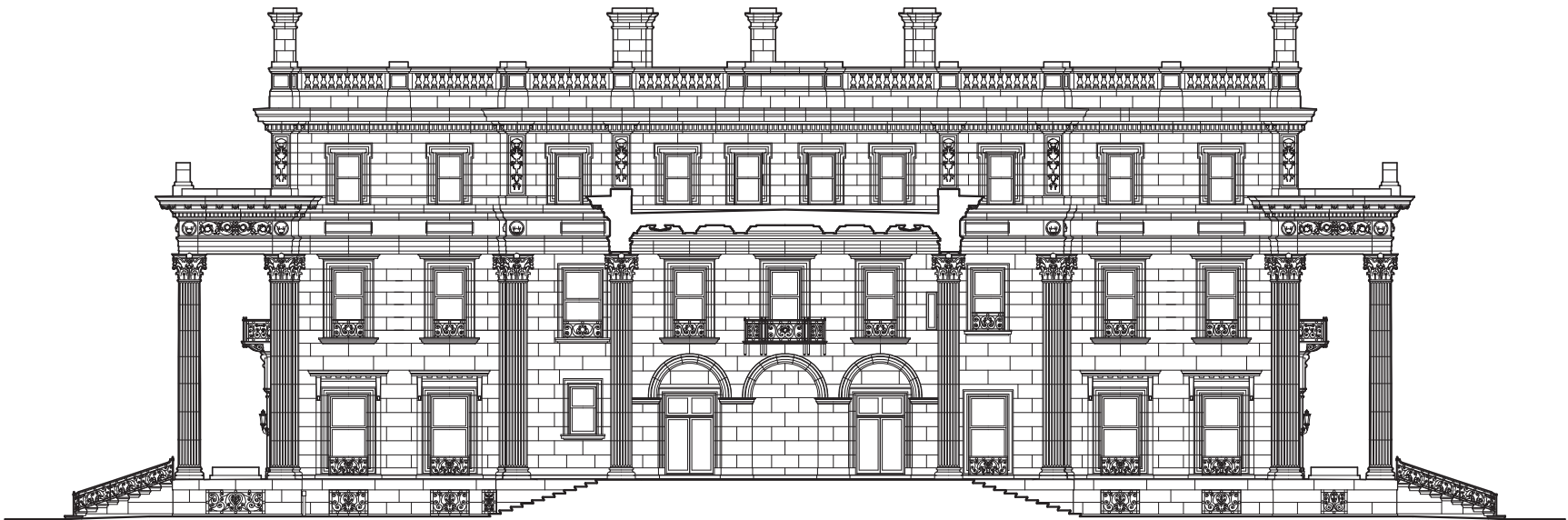


SCALE (B) 
SCALE OF FEET

1 WEST PORTICO ELEVATION
MD24 SCALE (B)

PRE-DESIGN 100% SUBMITTAL

DESIGNED: JGWA	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
—	MD24	REHABILITATE VANDERBILT MANSION EXTERIOR	—
TECH. REVIEW: —		VANDERBILT MANSION	PMIS/PKG NO.
DATE: 04/20/11		WEST ELEVATION	—
		VANDERBILT MANSION NATIONAL HISTORIC SITE	SHEET
		HYDE PARK, NEW YORK	13 OF 17

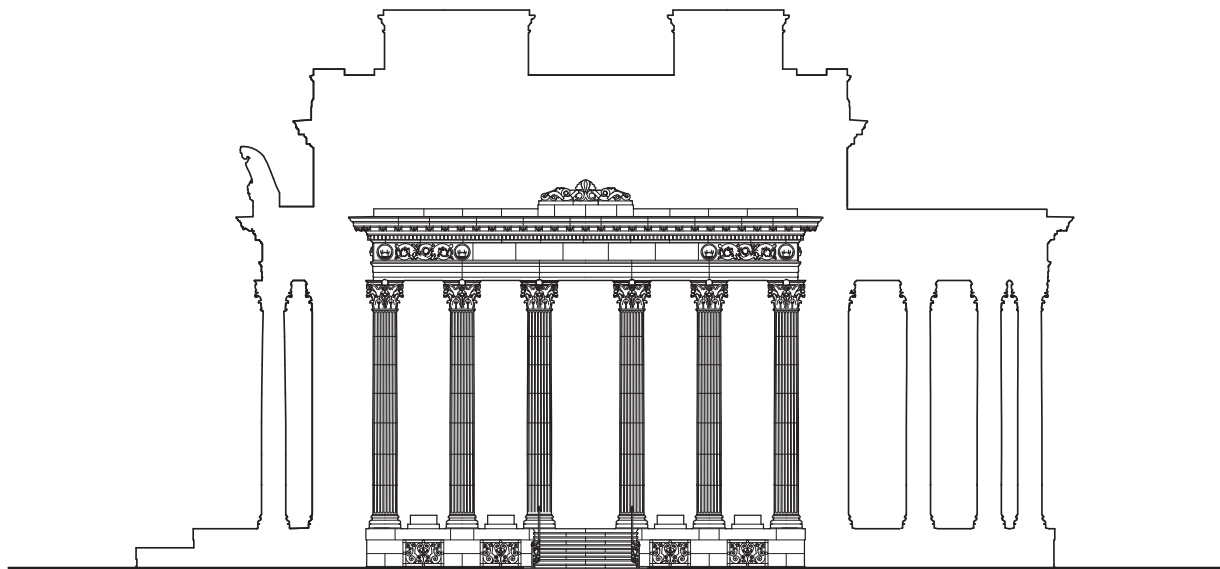


SCALE (B) 8 0 8 16
SCALE OF FEET

1 WEST ELEVATION
MD25 SCALE (B)

PRE-DESIGN 100% SUBMITTAL

DESIGNED: JGWA	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
MD25		REHABILITATE VANDERBILT MANSION EXTERIOR	—
TECH. REVIEW:		VANDERBILT MANSION	PMIS/PKG NO.
DATE:		WEST ELEVATION	—
04/20/11		VANDERBILT MANSION NATIONAL HISTORIC SITE	SHEET
		HYDE PARK, NEW YORK	14 OF 17

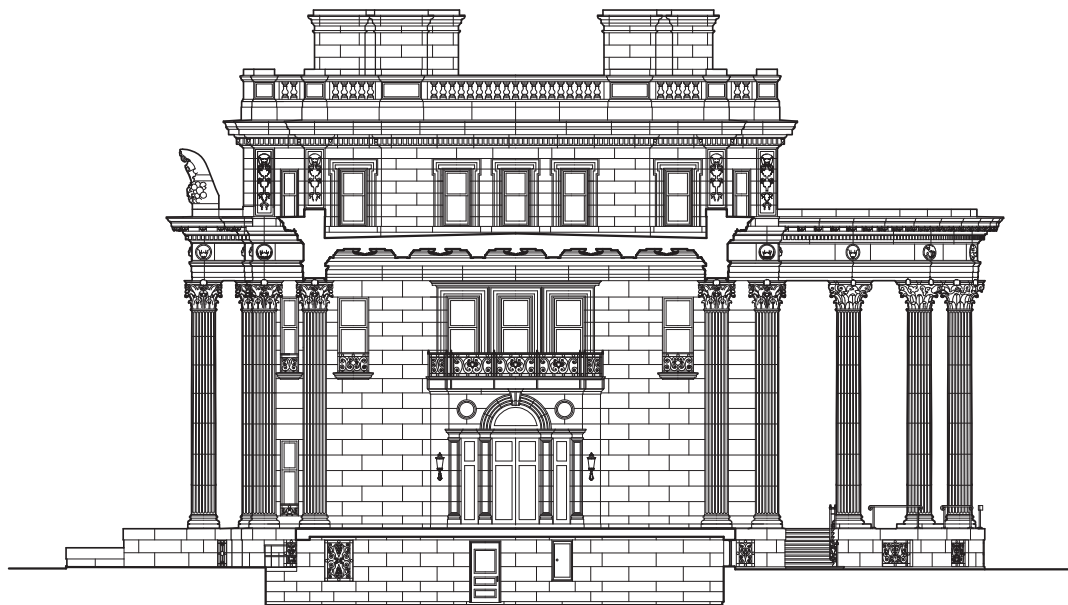


SCALE (B)  SCALE OF FEET

1 NORTH PORTICO ELEVATION
MD26 SCALE (B)

PRE-DESIGN 100% SUBMITTAL

DESIGNED: JGWA	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
MD26	MD26	REHABILITATE VANDERBILT MANSION EXTERIOR	—
TECH. REVIEW:		VANDERBILT MANSION	PMIS/PKG NO.
DATE:		NORTH ELEVATION	—
04/20/11		VANDERBILT MANSION NATIONAL HISTORIC SITE	SHEET
		HYDE PARK, NEW YORK	15 OF 17

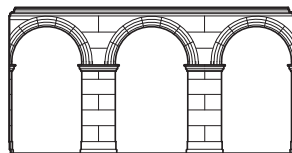


SCALE (B)  SCALE OF FEET

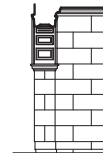
1 NORTH ELEVATION
MD27 SCALE (B)

PRE-DESIGN 100% SUBMITTAL

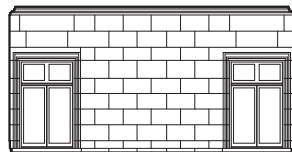
DESIGNED: JGWA	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
MD27		REHABILITATE VANDERBILT MANSION EXTERIOR	—
TECH. REVIEW:		VANDERBILT MANSION	PMIS/PKG NO.
DATE:		NORTH ELEVATION	—
04/20/11		VANDERBILT MANSION NATIONAL HISTORIC SITE	SHEET
		HYDE PARK, NEW YORK	16 OF 17



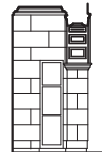
1 EAST ELEVATION WEST LOGGIA
MD28 SCALE (B)



2 SOUTH ELEVATION WEST LOGGIA
MD28 SCALE (B)



3 WEST ELEVATION WEST LOGGIA
MD28 SCALE (B)



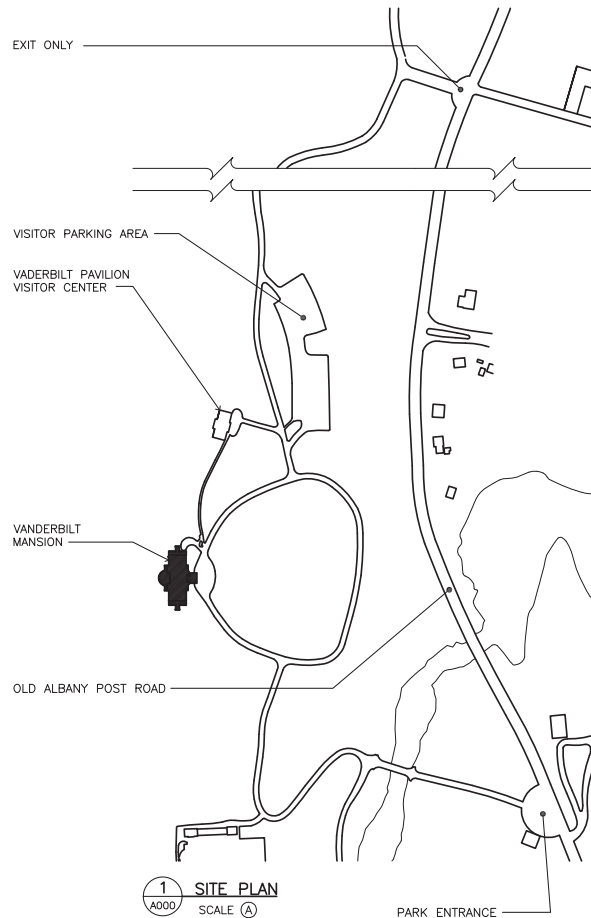
4 NORTH ELEVATION WEST LOGGIA
MD28 SCALE (B)



PRE-DESIGN 100% SUBMITTAL

DESIGNED: JGWA	SUB SHEET NO. MD28	TITLE OF SHEET REHABILITATE VANDERBILT MANSION EXTERIOR VANDERBILT MANSION MISC. ELEVATIONS	DRAWING NO. —
—	—	VANDERBILT MANSION NATIONAL HISTORIC SITE HYDE PARK, NEW YORK	PMIS/PKG NO. —
TECH. REVIEW: —	—	—	SHEET 17 OF 17
DATE: 04/20/11	—	—	—

Conditions Survey of the Historic Vanderbilt Mansion Vanderbilt National Historic Site, Hyde Park, NY



SHEET	SUB SHEET	TITLE OF SHEET
1.	A000	TITLE SHEET & SITE PLAN
PRE-DESIGN		
2.	PD11	BASEMENT FLOOR PLAN
3.	PD12	FIRST FLOOR PLAN
4.	PD16	PORTRICO REFLECTED CEILING PLAN
5.	PD20	EAST ELEVATION
6.	PD21	EAST ELEVATION
7.	PD22	SOUTH ELEVATION
8.	PD23	SOUTH ELEVATION
9.	PD24	WEST ELEVATION
10.	PD25	WEST ELEVATION
11.	PD26	NORTH ELEVATION
12.	PD27	NORTH ELEVATION
13.	PD28	MISCELLANEOUS ELEVATIONS
14.	PD30	TYPICAL LARGE SCALE CONDITIONS NOTES

SCALE (A) 100 0 100 200
SCALE OF FEET



ARCHITECT
JOHN G. WAITE ASSOCIATES
384 BROADWAY, ALBANY, NY 12207
64 FULTON ST., SUITE 402
NEW YORK, NY 10038

PRE-DESIGN 100% SUBMITTAL 04/20/11

Mark	Sheet	REVISION	Date	Initial	QUALITY DESIGN CERTIFICATION
					☐ Prepared in Accordance with Design
					OR
					☐ Development (Title I) Drawing No. _____
					OR
					☐ Variance from Design Development (Title I) Approved by Superintendent on _____ Date _____
					OR
					☐ Construction Drawing Not Preceded by Design Development (Title I)
					Project Manager _____ Date _____



CONSTRUCTION DRAWINGS

UNITED STATES
DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE
DENVER SERVICE CENTER

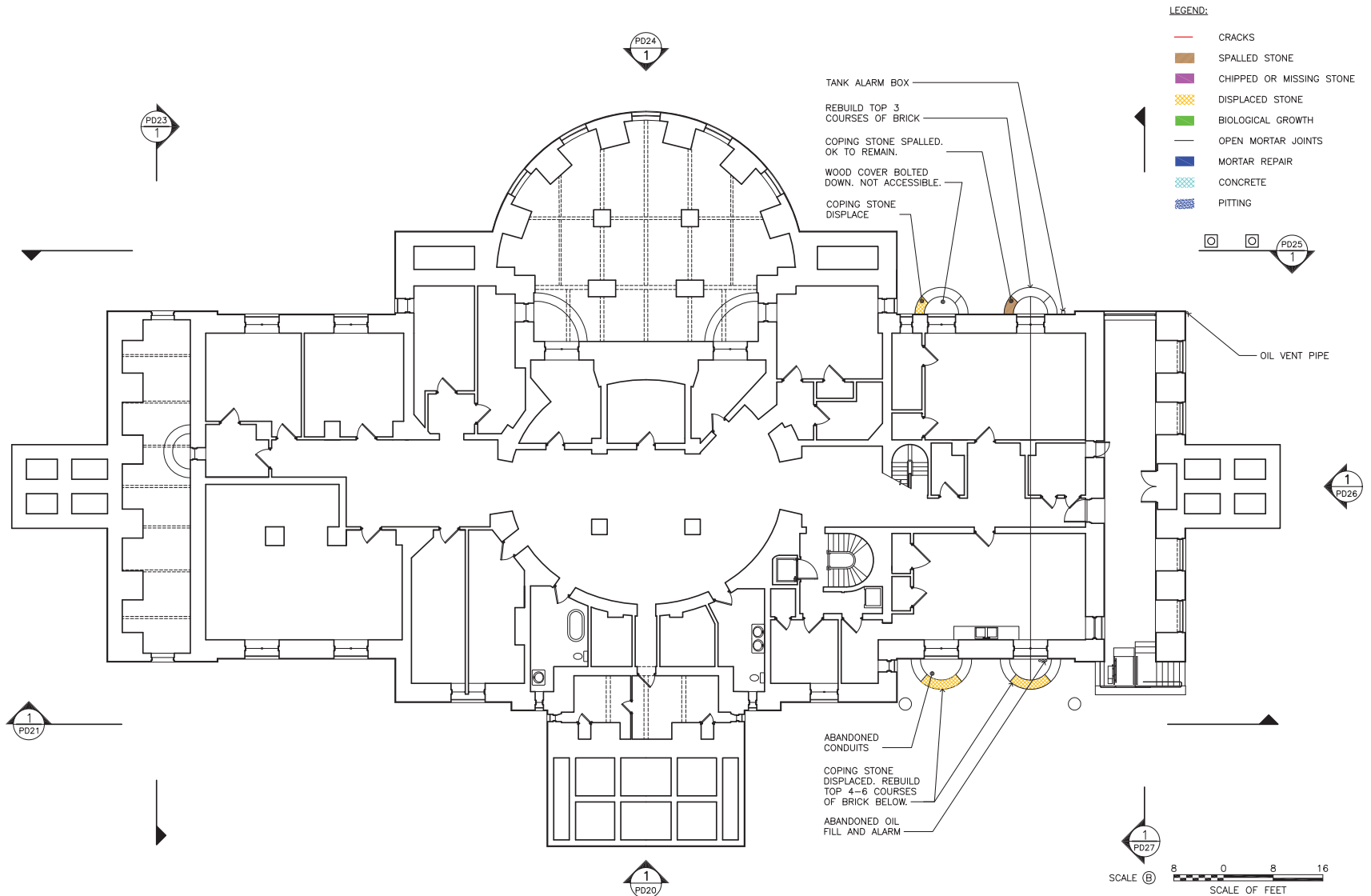
TITLE OF DRAWING
VANDERBILT MANSION

LOCATION WITHIN PARK
VANDERBILT MANSION

NAME OF PARK
VANDERBILT MANSION NATIONAL HISTORIC PARK
REGION COUNTY STATE
NER DUTCHESS NEW YORK

DRAWING NO.

PKG. NO. SHEET
1 OF 14



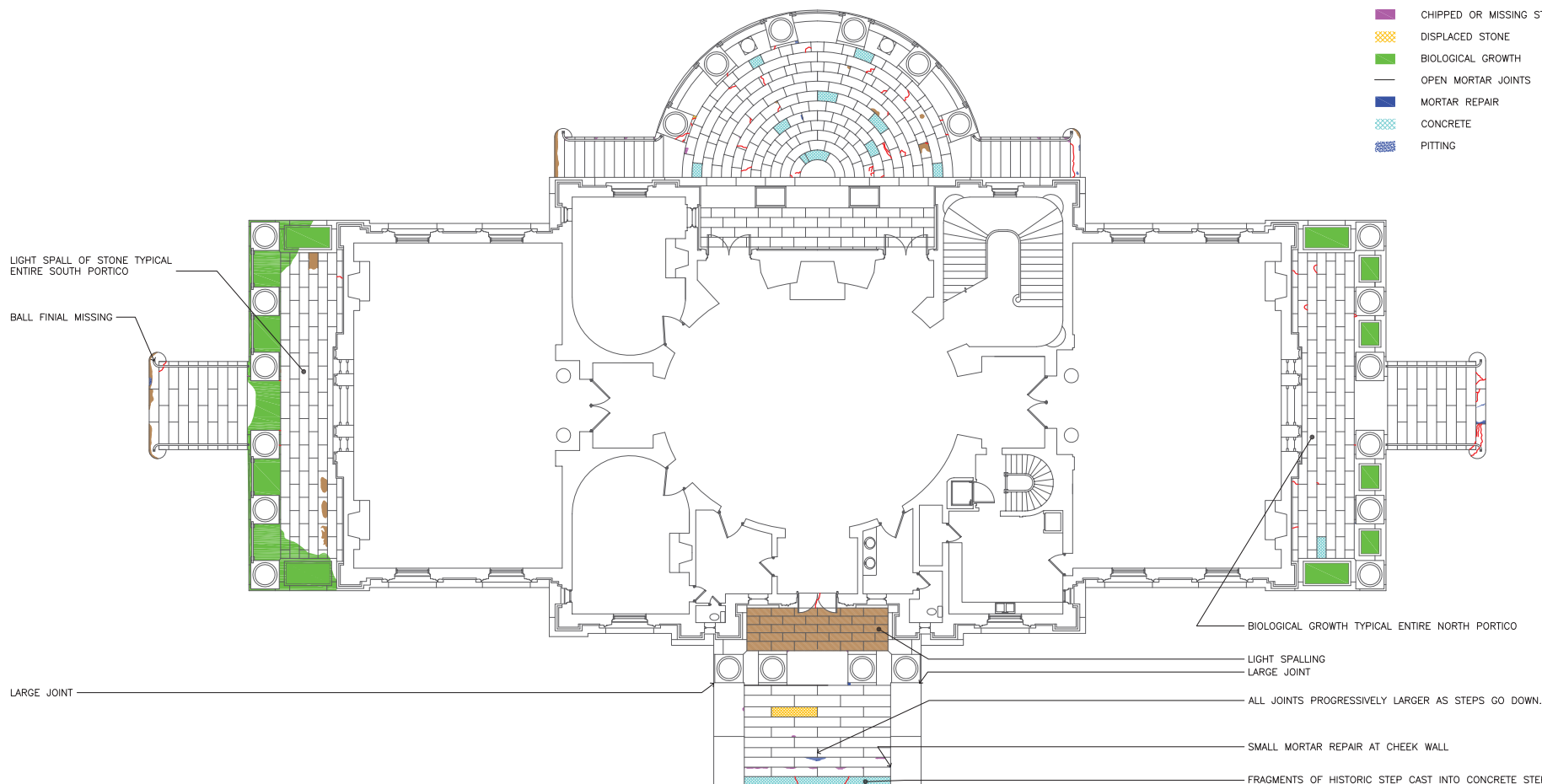
1 BASEMENT PLAN
SCALE (B)

PRE-DESIGN 100% SUBMITTAL

DESIGNED: JWA	SUB SHEET NO. PD11	TITLE OF SHEET REHABILITATE VANDERBILT MANSION EXTERIOR VANDERBILT MANSION BASEMENT PLAN VANDERBILT MANSION NATIONAL HISTORIC SITE HYDE PARK, NEW YORK	DRAWING NO. —
TECH. REVIEW: —			PMIS/PKG NO. —
DATE: 04/20/11			SHEET 2 OF 14

LEGEND:

- CRACKS
- SPALLED STONE
- CHIPPED OR MISSING STONE
- DISPLACED STONE
- BIOLOGICAL GROWTH
- OPEN MORTAR JOINTS
- MORTAR REPAIR
- CONCRETE
- PITTING



SCALE (B) 8 0 8 16
SCALE OF FEET



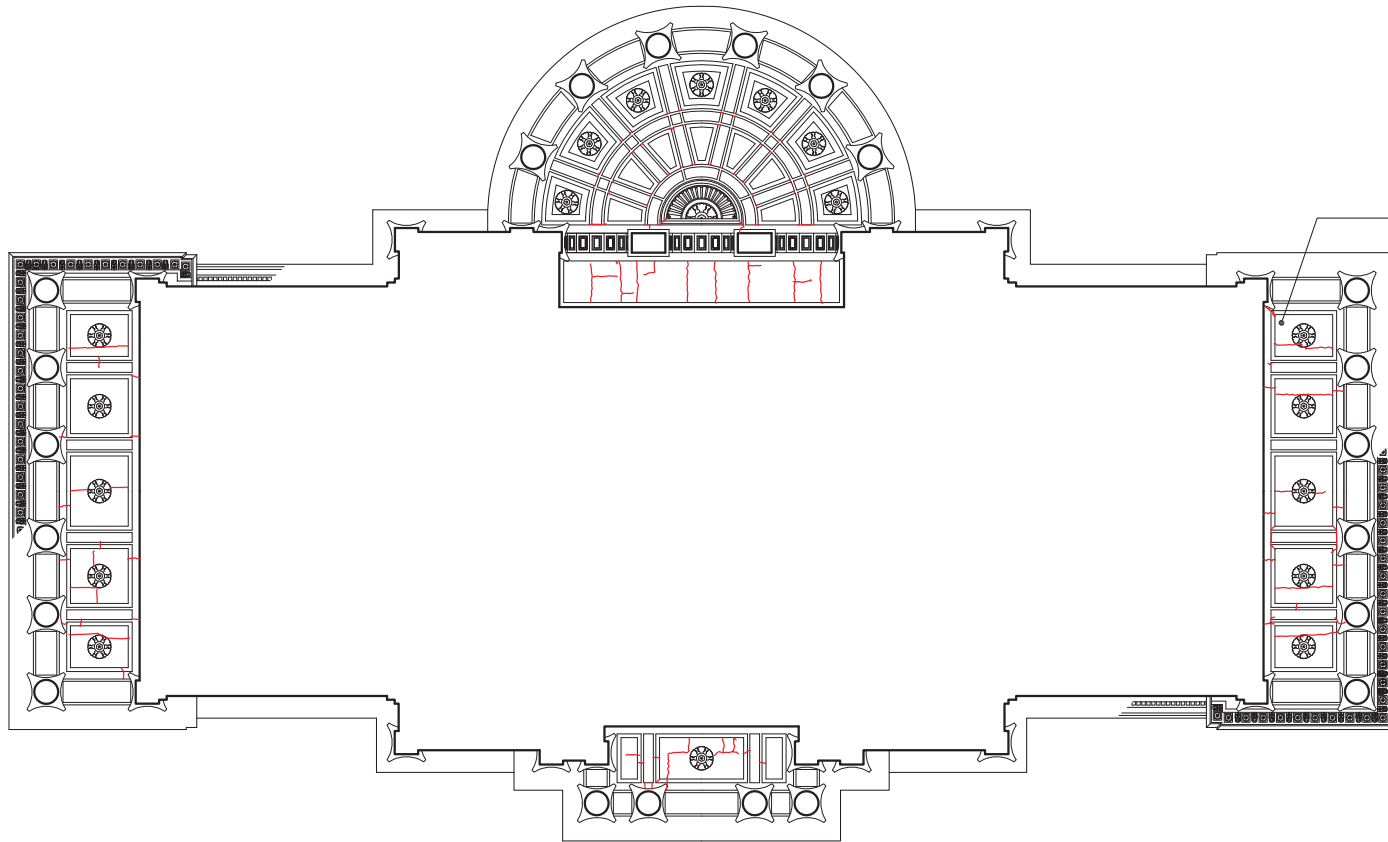
1 FIRST FLOOR PLAN
PD12 SCALE (B)

DESIGNED: JGWA	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
—	—	REHABILITATE VANDERBILT MANSION EXTERIOR	—
—	—	VANDERBILT MANSION	—
TECH. REVIEW:	PD12	CONDITIONS SURVEY	PMIS/PKG NO.
DATE: 04/20/11	—	VANDERBILT MANSION NATIONAL HISTORIC SITE	—
—	—	HYDE PARK, NEW YORK	SHEET
—	—	—	3 OF 14

PRE-DESIGN 100% SUBMITTAL

LEGEND:

— CRACKS



PAINT FAILED ON ALL PLASTER CEILINGS, CORNICES AND ORNAMENTS. TYPICAL ALL FOUR PORTICOS.

SCALE (B) 8 0 8 16
SCALE OF FEET



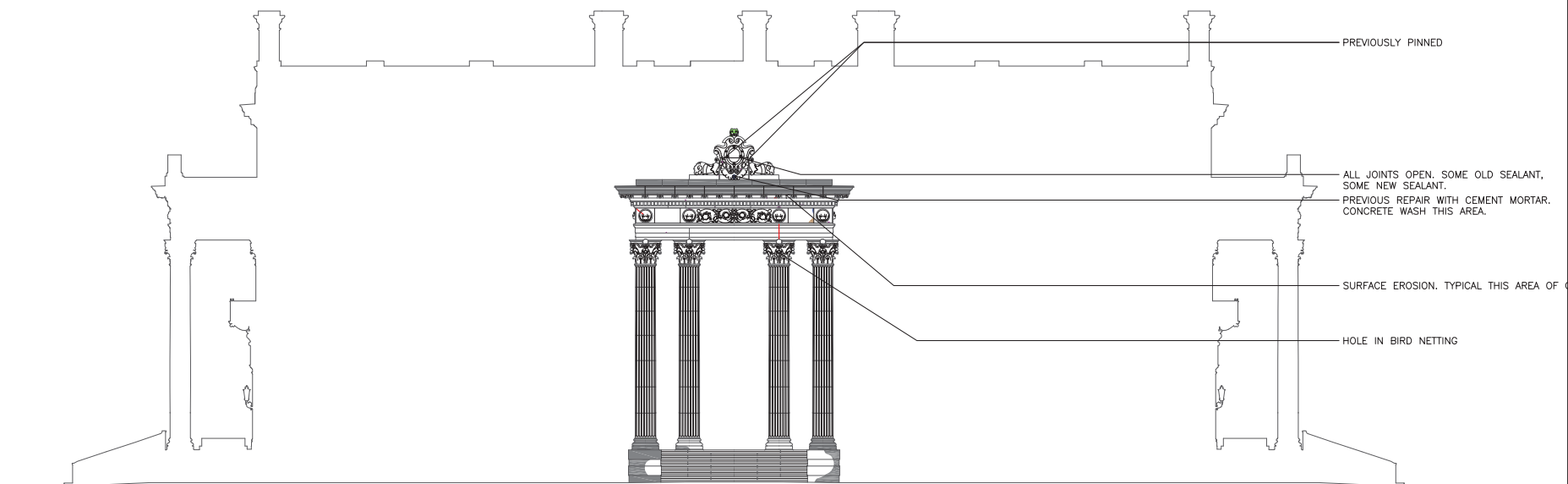
1 REFLECTED CEILING PLAN
PD16 SCALE (B)

PRE-DESIGN 100% SUBMITTAL

DESIGNED: JGWA	SUB SHEET NO. PD16	TITLE OF SHEET REHABILITATE VANDERBILT MANSION EXTERIOR VANDERBILT MANSION REFLECTED CEILING PLAN VANDERBILT MANSION NATIONAL HISTORIC SITE HYDE PARK, NEW YORK	DRAWING NO. —
—	—	—	PMIS/PKG NO. —
TECH. REVIEW: —	—	—	SHEET 4 OF 14
DATE: 04/20/11	—	—	—

LEGEND:

- CRACKS
- SPALLED STONE
- CHIPPED OR MISSING STONE
- BIOLOGICAL GROWTH
- UNIFORM GREY BIOLOGICAL GROWTH
- OPEN MORTAR JOINTS
- MORTAR REPAIR



SCALE (B) 8 0 8 16
SCALE OF FEET

1 EAST PORTICO ELEVATION
PD20 SCALE (B)

PRE-DESIGN 100% SUBMITTAL

DESIGNED: JGWA	SUB SHEET NO. PD20	TITLE OF SHEET REHABILITATE VANDERBILT MANSION EXTERIOR VANDERBILT MANSION CONDITIONS SURVEY	DRAWING NO. —
TECH. REVIEW: —	DATE: 04/20/11	VANDERBILT MANSION NATIONAL HISTORIC SITE HYDE PARK, NEW YORK	PMIS/PKG NO. —
			SHEET 5 of 14

7/8" VERTICAL DISPLACEMENT OF CORNICE PIECE

ERODED MOLDING

STORM WINDOW NOT INSTALLED

POSSIBLE UPWARD DISPLACEMENT

WINDOWS IN GOOD SHAPE. UNPAINTED JAMBS.

GEODE THIS AREA

STORM WINDOW NOT INSTALLED

STONE BROKEN

ALL JOINT SEALANT OLDER THAN 1 YEAR.
T-CAPS OLDER THAN 1 YEAR.

REGLAZING REQUIRED

DUE TO HARD MORTAR,
MULTIPLE CRACKS AT TOP EDGE

HOLE IN NETTING

MINOR RUST STAINING

PAINT ON JAMB

UV FILM FAILING

CRACK AT SASH

NEW GLAZING PUTTY REQUIRED

STONE SHIFTED OUT OF PLACE

LOOSE SCREEN

BLUESTONE SILL DELAMINATED

HALF SCREEN

UNVENTED STORM WINDOW OVER LEADED GLASS

LEGEND:

- CRACKS
- SPALLED STONE
- CHIPPED OR MISSING STONE
- BIOLOGICAL GROWTH
- UNIFORM GREY BIOLOGICAL GROWTH
- CARPENTER BEES AND WOOD PECKERS
- LIME SCALING
- OPEN MORTAR JOINTS
- MORTAR REPAIR
- MORTAR STAINING

ORIGINAL WIDE MORTAR JOINT
1/4" STANDING WATER IN POCKET

SMALL HOLES IN BIRD NETTING
FAILED MORTAR JOINT

UV FILM FAILING

CAP RAIL SHIFTED OUT OF PLACE

CHIPPING ALONG EDGE OF STONE

FILLED CRACK AT COLUMN PLINTH

SCREEN LOOSE AT
BOTTOM OF WINDOW

PIGEON DROPPINGS

SCALE (B) 8 0 8 16
SCALE OF FEET

1 EAST ELEVATION
PD21 SCALE (B)

DESIGNED:	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
JGWA	PD21	REHABILITATE VANDERBILT MANSION EXTERIOR	—
—	—	VANDERBILT MANSION	—
TECH. REVIEW:	—	CONDITIONS SURVEY	PMIS/PKG NO.
DATE:	04/20/11	VANDERBILT MANSION NATIONAL HISTORIC SITE	—
—	—	HYDE PARK, NEW YORK	SHEET
—	—	—	6 OF 14

PRE-DESIGN 100% SUBMITTAL

LEGEND:

- CRACKS
- SPALLED STONE
- CHIPPED OR MISSING STONE
- BIOLOGICAL GROWTH
- UNIFORM GREY BIOLOGICAL GROWTH
- PITTING
- OPEN MORTAR JOINTS
- MORTAR REPAIR

CORNICE PIECE DISPLACED IN TWO DIRECTIONS:
NORTH-SOUTH 13/16"DISPLACEMENT; EAST-WEST 9/16"DISPLACEMENT

MISSING LEAF. BROKEN LEAF PREVIOUSLY REPAIRED WITH NOW FERROUS PINS.

ALL JOINTS FILLED WITH SEALANT

HEAVY PITTING THIS AREA

CORNICE PIECE 3/8" DISPLACEMENT

BALL FINIAL MISSING



1 SOUTH PORTICO ELEVATION
PD22 SCALE ⑧

PRE-DESIGN 100% SUBMITTAL

DESIGNED: JGWA	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
ADD	PD22	REHABILITATE VANDERBILT MANSION EXTERIOR	—
TECH. REVIEW:		VANDERBILT MANSION	PMIS/PKG NO.
DATE: 04/20/11		CONDITIONS SURVEY	—
		VANDERBILT MANSION NATIONAL HISTORIC SITE	SHEET
		HYDE PARK, NEW YORK	7 OF 14

TYPICAL WINDOW THIS SIDE OF THIRD FLOOR: PEELING PAINT.
PARTIAL GLAZING FAILURE. NO EXTERIOR STORMS, ONLY INTERIOR STORMS.
PAINT ON SILLS PEELED, NEED DUTCHMAN REPAIR FOR
THE FIRST 2" MIN. MEETING RAILS UNEVEN.
JAMBS UNPAINTED AND CHECKED. PARTING STOPS ROTTEN.

CHIPPED CORNER

PITTING AT UNDERSIDE

TYPICAL AIR POLLUTION STAINING AT SOFFIT

BIRD DROPPINGS

FAILING OLD PIN REPAIR

SMALL CHIP UNDERSIDE

OLD INSECT HIVE

STREAKING AT CORNICE

PAINT ON JAMB

CHECKED AND ROTTED STORM SASH

BALL FINIAL MISSING
STONE PIECE SHIFTED OUT OF PLACE.
1/4" ON LEFT, 1/2" ON RIGHT.

STONE SHIFTED OUT OF PLANE

TOP FACE OF BLUESTONE SPALLING

FLOOR BOARDS OF BALCONY HAVE PEELING PAINT AND STARTING TO CUP

LINTEL REQUIRE POSSIBLE REPAIR

HARDWARE MISSING FOR DOOR HOLD

TWO SMALL CRACKS AT SIDE

LEGEND:

- CRACKS
- SPALLED STONE
- CHIPPED OR MISSING STONE
- BIOLOGICAL GROWTH
- UNIFORM GREY BIOLOGICAL GROWTH
- CARPENTER BEES AND WOOD PECKERS
- PITTING
- OPEN MORTAR JOINTS
- MORTAR REPAIR

REPLACED SASH LOCK.
DOES NOT MATCH
OTHER HARDWARE.

ROUGH ERODED SURFACE

4"-5" DIAMETER HOLE IN BIRD NETTING

ORIGINAL FLATHEAD IRON COUNTERSINK SCREW AT WINDOW GRILL.
NOT STAINLESS STEEL AS PER TYPICAL.

UV FILM FAILING, TYP.

SCALE (B) 8 0 8 16
SCALE OF FEET

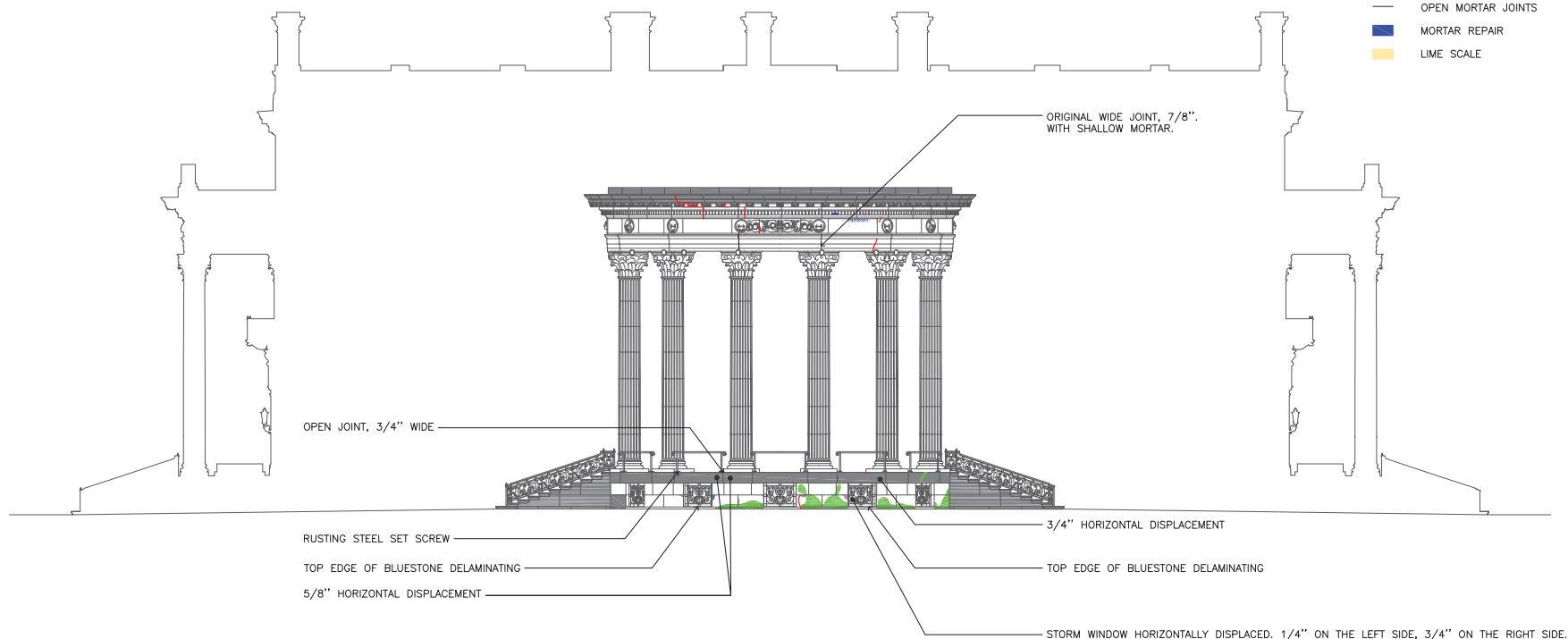
1 SOUTH ELEVATION
PD23 SCALE (B)

PRE-DESIGN 100% SUBMITTAL

DESIGNED: JGWA	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
—	—	REHABILITATE VANDERBILT MANSION EXTERIOR	—
—	—	VANDERBILT MANSION	—
—	—	CONDITIONS SURVEY	—
TECH. REVIEW:	—	VANDERBILT MANSION NATIONAL HISTORIC SITE	PMIS/PKG NO.
—	—	HYDE PARK, NEW YORK	—
DATE:	—	—	SHEET
04/20/11	—	—	8 OF 14

LEGEND:

- CRACKS
- SPALLED STONE
- CHIPPED OR MISSING STONE
- BIOLOGICAL GROWTH
- UNIFORM GREY BIOLOGICAL GROWTH
- CARPENTER BEES AND WOOD PECKERS
- PITTING
- OPEN MORTAR JOINTS
- MORTAR REPAIR
- LIME SCALE



SCALE (B) 8 0 8 16
SCALE OF FEET

1 WEST PORTICO ELEVATION
PD24 SCALE (B)

DESIGNED: JGWA	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
ADD	PD24	REHABILITATE VANDERBILT MANSION EXTERIOR	—
TECH. REVIEW:		VANDERBILT MANSION	PMIS/PKG NO.
DATE: 04/20/11		CONDITIONS SURVEY	—
		VANDERBILT MANSION NATIONAL HISTORIC SITE	SHEET
		HYDE PARK, NEW YORK	9 OF 14

PRE-DESIGN 100% SUBMITTAL

NO INTERIOR STORM WINDOW

5/8" HORIZONTAL DISPLACEMENT

NO UV FILM ON STORM WINDOW

MORTAR JOINTS THIS AREA NOT RE-POINTED

WOOD ROTTEN, DUTCHMAN REPAIR NEEDED

GLAZING PUTTY FAILING

VERTICAL MOVEMENT ALONG OPEN JOINT

CRACKED GLAZING PUTTY
AND MINOR PAINT FAILURE

RUST STAINING ON TOP OF SILL
FROM PREVIOUS AIR CONDITIONER

UV FILM FAILING, TYP.

STONE SILL DISPLACED
HORIZONTALLY AND VERTICALLY

SILL STONE HORIZONTALLY DISPLACED

DELAMINATING BLUESTONE SILL

LEGEND:

- CRACKS
- SPALLED STONE
- CHIPPED OR MISSING STONE
- BIOLOGICAL GROWTH
- UNIFORM GREY BIOLOGICAL GROWTH
- CARPENTER BEES AND WOOD PECKERS
- PITTING
- OPEN MORTAR JOINTS
- MORTAR REPAIR
- LIME SCALE

CORNICE STONE VERTICALLY
DISPLACED. 1/4" UPWARD.

SEALANT BREAKING DOWN

PITTING BEYOND

CRACK ON TOP OF SILL

UV FILM FAILING, TYP.

DISCOLORATION

BOTTOM AND SIDE SASH OF

STORM WINDOW ROTTED

GLAZING PUTTY AND
UV FILM FAILING

BALL FINIAL MISSING

BLUESTONE DELAMINATING,
ESP. AT TOP FACE OF SILL.

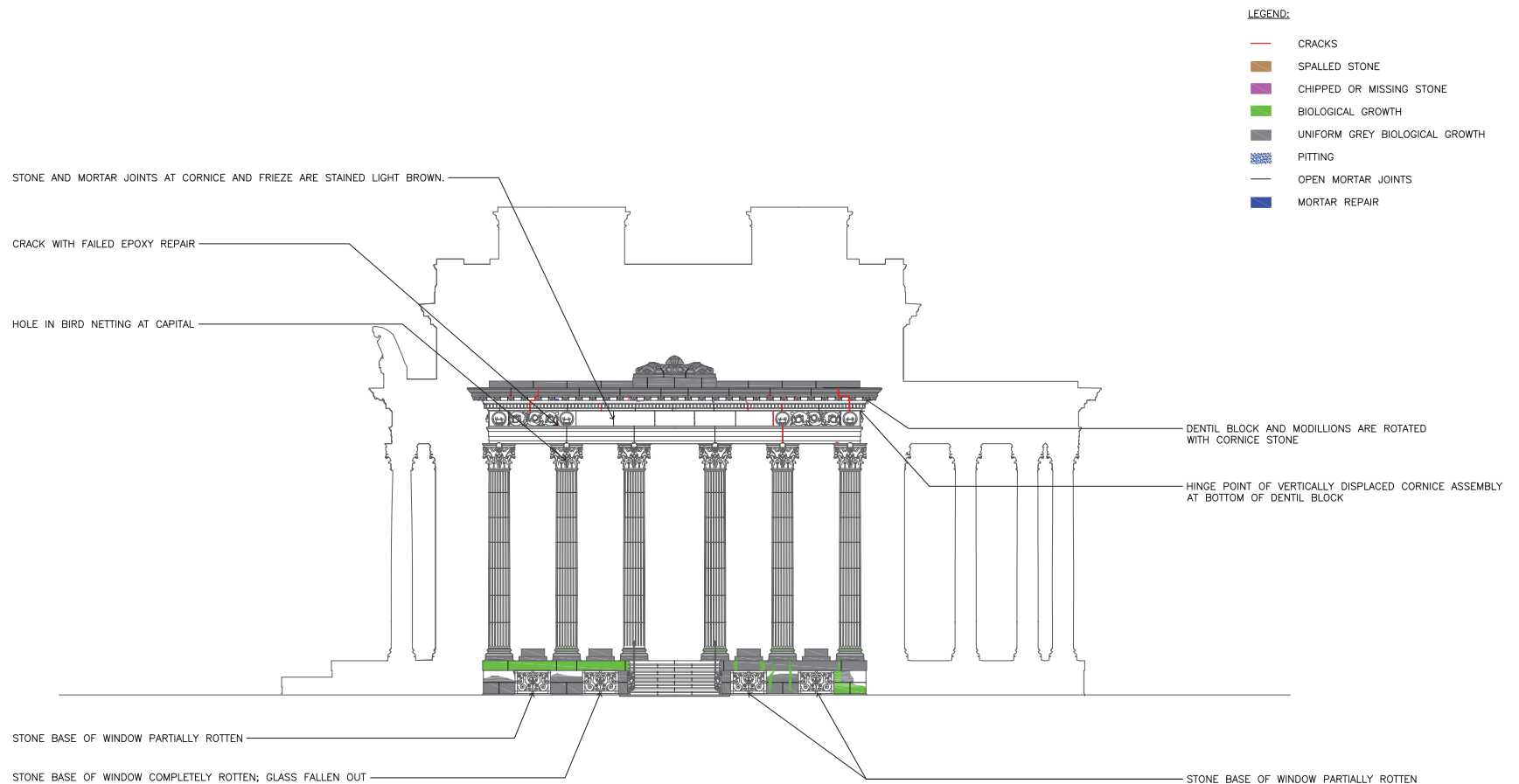
ABANDONED METAL ANCHOR
EMBEDDED IN WATER TABLE

SCALE ⑧ 8 0 8 16
SCALE OF FEET

1 WEST ELEVATION
PD25 SCALE ⑧

PRE-DESIGN 100% SUBMITTAL

DESIGNED:	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
JGWA	PD25	REHABILITATE VANDERBILT MANSION EXTERIOR	—
—	—	VANDERBILT MANSION	—
TECH. REVIEW:	—	CONDITIONS SURVEY	PMIS/PKG NO.
DATE: 04/20/11	—	VANDERBILT MANSION NATIONAL HISTORIC SITE	—
—	—	HYDE PARK, NEW YORK	SHEET
—	—	—	10 OF 14

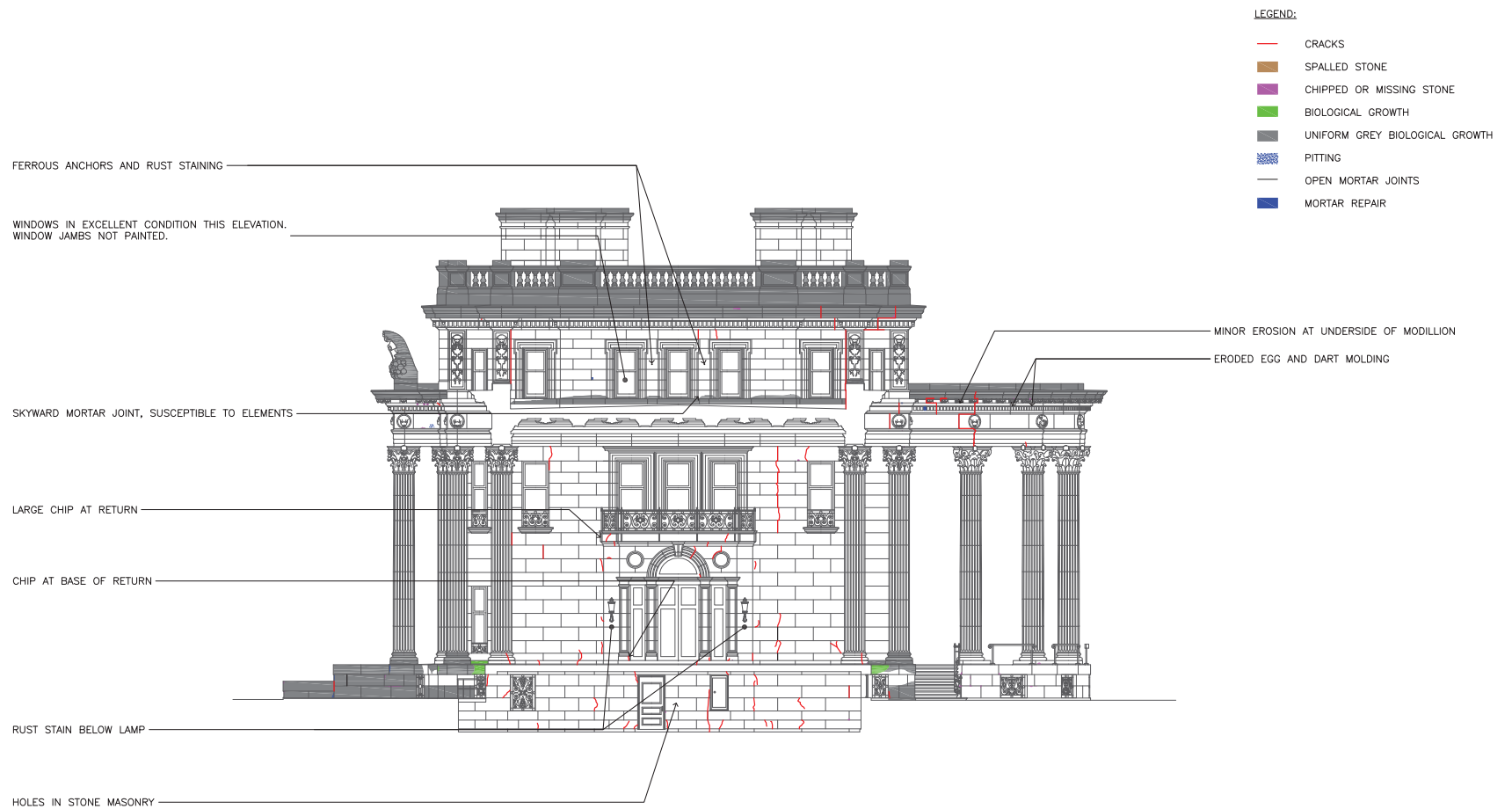


SCALE (B) 8 0 8 16
SCALE OF FEET

1 NORTH PORTICO ELEVATION
PD26 SCALE (B)

PRE-DESIGN 100% SUBMITTAL

DESIGNED:	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
JGWA		REHABILITATE VANDERBILT MANSION EXTERIOR	—
—	PD26	VANDERBILT MANSION	—
TECH. REVIEW:		CONDITIONS SURVEY	PMIS/PKG NO.
—		VANDERBILT MANSION NATIONAL HISTORIC SITE	—
DATE:		HYDE PARK, NEW YORK	SHEET
04/20/11			11 OF 14

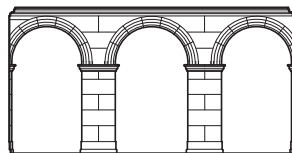


1 NORTH ELEVATION
PD27 SCALE (B)

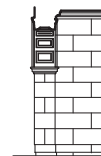
SCALE (B) 8 0 8 16
SCALE OF FEET

PRE-DESIGN 100% SUBMITTAL

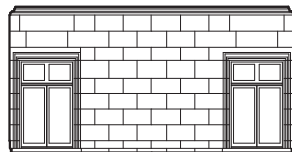
DESIGNED: JGWA	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
CHAD	PD27	REHABILITATE VANDERBILT MANSION EXTERIOR	—
TECH. REVIEW:		VANDERBILT MANSION	PMIS/PKG NO.
DATE: 04/20/11		CONDITIONS SURVEY	—
		VANDERBILT MANSION NATIONAL HISTORIC SITE	SHEET
		HYDE PARK, NEW YORK	12 OF 14



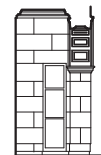
1 EAST ELEVATION WEST LOGGIA
PD28 SCALE (B)



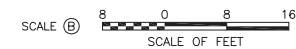
2 SOUTH ELEVATION WEST LOGGIA
PD28 SCALE (B)



3 WEST ELEVATION WEST LOGGIA
PD28 SCALE (B)

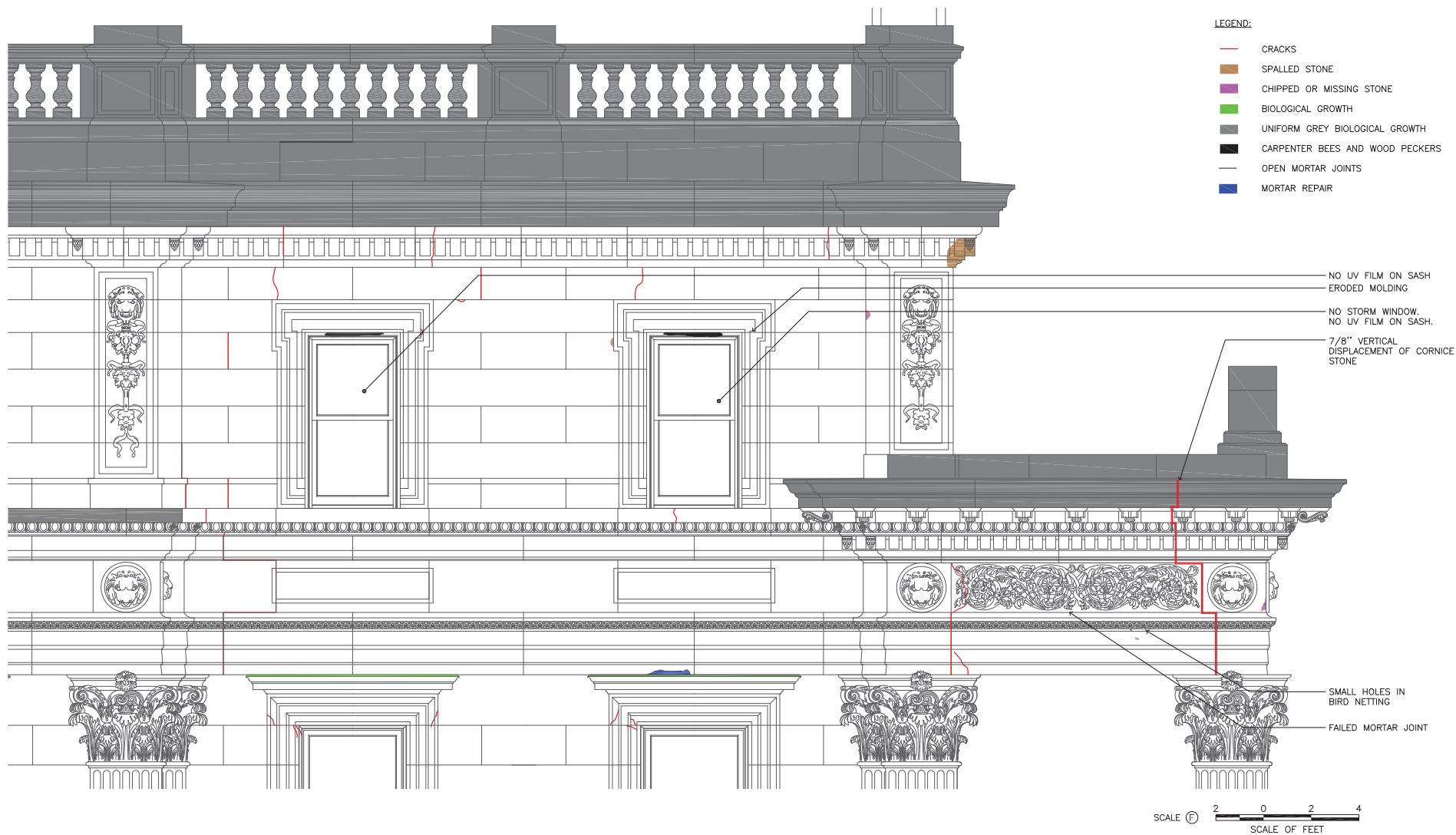


4 NORTH ELEVATION WEST LOGGIA
PD28 SCALE (B)



PRE-DESIGN 100% SUBMITTAL

DESIGNED: JGWA	SUB SHEET NO. PD28	TITLE OF SHEET REHABILITATE VANDERBILT MANSION EXTERIOR VANDERBILT MANSION MISC. ELEVATIONS	DRAWING NO. —
—	—	VANDERBILT MANSION NATIONAL HISTORIC SITE HYDE PARK, NEW YORK	PMIS/PKG NO. —
TECH. REVIEW: —	—	—	SHEET 13 OF 14
DATE: 04/20/11	—	—	—



1 TYPICAL LARGE SCALE CONDITIONS NOTES - THIRD FLOOR EAST ELEVATION
PD30 SCALE (F)

PRE-DESIGN 100% SUBMITTAL

DESIGNED: JGWA	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
BY: GADD	PD30	REHABILITATE VANDERBILT MANSION EXTERIOR VANDERBILT MANSION SOUTH ELEVATION	—
TECH. REVIEW:		VANDERBILT MANSION NATIONAL HISTORIC SITE HYDE PARK, NEW YORK	PMIS/PKG NO.
DATE: 04/20/11			SHEET 14 OF 14

12/10/10 12:29 TUNG R18 K:\PROJECTS\10564C VANDERBILT MANSION EXTERIOR RESTORATION\241 SCHEMATIC DESIGN\PD-COVER SHEET.DWG

EXTERIOR REHABILITATION — OVERVIEW OF PROPOSED
BUILDING PROBES

John G. Waite Associates, Architects has been retained by the National Park Service to provide design and construction documents for the exterior rehabilitation of the Vanderbilt Mansion in Hyde Park, New York. The building is constructed of load-bearing brick walls with limestone facing. The floor and roof construction is framed with steel and cast iron. The limestone paving on the porticos is carried by reinforced concrete decking with steel support framing, and the exterior stone stairs are supported by walls and vaults of brick construction.

A complete set of measured drawings of the exterior stonework have been prepared. Plans of the building perimeter and each of the four porticos have been drawn, as well as the reflected ceiling plans of the porticos. Elevations have been drawn of each elevation of the building. A complete stone-by-stone visual survey of the existing conditions has been made, archival drawings and photographs of the original construction have been examined, and a program of investigative building probes has been developed to expose underlying conditions and causes of the symptomatic deterioration observed in the exterior masonry.

The exterior wall construction has repetitive patterns of cracks in the stone. These may be caused by one or more underlying problems. It is possible that the steel framing has rusted as a result of water infiltration, and oxide jacking has caused the masonry to crack. It is also possible that the cast-iron boxed lintels at the window openings have failed, resulting in the failure of the stone veneer. Or, it may be that the design of the wall construction, incorporating a composite construction of steel and masonry, was not sufficiently resolved. The stone veneer may not have sufficient depth, and it may be that the stone was laid to such tight tolerances, that even small amounts of movement have caused the stone to crack. Differential settlement may be a cause of stone failure; portions of the foundations from the previous house on the site may have been re-used, or construction may have occurred on improperly compacted fill that was introduced during the demolition process. Archaeological investigations undertaken in October 2010 enabled us to determine that foundation walls and pier footings are constructed beneath the frost line, leading us to conclude that the visible problems are not related to frost heave. Limited stone removal, where the exterior cladding has failed, is intended to help us understand the design of the wall construction and the condition of underlying materials.

The decking on the porticos appears to have insufficient pitch, and the concrete slabs are not effectively waterproofed. While the steel support structure and reinforcement is failing, the full extent of deterioration remains to be determined, and a close examination of the original construction is required to completely understand the construction detailing.

The outer corners of the projecting cornices at the north and south porticos are canted towards the ground. This condition may be the result of failed internal structure, or it may have resulted from an insufficient design to retain the stonework. Investigation will be required to understand the underlying construction methodology and to gain a better understanding of material conditions. Inspection of the concealed suspension systems of the hanging ornamentation on the portico ceilings is also needed to make a determination regarding material conditions. Currently, a borescope inspection of the cavity above the ceiling is planned. If that survey proves inconclusive, we will not be able make informed conclusions regarding conditions or repairs; and final design solutions for rehabilitation in these areas will be deferred until the first phase of an exterior construction program.

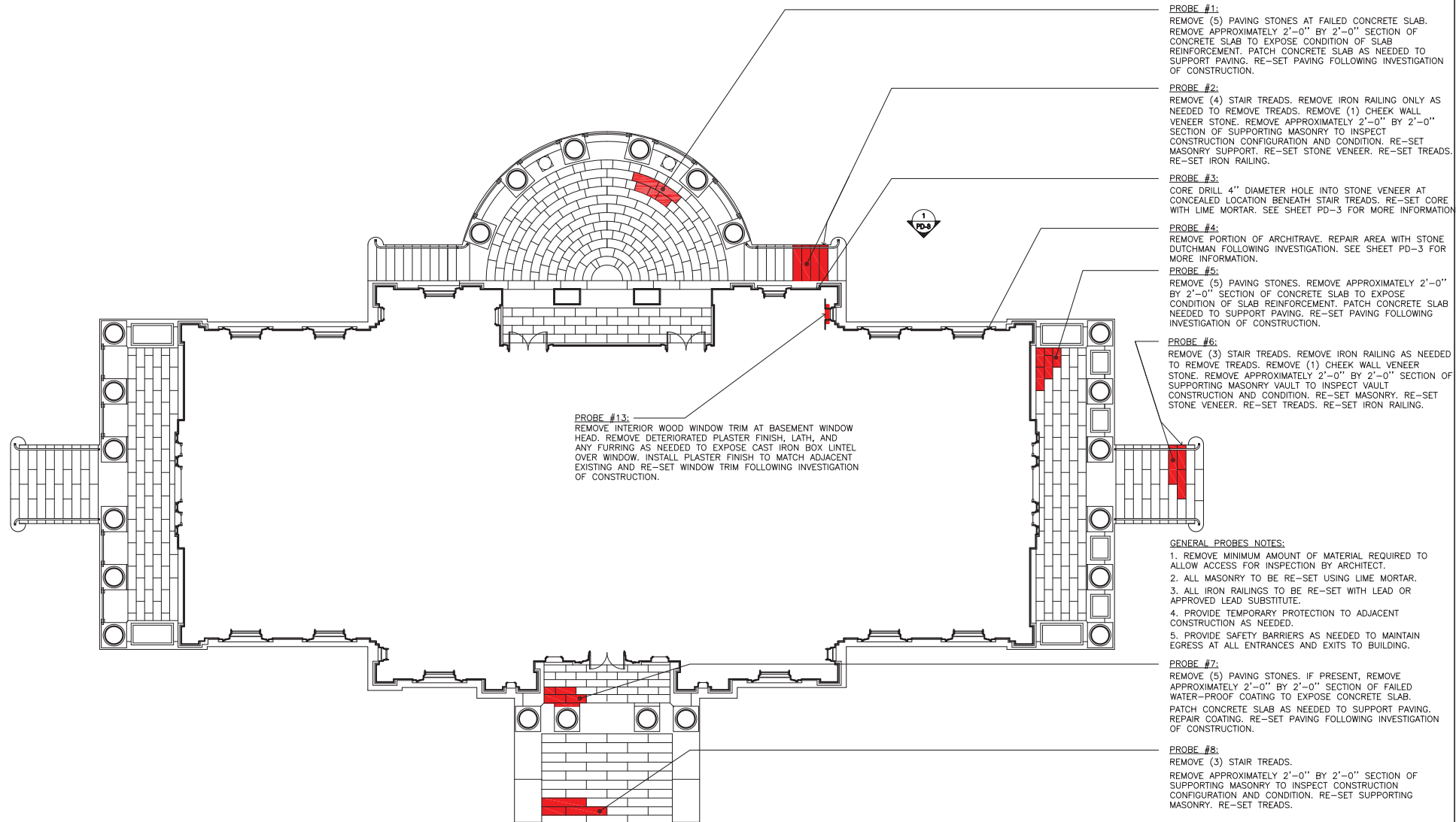
The stone stair construction at the north, west, south, and east porticos has open joints, and the stonework has shifted. This may be the result of water infiltration at open mortar joints and the resultant ice jacking, or it may have resulted from problems with the underlying brick masonry support structure. To make an accurate assessment, removal of typical stair treads at the north, east, and west porticos is proposed. The removal and reinstallation of the adjacent iron railings may be required to effect the removal of stair treads. Many of the treads have been broken where the posts of the railings have been anchored, so the risk of additional damage, prior to the exterior rehabilitation of the building is minimal.

All elements to be reinstalled will be set in lime mortar to facilitate disassembly during the anticipated future construction phase.

The attached drawings and photographs outline the specific program of recommended building probes.

DESIGNED: JGWA EXAD	SUB SHEET NO. PD-0	TITLE OF SHEET REHABILITATE VANDERBILT MANSION EXTERIOR VANDERBILT MANSION COVER SHEET	DRAWING NO. _____
TECH. REVIEW: _____		VANDERBILT MANSION NATIONAL HISTORIC SITE HYDE PARK, NEW YORK	PMIS/PKG NO. _____
DATE: 12/08/10			SHEET 1 OF 5

12/10/10 12:29 TUNG R18 K:\PROJECTS\10564.C VANDERBILT MANSION EXTERIOR RESTORATION\241 SCHEMATIC DESIGN\PD-1 FIRST FLOOR PLAN.DWG



PROBE #1:
REMOVE (5) PAVING STONES AT FAILED CONCRETE SLAB. REMOVE APPROXIMATELY 2'-0" BY 2'-0" SECTION OF CONCRETE SLAB TO EXPOSE CONDITION OF SLAB REINFORCEMENT. PATCH CONCRETE SLAB AS NEEDED TO SUPPORT PAVING. RE-SET PAVING FOLLOWING INVESTIGATION OF CONSTRUCTION.

PROBE #2:
REMOVE (4) STAIR TREADS. REMOVE IRON RAILING ONLY AS NEEDED TO REMOVE TREADS. REMOVE (1) CHEEK WALL VENEER STONE. REMOVE APPROXIMATELY 2'-0" BY 2'-0" SECTION OF SUPPORTING MASONRY TO INSPECT CONSTRUCTION CONFIGURATION AND CONDITION. RE-SET MASONRY SUPPORT. RE-SET STONE VENEER. RE-SET TREADS. RE-SET IRON RAILING.

PROBE #3:
CORE DRILL 4" DIAMETER HOLE INTO STONE VENEER AT CONCEALED LOCATION BENEATH STAIR TREADS. RE-SET CORE WITH LIME MORTAR. SEE SHEET PD-3 FOR MORE INFORMATION.

PROBE #4:
REMOVE PORTION OF ARCHITRAVE. REPAIR AREA WITH STONE DUTCHMAN FOLLOWING INVESTIGATION. SEE SHEET PD-3 FOR MORE INFORMATION.

PROBE #5:
REMOVE (5) PAVING STONES. REMOVE APPROXIMATELY 2'-0" BY 2'-0" SECTION OF CONCRETE SLAB TO EXPOSE CONDITION OF SLAB REINFORCEMENT. PATCH CONCRETE SLAB NEEDED TO SUPPORT PAVING. RE-SET PAVING FOLLOWING INVESTIGATION OF CONSTRUCTION.

PROBE #6:
REMOVE (3) STAIR TREADS. REMOVE IRON RAILING AS NEEDED TO REMOVE TREADS. REMOVE (1) CHEEK WALL VENEER STONE. REMOVE APPROXIMATELY 2'-0" BY 2'-0" SECTION OF SUPPORTING MASONRY VAULT TO INSPECT VAULT CONSTRUCTION AND CONDITION. RE-SET MASONRY. RE-SET STONE VENEER. RE-SET TREADS. RE-SET IRON RAILING.

PROBE #13:
REMOVE INTERIOR WOOD WINDOW TRIM AT BASEMENT WINDOW HEAD. REMOVE DETERIORATED PLASTER FINISH, LATH, AND ANY FURRING AS NEEDED TO EXPOSE CAST IRON BOX LINTEL OVER WINDOW. INSTALL PLASTER FINISH TO MATCH ADJACENT EXISTING AND RE-SET WINDOW TRIM FOLLOWING INVESTIGATION OF CONSTRUCTION.

GENERAL PROBES NOTES:
1. REMOVE MINIMUM AMOUNT OF MATERIAL REQUIRED TO ALLOW ACCESS FOR INSPECTION BY ARCHITECT.
2. ALL MASONRY TO BE RE-SET USING LIME MORTAR.
3. ALL IRON RAILINGS TO BE RE-SET WITH LEAD OR APPROVED LEAD SUBSTITUTE.
4. PROVIDE TEMPORARY PROTECTION TO ADJACENT CONSTRUCTION AS NEEDED.
5. PROVIDE SAFETY BARRIERS AS NEEDED TO MAINTAIN EGRESS AT ALL ENTRANCES AND EXITS TO BUILDING.

PROBE #7:
REMOVE (5) PAVING STONES. IF PRESENT, REMOVE APPROXIMATELY 2'-0" BY 2'-0" SECTION OF FAILED WATER-PROOF COATING TO EXPOSE CONCRETE SLAB. PATCH CONCRETE SLAB AS NEEDED TO SUPPORT PAVING. REPAIR COATING. RE-SET PAVING FOLLOWING INVESTIGATION OF CONSTRUCTION.

PROBE #8:
REMOVE (3) STAIR TREADS. REMOVE APPROXIMATELY 2'-0" BY 2'-0" SECTION OF SUPPORTING MASONRY TO INSPECT CONSTRUCTION CONFIGURATION AND CONDITION. RE-SET SUPPORTING MASONRY. RE-SET TREADS.

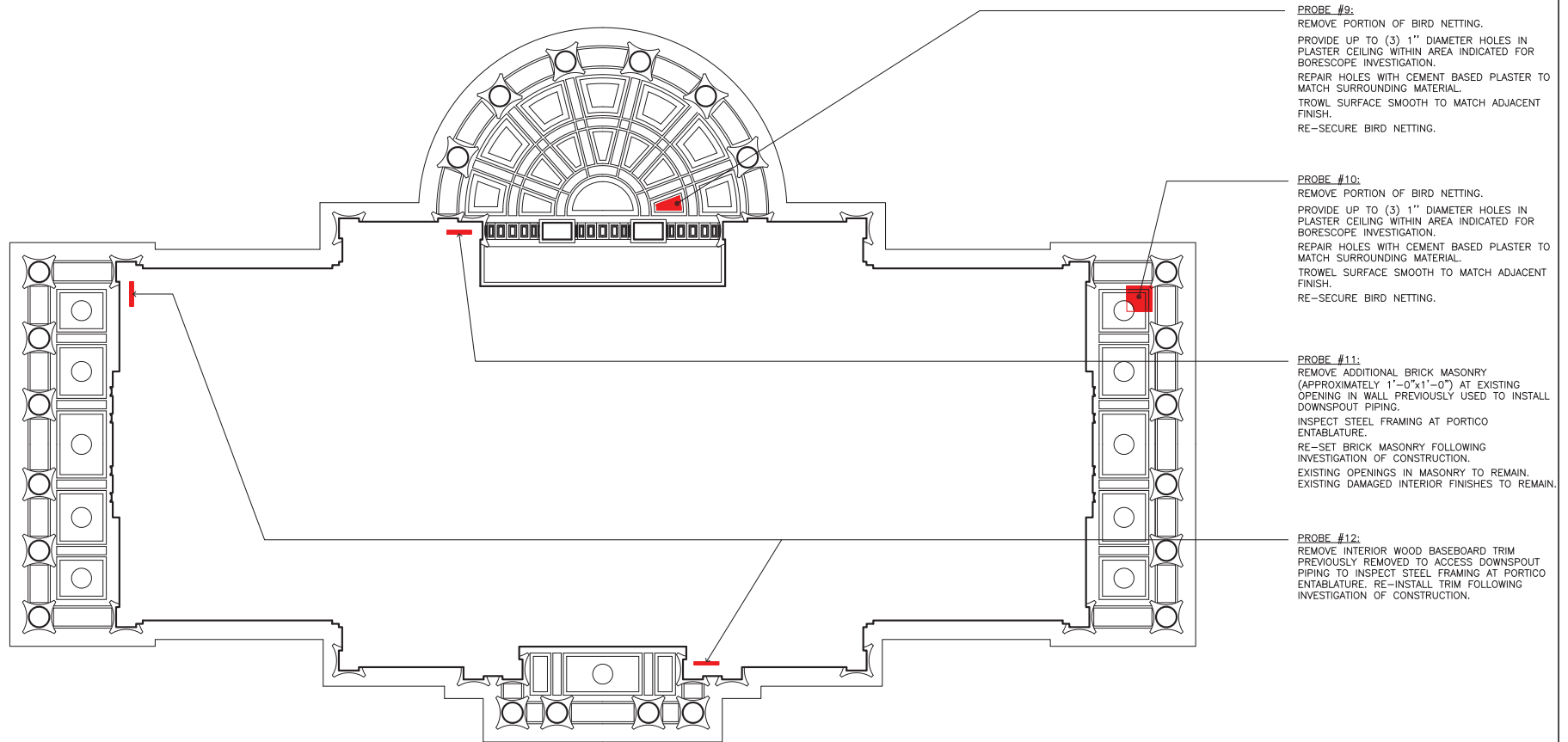
SCALE (B) 8 0 8 16
SCALE OF FEET



INVESTIGATIVE BUILDING PROBES
FIRST FLOOR PLAN

DESIGNED: JGWA BADD	SUB SHEET NO. PD-1	TITLE OF SHEET REHABILITATE VANDERBILT MANSION EXTERIOR VANDERBILT MANSION FIRST FLOOR PLAN VANDERBILT MANSION NATIONAL HISTORIC SITE HYDE PARK, NEW YORK	DRAWING NO. PMS/PKG NO. SHEET 2 OF 5
---------------------------	---------------------------	--	---

12/10/10 12:29 TUNG R18 K:\PROJECTS\10564.C VANDERBILT MANSION EXTERIOR RESTORATION\24) SCHEMATIC DESIGN\PD-2 FIRST FLOOR PLAN.DWG



INVESTIGATIVE BUILDING PROBES
PORTICO REFLECTED CEILING PLAN

SCALE (B) 8 0 8 16
SCALE OF FEET



DESIGNED: JGWA BADD	SUB SHEET NO. PD-2	TITLE OF SHEET REHABILITATE VANDERBILT MANSION EXTERIOR VANDERBILT MANSION PORTICO CEILING PLAN VANDERBILT MANSION NATIONAL HISTORIC SITE HYDE PARK, NEW YORK	DRAWING NO. _____ PMIS/PKG NO. _____ SHEET 3 OF 5
TECH. REVIEW:			
DATE: 12/08/10			

12/10/10 12:17 L:\R18\A\PROJECTS\10564\6 VANDERBILT MANSION EXTERIOR RESTORATION\04 SCHMATIC DESIGN\03 WEST ELEVATION.DWG
XREFS: V:\01 BASEMENT.DWG\102_002 PLAN.dwg\102_002 PLAN.dwg\102_002 PLAN.dwg\102_002 PLAN.dwg\102_002 PLAN.dwg\102_002 PLAN.dwg
IMAGES: C:\USERS\JESHERL\JOHN\10564\6 VANDERBILT MANSION EXTERIOR RESTORATION\102_002 PLAN.dwg\102_002 PLAN.dwg\102_002 PLAN.dwg



PROBE #4:
REMOVE CRACKED PORTION OF WINDOW ARCHITRAVE AND SILL.
REMOVE MASONRY SUBSTRATE BEYOND AS NEEDED TO EXPOSE METAL FRAMING.
PROVIDE STONE DUTCHMAN REPAIR FOLLOWING INVESTIGATION OF CONSTRUCTION.
STONE TYPE, PROFILE, CONFIGURATION, AND TOOLING TO MATCH EXISTING.
IF POSSIBLE, RE-SET HISTORIC STONE MATERIAL.

PROBE #3:
CORE DRILL 4" DIAMETER HOLE INTO STONE VENEER AT CONCEALED LOCATION BENEATH STAIR TREADS.
STAIR TREAD TO BE REMOVED PER PROBE #2.
RE-SET CORE WITH LIME MORTAR.

INVESTIGATIVE BUILDING PROBES
WEST ELEVATION

SCALE (F) 2 0 2 4
SCALE OF FEET

DESIGNED: JGWA BADD	SUB SHEET NO.	TITLE OF SHEET REHABILITATE VANDERBILT MANSION EXTERIOR VANDERBILT MANSION WEST ELEVATION VANDERBILT MANSION NATIONAL HISTORIC SITE HYDE PARK, NEW YORK	DRAWING NO. _____
TECH. REVIEW:	PD-3		PMIS/PKG NO. _____
DATE: 12/08/10			SHEET 4 OF 5

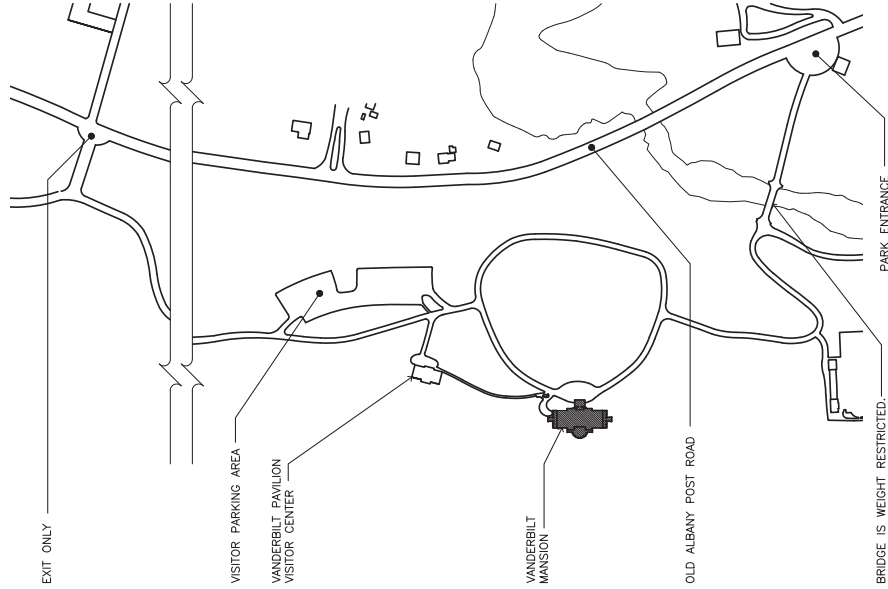
APPENDIX G

RECORD OF TREATMENT DOCUMENTS

COMPLETE THE EXTERIOR RESTORATION OF THE VANDERBILT MANSION: PMIS 152373

Construction Drawings
June 1, 2014

COMPLETE THE EXTERIOR REHABILITATION OF THE VANDERBILT MANSION
VANDERBILT MANSION NATIONAL HISTORIC SITE,
HYDE PARK, NY



SHEET	SUB SHEET	TITLE OF SHEET
1.	G100	TITLE SHEET & LOCATION PLAN
2.	G101	TOPOGRAPHIC SURVEY
3.		SITE PLAN
4.	C1	EXISTING CONDITIONS
5.	C2	STORMWATER & GRADING PLAN
6.	C3	STORM/FOUNDATION DRAIN PROFILES
7.	C4	CIVIL DETAILS
8.	C5	EROSION & SEDIMENT CONTROL DETAILS
9.	A101	SUBBASEMENT PLAN
10.	A102	BASEMENT PLAN
11.	A103	FIRST FLOOR PLAN
12.	A104	SECOND FLOOR PLAN
13.	A105	THIRD FLOOR PLAN
14.	A106	ATTIC PLAN
15.	A107	REFLECTED CEILING PLAN
16.	A201	EAST PORTICO PLANS
17.	A202	NORTH PORTICO PLANS
18.	A203	WEST PORTICO PLANS
19.	A204	SOUTH PORTICO PLANS
20.	A301	EAST ELEVATION
21.	A302	NORTH ELEVATION
22.	A303	WEST ELEVATION
23.	A304	SOUTH ELEVATION
24.	A401	DETAIL EAST PORTICO ELEVATIONS
25.	A402	DETAIL EAST ELEVATION SOUTH
26.	A403	DETAIL EAST ELEVATION CENTER
27.	A404	DETAIL WEST ELEVATION NORTH
28.	A405	DETAIL NORTH PORTICO ELEVATION
29.	A406	DETAIL NORTH ELEVATION
30.	A407	DETAIL WEST PORTICO ELEVATION

SHEET	SUB SHEET	TITLE OF SHEET
31.	A501	PORTICO SLAB DETAILS
32.	A502	EAST PORTICO SECTIONS
33.	A503	NORTH PORTICO SECTIONS
34.	A504	WEST PORTICO SECTIONS
35.	A505	SOUTH PORTICO SECTIONS
36.	A506	STAIR SECTIONS
37.	A507	NOT USED
38.	A508	FLASHING DETAILS
39.	A509	FOUNDATION DETAILS
40.	A510	LIFT DETAILS
41.	A511	LIFT DETAILS - OPTION D
42.	A512	LIFT DETAILS - OPTION D
43.	A600	WINDOW SCHEDULE
44.	A601	WINDOW SCHEDULE
45.	A602	WINDOW SCHEDULE
46.	A603	WINDOW DETAILS
47.	A604	DOOR SCHEDULE & DETAILS
48.	A605	MISC. WINDOW AND DOOR DETAILS
49.	S101	1ST FLOOR FRAMING PLAN
50.	S200	GENERAL NOTES
51.	S201	TYPICAL DETAILS
52.	S301	PORTICO SECTIONS
53.	S302	PORTICO SECTIONS
54.	S303	STAIR SECTIONS
55.	P100	INTERIOR PLUMBING PLAN
56.	P101	INTERIOR PLUMBING PLAN
57.	E101	ELECTRICAL PLANS
58.	E102	ELEC. SCHEDULE & DETAILS

BID OPTIONS:

OPTION A: NOT USED

OPTION B: PROVIDE COMPLETE PERIMETER FOOTING DRAIN.

OPTION C: PROVIDE EXISTING WINDOW FRAME AND STORM WINDOW RESTORATION.

OPTION D: PROVIDE NEW WHEELCHAIR LIFT, STONE STEPS, AND ORNAMENTAL METAL RAILINGS.

OPTION E: PROVIDE COMPLETE PORTICO STONE PAVING REPLACEMENT.

ABBREVIATIONS:

DIA. = DIAMETER

O.C. = ON CENTER

QTY. = QUANTITY

SF = SQUARE FEET

SIM. = SIMILAR

S.S. = STAINLESS STEEL

TYP. = TYPICAL



PMIS # 152373



JULY 18, 2014

ARCHITECT
ARCHITECTS, PLLC
ALBANY, NY

Mark	Sheet	REVISION	Date	Initial	QUALITY DESIGN CERTIFICATION
					☐ Prepared by Design Development (Title 19)
					☐ OR Prepared by Design Development (Title 19)
					☐ Approved by Supervising Engineer (Title 19)
					☐ Construction Drawing Not Preceded by Design Development (Title 19)
					Project Manager
					Date

CONSTRUCTION DRAWINGS

UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
DENVER SERVICE CENTER



TITLE OF DRAWING
REHABILITATE THE VANDERBILT MANSION EXTERIOR

LOCATION WITHIN PARK
VANDERBILT MANSION

NAME OF PARK
VANDERBILT MANSION NATIONAL HISTORIC PARK

STATE
NEW YORK

COUNTY
DUTCHESS

REGION
NER

DRAWING NO.
352

104796

SHEET
1

OF
58

MONUMENTS

N. 8000.000'
E. 6000.000'
ELEV. 193.72'

NAME: 3
DESCRIPTION: IRON ROD
N. 7809.965'
E. 5851.124'
ELEV. 193.52'

NAME: 5
DESCRIPTION: PK NAIL
N. 7904.511'
E. 6041.149'
ELEV. 194.25'

N. 7904.511'
E. 6041.149'
ELEV. 194.25'

UNDERGROUND UTILITY LOCATIONS SHOWN ARE BASED UPON VARIOUS RECORD UTILITY MAPS IN CONJUNCTION WITH VISIBLE EVIDENCE GATHERED DURING THE TIME THE FIELD SURVEY WAS PERFORMED. THEREFORE, ALL UNDERGROUND UTILITY LOCATIONS SHOULD BE FIELD VERIFIED PRIOR TO CONSTRUCTION.

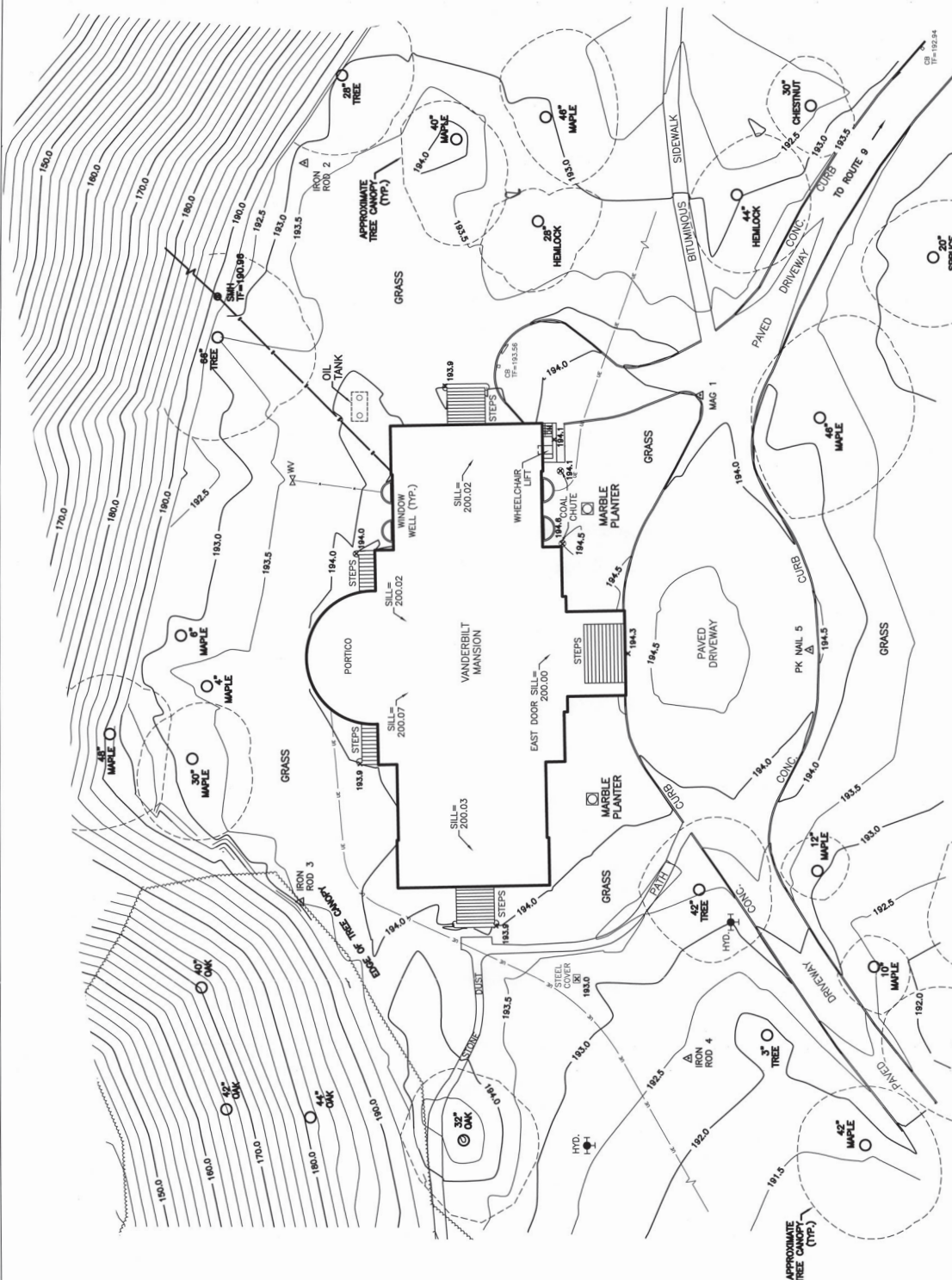
THIS DRAWING ONLY REFLECTS AND
VERIFIES THE FIELD SURVEY
DATA OF THOSE FEATURES AND
CONDITIONS PRESENT AS OF
NOVEMBER 5, 2013

HORIZONTAL DATUM: MAGNETIC

VERTICAL DATUM: ASSUMED (SILL OF MAIN DOOR—EAST SIDE)

ASSUMED (GILL) OF
ELEVATION 200.00

CONTOUR INTERVAL = 0.5 FOOT



SCALE (A)

20 0 20 40
SCALE OF FEET

DESIGNED:	SUB SHEET NO.
-----------	---------------

CME

0000

1

TECH. REVIEW:

DATE: _____

TITLE OF SHEET

REHABILITATE VANDERBILT MANSION EXTERIOR VANDERBILT MANSION TOPOGRAPHIC SURVEY

VANDERBILT MANSION NATIONAL HISTORIC SITE
HYDE PARK, NEW YORK

DRAWING NO.

$$\begin{array}{r} 382 \\ \hline 104796 \end{array}$$
PMIS/PKG NO.
152373

SHEET 50

1. THE CONTRACTOR SHALL NOTIFY CDG SAFELY OF ANY NEW YORK (811) OR 800-992-7892) AT LEAST 4 DAYS PRIOR TO STARTING EXCAVATION ACTIVITIES.
2. KNOWN UNDERGROUND UTILITIES AND STRUCTURES ARE SHOWN ON THE DRAWINGS, BUT THE LOCATION OF THESE UTILITIES AND STRUCTURES SHALL BE CONSIDERED APPROXIMATE. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UTILITIES PRIOR TO STARTING EXCAVATION ACTIVITIES.
3. HISTORICAL RESOURCES NOTE- CONTRACTOR SHALL BE AWARE THAT THIS SITE IS AN HISTORIC RESOURCE. CARE MUST BE TAKEN DURING CONSTRUCTION TO PROTECT CULTURAL RESOURCES, WHETHER THEY ARE DOCUMENTED FEATURES, POTENTIALLY VALUABLE ITEMS OR BURIED ARTIFACTS. CONTRACTOR SHALL PROCEED WITH CARE AND ATTENTION TO PRESERVATION CONCERNS. IF ANY DISCOVERY OF HISTORIC OR PREHISTORIC LOSS OF FABRIC, CONTRACTOR SHALL CEASE WORK AND SEEK GUIDANCE AND APPROVAL FROM CONTRACTING OFFICER BEFORE RESUMING WORK.
4. PROVIDE COORDINATION FOR ARCHAEOLOGY OBSERVATION PROVIDED BY THE GOVERNMENT DURING ALL EXCAVATION OPERATIONS.
5. SEE CIVIL DETAIL SHEET C3 FOR STORM DRAIN PIPE AND FOUNDATION DRAIN PIPE PROFILES.
6. SEE CIVIL DETAIL SHEET C4 FOR STORM DRAIN PIPE AND FOUNDATION DRAIN PIPE SCHEDULES.

1. PROVIDE ADDITIONAL FOUNDATION DRAIN AROUND PERIMETER OF ENTIRE MANSION ABOVE BASE BID (BASE BID - FOUNDATION DRAIN AT NORTH PORTICO ONLY). PROVIDE 2 ADDITIONAL FIELD INLETS AND REPAIR AT EAST PORTICO SIDE.

PROPOSED

- SD— STORM DRAIN PIPE
- FD— FOUNDATION DRAIN PIPE (BASE BID)
- FD--- FOUNDATION DRAIN PIPE (OPTION B)
- PAVEMENT REMOVAL & RESTORATION (OPTION B)
- 163.79 STORM DRAIN INVERT ELEVATION
- SD1 STORM DRAIN PIPE LABEL
- FD1 FOUNDATION DRAIN PIPE LABEL
- DRY WELL
- FIELD INLET
- DRY WELL 3
- CLEANOUT



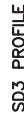
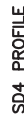
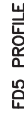
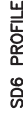
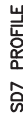
DESIGNED:	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
MAP		REHABILITATE VANDERBILT MANSION EXTERIOR	382
EXIST		VANDERBILT MANSION	104796
MRS/DAB		STORMWATER & GRADING PLAN	PM5/PKG NO.
TECH. REVIEW:			152373
MAP			SHEET
DATE: 1/8/14			5 OF 58

AMEC E&E, PC

1. CONTRACTOR SHALL VERIFY REQUIRED DEPTH OF FOUNDATION DRAIN PIPING AND COORDINATE WITH STORM DRAIN INVERTS PRIOR TO CONSTRUCTION.
2. DEPTHS OF EXISTING UTILITIES ARE UNKNOWN AND MUST BE VERIFIED BY CONTRACTOR PRIOR TO CONSTRUCTION.



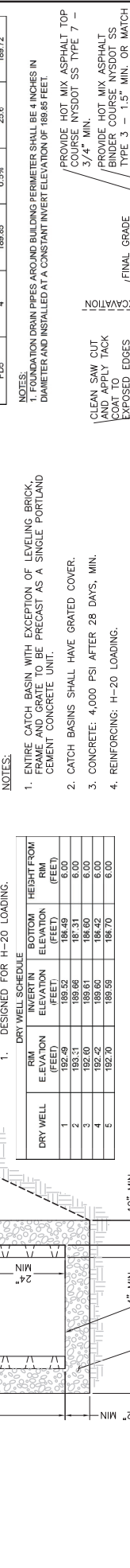
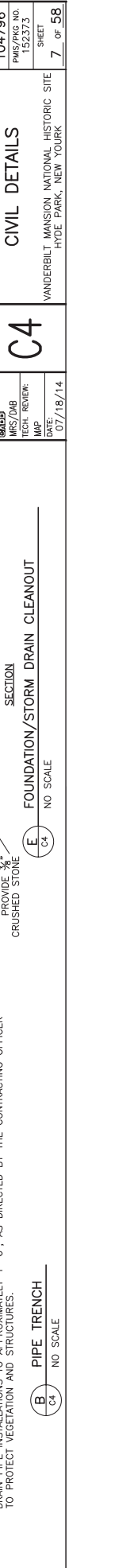
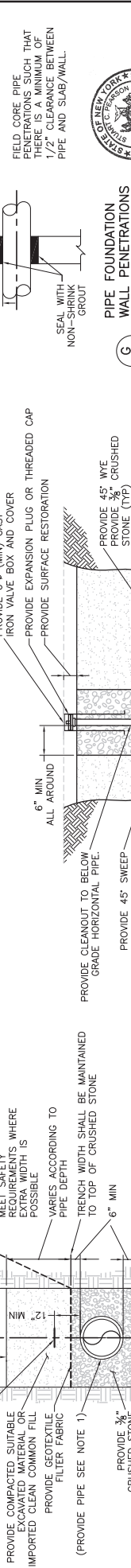
FD2 PROFILE



DESIGNED:	MAP		MRS/DAB	TECH. REV	MAP	DATE:	07/18/
-----------	-----	---	---------	-----------	-----	-------	--------

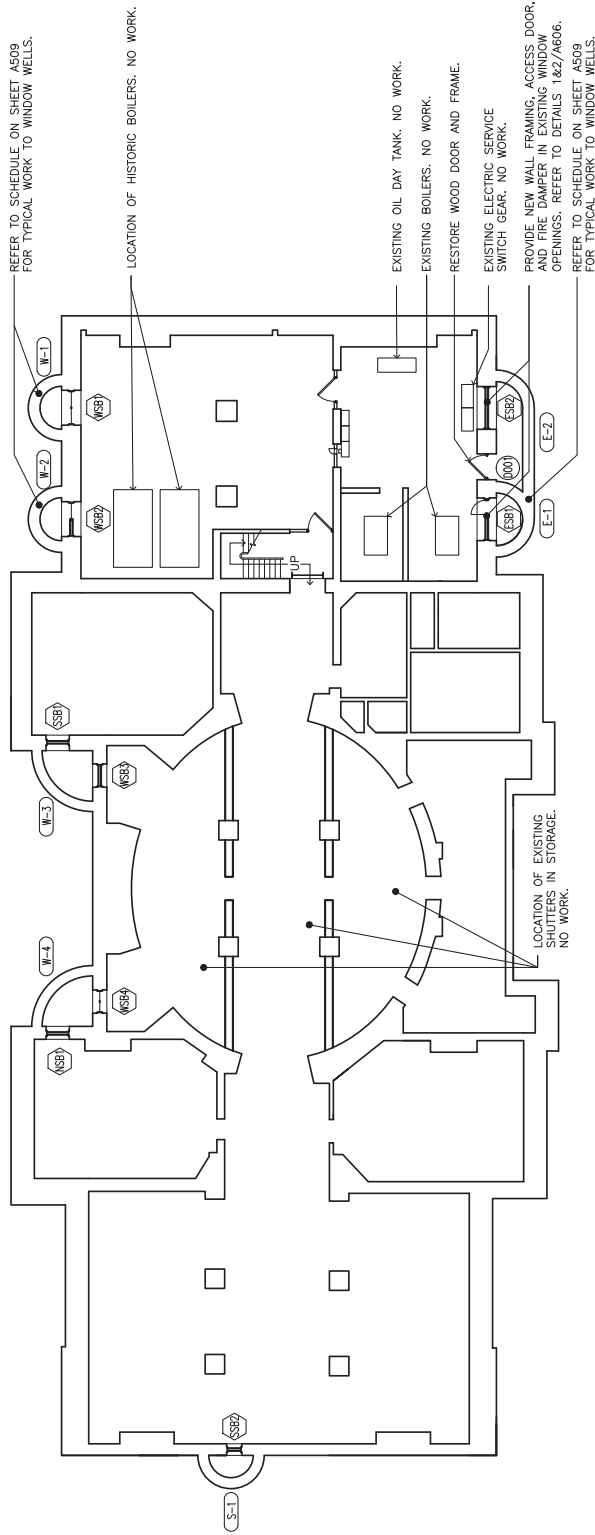
REHABILITATE VANDERBILT MANSION EXTERIOR VANDERBILT MANSION STORM/FOUNDATION DRAIN PROFILES VANDERBILT MANSION NATIONAL HISTORIC SITE HYDE PARK, NEW YORK	TITLE OF SHEET	DRAWING NO.
		382
		104796
	PMIS/PKG NO.	152373
	SHEET	6 OF 58

Age Group	HORIZONTAL	VERTICAL	BOTH	NEITHER
0-10	10	10	10	10
11-20	15	15	15	15
21-30	40	10	10	10
31-40	25	25	25	25
41-50	15	35	35	15
51-60	10	40	40	10
61-70	5	45	45	5
71+	5	50	45	5

[illegible]

LEGEND:

- WINDOWS - REFER TO A600
- WINDOW WELLS - REFER TO A509
- DOORS - REFER TO A605
- CONTRACTOR ACCESS ROUTE



1 SUBBASEMENT PLAN
A101 SCALE (A)



DESIGNED:	JOWA
TECH. REVIEW:	07/18/14
DATE:	07/18/14

SUB SHEET NO.
A101

DRAWING NO.	382
PMS/PKG NO.	104796
SHEET	152373
SHEET	9 of 58

TITLE OF SHEET
REHABILITATE VANDERBILT MANSION EXTERIOR
VANDERBILT MANSION
SUBBASEMENT PLAN
VANDERBILT MANSION NATIONAL HISTORIC SITE
HYDE PARK, NEW YORK

(X) WINDOWS -- REFER TO A600
 (X-X) WINDOW WELLS -- REFER TO
 (X) DOORS -- REFER TO A605
 --- CONTRACTOR ACCESS ROUTE

SIM. TO 

REFER TO SCHEDULE ON
4509 FOR TYPICAL WORK
TO WINDOW WELLS.

PROVIDE FOUNDATION
WATERPROOFING AT
FOUNDATION EXPOSED
DURING STAIR WORK.

REFER TO SHEET A204, A501,
AND A505 FOR WORK TO
PORTICO STRUCTURE ABOVE.—

PROVIDE APPROXIMATELY 622 SQ
FT OF BRICK REPOINTING THIS
SPACE UNDER SOUTH PORTICO. —

EXISTING TONGUE AND GROOVE
WOOD FLOOR— PROTECT IN PLACE.

EXISTING WOOD FRAME WALL, BEADBOARD
SHEATHING, DOOR, AND FRAME TO BE
SALVAGED AND REINSTALLED.

REFER TO SHEETS A201, A501,
AND A502 FOR WORK TO
PORTICO STRUCTURE ABOVE.

OPTION D: PROVIDE NEW WHEELCHAIR LIFT. REFER TO A511.

____REPLACE OIL TANK FILL AND VENT
PIPING WITHIN WINDOW WELL.

PREPARE AND PAINT
COAL CHUTE COVERS.

SCALE

A vertical scale bar labeled "SCALE OF FEET". The scale has markings at 8, 0, 8, and 16. The segment between 0 and 8 is divided into four equal parts by tick marks.

1 BASEMENT PLAN
A102 SCALE (A)

DESIGNED:	SUB SHEET NO.
-----------	---------------

REHABILITATE VANDERBILT MANSION EXTERIOR VANDERBILT MANSION BASEMENT PLAN	TITLE OF SHEET	DRAWING NO.
	VANDERBILT MANSION NATIONAL HISTORIC SITE HYDE PARK, NEW YORK	382 104796
	PMS/PKG. NO.	SHEET
	15237/3	10 OF 58

DRAWING NO.	TITLE OF SHEET	SUB SHEET NO.
382	REHABILITATE VANDERBILT MANSION EXTERIOR	A102
104796	VANDERBILT MANSION	
PAPER PRICE, \$	BASMENT PLAN	
15237.5	VANDERBILT MANSION NATIONAL HISTORIC SITE	
SHEET	HYDE PARK, NEW YORK	
10 OF 58		

	DESIGNED: JOWA	A102	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
	CHECKED: 		TECH. REVIEW:	REHABILITATE VANDERBILT MANSION EXTERIOR VANDERBILT MANSION BASEMENT PLAN VANDERBILT MANSION, NATIONAL HISTORIC SITE HYDE PARK, NEW YORK	104796 PLANS PRG. NO. 15237.3

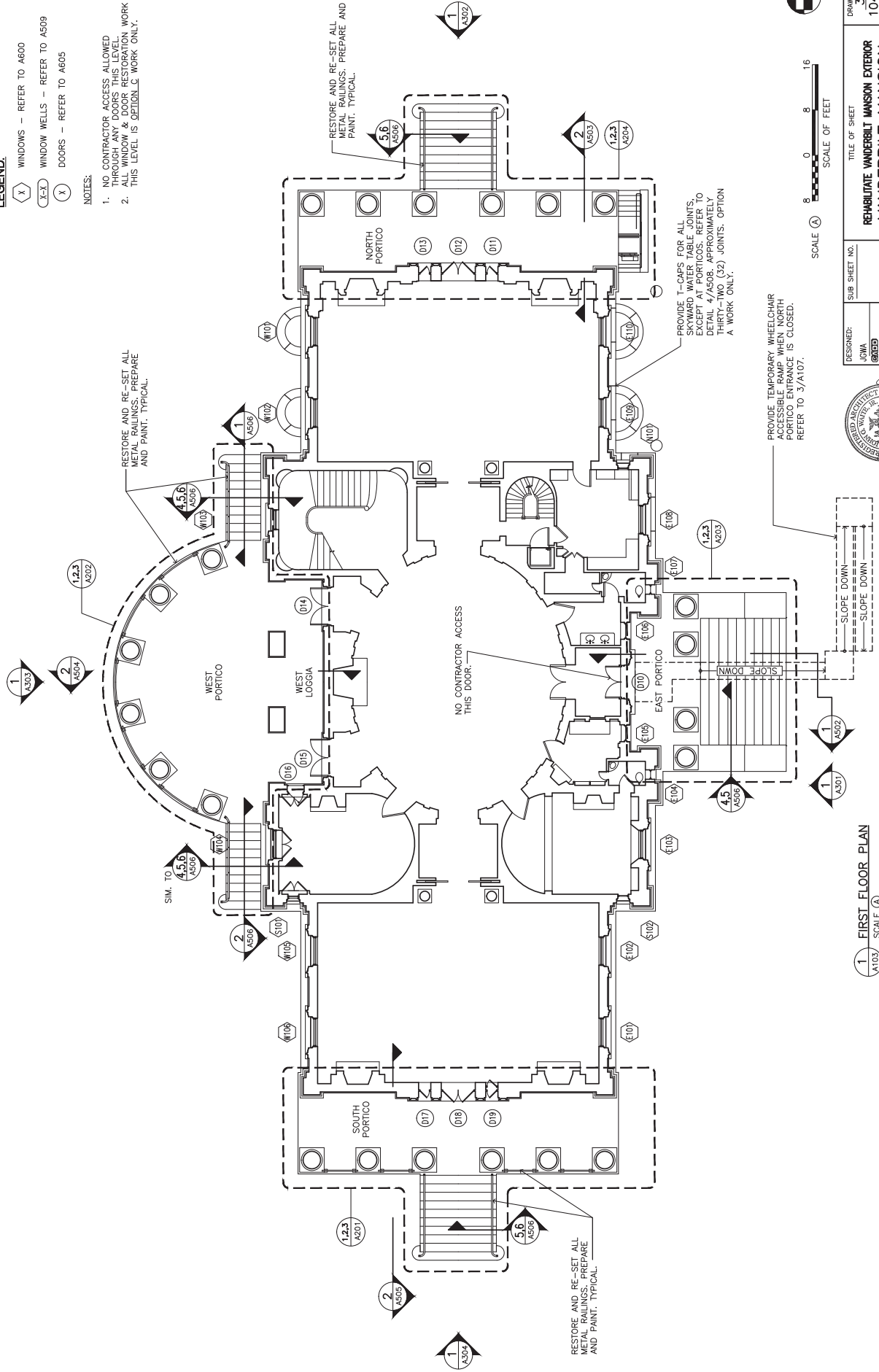
	DESIGNED:	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO. 382 104796 PANS PRG. NO. 152373 SHEET 10 of 58
	JOWA 04070	A102	REHABILITATE VANDERBILT MANSION EXTERIOR VANDERBILT MANSION BASEMENT PLAN VANDERBILT MANSION NATIONAL HISTORIC SITE HYDE PARK, NEW YORK	
	TECH. REVIEW:			
	DATE:			
	07/18/14			

LEGEND:

- (X) WINDOWS - REFER TO A600
(X-X) WINDOW WELLS - REFER TO A509
(X) DOORS - REFER TO A605

NOTES:

1. NO CONTRACTOR ACCESS ALLOWED THROUGH ANY DOORS THIS LEVEL.
2. ALL WINDOW & DOOR RESTORATION WORK THIS LEVEL IS OPTION C WORK ONLY.



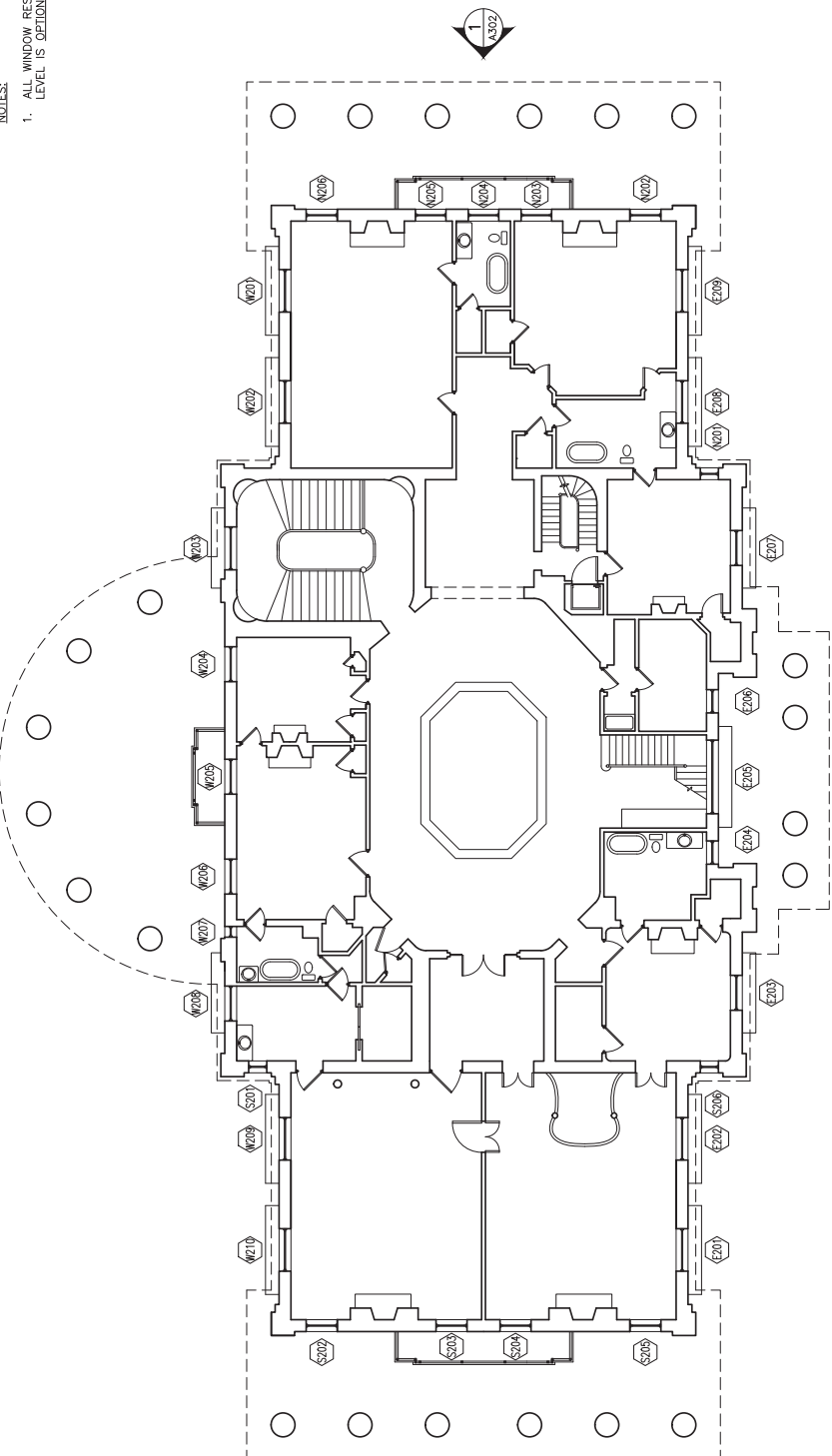
DESIGNED: JOWA
SUB SHEET NO. A103
TITLE OF SHEET: REHABILITATE VANDERBILT MANSION EXTERIOR
DRAWING NO. 104796
PMS/PAC NO. 152373
SHEET 11 OF 58
DATE: 07/18/14
VANDERBILT MANSION NATIONAL HISTORIC SITE
HYDE PARK, NEW YORK

LEGEND:

- (X) WINDOWS - REFER TO A600
(X-X) WINDOW WELLS - REFER TO A509
(X) DOORS - REFER TO A605

NOTES:

1. ALL WINDOW RESTORATION WORK THIS LEVEL IS OPTION C WORK ONLY.



1 SECOND FLOOR PLAN
A104 SCALE (A)

SCALE (A) 8 0 8 16
SCALE OF FEET



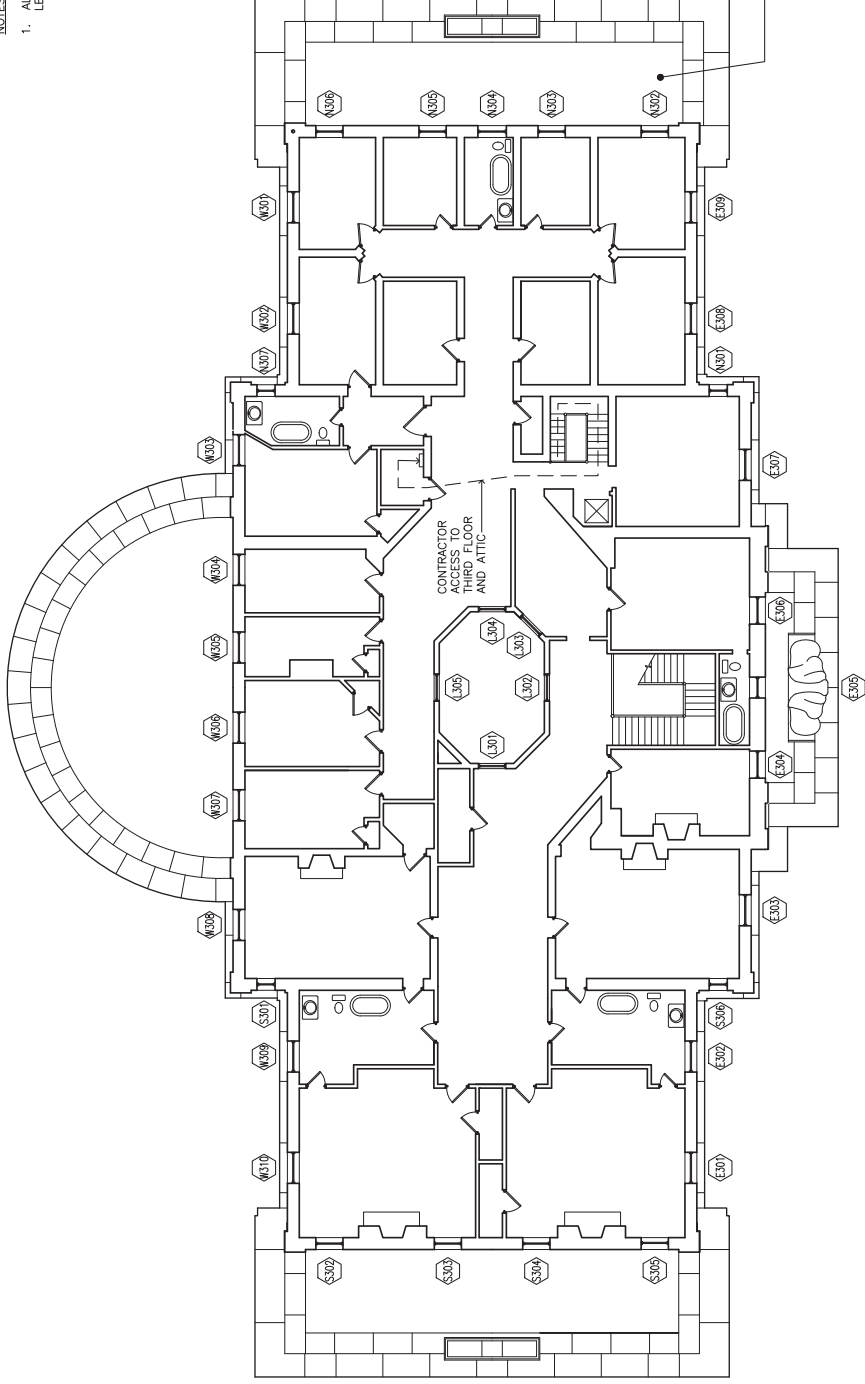
DESIGNED: JOWA 06/05	SUB SHEET NO. A104	TITLE OF SHEET REHABILITATE VANDERBILT MANSION EXTERIOR VANDERBILT MANSION SECOND FLOOR PLAN	DRAWING NO. 382
TECH. REVIEW: —	DATE: 07/18/14	VANDERBILT MANSION NATIONAL HISTORIC SITE HYDE PARK, NEW YORK	PWS/PKG NO. 152373
			SHEET 12 OF 58

LEGEND:

- (X) WINDOWS - REFER TO A600
(X-X) WINDOW WELLS - REFER TO A509
(X) DOORS - REFER TO A605
--- CONTRACTOR ACCESS ROUTE

NOTES:

1. ALL WINDOW RESTORATION WORK THIS LEVEL IS OPTION C WORK ONLY.



SCALE (A) 8 0 8 16
SCALE OF FEET



DESIGNED: JOWA 06/09	SUB SHEET NO. A105	TITLE OF SHEET REHABILITATE VANDERBILT MANSION EXTERIOR VANDERBILT MANSION THIRD FLOOR PLAN	DRAWING NO. 382
TECH. REVIEW: —	DATE: 07/18/14	VANDERBILT MANSION NATIONAL HISTORIC SITE HYDE PARK, NEW YORK	PWS/PKG NO. 152373
			SHEET 13 OF 58

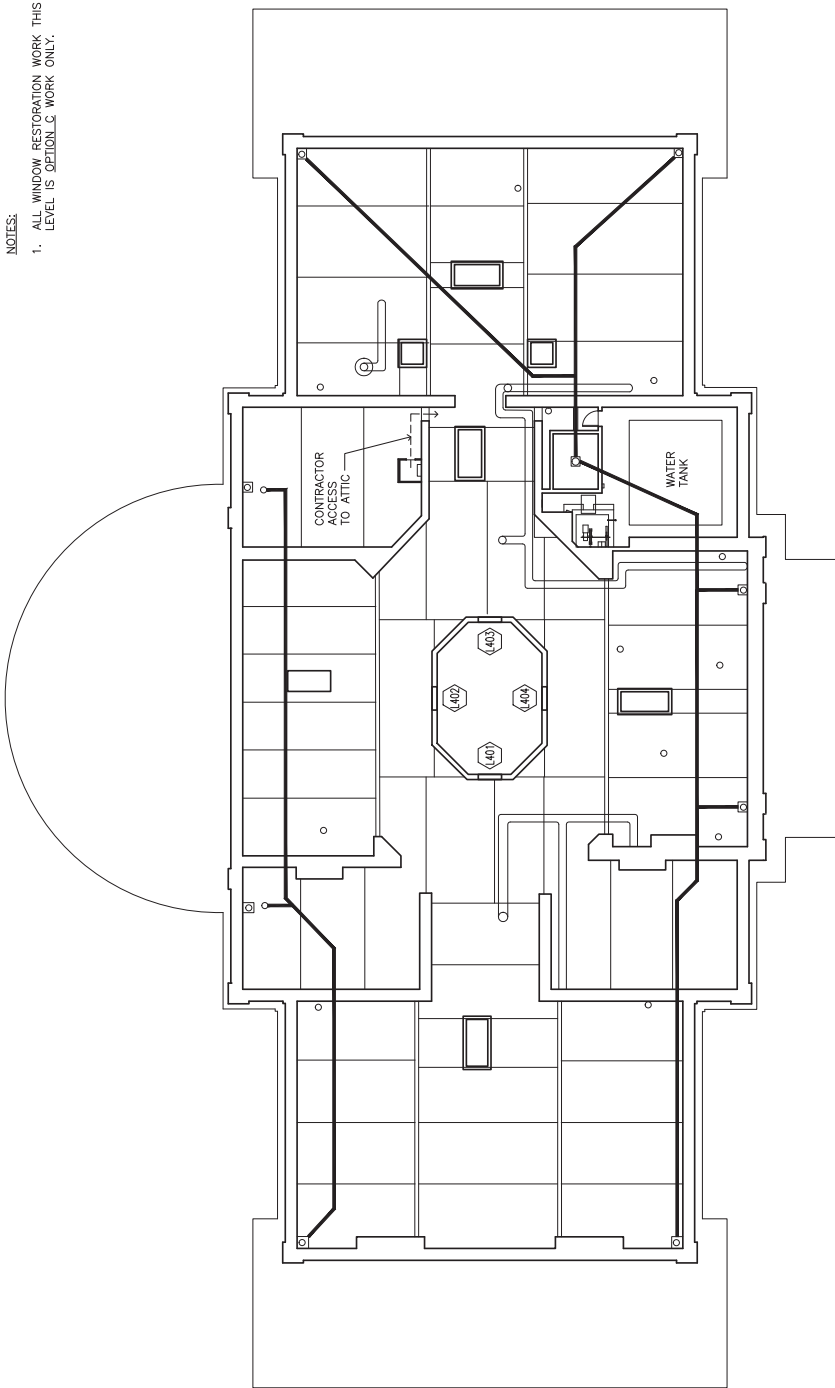
1 THIRD FLOOR PLAN
SCALE (A)

LEGEND:

- ROOF DRAIN PIPING
- EXISTING DUCTWORK
- CONTRACTOR ACCESS ROUTE

NOTES:

- ALL WINDOW RESTORATION WORK THIS LEVEL IS OPTION C WORK ONLY.



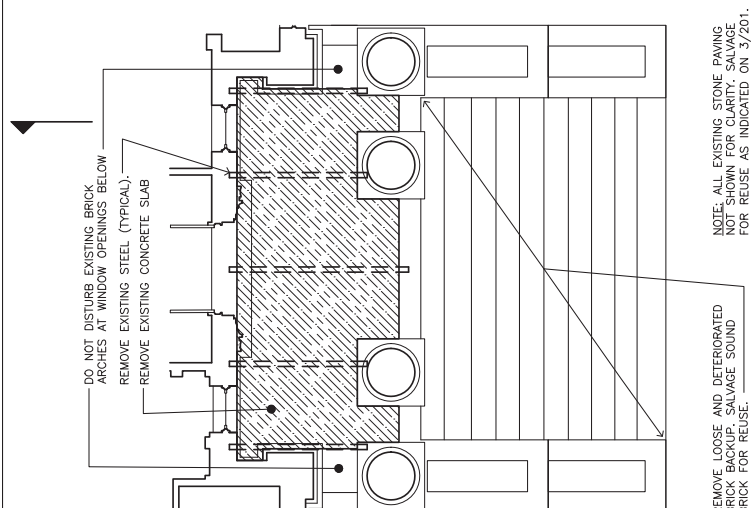
1 ATTIC FLOOR PLAN
A106 SCALE (A)



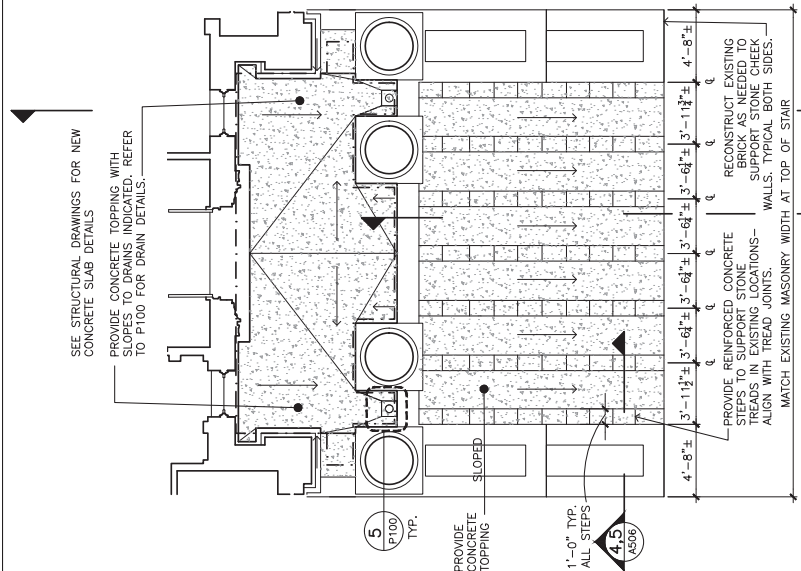
SCALE (A) 8 0 8 16
SCALE OF FEET



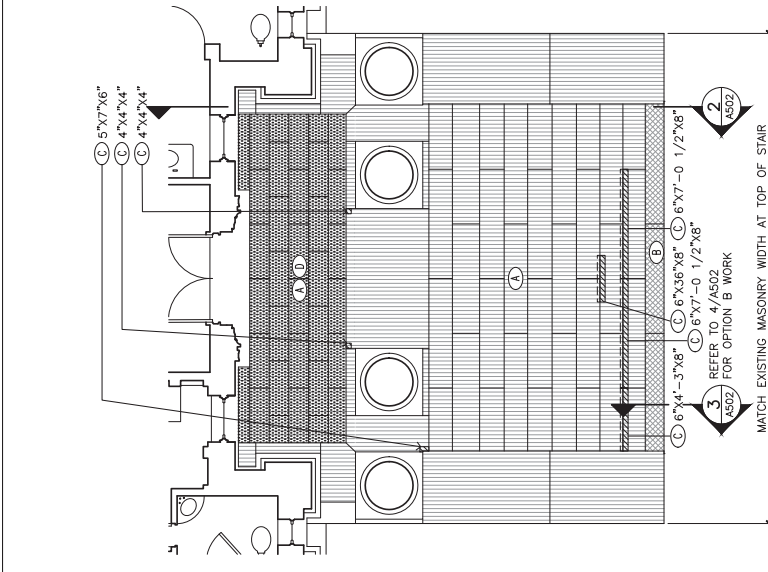
DESIGNED: JOWA GASB	SUB SHEET NO. A106	TITLE OF SHEET REHABILITATE VANDERBILT MANSION EXTERIOR VANDERBILT MANSION ATTIC FLOOR PLAN	DRAWING NO. 382 104796
TECH. REVIEW: —	DATE: 07/18/14	VANDERBILT MANSION NATIONAL HISTORIC SITE HYDE PARK, NEW YORK	PMS/PAG. NO. 152373 SHEET 14 OF 58



1 EAST PORTICO REMOVALS PLAN
A201 SCALE A



2 EAST PORTICO DRAINAGE PLAN
A201 SCALE A



3 EAST PORTICO STONE RESTORATION PLAN
A201 SCALE A

MASONRY RESTORATION KEY NOTES:

- (A) EXISTING STONE TO BE SALVAGED AND RE--SET.
- (B) REPLACE STONE. MATCH EXISTING PROFILE.
- (C) PROVIDE DUTCHMAN REPAIR IN SIZE INDICATED.
- (D) TOOL BACK STONE SURFACE TO PRODUCE SMOOTH AND LEVEL TOP SURFACE.
- (E) REMOVE CONCRETE SLAB
- PROVIDE LIGHTWEIGHT CONCRETE TOPPING
- DRAINAGE AREA WITH INTERNAL WEEP DRAIN
- DIRECTION OF DRAINAGE BELOW
- LINE OF BASEMENT WALL BELOW



DESIGNED: JOWA

DATE: 07/18/14

SUB SHEET NO. A201

TITLE OF SHEET
REHABILITATE VANDERBILT MANSION EXTERIOR
VANDERBILT MANSION
EAST PORTICO PLANS
VANDERBILT MANSION NATIONAL HISTORIC SITE
HYDE PARK, NEW YORK

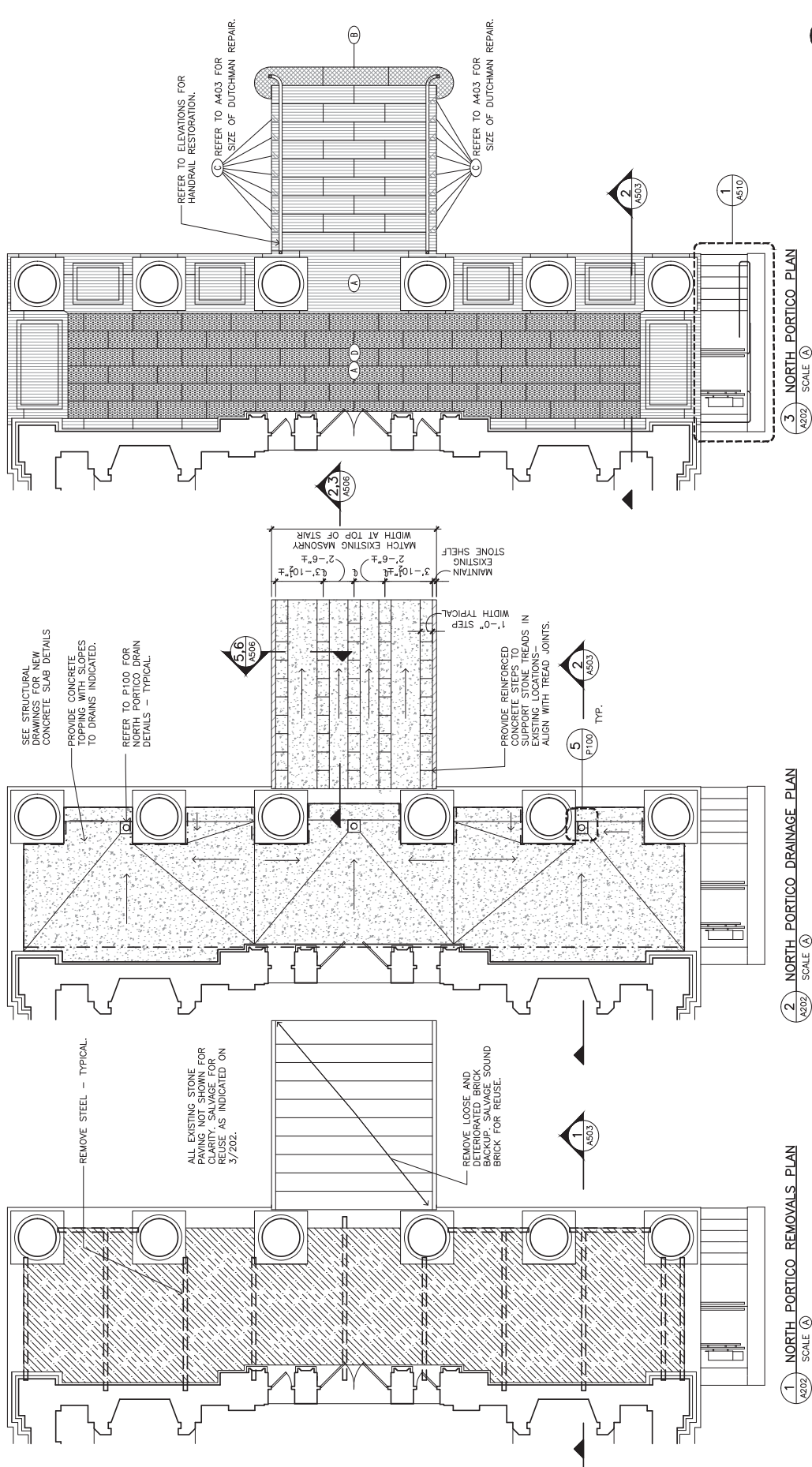
DRAWING NO. 352

104796

PMIS/PKG NO. 152373

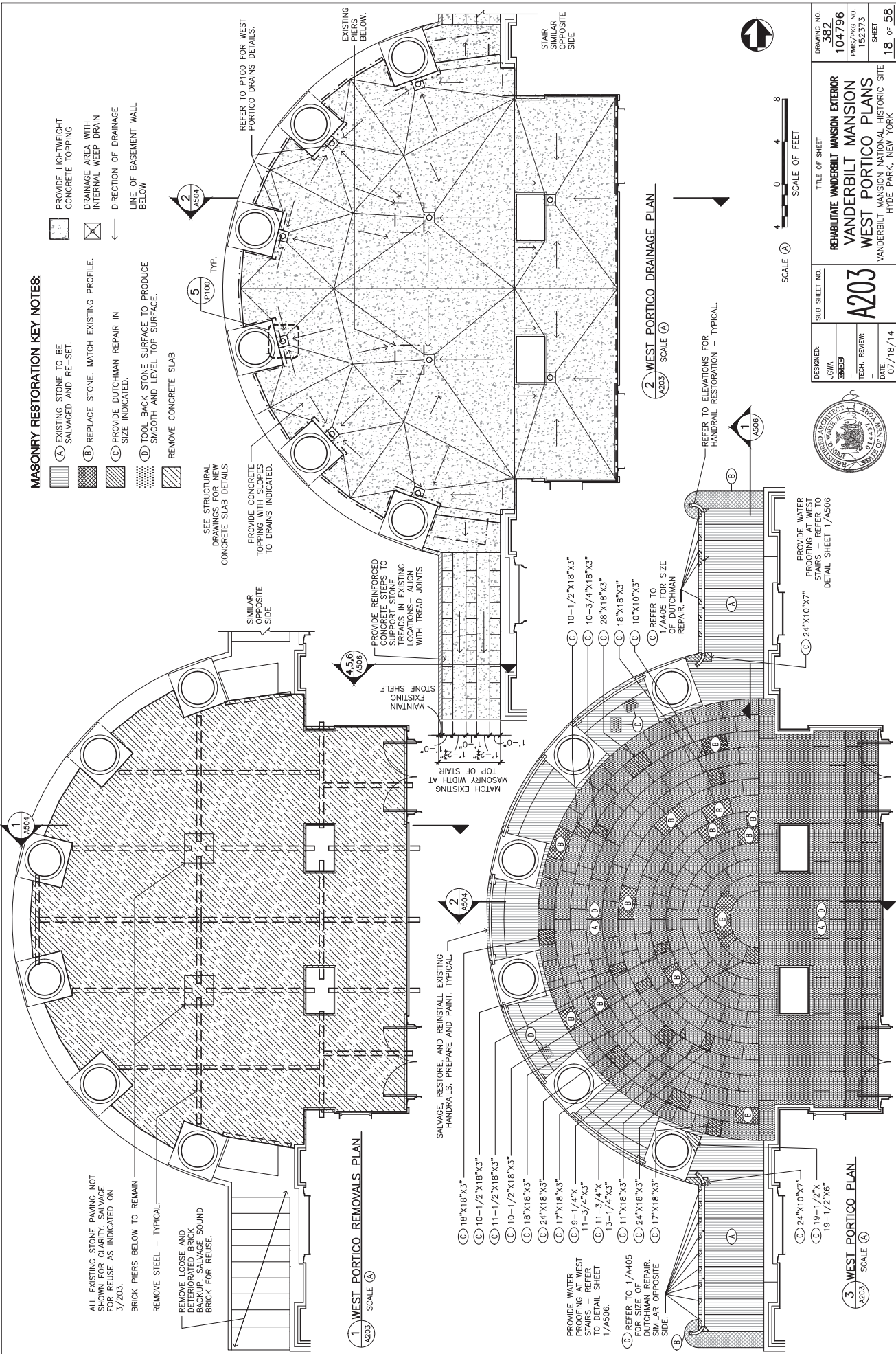
SHEET 16 of 58

REHABITATE VANDERBILT MANSION EXTERIOR
VANDERBILT MANSION
EAST PORTICO PLANS
VANDERBILT MANSION NATIONAL HISTORIC SITE
HYDE PARK, NEW YORK



MASONRY RESTORATION KEY NOTES:

- EXISTING STONE TO BE SALVAGED AND RE-SET.
- REPLACE STONE. MATCH EXISTING PROFILE.
- PROVIDE DUTCHMAN REPAIR IN SIZE INDICATED.
- TOOL BACK STONE SURFACE TO PRODUCE SMOOTH AND LEVEL TOP SURFACE.
- REMOVE CONCRETE SLAB
- PROVIDE LIGHTWEIGHT CONCRETE TOPPING
- DRAINAGE AREA WITH INTERNAL WEED DRAIN
- DIRECTION OF DRAINAGE BELOW
- LINE OF BASEMENT WALL



DESIGNED: JOWA	SUB SHEET NO. A203	TITLE OF SHEET: REHABILITATE VANDERBILT MANSION EXTERIOR	DRAWING NO. 382
TECH. REVIEW: [Signature]		VANDERBILT MANSION	PMS/PKG NO. 104796
DATE: 07/18/14		WEST PORTICO PLANS	PMS/PKG NO. 152373
		VANDERBILT MANSION NATIONAL HISTORIC SITE	SHEET 18 OF 58

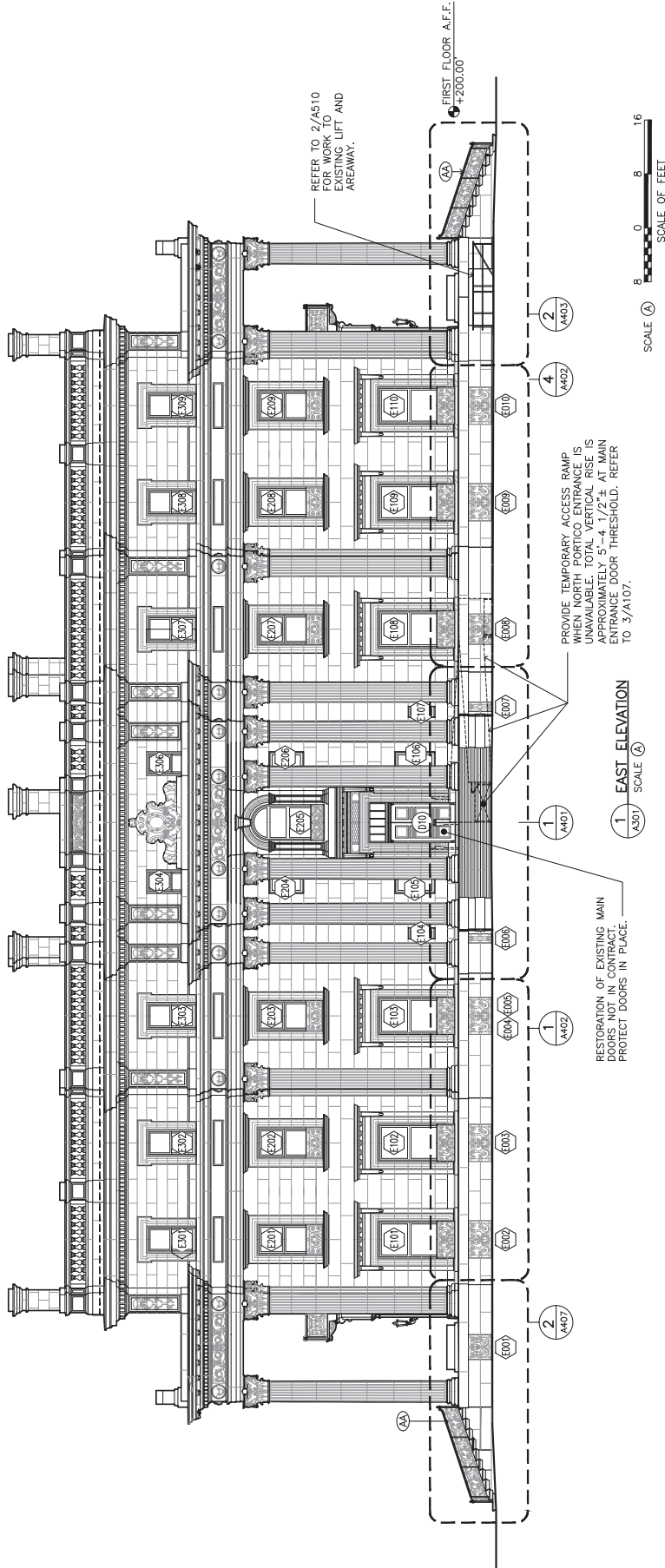


KEY NOTES:

- (A3) RESTORE IRON STAIR RAILINGS.
REPAIR OR REPLACE DAMAGED
COMPONENTS. FABRICATE MISSING OR
DAMAGED COMPONENTS TO MATCH
EXISTING. PREPARE AND PAINT WITH
SHOP APPLIED COATING. REASSEMBLE
AND INSTALL.

GENERAL RESTORATION NOTES:

1. REFER TO SHEETS A401-A407 FOR
MASONRY REPAIRS.
2. REMOVE ALL INSECT NESTS AND
HIVES IN ENTIRETY.



DESIGNED:
JOWA
GARDNER
TECH. REVIEW:
DATE: 07/18/14

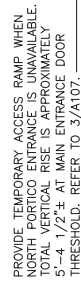
SUB SHEET NO.
A301

TITLE OF SHEET
REHABILITATE VANDERBILT MANSION EXTERIOR
VANDERBILT MANSION
EAST ELEVATION
VANDERBILT MANSION NATIONAL HISTORIC SITE
HYDE PARK, NEW YORK

DRAWING NO.
382
104796
PWS/PKG NO.
152373
SHEET
20 OF 58

GENERAL RESTORATION NOTES:

1. REFER TO SHEETS A401-A407 FOR MASONRY REPAIRS.
2. REMOVE ALL INSECT NESTS AND HIVES IN ENTIRETY.



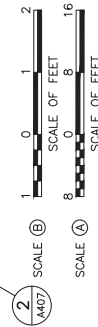
1 NORTH ELEVATION



DRAWING NO. 382	TITLE OF SHEET	
	REHABILITATE VANDERBILT MANSION EXTERIOR	
	VANDERBILT MANSION	
	NORTH ELEVATION	
PWS/PKG. NO. 104796	VANDERBILT MANSION NATIONAL HISTORIC SITE	
SHEET 152373		

GENERAL RESTORATION NOTES:

1. REFER TO SHEETS A401-A407 FOR MASONRY REPAIRS.
2. REMOVE ALL INSECT NESTS AND HIVES IN ENTIRETY.



DESIGNED:	SUB SHEET NO.
-----------	---------------

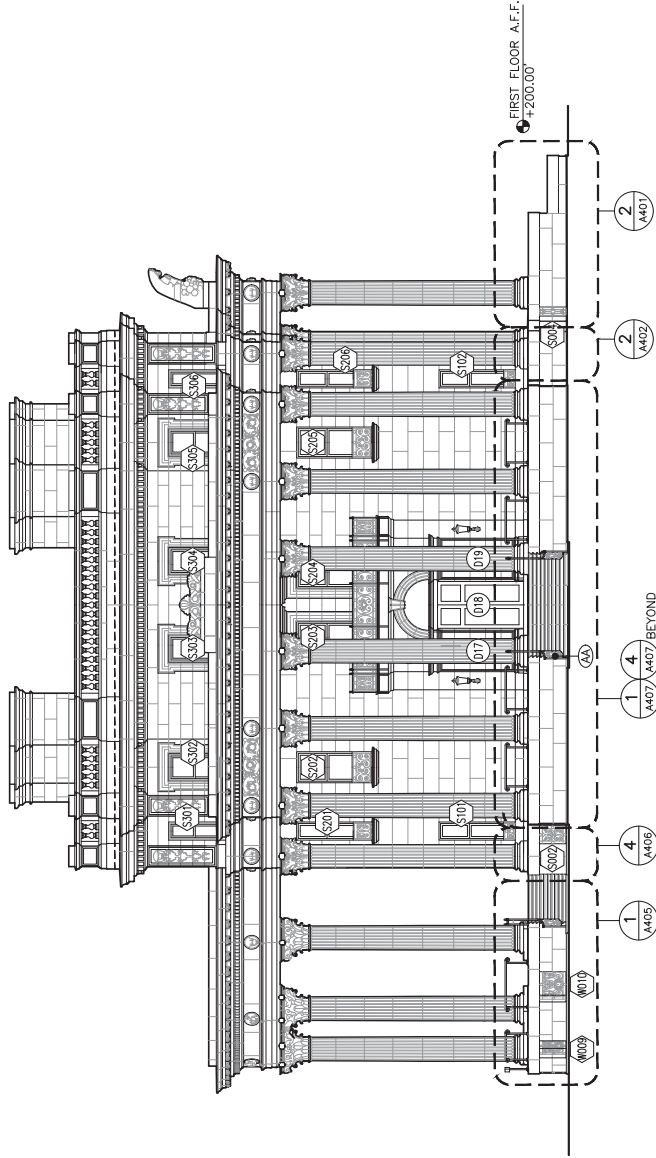
TITLE OF SHEET REHABILITATE VANDERBILT MANSION EXTERIOR VANDERBILT MANSION WEST ELEVATION		DRAWING NO. 382
VANDERBILT MANSION NATIONAL HISTORIC SITE HYDE PARK, NEW YORK		PMS/PKG NO. 104796 152373
		SHEET 22 OF 58

KEY NOTES:

- (A) RESTORE IRON STAIR RAILINGS.
REMOVE RAILINGS AND DISASSEMBLE
WASHERS, BOLTS, AND BRACKETS OR
DAMAGED COMPONENTS TO MATCH
EXISTING. PREPARE AND PAINT WITH
SHOP APPLIED COATING. REASSEMBLE
AND INSTALL.

GENERAL RESTORATION NOTES:

1. REFER TO SHEETS A401-A407 FOR
MASONRY REPAIRS.
2. REMOVE ALL INSECT NESTS AND
HIVES IN ENTIRETY.



1 SOUTH ELEVATION
SCALE (A)

SCALE OF FEET
0 8 16

DESIGNED: JOWA GARDNER	SUB SHEET NO. A304	TITLE OF SHEET REHABILITATE VANDERBILT MANSION EXTERIOR VANDERBILT MANSION SOUTH ELEVATION	DRAWING NO. 382
TECH. REVIEW: —	DATE: 07/18/14	VANDERBILT MANSION NATIONAL HISTORIC SITE HYDE PARK, NEW YORK	PWS/PAC NO. 152373
			SHEET 23 OF 58

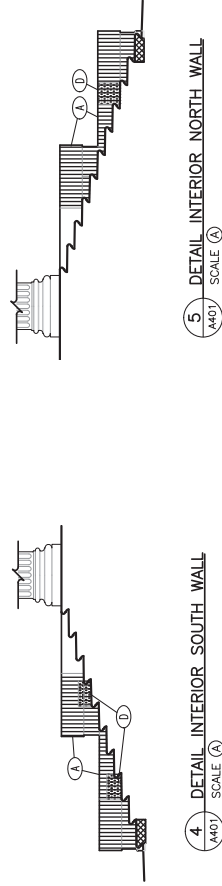
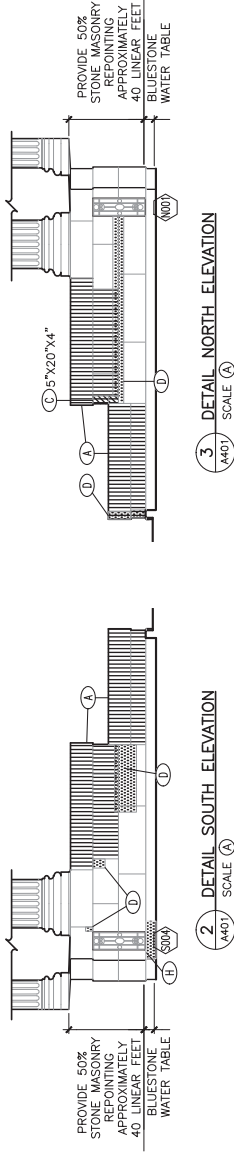
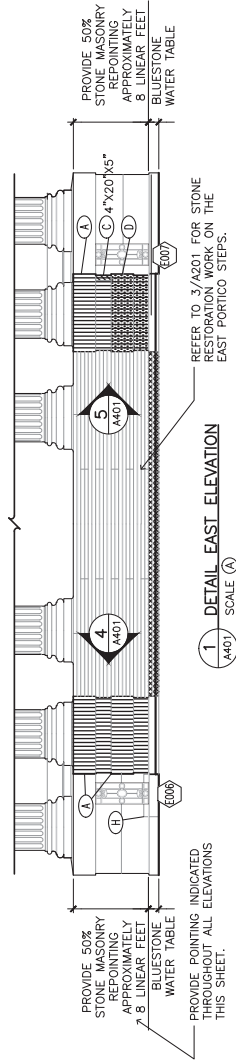
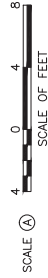


GENERAL MASONRY RESTORATION NOTES:

1. ALL MASONRY RESTORATION WORK IS BASE BID UNLESS NOTED OTHERWISE.
2. NOT USED
3. RAKE OUT AND REPOINT EXISTING MASONRY JOINTS. SEE DRAWINGS FOR % OF JOINTS TO BE REPOINTED. EXISTING SOUND JOINTS TO REMAIN
4. PROVIDE METAL T-CAPS AT ALL SKYWARD MORTAR JOINTS WITHOUT EXISTING T-CAPS. EXISTING METAL JOINTS TO REMAIN, TYPICAL. REFER TO DETAIL 4/5308.
5. REMOVE ALL EXISTING SEALANT FROM MASONRY JOINTS AND PROVIDE MORTAR REPOINTING.
6. REFER TO DETAILS ON SHEET 4508 FOR TYPICAL MASONRY REPOINTING DETAILS.
7. STONE CRACKS LESS THAN $\frac{1}{8}$ " TO REMAIN - NO WORK.
8. PROVIDE TOUQUING TO OF STONE SURFACE TO REMOVE SPAILED LAYERS OF BLUESTONE COPING AND WATERABLE - TYPICAL.
9. PROVIDE PAINT FINISH FOR ALL BRICK SURFACES IN NORTH PORTICO BASEMENT.
10. PROVIDE 2LF MASONRY REPOINTING AT EACH BASEMENT WINDOW OPENING.
11. PROVIDE 100% REPOINTING OF EXISTING MASONRY WATER TABLE ENTIRE PERIMETER OF BASEMENT WINDOW OPENING. REPAIR ALL OLD BOTTOM BED JOINTS. APPROXIMATELY 1050 LINEAR FEET.

MASONRY RESTORATION KEY NOTES:

- (A) EXISTING STONE TO BE SALVAGED AND RE-SET.
- (B) REPLACE STONE. MATCH EXISTING PROFILE.
- (C) PROVIDE DUTCHMAN REPAIR IN SIZE INDICATED.
- (D) TOOL BACK STONE SURFACE TO PRODUCE SMOOTH AND LEVEL TOP SURFACE.
- (E) PROVIDE EPOXY REPAIR TO SURFACE CRACK.
- (E) PROVIDE MORTAR REPAIR TO SURFACE CRACK. RAKE OUT PREVIOUSLY REPAIRED CRACKS TO PROVIDE ADEQUATE BONDING SURFACE AND REPOINT WITH COLOR MATCHED MORTAR TO MATCH STONE COLOR.
- (G) PROVIDE PIN AND EPOXY REPAIR TO CRACKED STONE.
- (H) TOP STONE SURFACE TO REMOVE SPALLED LAYERS OF STONE. PROVIDE 1" CAP AT OVER VERTICAL JOINTS AND CRACKS IN WINDOW SILLS.

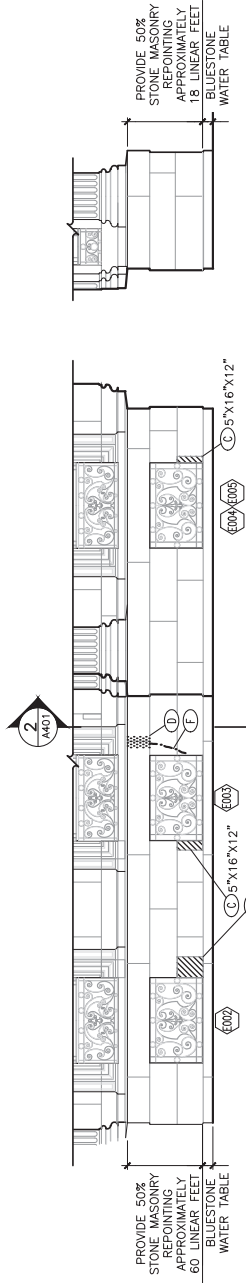
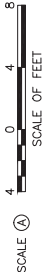


GENERAL MASONRY RESTORATION NOTES:

1. ALL MASONRY RESTORATION WORK IS BASE BID UNLESS NOTED OTHERWISE.
2. NOT USED
3. RAKE OUT AND REPOINT EXISTING MASONRY JOINTS. SEE DRAWINGS FOR % OF JOINTS TO BE REPOINTED. EXISTING SOUND JOINTS TO REMAIN
4. PROVIDE METAL T-CAPS AT ALL SKYWARD MORTAR JOINTS WITHOUT EXISTING T-CAPS. EXISTING METAL T-CAPS TO REMAIN, TYPICAL. REFER TO DETAIL 4/A508.
5. REMOVE ALL EXISTING SEALANT FROM MASONRY JOINTS AND PROVIDE MORTAR REPOINTING.
6. REFER TO DETAILS ON SHEET A508 FOR TYPICAL MASONRY REPOINTING DETAILS.
7. STONE CRACKS LESS THAN 1/2" TO REMAIN - NO WORK.
8. PROVIDE TOOLING TO OF STONE SURFACE TO REMOVE SPALLED LAYERS OF BLUESTONE COPING AND WATERABLE - TYPICAL.
9. PROVIDE PAINT FINISH FOR ALL BRICK SURFACES IN NORTH PORTICO BASEMENT.
10. PROVIDE 2/E MASONRY REPOINTING AT EACH BASEMENT WINDOW OPENING.
11. PROVIDE 100% REPOINTING OF EXISTING BLUESTONE WATER TABLE ENTIRE PERIMETER OF BUILDING, INCLUDE ALL VERTICAL, TOP, BED, AND BOTTOM BED JOINTS. APPROXIMATELY 1050 LINEAR FEET.

MASONRY RESTORATION KEY NOTES:

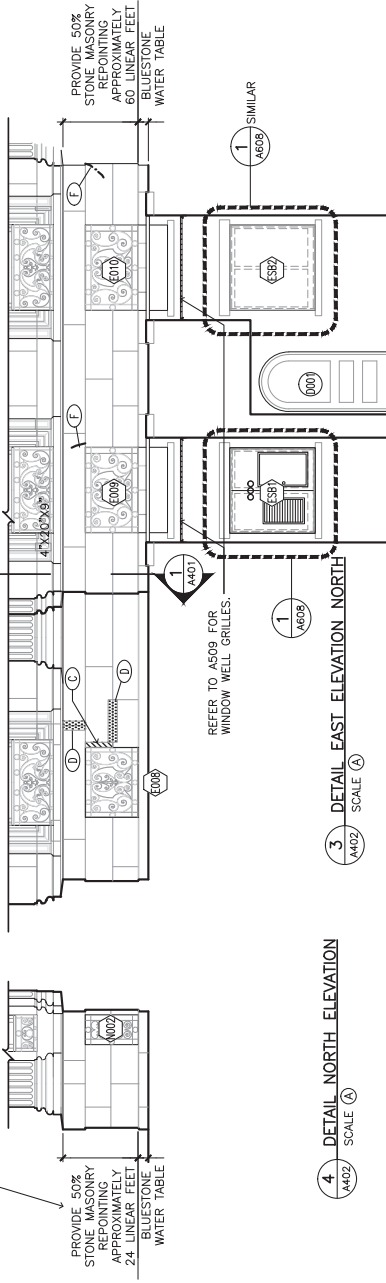
- A EXISTING STONE TO BE SALVAGED AND RE-SET.
- B REPLACE STONE. MATCH EXISTING PROFILE.
- C PROVIDE DUTCHMAN REPAIR IN SIZE INDICATED.
- D TOOL BACK STONE SURFACE TO PRODUCE SMOOTH AND LEVEL TOP SURFACE.
- E PROVIDE EPOXY REPAIR TO SURFACE CRACK.
- F PROVIDE MORTAR REPAIR TO SURFACE CRACK. RAKE OUT PREVIOUSLY REPOINTED JOINTS. PROVIDE ADEQUATE BONDING SURFACE AND REPOINT WITH COLOR MATCHED MORTAR TO MATCH STONE COLOR.
- G PROVIDE PIN AND EPOXY REPAIR TO CRACKED STONE.
- H TOOL TOP STONE SURFACE TO REMOVE SPALLED LAYERS OF BLUESTONE WATERABLE. PROVIDE T-CAPS AT OPEN VERTICAL JOINTS AND CRACKS IN WINDOW SILLS.



2 DETAIL EAST ELEVATION SOUTH
SCALE (A)

1 DETAIL EAST ELEVATION SOUTH
SCALE (A)

PROVIDE POINTING INDICATED THROUGHOUT ALL ELEVATIONS THIS SHEET.



4 DETAIL NORTH ELEVATION
SCALE (A)

3 DETAIL EAST ELEVATION NORTH
SCALE (A)

1 A609

REFER TO A509 FOR WINDOW WELL GRILLES.

1 A608

1 A608



DESIGNED:	JOWA
TECH. REVIEW:	—
DATE:	07/18/14

SUB SHEET NO. A402

TITLE OF SHEET REHABILITATE VANDERBILT MANSION EXTERIOR VANDERBILT MANSION DETAIL EAST ELEVATIONS

DRAWING NO. 382 104796

PMS/PKG NO. 152373

SHEET 25 of 58

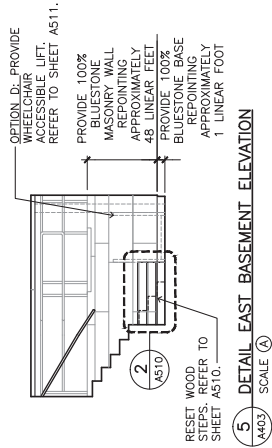
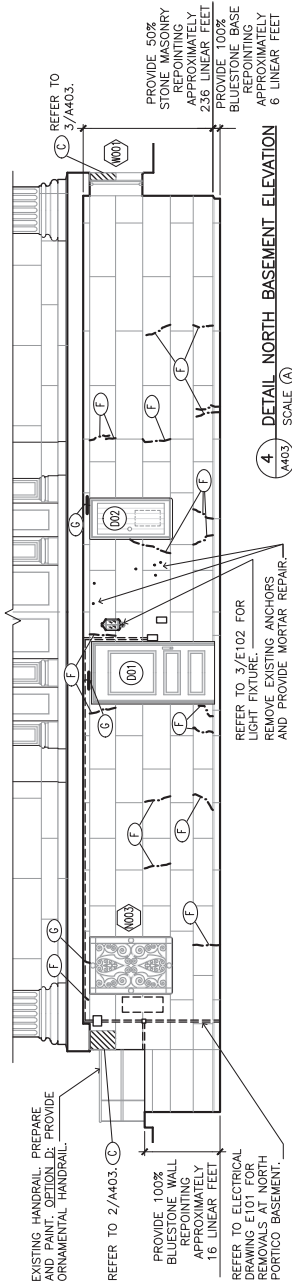
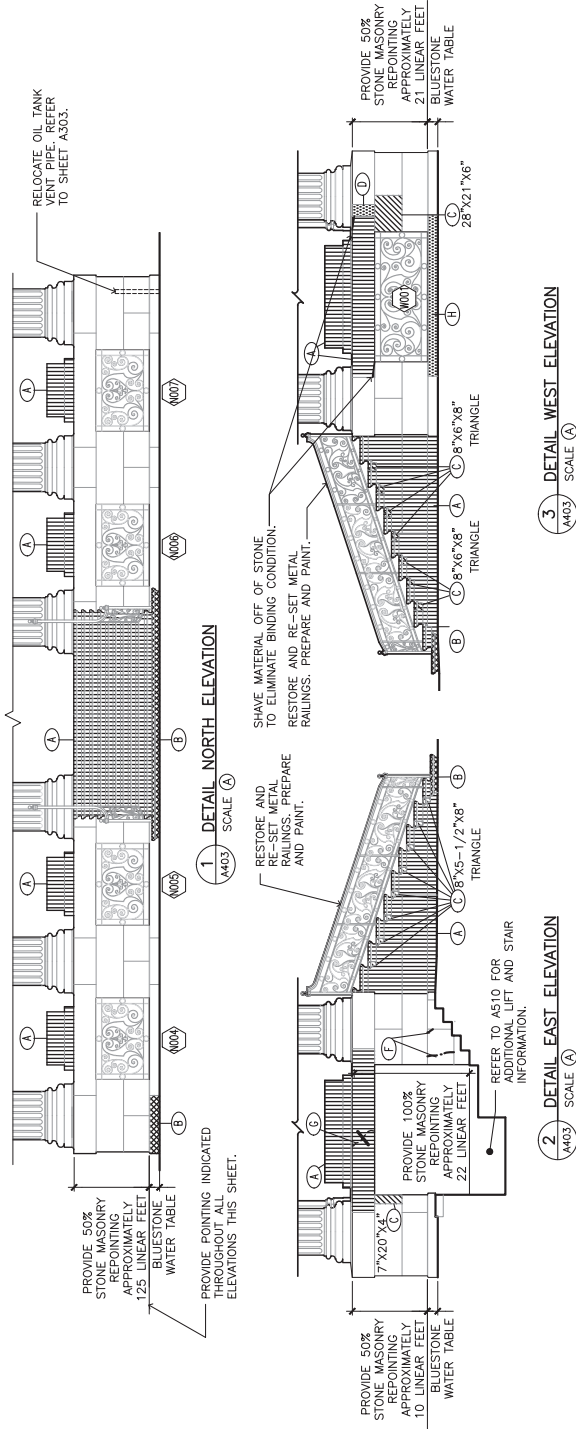
VANDERBILT MANSION NATIONAL HISTORIC SITE HYDE PARK, NEW YORK

GENERAL MASONRY RESTORATION NOTES:

1. ALL MASONRY RESTORATION WORK IS BASE BID UNLESS NOTED OTHERWISE.
2. NOT USED
3. RAKE OUT AND REPOINT EXISTING MASONRY JOINTS. SEE DRAWINGS FOR % OF JOINTS TO BE REPOINTED. EXISTING SOUND JOINTS TO REMAIN.
4. PROVIDE METAL T-CAPS AT ALL SKYWARD MORTAR JOINTS WITHOUT EXISTING T-CAPS. EXISTING METAL T-CAPS TO REMAIN, TYPICAL. REFER TO DETAIL 4/A508.
5. REMOVE ALL EXISTING SEALANT FROM MASONRY JOINTS AND PROVIDE MORTAR REPOINTING.
6. REFER TO DETAILS ON SHEET A508 FOR TYPICAL MASONRY REPOINTING DETAILS.
7. STONE CRACKS LESS THAN 1/8" TO REMAIN - NO WORK.
8. PROVIDE TOOLING TO OF STONE SURFACE TO REMOVE SPALLED LAYERS OF BLUESTONE COPING AND WATERABLE - TYPICAL.
9. PROVIDE PAINT FINISH FOR ALL BRICK SURFACES IN NORTH PORTICO BASEMENT.
10. PROVIDE 2"E MASONRY REPOINTING AT EACH BASEMENT WINDOW OPENING.
11. PROVIDE 100% REPOINTING OF EXISTING BLUESTONE WATER TABLE ENTIRE PERIMETER OF BUILDING. INCLUDE ALL VERTICAL TOP, BED, AND BOTTOM BED JOINTS. APPROXIMATELY 1050 LINEAR FEET.

MASONRY RESTORATION KEY NOTES:

- (A) EXISTING STONE TO BE SALVAGED AND RE-SET.
- (B) REPLACE STONE. MATCH EXISTING PROFILE.
- (C) PROVIDE DUTCHMAN REPAIR IN SIZE INDICATED.
- (D) TOOL BACK STONE SURFACE TO PRODUCE SMOOTH AND LEVEL TOP SURFACE.
- (E) PROVIDE EPOXY REPAIR TO SURFACE CRACK.
- (F) PROVIDE MORTAR REPAIR TO SURFACE CRACK. RAKE OUT PREVIOUSLY REPOINTED JOINTS. PROVIDE ADEQUATE BONDING SURFACE AND REPOINT WITH COLOR MATCHED MORTAR TO MATCH STONE COLOR.
- (G) PROVIDE PIN AND EPOXY REPAIR TO CRACKED STONE.
- (H) TOOL TOP STONE SURFACE TO REMOVE SPALLED LAYERS OF BLUESTONE WATERABLE. PROVIDE T-CAPS AT OPEN VERTICAL JOINTS AND CRACKS IN WINDOW SILLS.



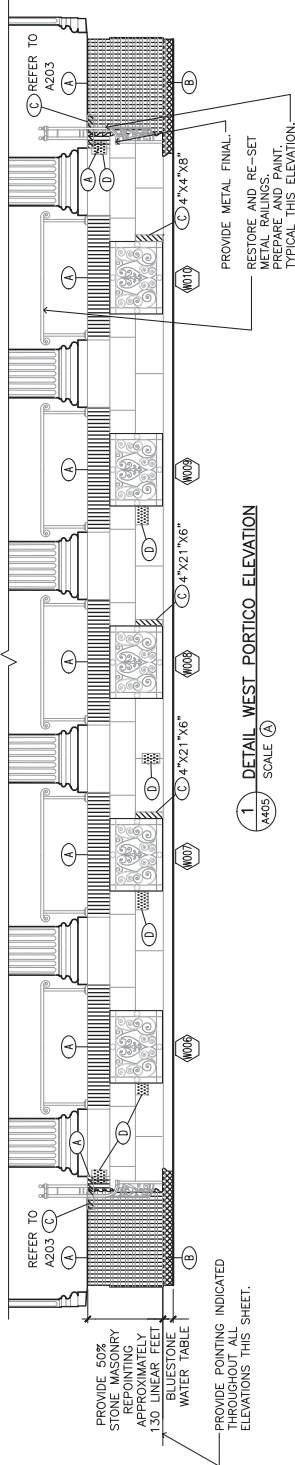
DESIGNED:	JOWA	SUB SHEET NO.	A403	TITLE OF SHEET	REHABILITATE VANDERBILT MANSION EXTERIOR	DRAWING NO.	382
TECH. REVIEW:					VANDERBILT MANSION	PMS/PKG NO.	104796
DATE:	07/18/14				DETAIL NORTH PORTICO ELEVATIONS		152373
					VANDERBILT MANSION NATIONAL HISTORIC SITE	SHEET	26 of 58
					HYDE PARK, NEW YORK		

GENERAL MASONRY RESTORATION NOTES:

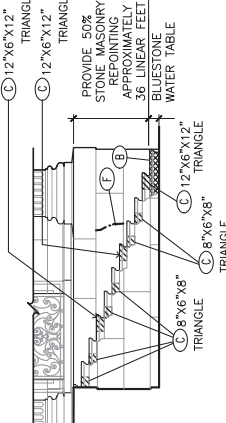
1. ALL MASONRY RESTORATION WORK IS BASE BID UNLESS NOTED OTHERWISE.
2. NOT USED
3. RAKE OUT AND REPOINT EXISTING MASONRY JOINTS. SEE DRAWINGS FOR % OF JOINTS TO BE REPOINTED. EXISTING SOUND JOINTS TO REMAIN
4. PROVIDE METAL T-CAPS AT ALL SKYWARD MORTAR JOINTS WITHOUT EXISTING T-CAPS. EXISTING METAL T-CAPS TO REMAIN, TYPICAL. REFER TO DETAIL 4/A508.
5. REMOVE ALL EXISTING SEAMANT FROM MASONRY JOINTS AND PROVIDE MORTAR REPOINTING.
6. REFER TO DETAILS ON SHEET A508 FOR TYPICAL MASONRY REPOINTING DETAILS.
7. STONE CRACKS LESS THAN 1/2" TO REMAIN - NO WORK.
8. PROVIDE TOOLING TO OF STONE SURFACE TO REMOVE SPALLED LAYERS OF BLUESTONE COPING AND WATER TABLE - TYPICAL.
9. PROVIDE PAINT FINISH FOR ALL BRICK SURFACES IN NORTH PORTICO BASEMENT.
10. PROVIDE 5% MASONRY REPOINTING AT EACH BASEMENT WINDOW OPENING.
11. PROVIDE 100% REPOINTING OF EXISTING BLUESTONE WATER TABLE ENTIRE PERIMETER OF BUILDING. INCLUDE ALL VERTICAL TOP, BED, AND BOTTOM BED JOINTS. APPROXIMATELY 1050 LINEAR FEET.

MASONRY RESTORATION KEY NOTES:

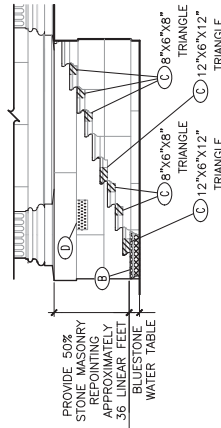
- (A) EXISTING STONE TO BE SALVAGED AND RE-SET.
- (B) REPLACE STONE. MATCH EXISTING PROFILE.
- (C) PROVIDE DUTCHMAN REPAIR IN SIZE INDICATED.
- (D) TOOL BACK STONE SURFACE TO PRODUCE SMOOTH AND LEVEL TOP SURFACE.
- (E) PROVIDE EPOXY REPAIR TO SURFACE CRACK.
- (F) PROVIDE MORTAR REPAIR TO SURFACE CRACK. RAKE OUT PREVIOUSLY REPOINTED JOINTS. PROVIDE ADEQUATE BONDING SURFACE AND REPOINT WITH COLOR MATCHED MORTAR TO MATCH STONE COLOR.
- (G) PROVIDE PIN AND EPOXY REPAIR TO CRACKED STONE.
- (H) TOOL TOP STONE SURFACE TO REMOVE SPALLED LAYERS OF BLUESTONE WATER TABLE. PROVIDE T-CAPS AT OPEN VERTICAL JOINTS AND CRACKS IN WINDOW SILLS.



1 DETAIL WEST PORTICO ELEVATION SCALE (A)

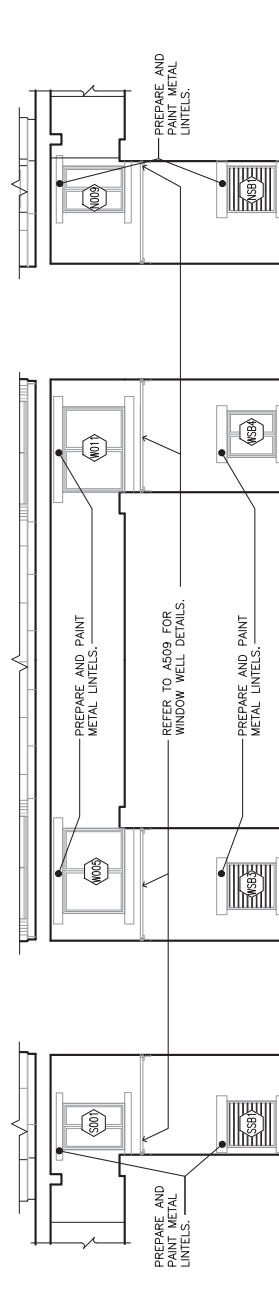


NOTE: METAL RAILINGS AT STAIRS NOT SHOWN FOR CLARITY. RESTORE AND RE-SET METAL RAILINGS. PREPARE AND PAINT.



2 DETAIL WEST ELEVATION NORTH STAIR SCALE (A)

3 DETAIL WEST ELEVATION SOUTH STAIR SCALE (A)



4 LOGGIA BASEMENT SOUTH ELEVATION SCALE (A)

5 LOGGIA BASEMENT EAST ELEVATION SCALE (A)

6 LOGGIA BASEMENT NORTH ELEVATION SCALE (A)



7 LOGGIA BASEMENT WEST ELEVATION SCALE (A)

PROVIDE 100% REPOINTING OF ALL BRICK PIERS AT WEST PORTICO. APPROXIMATELY 462 SQUARE FEET. NOT ALL SURFACES SHOWN.



DESIGNED:	JWS
TECH. REVIEW:	06/05
DATE:	07/18/14

SUB SHEET NO. A405

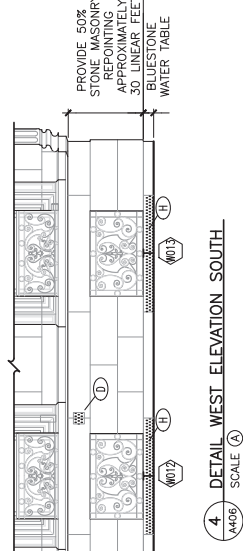
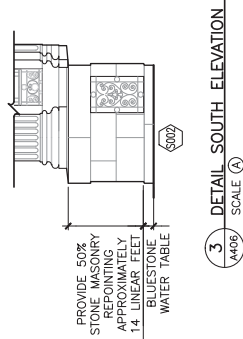
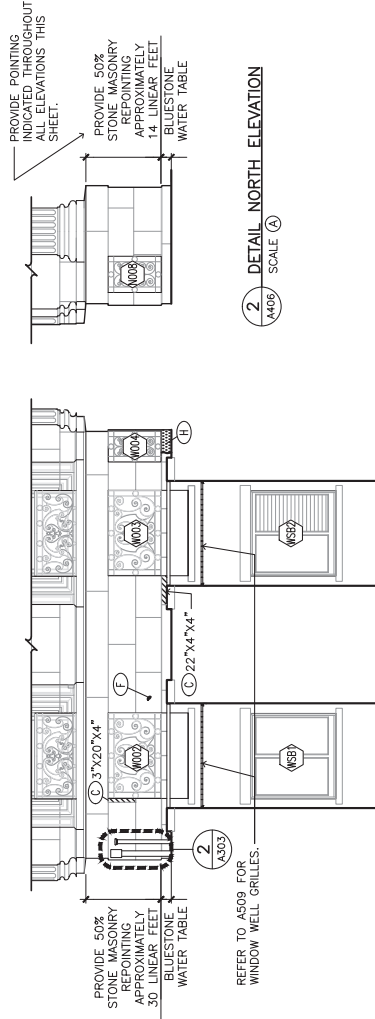
DRAWING NO. 382	TITLE OF SHEET REHABILITATE VANDERBILT MANSION EXTERIOR
PMS/PKG NO. 152373	VANDERBILT MANSION 104796
SHEET 28 of 58	DETAIL WEST PORTICO ELEVATIONS

GENERAL MASONRY RESTORATION NOTES:

1. ALL MASONRY RESTORATION WORK IS BASE BID UNLESS NOTED OTHERWISE.
2. NOT USED
3. RAKE OUT AND REPOINT EXISTING MASONRY JOINTS. SEE DRAWINGS FOR % OF JOINTS TO BE REPOINTED. EXISTING SOUND JOINTS TO REMAIN
4. PROVIDE METAL T-CAPS AT ALL SKYWARD MORTAR JOINTS WITH EXISTING T-CAPS. EXISTING METAL JOINTS TO REMAIN, TYPICAL. REFER TO DETAIL 4/5008.
5. REMOVE ALL EXISTING SEALANT FROM MASONRY JOINTS AND PROVIDE SEALANT FOR MASONRY JOINTS.
6. REFER TO DETAILS ON SHEET A508 FOR TYPICAL MASONRY REPOINTING DETAILS.
7. STONE CRACKS LESS THAN $\frac{1}{32}"$ TO REMAIN - NO WORK.
8. PROVIDE TOOLING TO OF STONE SURFACE TO REMOVE SPALLED LAYERS OF BLUESTONE COPING AND WATERABLE - TYPICAL.
9. PROVIDE PAINT FINISH FOR ALL BRICK SURFACES IN NORTH PORTICO BASEMENT.
10. PROVIDE 2LF MASONRY REPOINTING AT EACH BASEMENT WINDOW OPENING.
11. PROVIDE 100% REPOINTING OF EXISTING BLUESTONE WATER TABLE ENTIRE PERIMETER OF EXISTING BLUESTONE WATER TABLE AND BOTTOM BED JOINTS. APPROXIMATELY 1050 LINEAR FEET.

MASONRY RESTORATION KEY NOTES:

-  **A** EXISTING STONE TO BE SALVAGED AND RE-SET.
-  **B** REPLACE STONE. MATCH EXISTING PROFILE.
-  **C** PROVIDE DUTCHMAN REPAIR IN SIZE INDICATED.
-  **D** TOOL BACK STONE SURFACE TO PRODUCE SMOOTH AND LEVEL TOP SURFACE.
-  **E** PROVIDE EPOXY REPAIR TO SURFACE CRACK.
-  **F** PROVIDE MORTAR REPAIR TO SURFACE CRACK. RAKE OUT PREVIOUSLY REPAIRED CRACKS TO PROVIDE ADEQUATE BONDING SURFACE AND REPOINT WITH COLOR MATCHED MORTAR TO MATCH STONE COLOR.
-  **G** PROVIDE PIN AND EPOXY REPAIR TO CRACKED STONE.
-  **H** TOP STONE SURFACE TO REMOVE SPALLED LAYERS OF STONE. REPAIR AND PROVIDE TYPICAL REPAIR TO ALL VERTICAL JOINTS AND CRACKS IN WINDOW SILLS.



DESIGNED:	JCWA		A406	SUB SHEET NO. _____
TECH. REVIEW:	_____			
DATE:	07/18/14			

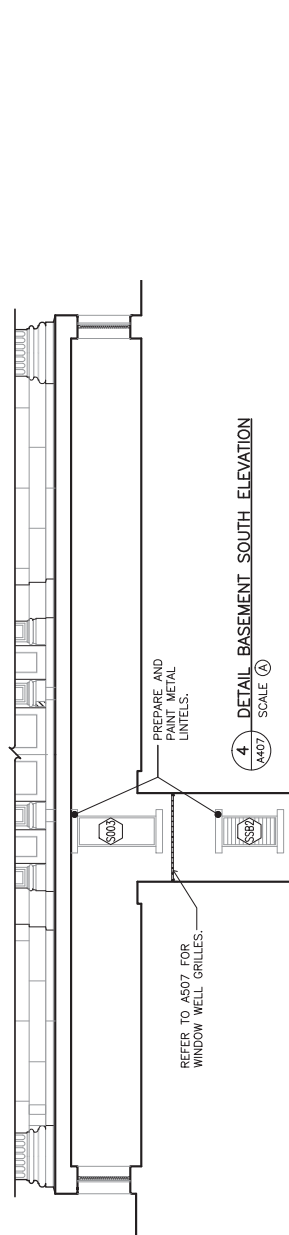
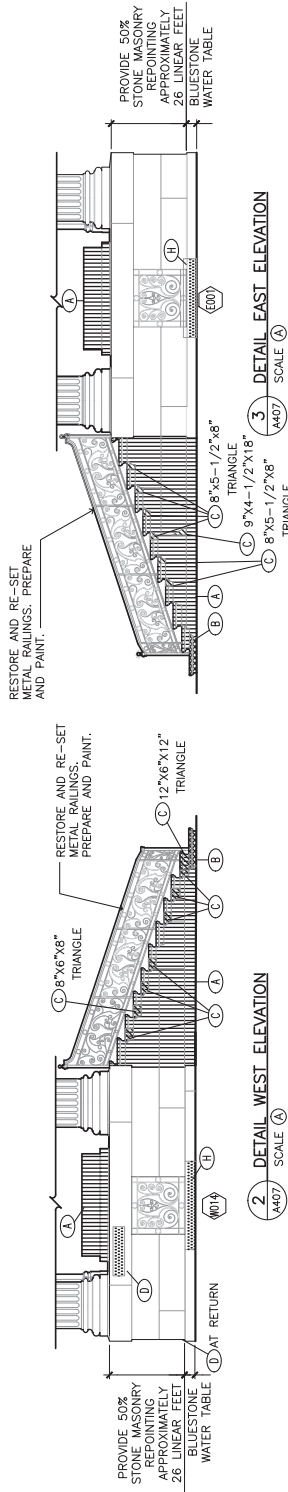
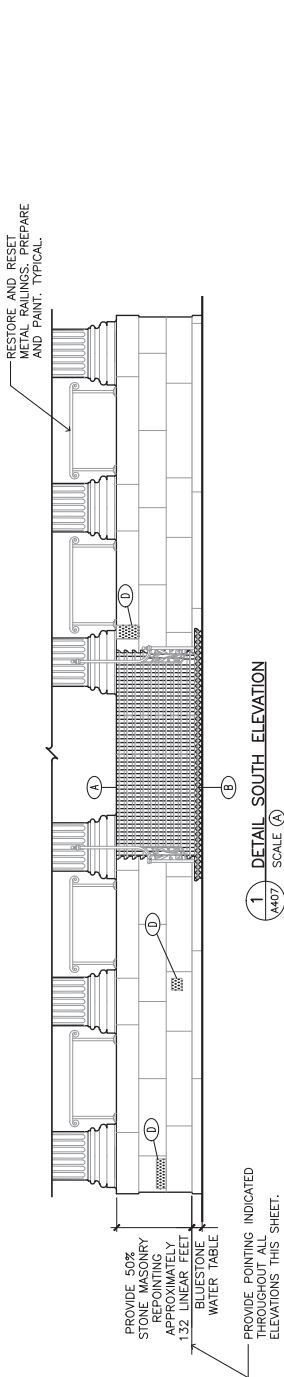
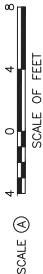
REHABILITATE VANDERBILT MANSION EXTERIOR VANDERBILT MANSION DETAIL WEST ELEVATIONS	TITLE OF SHEET	
	DRAWING NO.	
	382	104796
	PMS/PKG NO.	SHEET
	152373	29 of 58

GENERAL MASONRY RESTORATION NOTES:

1. ALL MASONRY RESTORATION WORK IS BASE BID UNLESS NOTED OTHERWISE.
2. NOT USED
3. RAKE OUT AND REPOINT EXISTING MASONRY JOINTS. SEE DRAWINGS FOR % OF JOINTS TO BE REPOINTED. EXISTING SOUND JOINTS TO REMAIN.
4. PROVIDE METAL T-CAPS AT ALL SKYWARD MORTAR JOINTS WITHOUT EXISTING T-CAPS. EXISTING METAL T-CAPS TO REMAIN, TYPICAL. REFER TO DETAIL 4/A508.
5. REMOVE ALL EXISTING SEALANT FROM MASONRY JOINTS AND PROVIDE MORTAR REPOINTING.
6. REFER TO DETAILS ON SHEET A508 FOR TYPICAL MASONRY REPOINTING DETAILS.
7. STONE CRACKS LESS THAN 1/8" TO REMAIN - NO WORK.
8. PROVIDE TOOLING TO OF STONE SURFACE TO REMOVE SPALLED LAYERS OF BLUESTONE COPING AND WATERABLE - TYPICAL.
9. PROVIDE PAINT FINISH FOR ALL BRICK SURFACES IN NORTH PORTICO BASEMENT.
10. PROVIDE 2E MASONRY REPOINTING AT EACH BASEMENT WINDOW OPENING.
11. PROVIDE 100% REPOINTING OF EXISTING BLUESTONE WATER TABLE ENTIRE PERIMETER OF BUILDING. INCLUDE ALL VERTICAL, TOP, AND BOTTOM BED JOINTS. APPROXIMATELY 1050 LINEAR FEET.

MASONRY RESTORATION KEY NOTES:

- (A) EXISTING STONE TO BE SALVAGED AND RE-SET.
- (B) REPLACE STONE. MATCH EXISTING PROFILE.
- (C) PROVIDE DUTCHMAN REPAIR IN SIZE INDICATED.
- (D) TOOL BACK STONE SURFACE TO PRODUCE SMOOTH AND LEVEL TOP SURFACE.
- (E) PROVIDE EPOXY REPAIR TO SURFACE CRACK.
- (F) PROVIDE MORTAR REPAIR TO SURFACE CRACK. RAKE OUT PREVIOUSLY REPOINTED JOINTS TO PROPER DEPTH. APPLY ADEQUATE BONDING SURFACE AND REPOINT WITH COLOR MATCHED MORTAR TO MATCH STONE COLOR.
- (G) PROVIDE PIN AND EPOXY REPAIR TO CRACKED STONE.
- (H) TOOL TOP STONE SURFACE TO REMOVE SPALLED LAYERS OF BLUESTONE. WATERABLE. PROVIDE T-CAPS AT OPEN VERTICAL JOINTS AND CRACKS IN WINDOW SILLS.



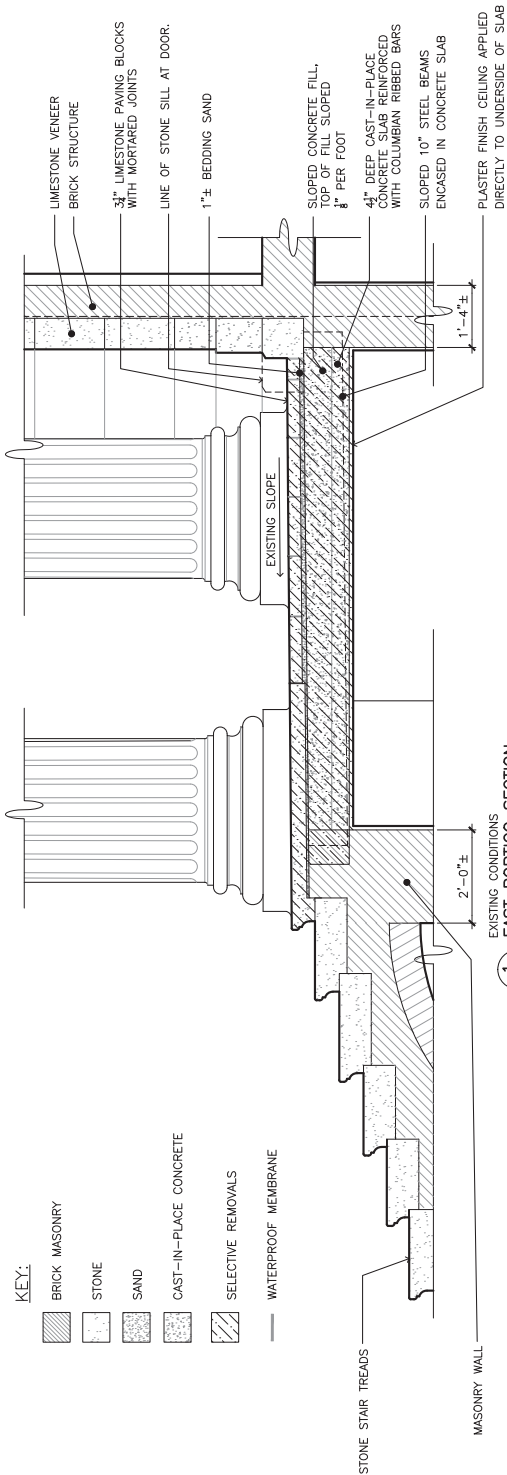
4 DETAIL BASEMENT SOUTH ELEVATION A407 SCALE (A)



DESIGNED:	JOWA	SUB SHEET NO.	A407	TITLE OF SHEET	REHABILITATE VANDERBILT MANSION EXTERIOR	DRAWING NO.	382
TECH. REVIEW:					VANDERBILT MANSION	PMS/PKG NO.	104796
DATE:	07/18/14				DETAIL SOUTH PORTICO ELEVATIONS	PMS/PKG NO.	152373
					VANDERBILT MANSION NATIONAL HISTORIC SITE	SHEET	30 of 58
					HYDE PARK, NEW YORK		

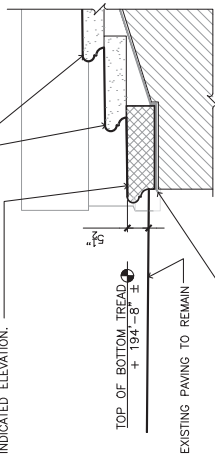
KEY:

- BRICK MASONRY
- STONE
- SAND
- CAST-IN-PLACE CONCRETE
- SELECTIVE REMOVALS
- WATERPROOF MEMBRANE

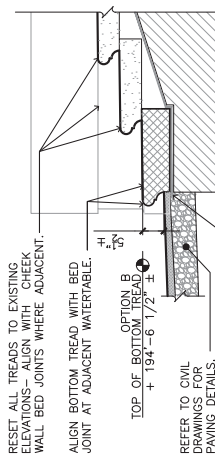


1
EXISTING CONDITIONS
EAST PORTICO SECTION
SCALE 1/4" = 1'-0"

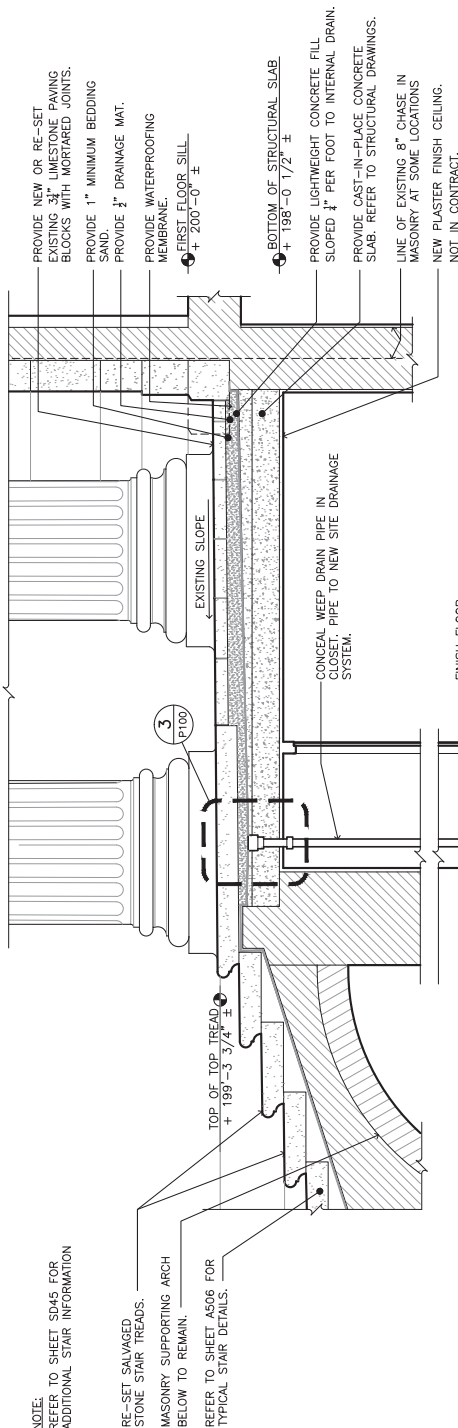
NOTE:
REFER TO SHEET SD45 FOR
ADDITIONAL STAIR INFORMATION



3
PROPOSED
EAST STAIR SECTION
SCALE 1/4" = 1'-0"



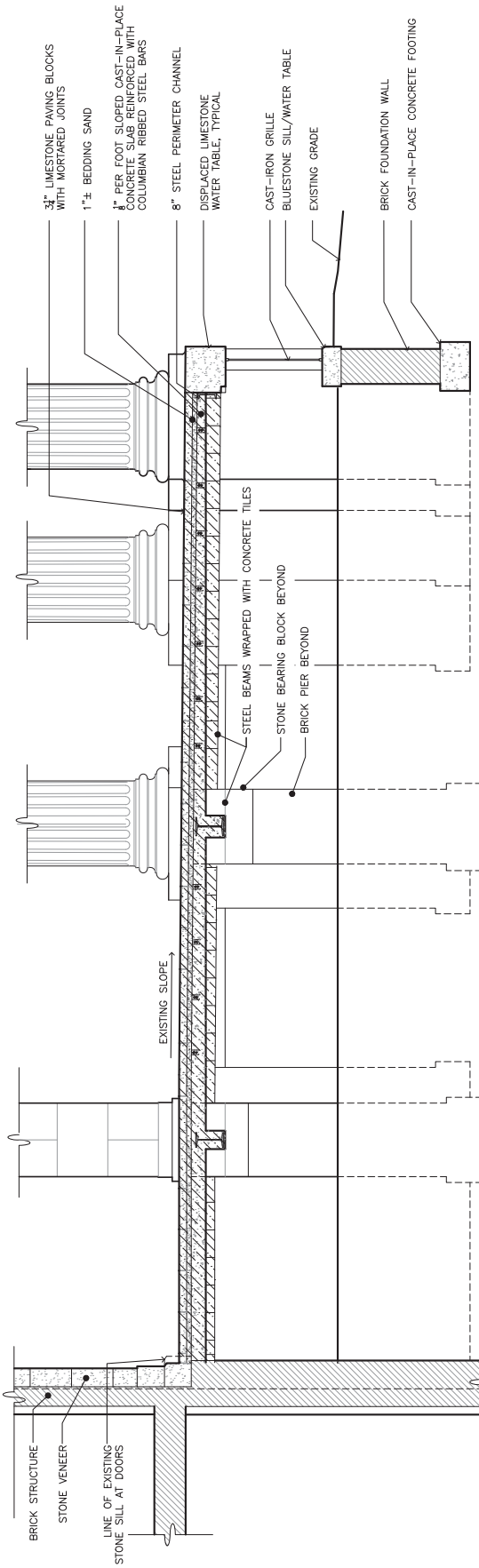
4
OPTION B
EAST STAIR SECTION
SCALE 1/4" = 1'-0"



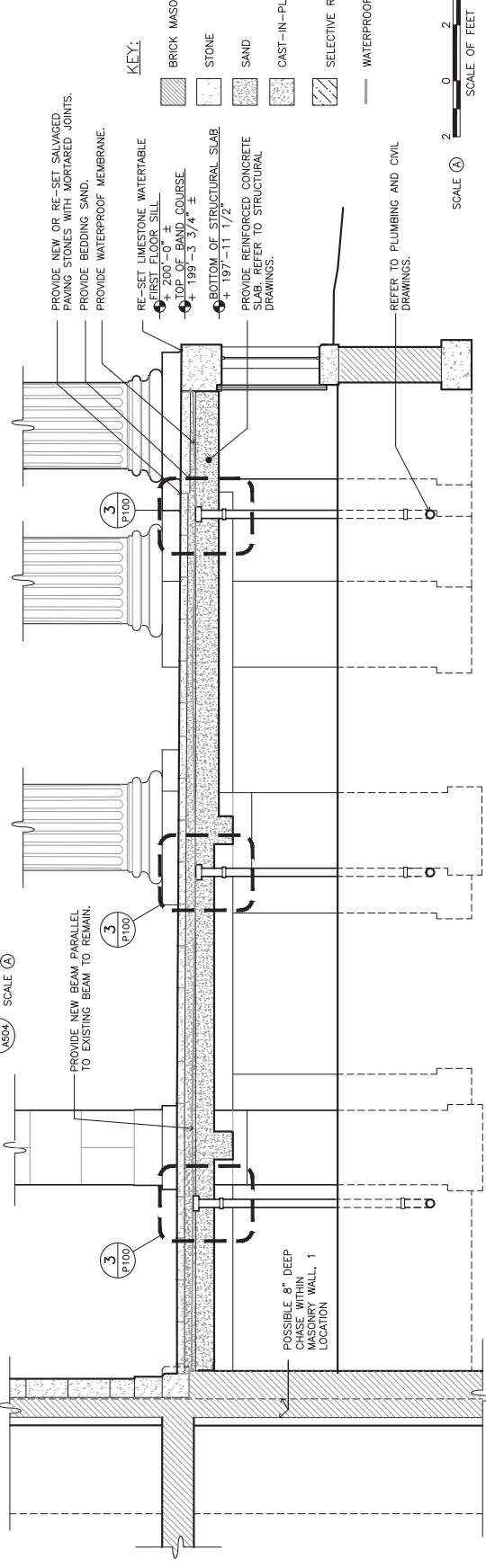
2
PROPOSED
EAST PORTICO SECTION
SCALE 1/4" = 1'-0"



DESIGNED:	JOWA	SUB SHEET NO.	A502	TITLE OF SHEET	REHABILITATE VANDERBILT MANSION EXTERIOR
TECH. REVIEW:					VANDERBILT MANSION
DATE:	07/18/14				EAST PORTICO SECTIONS
					VANDERBILT MANSION NATIONAL HISTORIC SITE
					HYDE PARK, NEW YORK
					DRAWING NO. 382
					104796
					PMS/PKG NO. 152373
					SHEET 32 OF 58



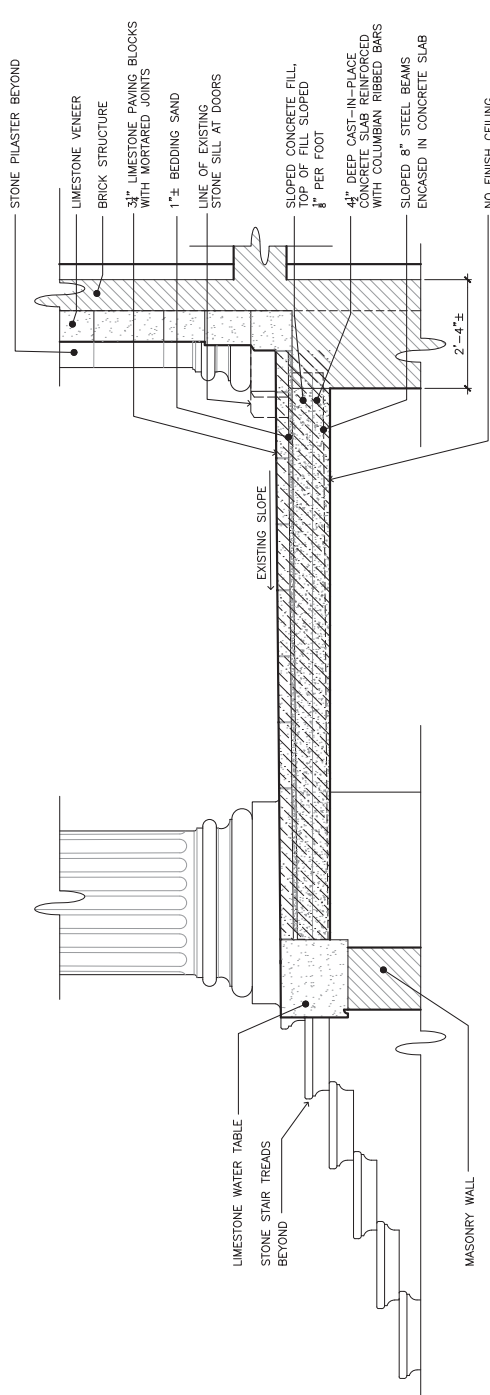
1
EXISTING CONDITIONS
WEST PORTICO SECTION
SCALE (A)



2
PROPOSED
WEST PORTICO SECTION
SCALE (A)

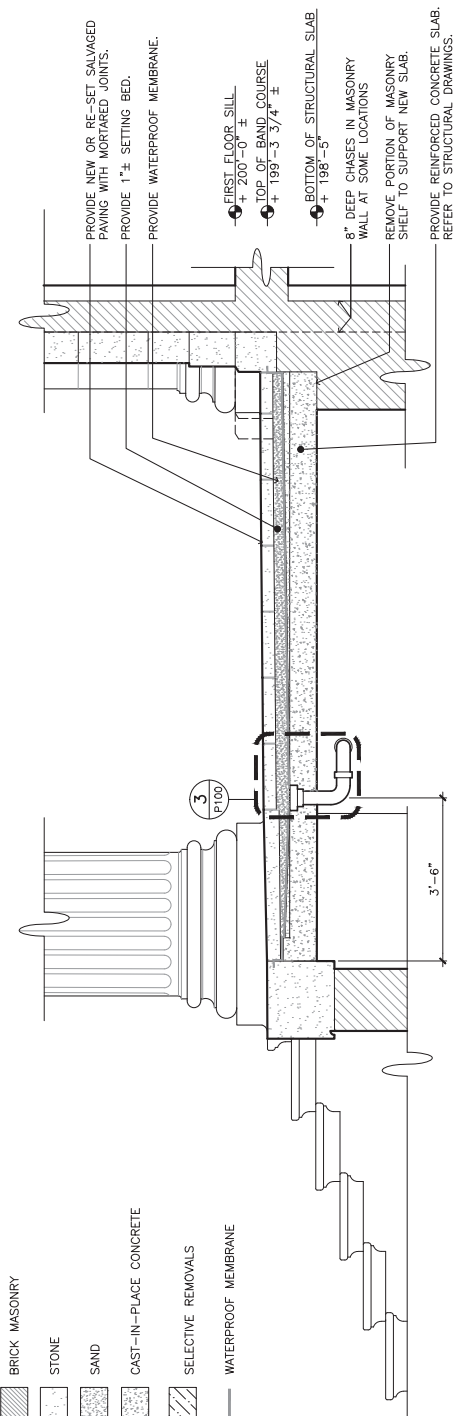


DESIGNED:	JOWA	SUB SHEET NO.	A504	TITLE OF SHEET	REHABILITATE VANDERBILT MANSION EXTERIOR	DRAWING NO.	382
TECH. REVIEW:					VANDERBILT MANSION	PMS/PAC NO.	104796
DATE:	07/18/14				WEST PORTICO SECTIONS	SHEET	152373
					VANDERBILT MANSION NATIONAL HISTORIC SITE		34 OF 58
					HYDE PARK, NEW YORK		



1 EXISTING CONDITIONS
1 SOUTH PORTICO SECTION
SCALE (A)

- KEY:
- BRICK MASONRY
 - STONE
 - SAND
 - CAST-IN-PLACE CONCRETE
 - SELECTIVE REMOVALS
 - WATERPROOF MEMBRANE



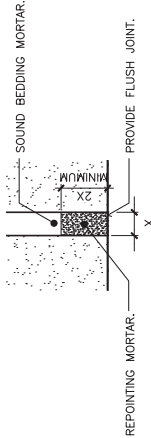
2 PROPOSED
2 SOUTH PORTICO SECTION
SCALE (A)



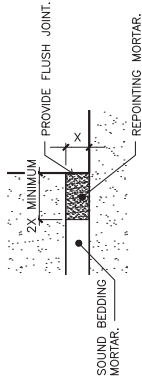
DESIGNED:	JOWA	SUB SHEET NO.	A505	TITLE OF SHEET	REHABILITATE VANDERBILT MANSION EXTERIOR	DRAWING NO.	382
TECH. REVIEW:	—				VANDERBILT MANSION	PMS/PWG NO.	104796
DATE:	07/18/14				SOUTH PORTICO SECTIONS	SHEET	35 OF 58

1 NOT USED
A508

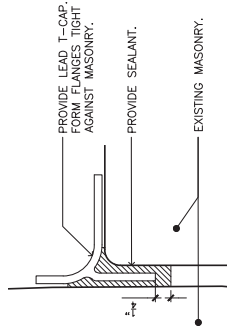
2 NOT USED
A508



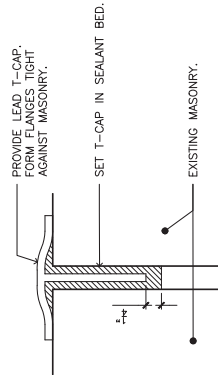
5 TYPICAL STONE MASONRY JOINT
A508 SCALE C



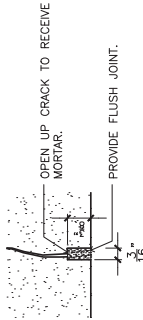
6 TYPICAL STONE CORNER JOINT
A508 SCALE C



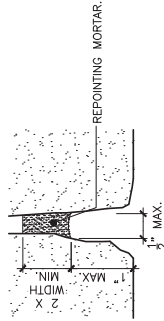
3 TYPICAL T-CAP AT INSIDE CORNER
A508 SCALE C



4 TYPICAL T-CAP AT HORIZONTAL JOINT
A508 SCALE C

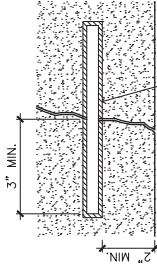


7 TYPICAL STONE CRACK REPAIR
A508 SCALE C



8 TYPICAL WEATHERED STONE JOINT REPAIR
A508 SCALE C

NOTE:
WEATHERED JOINTS IN EXCESS OF 1/2\"/>



9 TYPICAL STONE PIN REPAIR
A508 SCALE B



10 NORTH PORTICO BRICK MORTAR JOINT
A508 SCALE C

SCALE C 1 0 1 2
SCALE OF INCHES

SCALE B 2 0 2 4
SCALE OF INCHES

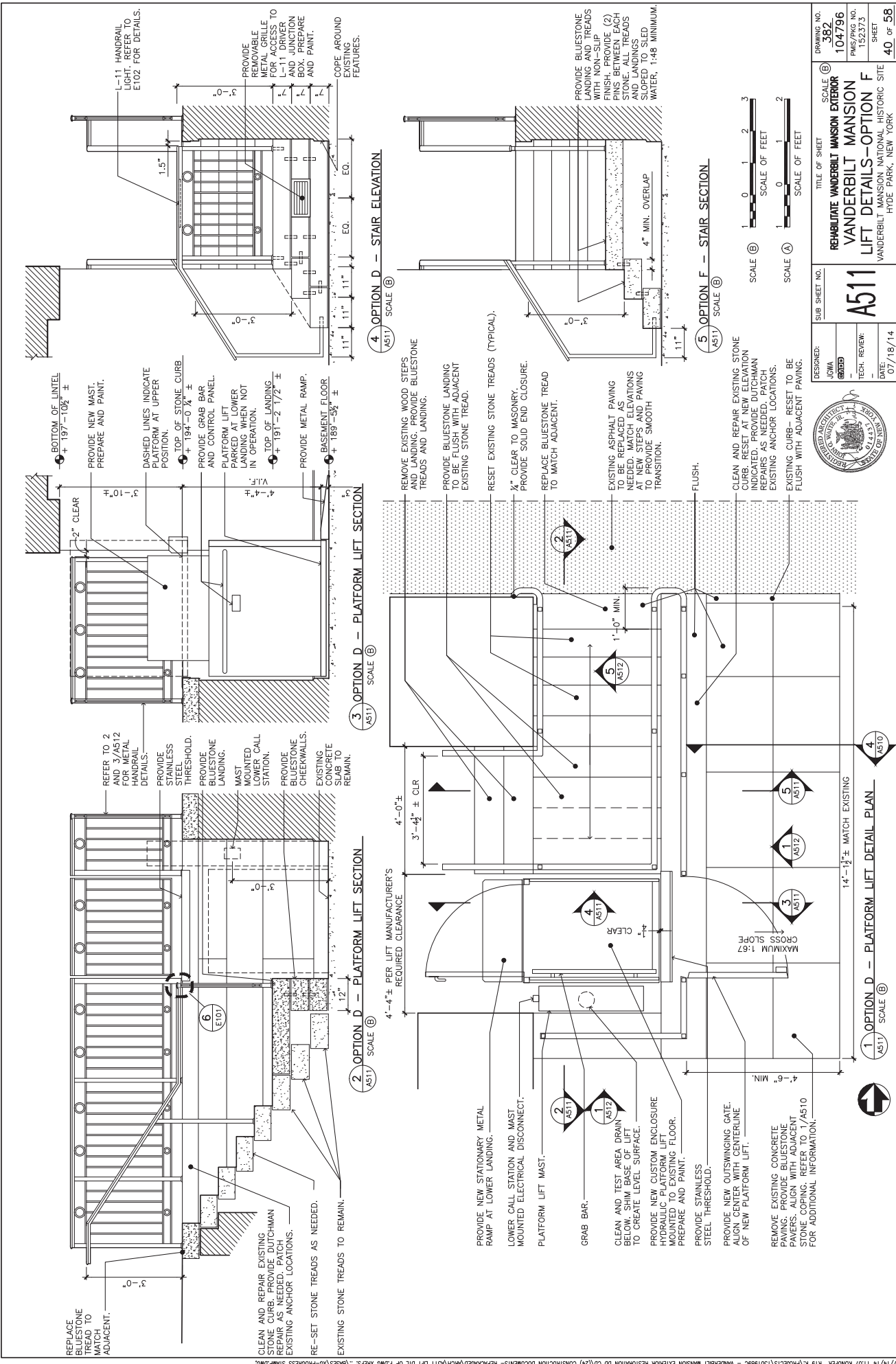
SCALE A 1 0 1 2
SCALE OF FEET



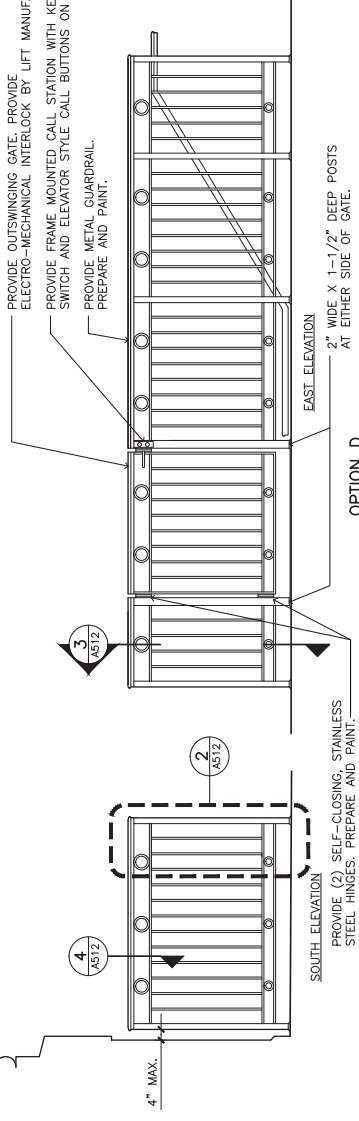
DESIGNED: JOWA
CHECKED: JOWA
TECH. REVIEW: JOWA
DATE: 07/18/14

TITLE OF SHEET
REHABILITATE VANDERBILT MANSION EXTERIOR
VANDERBILT MANSION
FLASHING DETAILS
VANDERBILT MANSION NATIONAL HISTORIC SITE
HYDE PARK, NEW YORK

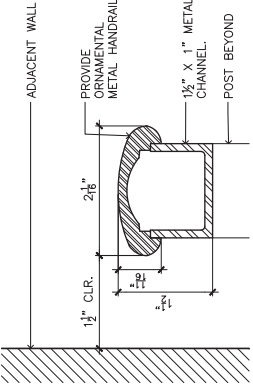
DRAWING NO. 382
104796
PWS/PKG NO. 152373
SHEET 37 OF 58



PROVIDE OUTSWINGING GATE. PROVIDE
ELECTRO-MECHANICAL INTERLOCK BY LIFT MANUFACTURER.
PROVIDE FRAME MOUNTED CALL STATION WITH KEY
SWITCH AND ELEVATOR STYLE CALL BUTTONS ON POST.
PROVIDE METAL GUARDRAIL.
PREPARE AND PAINT.

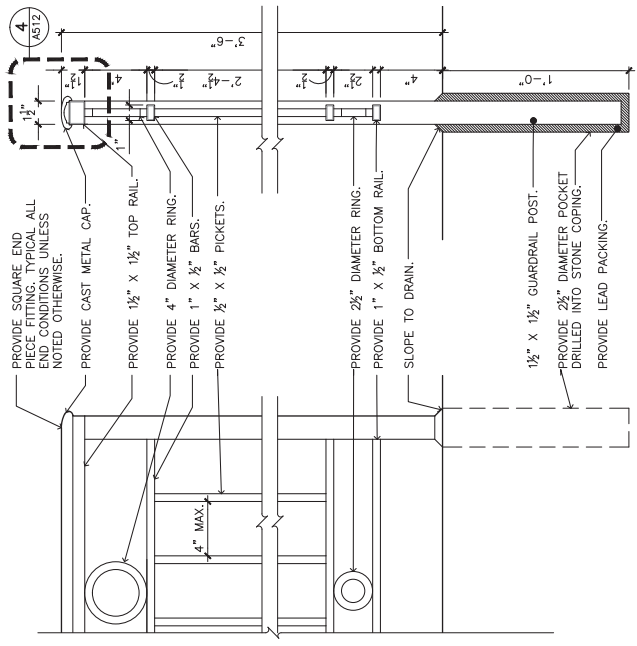


NOTE: ENTIRE SHEET IS OPTION D.



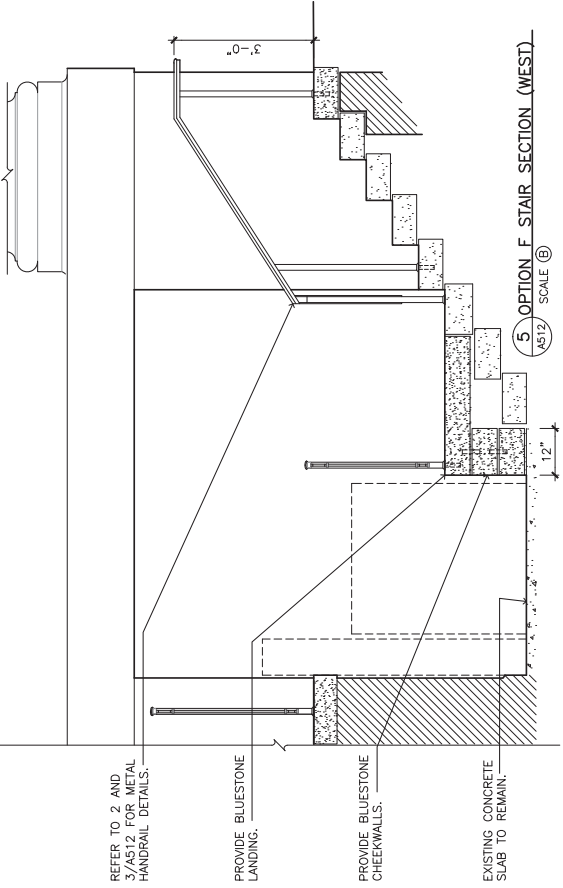
OPTION D
4 HANDRAIL SECTION
A512

OPTION D
1 RAILING ELEVATION AT NORTH-EAST CORNER
A512 SCALE (B)

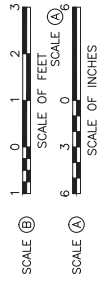


OPTION D
2 RAILING DETAIL ELEVATION
A512 SCALE (A)

OPTION D
3 RAILING SECTION DETAIL
A512 SCALE (A)



OPTION F STAIR SECTION (WEST)
A512 SCALE (B)



DESIGNED:	JOWA	SUB SHEET NO.	A512	TITLE OF SHEET	REHABILITATE VANDERBILT MANSION EXTERIOR	DRAWING NO.	382
TECH. REVIEW:					VANDERBILT MANSION	PWS/PKG NO.	104796
DATE:	07/18/14				LIFT DETAILS-OPTION F	PWS/PKG NO.	152373
					VANDERBILT MANSION NATIONAL HISTORIC SITE	SHEET	41 OF 58
					HYDE PARK, NEW YORK		

WINDOW / STORM WINDOW RESTORATION SCHEDULE

WINDOW NUMBER	WINDOW TYPE	APPROXIMATE FRAME (SASH) OPENING DIMENSIONS W x H	BASE BID										OPTION C					REMARKS	WINDOW NUMBER																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
			RESTORE SASH	REPLACE SASH	REPLACE GLASS PANE	EXTERIOR FINISH	PROVIDE NEW LOCK / LATCH	HARDWARE	RESTORE EXISTING FRAME	PROVIDE DUTCHMAN REPAIR	REPLACE SILL	BRICK MOLDING KEY NOTE 1.	EXTERIOR FINISH	REMOVE INTERIOR KEY NOTE 7	RESTORE EXISTING STORM KEY NOTE 2.	PROVIDE NEW STORM	NOTES			SCREEN	PROVIDE NEW SCREEN	REMOVE LAMINATE KEY NOTE 5.	PROVIDE LAMINATE KEY NOTE 3.	FRAME	PROVIDE EXISTING FRAME	REPAIR DUTCHMAN	REPLACE SILL	BRICK MOLDING KEY NOTE 1.	EXTERIOR FINISH	REMOVE INTERIOR KEY NOTE 7	RESTORE EXISTING STORM KEY NOTE 2.	PROVIDE NEW STORM																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
FIRST FLOOR																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
N101	D.H.	1'-11" x 9'-5" ±																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										

GENERAL NOTES—WOOD WINDOW RESTORATION:

- WINDOW RESTORATION WORK SHOWN IS BASE BID WORK UNLESS NOTED OTHERWISE.
- ALL DIMENSIONS GIVEN ARE APPROXIMATE. CONTRACTOR TO VERIFY ALL DIMENSIONS IN THE FIELD.
- REMOVE ALL EXISTING WOOD SASH INDICATED TO BE RESTORED. PROVIDE DUTCHMAN REPAIRS TO EXISTING GLAZING PUTTY, AND REMOVE EXISTING WINDOW FILM. REMOVE LOOSE PAINT FROM ALL EXTERIOR SURFACES OF ALL SASH, FRAMES, AND STOPS.
- REMOVE ALL EXTERNEOUS UNMARKED HARDWARE FROM WINDOWS TO BE RESTORED SUCH AS WINDOW SCREENS/FRAMES, BRACKETS, SCREWS, NAILS, WIRES/CABLES, ETC., FROM ALL EXTERIOR AND INTERIOR WOOD WINDOW ELEMENTS. HISTORIC WINDOW MATERIAL, INCLUDING ORIGINAL HARDWARE

WINDOW RESTORATION KEY NOTES:

- PROVIDE OPEN MASONRY JOINTS. APPLY SEALANT TO ENTIRE PERIMETER OF FRAME TO MASONRY. REINSTALL BRICK MOLDING.
- REPLACE BROKEN AND CRACKED GLASS PANE IN QUANTITY INDICATED ON THE SCHEDULE. PROVIDE ALL NEW GLAZING PUTTY.
- PREPARE AND PAINT ALL SURFACES OF ALL WINDOWS, STORMS, FRAMES, AND OTHER COMPONENTS, EXCLUDING INTERIOR FINISHES TO REMAIN.
- REINSTALL ALL SASH INDICATED TO BE RESTORED AND ASSOCIATED HARDWARE TO FULLY OPERATING CONDITION.
- REMOVE AND REINSTALL EXISTING HISTORIC METAL WEATHERSTRIPPING. SASH INDICATED TO BE RESTORED. REMOVE MISCELLANEOUS FOAM/COTTON WEATHERSTRIPPING.

LEGEND:

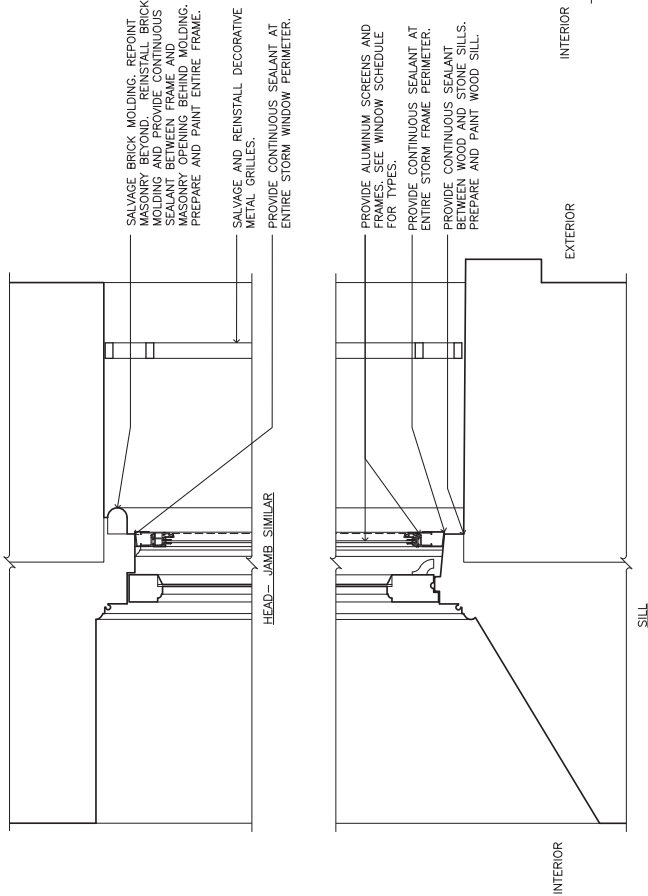
CSMT. = SINGLE CASEMENT
CO = COMBINATION DOUBLE— HUNG
D.H. = WITH SCREEN— OPERABLE
F = DOUBLE— HUNG OPERABLE
FR = FIXED
FRCS. = FRENCH CASEMENT
LOU = LOUVER
O = OTHER
S.H. = SINGLE— HUNG OPERABLE
SL = SLIDER— OPERABLE

ELEVATION FLOOR
WINDOW: N102 — WINDOW OPENING

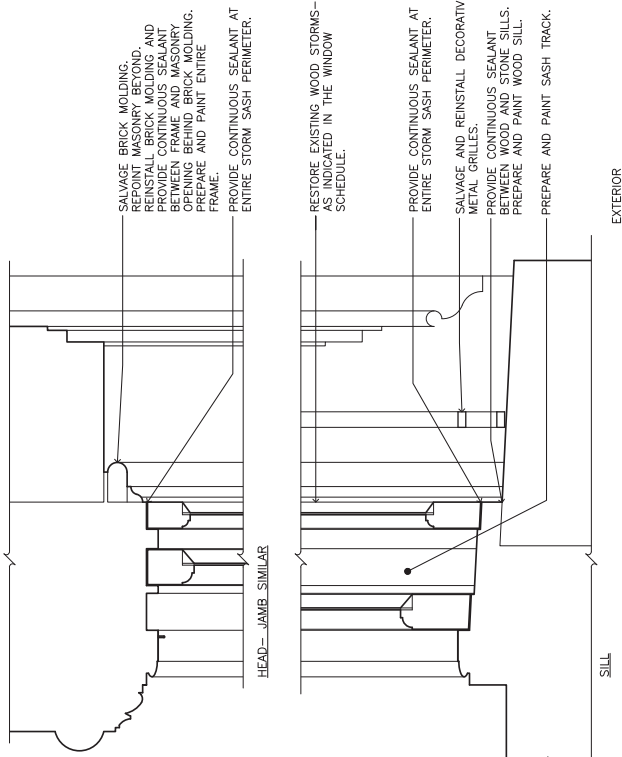
● = PERFORM WORK INDICATED.
X = NONE EXISTING.
P = NO WORK.
P = PROVIDE

DESIGNED: JOWA
SUB SHEET NO. 382
TITLE OF SHEET REHABILITATE VANDERBILT MANSION EXTERIOR
DRAWING NO. 104796
PMS/PWG NO. 152373
TECH. REVIEW: A601
SHEET 43 of 58
DATE: 07/18/14
VANDERBILT MANSION NATIONAL HISTORIC SITE
HYDE PARK, NEW YORK

NOTE: TYPICAL CONDITIONS SHOWN. SCOPE OF WORK AT ATYPICAL WINDOW CONDITIONS IS SUBSTANTIALLY SIMILAR.



1 TYPICAL BASEMENT CASEMENT WINDOW WITH SLIDING ALUMINUM STORM
A603 SCALE (A)



OPTION C WORK:
2 TYPICAL FIRST AND SECOND FLOOR DOUBLE-HUNG WINDOW WITH EXISTING WOOD STORM
A603 SCALE (A)

SCALE (A)
6 3 0 6
SCALE OF INCHES



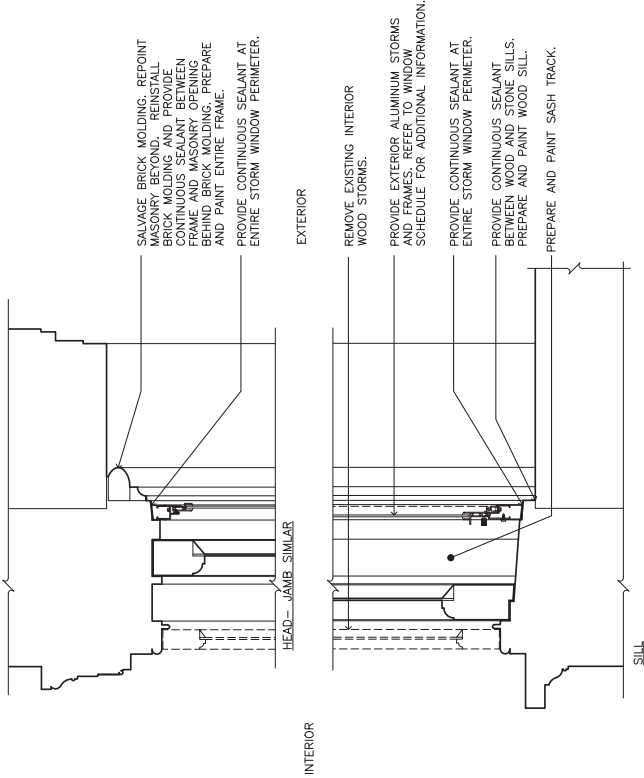
DESIGNED:
JOWA
GABED
TECH. REVIEW:
DATE: 07/18/14

SUB SHEET NO.
A603

TITLE OF SHEET
REHABILITATE VANDERBILT MANSION EXTERIOR
VANDERBILT MANSION
WINDOW DETAILS
VANDERBILT MANSION NATIONAL HISTORIC SITE
HYDE PARK, NEW YORK

DRAWING NO.
382
104796
PMS/PKG NO.
152373
SHEET
45 OF 58

NOTE: TYPICAL CONDITIONS SHOWN. SCOPE OF WORK AT ATYPICAL WINDOW CONDITIONS IS SUBSTANTIALLY SIMILAR.



OPTION C WORK:
2 TYPICAL THIRD FLOOR DOUBLE—HUNG WINDOW WITH ALUMINUM STORM.
A604 SCALE (A)

SCALE (A) 6 3 0 6
SCALE OF INCHES



DESIGNED: JOWA GABD	SUB SHEET NO. A604	TITLE OF SHEET REHABILITATE VANDERBILT MANSION EXTERIOR VANDERBILT MANSION WINDOW DETAILS	DRAWING NO. 382 104796
TECH. REVIEW: —	DATE: 07/18/14	VANDERBILT MANSION NATIONAL HISTORIC SITE HYDE PARK, NEW YORK	PMS/PKG NO. 152373 SHEET 45 OF 58

OPTION	
--------	--

[illegible]

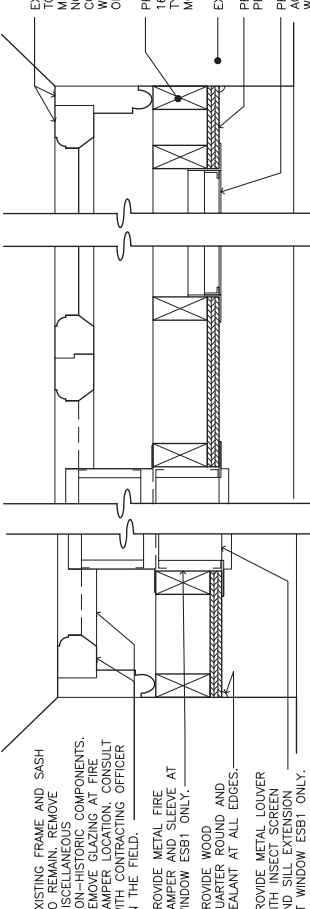
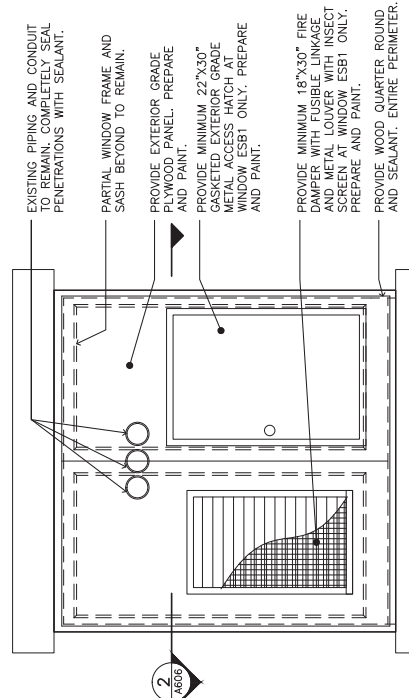
LEGEND:

- DOOR: D02 — DOOR OPENING

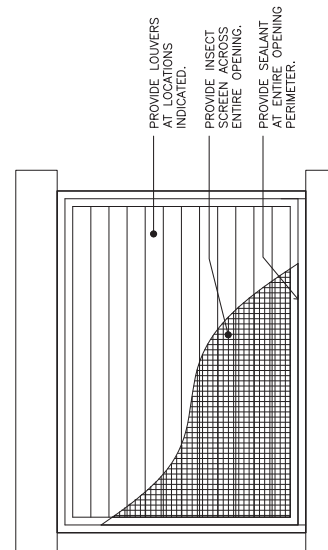
1. REPLACE OR PROVIDE DUTCHMAN REPAIR TO DAMAGED EXISTING WOOD BRICK MOLDINGS IN QUANTITY INDICATED ON THE SCHEDULE. REPLICATE EXISTING PROFILES.
2. OPTION C: RESTORE EXISTING STORM PANELS. REMOVE ALL SASH FROM FRAMES. REPLACE ALL GLAZING COMPOUND. REPLACE BROKEN OR CRACKED GLASS. PROVIDE DUTCHMAN REPAIRS AS NEEDED TO STORM PANELS. PREPARE AND PAINT ALL WOOD SURFACES.



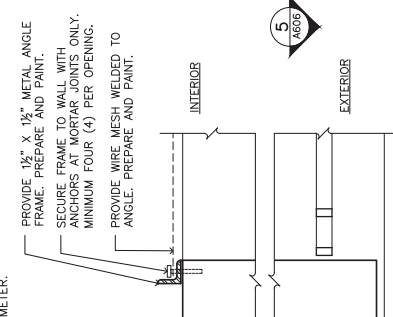
DESIGNED: JOWA 	DATE: 07/18/14	A605	SSUR SHEET NO.	TITLE OF SHEET REHABILITATE VANDERBILT MANSION EXTERIOR VANDERBILT MANSION DOOR SCHEDULE VANDERBILT MANSION NATIONAL HISTORIC SITE HYDE PARK, NEW YORK	DRAWING NO. 382 104796 PLANTING NO. 152475 S SHEET



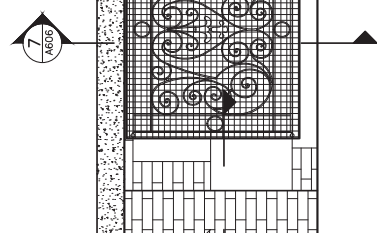
1 SUB-BASEMENT WINDOW ESB1 DETAIL (ESB2 SIMILAR) SCALE (B) A606



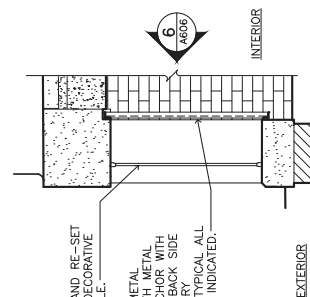
3 TYPICAL MECHANICAL LOUVER SCALE (B) A606



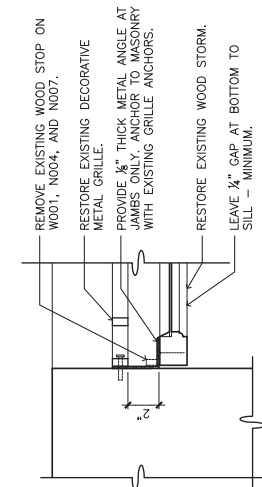
5 GRILLE DETAIL SCALE (A) A606



6 TYPICAL W. PORTICO GRILLE ELEVATION SCALE (C) A606



7 TYPICAL GRILLE DETAIL SCALE (C) A606



4 EXISTING WOOD STORM ANCHOR AT NORTH PORTICO SCALE (A) A606



DESIGNED: JOWA	SUB SHEET NO. A606	TITLE OF SHEET	DRAWING NO. 382
TECH. REVIEW: -		REHABILITATE VANDERBILT MANSION EXTERIOR	104796
DATE: 07/18/14		MISC. WIN. & DOOR DETL.	PMS/PWG NO. 152373
		VANDERBILT MANSION NATIONAL HISTORIC SITE	SHEET 48 OF 58
		HYDE PARK, NEW YORK	



GENERAL NOTES

- 1. ALL STRUCTURAL WORK SHALL BE COORDINATED WITH ARCHITECTURAL AND MECHANICAL DRAWINGS AND SHALL CONFORM TO THE PROJECT SPECIFICATIONS, INCLUDING THE 2012 INTERNATIONAL BUILDING CODE (IBC) AND THE 2010 BUILDING CODE OF NEW YORK STATE.
- 2. CONTRACTOR SHALL PROVIDE TEMPORARY SHORING, BRACING, SHEETING AND MAKE SAFE ALL FLOORS, ROOFS, WALLS AND ADJACENT PROPERTY AS PROJECT CONDITIONS REQUIRE. SHORING AND SHEETING SHALL BE DESIGNED BY A REGISTERED PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW YORK HIRED BY THE CONTRACTOR WHO SHALL SUBMIT SHOP DRAWINGS AND CALCULATIONS FOR THE CONTRACTING OFFICER'S REVIEW.
- 3. DIMENSIONS AND ELEVATIONS OF EXISTING CONSTRUCTION GIVEN IN STRUCTURAL DRAWINGS ARE BASED ON INFORMATION CONTAINED IN VARIOUS ORIGINAL DESIGN AND CONSTRUCTION DOCUMENTS PROVIDED BY THE OWNER, AND LIMITED FIELD OBSERVATIONS AND MEASUREMENTS. THE CONTRACTOR SHALL VERIFY ALL INFORMATION PERTAINING TO EXISTING CONDITIONS BY ACTUAL MEASUREMENT AND OBSERVATION AT THE SITE. ALL DISCREPANCIES BETWEEN ACTUAL CONDITIONS AND THOSE SHOWN IN THE CONTRACT DOCUMENTS SHALL BE REPORTED TO THE CONTRACTING OFFICER FOR EVALUATION BEFORE THE AFFECTED CONSTRUCTION IS PUT IN PLACE.
- 4. THE CONTRACT DRAWINGS AND SPECIFICATIONS ARE COMPLEMENTARY. THESE NOTES HIGHLIGHT RATHER THAN REPLACE THE SPECIFICATIONS CONTAINED IN THE PROJECT MANUAL.

CONCRETE

- 1. ALL CONCRETE WORK SHALL CONFORM TO THE GOVERNING CODES AND STANDARDS LISTED IN SPECIFICATION SECTION 033000.
- 2. ALL CONCRETE SHALL BE NORMAL WEIGHT CONCRETE WITH A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI AT 28 DAYS, UNLESS OTHERWISE NOTED.
- 3. ALL GROUT SHALL BE NONSHRINK WITH A MINIMUM COMPRESSIVE STRENGTH OF 5,000 PSI.
- 4. ALL REINFORCING STEEL (DEFORMED BARS AND WELDED WIRE FABRIC) SHALL BE STAINLESS STEEL. REFER TO SPECIFICATION SECTION 033000, PART 2.2.
- 5. PROVIDE CLEARANCE FROM FACE OF CONCRETE TO REINFORCEMENT AS FOLLOWS:
SLABS: 2"
BEAMS: 2"

STRUCTURAL STEEL

- 1. ALL STRUCTURAL STEEL WORK SHALL CONFORM TO THE GOVERNING CODES AND STANDARDS LISTED IN SPECIFICATION SECTION 051200.
- 2. ALL STRUCTURAL STEEL AT PORTICO LEVEL SHALL BE STAINLESS STEEL (CHANNELS, ANGLES, AND PLATES). REFER TO SPECIFICATION SECTION 051200, PART 2.1.
- 3. PROVIDE STAINLESS STEEL NUTS AND BOLTS FOR ALL APPLICATIONS. REFER TO SPECIFICATION SECTION 051200, PART 2.1.

SPECIAL INSPECTIONS

- 1. INSPECTIONS AS SPECIFIED IN THE STATEMENT OF STRUCTURAL TESTS AND SPECIAL INSPECTIONS SHALL BE PERFORMED BY A TESTING AGENCY PROVIDED BY THE CONTRACTOR AND APPROVED BY THE CONTRACTING OFFICER FOR THE FOLLOWING ITEMS:
 - A. STEEL CONSTRUCTION (BC 1704.3, TABLE 1704.3)
 - i. WELDING (BC 1704.3.1)
 - ii. BOLTING (BC 1704.3.2)
 - iii. HIGH-STRENGTH BOLTING (BC 1704.3.3)
 - B. CONCRETE CONSTRUCTION (BC 1704.4, TABLE 1704.4)
 - i. MATERIALS (BC 1704.4.1)

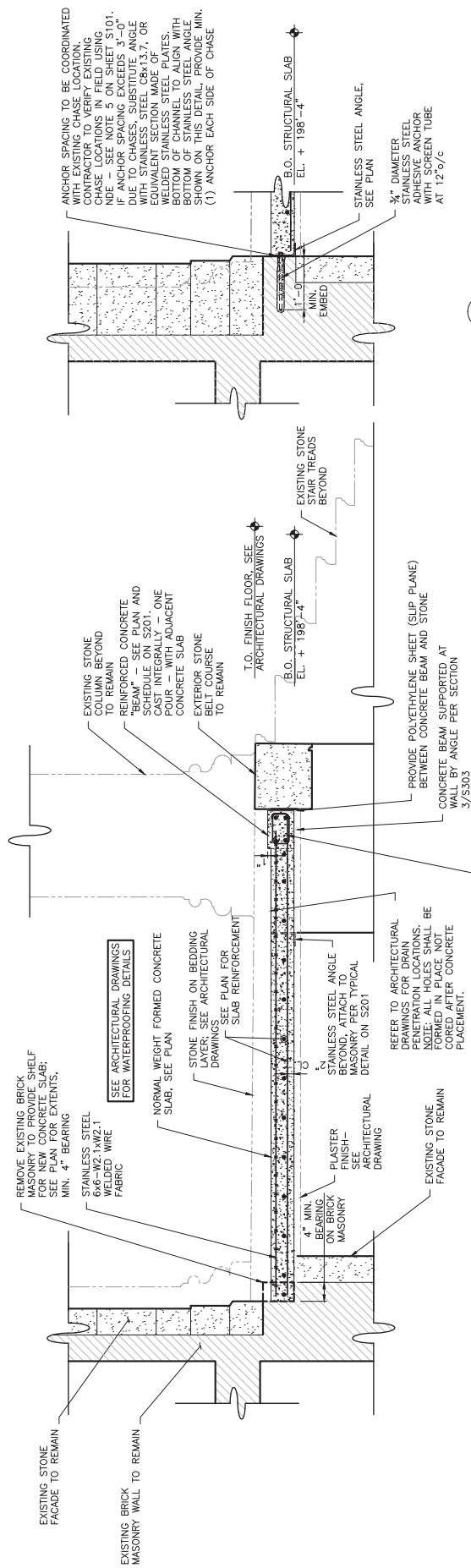
THE TESTING AGENCY FOR THE INSPECTIONS SHALL FILE ALL APPROPRIATE FORMS WITH THE AUTHORITY HAVING JURISDICTION.

RSA STANDARD ABBREVIATIONS

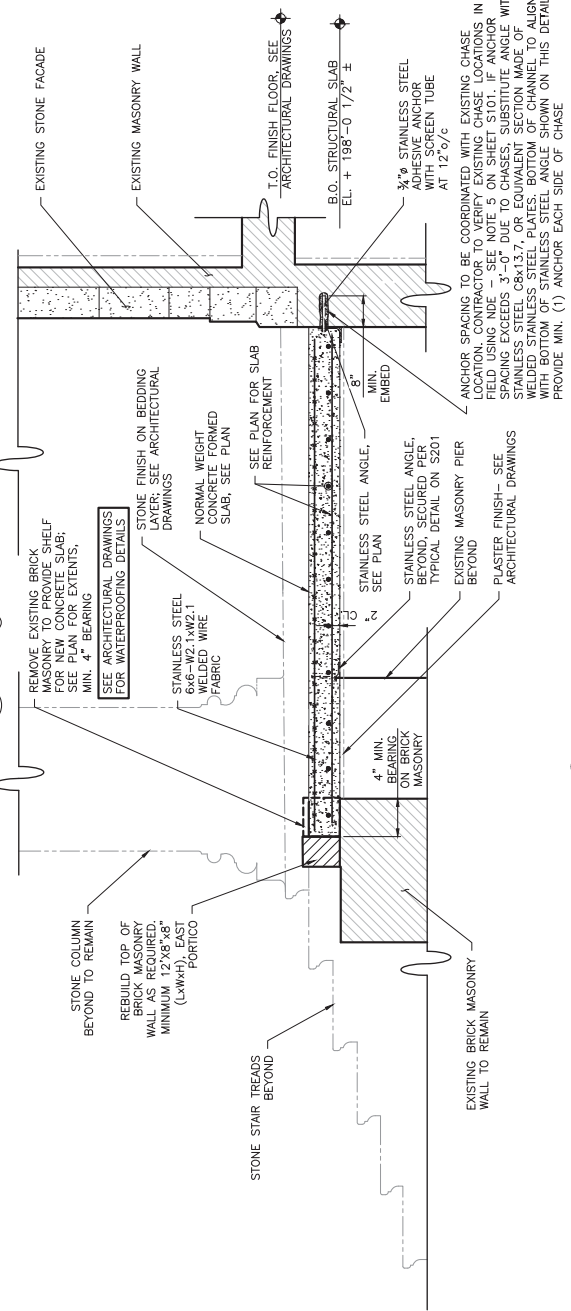
ADD'L	ADJACENT	FIN.	FINISH	W/	WITH
ALT.	ALTERNATE	FLR.	FLOOR	W.W.F.	WELDED WIRE FABRIC
ANCH.	ANCHOR	FT.	FEETING	#	NUMBER/SIZE
APPROX.	APPROXIMATE	FT.	FEETING	Ø	CENTERLINE
ARCH.	ARCHITECTURAL/ARCHITECT	GA	GAGE	Ø	DIAMETER
B.O.	BOTTOM OF	HORIZ.	HORIZONTAL	Ø	PLATE/PROPERTY LINE
BLDG.	BUILDING	LLV	LONG LEC VERTICAL		
BLM.	BEAM	L.W.	LIGHTWEIGHT		
BOT.	BOTTOM	MAS	MASONRY		
CANT.	CANTILEVER	MAX	MAXIMUM		
C.I.P.	CAST IN PLACE	MIN	MINIMUM		
C.J.	CONTRACTION JOINT	MISC	MISCELLANEOUS	(E)	EXISTING MEMBER OR DIMENSION
CLR.	CLEAR	M.O.	MASONRY OPENING	EXIST.	EXISTING
COL.	COLUMN	N.S.	NORTH	V.I.F.	VERIFY IN FIELD
CONC.	CONCRETE	N.W.	NORTH WEST		
COR.	CORNER	O/C	ON CENTER		
CR.	CRACK	PERP	PERPENDICULAR		
DBL	DOUBLE	PSF	POUNDS PER SQUARE FOOT		
DEMO	DEMOLITION/DEMOLISH	PSI	POUNDS PER SQUARE INCH		
DTL	DETAIL	REINF	REINFORCE(D), REINFORCEMENT REQUIRED		
DIA.	DIAMETER	REQ'D	REQUIRED		
DIAG.	DIAGONAL	SIM	SIMILAR		
DIM.	DIMENSION	S.S.	STAINLESS STEEL		
DN.	DOWN	STD	STANDARD		
DWG(S)	DRAWING(S)	STL.	STEEL		
EA.	EACH	T.O.	TOP OF		
E.F.	EACH FACE	T & B	TOP & BOTTOM		
EXP.	EXPANSION	U.N.O.	UNLESS NOTED OTHERWISE		
EXP. JT.	EXPANSION JOINT	VERT.	VERTICAL		
EL.	ELEVATION				
EMBED.	EMBEDMENT				
ENGR.	ENGINEER				
EQ.	EQUAL				
EQ.R.	EQUAL RECORD				
EXP.	EXPANSION				
EXT.	EXTERIOR				
E.W.	EACH WAY				
FDN.	FOUNDATION				



DESIGNED: RSA	SUB SHEET NO. S200	TITLE OF SHEET REHABILITATE VANDERBILT MANSION EXTERIOR VANDERBILT MANSION GENERAL NOTES	DRAWING NO. 382
TECH. REVIEW: 06/09			PMS/PKG NO. 104796
DATE: 07/18/2014			152373
			SHEET 50 of 58



1 NORTH PORTICO SECTION
S301 SCALE (C)



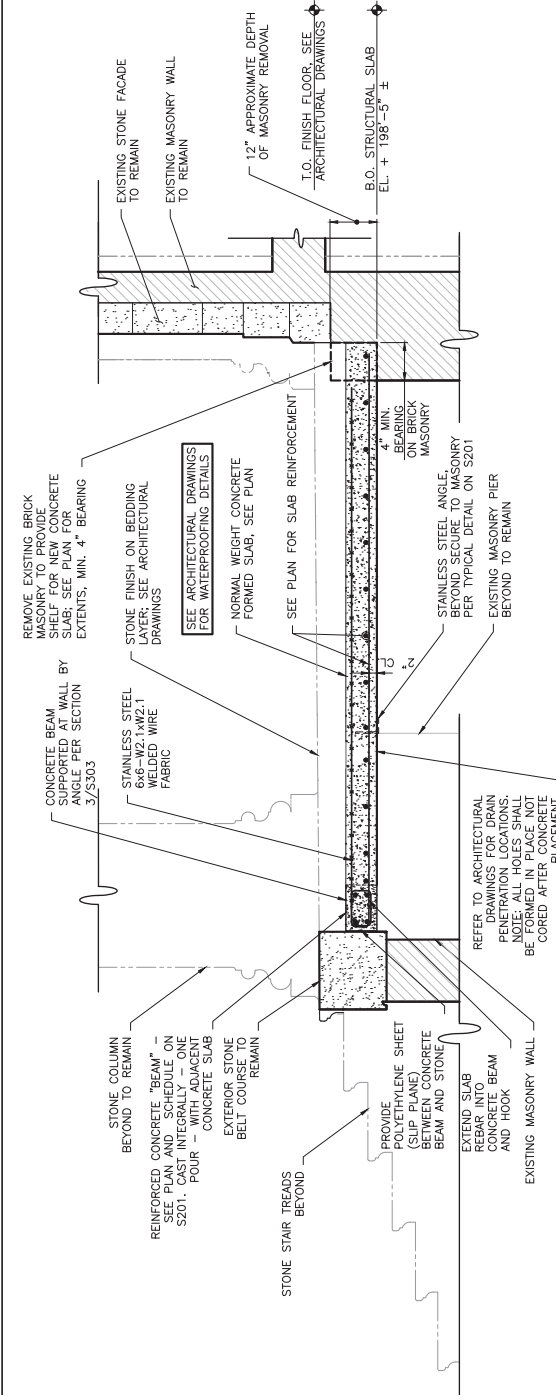
NOTE:
PROTECT ALL STONE SURFACES
DURING CONCRETE PLACEMENT

2 NORTH PORTICO SECTION
S301 SCALE ©

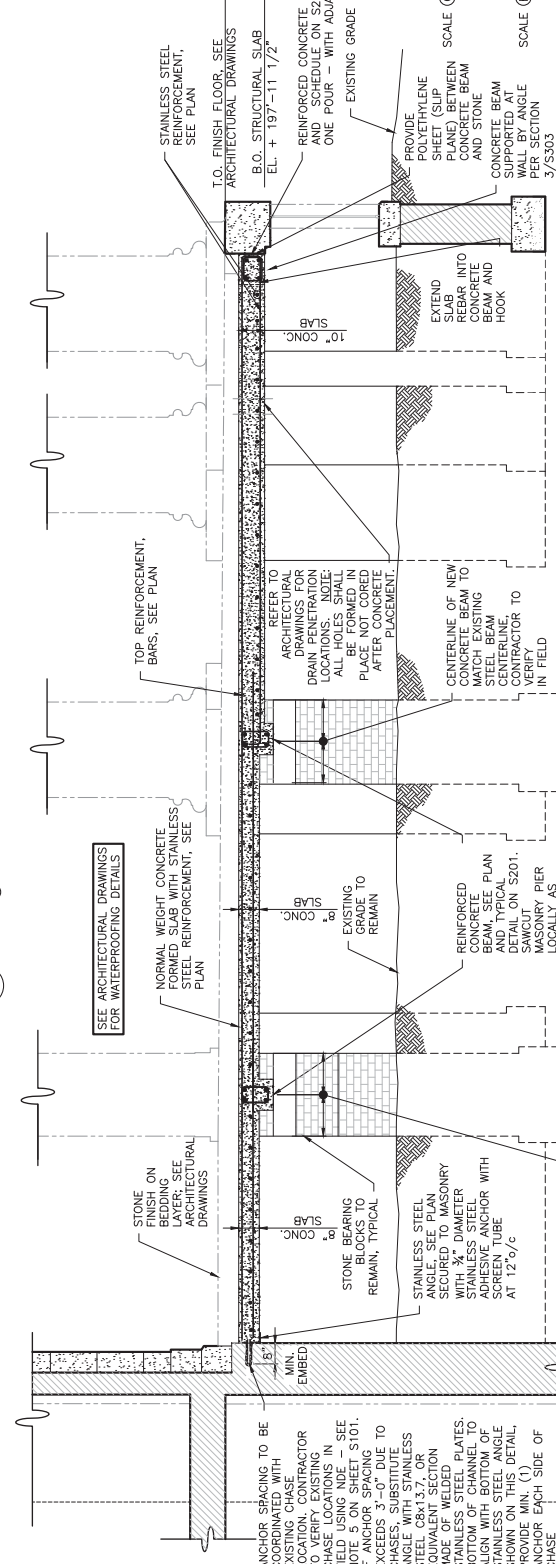
TITLE OF SHEET REHABILITATE VANDERBILT MANSION EXTERIOR VANDERBILT MANSION PORTICO SECTIONS		DRAWING NO. 382
VANDERBILT MANSION NATIONAL HISTORIC SITE HYDE PARK, NEW YORK		PMS/PKG NO. 104796 152373
		SHEET 52 OF 58

DESIGNED: RSA	SUB SHEET NO. _____	S301	V _____
			
—			
TECH. REVIEW: —			
DATE: 07/18/2014			

7

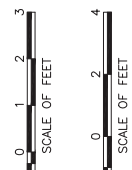


1 SOUTH PORTICO SECTION
SCALE 1/3202

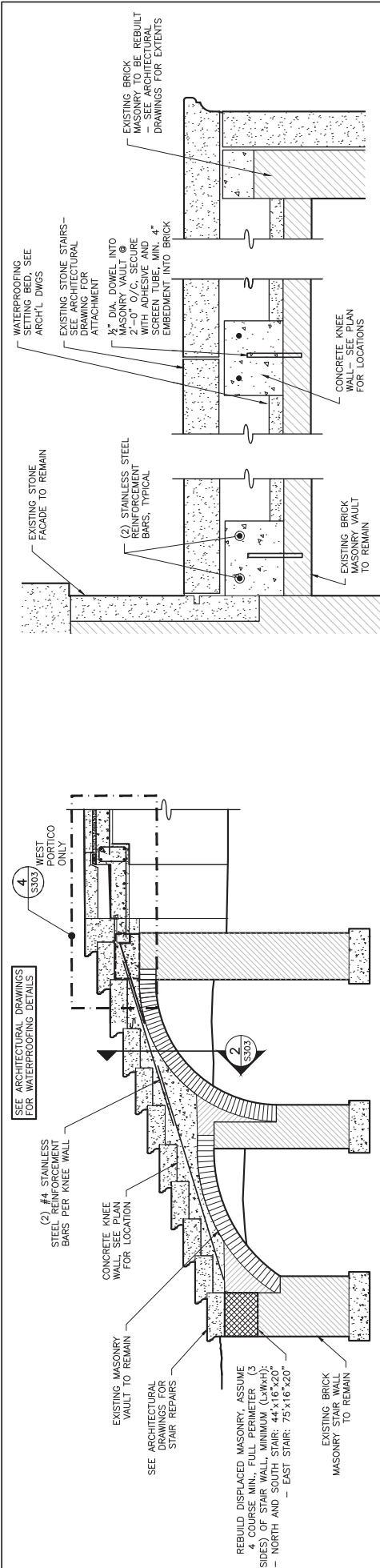


2 WEST PORTICO SECTION
SCALE 2/3202

NOTE:
REMOVE ALL STONE SURFACES
DURING CONCRETE PLACEMENT



DESIGNED: RSA		SUB SHEET NO. S302		TITLE OF SHEET REHABILITATE VANDERBILT MANSION EXTERIOR VANDERBILT MANSION PORTICO SECTIONS		DRAWING NO. 382
TECH. REVIEW: -		DATE: 07/18/2014		VANDERBILT MANSION NATIONAL HISTORIC SITE HYDE PARK, NEW YORK		PMS/PAC NO. 104796
152373		SHEET 53 OF 58				

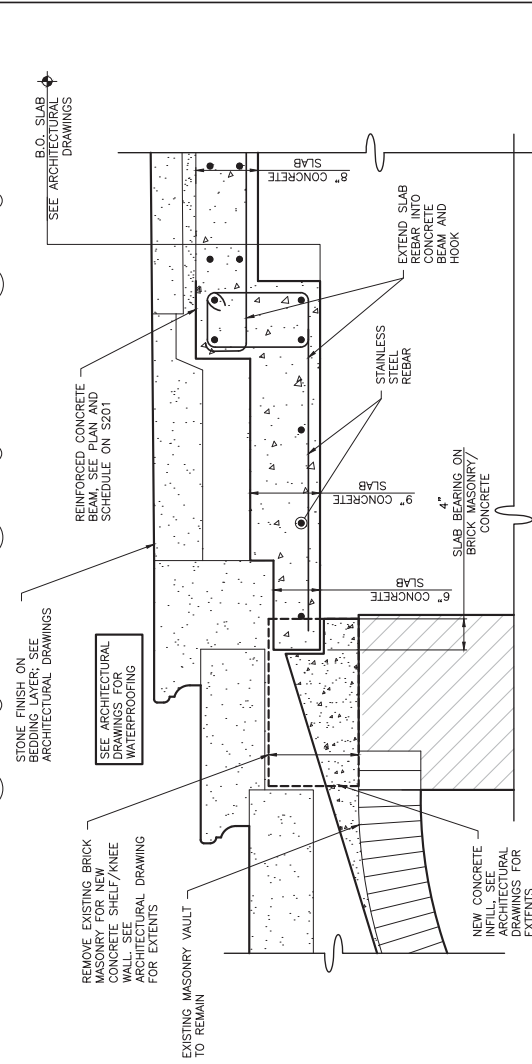


1 PROPOSED STAIR SECTION
SCALE ① S303

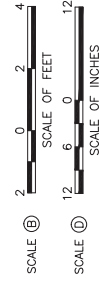
2A STAIR DETAIL AT WALL
SCALE ① S303

2B STAIR DETAIL AT JOINT
SCALE ① S303

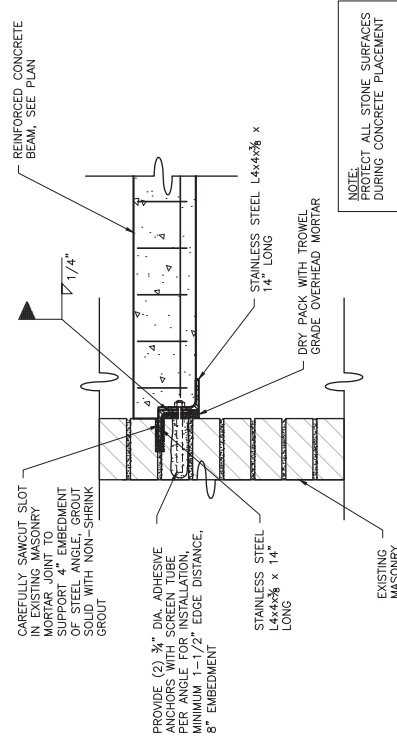
2C STAIR DETAIL AT CHEEK WALL
SCALE ① S303



4 WEST PORTICO STAIR SECTION
SCALE ① S303

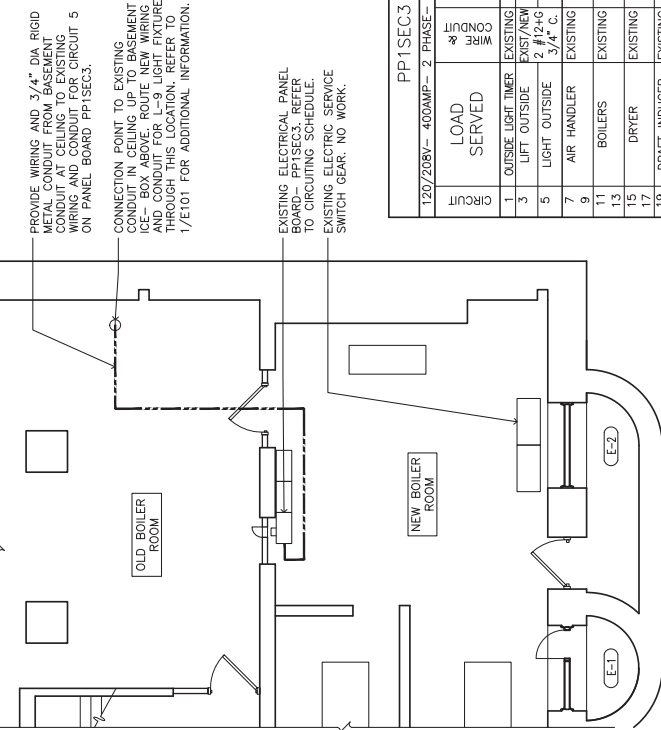


3 CONCRETE BEAM SUPPORT ANGLES
SCALE ① S303

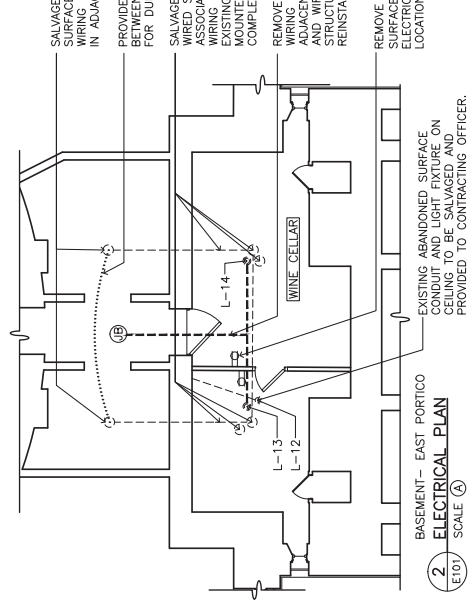


DESIGNED: PSA	SUB SHEET NO. S303	TITLE OF SHEET REHABILITATE VANDERBILT MANSION EXTERIOR VANDERBILT MANSION STAIR SECTIONS	DRAWING NO. 382
TECH. REVIEW: 06/05/10	DATE: 07/18/2014	PMS/PKG NO. 104796	SHEET 54 of 58
		VANDERBILT MANSION NATIONAL HISTORIC SITE HYDE PARK, NEW YORK	





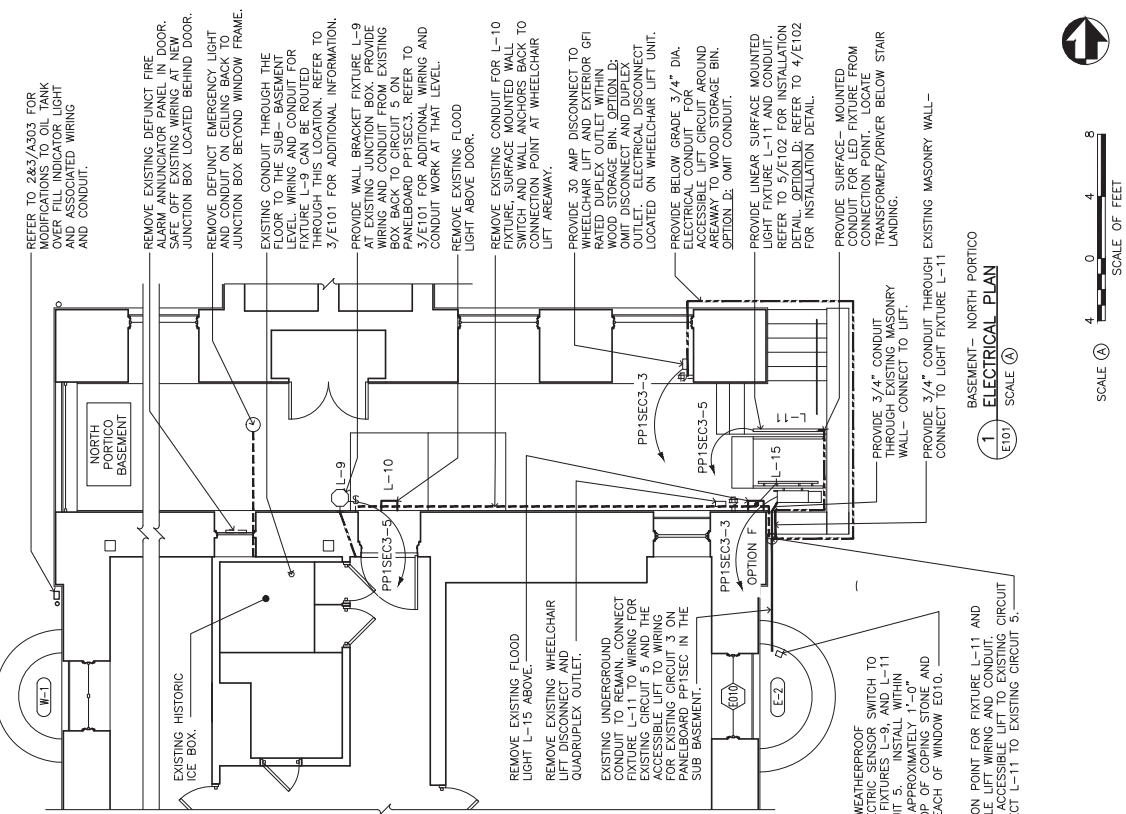
3
E101
SCALE (A)



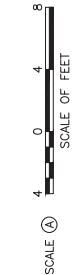
2
E101
SCALE (A)

- GENERAL NOTES:**
- ASSUME ALL WIRING BEYOND EXISTING JUNCTION BOXES IS IN GOOD CONDITION. EXISTING WIRING FOUND TO BE UNSUITABLE FOR REUSE IS TO BE BROUGHT TO THE ATTENTION OF THE CONTRACTING OFFICER.
 - CONTRACTOR TO COORDINATE WITH CONTRACTING OFFICER REGARDING TEMPORARY SHUT DOWN OF ALL OTHER WORK WHICH MAY INTERFERE WITH THE SMOKE DETECTION SYSTEM. SMOKE DETECTORS IN THE BASEMENT WINE CELLAR ARE TO BE TEMPORARILY REMOVED FROM THE SYSTEM FOR THE DURATION OF THE WORK. DETECTORS TO REMAIN IN OPERATION DURING CONSTRUCTION, REINSTALL AND TEST WINE CELLAR DETECTORS AT THE CONCLUSION OF THE WORK IN THIS AREA.
 - ALL EXISTING WIRING, CIRCUITING, AND SWITCHING TO REMAIN, UNLESS NOTED OTHERWISE.

PP1SEC3 CIRCUITING SCHEDULE									
120/208V- 400AMP- 2 PHASE- 4 WIRE									
CIRCUIT	LOAD SERVED	# WIRE	TRIP	POLE	TRIP	POLE	TRIP	POLE	LOAD SERVED
1	OUTSIDE LIGHT TIMER	EXISTING 20	1	20	EXISTING 20	1	20	EXISTING	SPARE
2	LIFT OUTSIDE	EXIST/NEW 20	1	20	EXISTING 20	1	20	EXISTING	OIL ALERT
3	LIFT OUTSIDE	2 #12+6 3/4\" C.	20	1	20	EXISTING	30	2	SPARE
4	AIR HANDLER	EXISTING 30	2	1	20	EXISTING	30	2	SPARE
5	BOILERS	EXISTING 30	2	3	50	EXISTING	30	2	SPARE
6	DRYER	EXISTING 30	2	3	20	EXISTING	30	2	SPARE
7	DRAFT INDUCER	EXISTING 20	2	3	20	EXISTING	30	2	SPARE
8	AIR HANDLER- CRAWL SPACE	EXISTING 30	3	2	25	EXISTING	30	2	SPARE
9	SPACE	EXISTING 30	2	1	20	EXISTING	MR. V. BEDROOM	28	SPARE
10	SPACE	EXISTING 30	2	1	20	EXISTING	MR. V. BEDROOM	30	SPACE
11	SPACE	EXISTING 30	2	1	20	EXISTING	MR. V. BEDROOM	32	SPACE
12	SPACE	EXISTING 30	2	1	20	EXISTING	MR. V. BEDROOM	34	SPACE
13	SPACE	EXISTING 30	2	1	20	EXISTING	MR. V. BEDROOM	36	SPACE
14	SPACE	EXISTING 30	2	1	20	EXISTING	MR. V. BEDROOM	38	SPACE
15	SPACE	EXISTING 30	2	1	20	EXISTING	MR. V. BEDROOM	40	SPACE
16	SPACE	EXISTING 30	2	1	20	EXISTING	MR. V. BEDROOM	42	SPACE
17	SPACE	EXISTING 30	2	1	20	EXISTING	MR. V. BEDROOM	44	SPACE
18	SPACE	EXISTING 30	2	1	20	EXISTING	MR. V. BEDROOM	46	SPACE
19	SPACE	EXISTING 30	2	1	20	EXISTING	MR. V. BEDROOM	48	SPACE
20	SPACE	EXISTING 30	2	1	20	EXISTING	MR. V. BEDROOM	50	SPACE
21	SPACE	EXISTING 30	2	1	20	EXISTING	MR. V. BEDROOM	52	SPACE
22	SPACE	EXISTING 30	2	1	20	EXISTING	MR. V. BEDROOM	54	SPACE
23	SPACE	EXISTING 30	2	1	20	EXISTING	MR. V. BEDROOM	56	SPACE
24	SPACE	EXISTING 30	2	1	20	EXISTING	MR. V. BEDROOM	58	SPACE
25	SPACE	EXISTING 30	2	1	20	EXISTING	MR. V. BEDROOM	60	SPACE
26	SPACE	EXISTING 30	2	1	20	EXISTING	MR. V. BEDROOM	62	SPACE
27	SPACE	EXISTING 30	2	1	20	EXISTING	MR. V. BEDROOM	64	SPACE
28	SPACE	EXISTING 30	2	1	20	EXISTING	MR. V. BEDROOM	66	SPACE
29	SPACE	EXISTING 30	2	1	20	EXISTING	MR. V. BEDROOM	68	SPACE
30	SPACE	EXISTING 30	2	1	20	EXISTING	MR. V. BEDROOM	70	SPACE
31	SPACE	EXISTING 30	2	1	20	EXISTING	MR. V. BEDROOM	72	SPACE
32	SPACE	EXISTING 30	2	1	20	EXISTING	MR. V. BEDROOM	74	SPACE
33	SPACE	EXISTING 30	2	1	20	EXISTING	MR. V. BEDROOM	76	SPACE
34	SPACE	EXISTING 30	2	1	20	EXISTING	MR. V. BEDROOM	78	SPACE
35	SPACE	EXISTING 30	2	1	20	EXISTING	MR. V. BEDROOM	80	SPACE
36	SPACE	EXISTING 30	2	1	20	EXISTING	MR. V. BEDROOM	82	SPACE
37	SPACE	EXISTING 30	2	1	20	EXISTING	MR. V. BEDROOM	84	SPACE
38	SPACE	EXISTING 30	2	1	20	EXISTING	MR. V. BEDROOM	86	SPACE
39	SPACE	EXISTING 30	2	1	20	EXISTING	MR. V. BEDROOM	88	SPACE
40	SPACE	EXISTING 30	2	1	20	EXISTING	MR. V. BEDROOM	90	SPACE
41	SPACE	EXISTING 30	2	1	20	EXISTING	MR. V. BEDROOM	92	SPACE
42	SPACE	EXISTING 30	2	1	20	EXISTING	MR. V. BEDROOM	94	SPACE
43	SPACE	EXISTING 30	2	1	20	EXISTING	MR. V. BEDROOM	96	SPACE
44	SPACE	EXISTING 30	2	1	20	EXISTING	MR. V. BEDROOM	98	SPACE
45	SPACE	EXISTING 30	2	1	20	EXISTING	MR. V. BEDROOM	100	SPACE



1
E101
SCALE (A)



DESIGNED: JOWA
CHECKED: JOWA
TECH. REVIEW: JOWA
DATE: 07/18/14

SUB SHEET NO. E101

TITLE OF SHEET
REHABILITATE VANDERBILT MANSION EXTERIOR
VANDERBILT MANSION
ELECTRICAL PLANS
VANDERBILT MANSION NATIONAL HISTORIC SITE
HYDE PARK, NEW YORK

DRAWING NO. 382
PMS/PKG NO. 104796
152373
SHEET 57 OF 58

LIGHT FIXTURE SCHEDULE

FIXTURE NUMBER	LOCATION	EXIST / NEW	REMOVE EXISTING	REINSTALL EXISTING AS - IS	RESTORE EXISTING KEY NOTE 1	PROVIDE REPRODUCTION KEY NOTE 2	TYPE	VOLTAGE	NO. OF SOCKETS/BULBS	BULBS		REMARKS	FIXTURE NUMBER
										TYPE	WATTAGE		
BASEMENT FLOOR													
L-9	NORTH PORTICO	NEW					BRACKET SURFACE	120V	1	A	20W	REFER TO DETAIL 3/E102.	L-9
L-10	NORTH PORTICO	EXISTING	●			●	SURFACE	120V	X	LED	5W	PROVIDE NEW 18" LONG LINEAR LED SURFACE MOUNT FIXTURE AND TRANSFORMER. REFER TO DETAILS 4/E102, 5/E102, 4/A511 AND THE SPECIFICATIONS.	L-10
L-11	NORTH PORTICO	NEW											L-11
L-12	WINE CELLAR	EXISTING	●				SURFACE		X	A		SALVAGE LIGHT FIXTURE AND RETURN TO THE CONTRACTING OFFICER.	L-12
L-13	WINE CELLAR	EXISTING		●			SURFACE		1	A	9W	SALVAGE AND REINSTALL EXISTING PORCELAIN BULB BASE FIXTURE IN EXISTING LOCATION.	L-13
L-14	WINE CELLAR	EXISTING		●			SURFACE		1	A	9W	SALVAGE AND REINSTALL EXISTING PORCELAIN BULB BASE FIXTURE IN EXISTING LOCATION.	L-14
L-15	NORTH PORTICO	EXISTING	●				SURFACE		X				L-15

KEY NOTES:

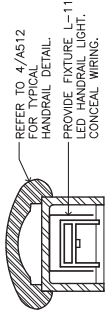
1. PROVIDE NEW HISTORIC REPRODUCTION FIXTURE REPRODUCTION OF EXISTING ELECTRICAL CIRCUIT WIRING AND COMPONENTS.
2. PROVIDE NEW LIGHT BULBS FOR ALL FIXTURES SCHEDULED TO BE INSTALLED/REINSTALLED.
3. UNLESS NOTED OTHERWISE, ALL NEW LIGHT BULBS TO BE A19 LED TYPE BULBS.

LEGEND:

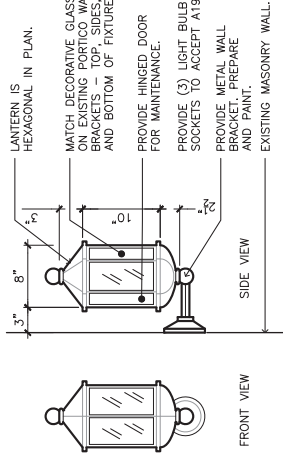
- PERFORM WORK INDICATED
- X NO WORK

1 NOT USED
E102

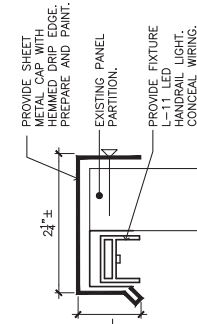
2 NOT USED
E102



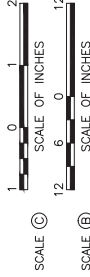
OPTION D
4 HANDRAIL LIGHT DETAIL
E102 SCALE C



3 REPRODUCTION WALL BRACKET
E102 SCALE B



5 LIGHT FIXTURE DETAIL
E102 SCALE C



DESIGNED: JOWA GABED	SUB SHEET NO. —	TITLE OF SHEET REHABILITATE VANDERBILT MANSION EXTERIOR VANDERBILT MANSION LIGHTING SCHEDULE & DETAILS	DRAWING NO. 382 104796
TECH. REVIEW: —	DATE: 07/18/14		PMS/PKG NO. 152373
			SHEET 58 OF 58



As the nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering sound use of our land and water resources; protecting our fish, wildlife, and biological diversity; preserving the environmental and cultural values of our national parks and historic places; and providing for the enjoyment of life through outdoor recreation. The department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The department also has a major responsibility for American Indian reservation communities and for people who live in island territories under US administration.

National Park Service
U.S. Department of the Interior



Vanderbilt Mansion National Historic Site
Hyde Park, New York