Technical Specifications

Exterior Restoration at the

James and Ann Whitall House

Red Bank Battlefield
100 Hessian Avenue
National Park, NJ 08063

Owner:

County of Gloucester
Department of Parks and Recreation
Chuck Rose, Director
Shady Lane Complex
254 County House Road
Clarksboro, NJ 08020

Architect:

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I. PROJECT INTRODUCTION

The James and Ann Whitall House was built in 1748 on the Red Bank Plantation, a portion of which was commandeered by the Colonial militia for the construction of Fort Mercer and became the site of the Battle of Red Bank on October 22, 1777. The house remained in the Whitall family until 1862, while three additions were constructed and the house remodeled in 1847. The federal government purchased the property in 1872, resulting in the municipality's subsequent name of "National Park." Since 1905, the house and a surrounding 20 acres has been owned by the County of Gloucester and maintained by Gloucester County's Department of Parks and Recreation. Cyclical restoration and preservation campaigns have occurred over the past century, bringing the building to its current configuration. Most recently, a new wood shingle roof was installed in late 2021. The building is a National Historic Landmark that illustrates early American construction methods and regional architectural styles.

The intent of this project is to preserve the house for future generations of visitors by completing exterior restoration work, including masonry, woodwork, doors, and windows. As the building is publicly-owned and listed on the New Jersey and National Registers of Historic Places, and is being funded with a grant from the Preserve New Jersey Historic Preservation Fund, all work will be reviewed by the New Jersey Historic Trust for compliance with the Secretary of the Interior's *Standards for the Treatment of Historic Buildings.*

II. SCOPE OF WORK

The scope of work for the Exterior Restoration project consists of the following elements, as described in the specifications:

1. General conditions, including supervision costs (Base Bid);
2. All UCC permits, inspections, approvals, and COs (Base Bid);
3. Temporary facilities and scaffolding as needed (Base Bid);
4. Restoration of all five exterior wood doors and the addition of bulkhead astragal (Base Bid);
5. Restoration of windows W1, W5, and W8 as marked on the Architectural Drawings and including spot repainting of interior side of sash and interior trim (Base Bid);

6. Repainting of all exterior wood trim (Base Bid);

7. Repainting of exterior side of all windows (Base Bid);

8. Repainting of all exterior doors (exterior, edges, and interior) (Base Bid);

9. Re-seeding of any areas of lawns or grass disturbed during execution of the project (Base Bid).

10. Repair of the brick masonry through the isolated patching and replacement of bricks (Base Bid and Deduct-Alternate #1);

11. Spot repointing of the brick and stone masonry (Base Bid and Deduct-Alternate #1);

12. Rehabilitation of all windows except windows W1-W8 on the window schedule, including spot repainting of interior side of sash and interior trim (Base Bid and Deduct-Alternate #2);

13. Repair of exterior wood trim through Dutchman repair or epoxy consolidation (Base Bid and Deduct-Alternate #3);

14. Restoration of windows W2, W3, W4, W6, and W7 marked on the Architectural Drawings (Base Bid and Deduct-Alternate #4);

While the County intends to undertake the full scope of work, Deduct-Alternates have been included on the bid form to allow flexibility in awarding a contract in case the bids come in over budget. Deduct-Alternates, if accepted, will be accepted in numerical order. We have also incorporated unit costs for brick patching, brick repointing, and stone repointing that will serve as the basis for any masonry work is added to the contractual scope of work.

Technical Specifications

GENERAL REQUIREMENTS 1

SECTION 01010 – Summary of Work

1. General

1.1 DESCRIPTION

A. The contractor performing the work of this project must have been determined a qualified restoration contractor using the standards established by the New Jersey Historic Trust as follows: The contractor must have successfully completed two projects within the past five years of similar scope and character involving different buildings where the restoration work met the Secretary of the Interior's *Standards for the Treatment of Historic Properties* (Revised 2017). These projects should have involved the same foreman who will be on site during relevant construction activity for the proposed project.

B. Contractor will complete the specified exterior restoration of the James and Ann Whitall House located in Red Bank Battlefield, at 100 Hessian Avenue, National Park, NJ 08063. The Owner's representative is Jennifer Janofsky, (856)853-5120, who is coordinating access to the site. The projects architects are Westfield Architects & Preservation Consultants, 425 White Horse Pike, Haddon Heights, NJ 08035-1706. Contact Margaret Westfield R.A. with any technical questions at 856-547-0465.

C. The building would be classified as Use Group B as historic building museum with public visitation, under the NJ UCC Rehabilitation Subcode sub-chapter 6.

D. The building appears to meet the conditions stated in UCC Rehabilitation Subcode Section 6.33 and may be subject to interpretation by local construction officials due to its classification as a Historic Building.

E. Major systems involved are Architectural. These specifications, drawings, notes, and Owner-issued bidding documents compose the Contract Documents which delineate work required for this phase of restoration. The work of all trades under contract is to comply with all applicable state, county, and local codes. The Contractor is responsible for coordination of the work of various trades included in the full scope of work.

F. The James and Ann Whitall House was originally built in 1748 and expanded in the 18th and 19th centuries. During the Revolutionary War, the Georgian-style house was used as a field hospital after the Battle of Red Bank. The significance of the structure has been acknowledged by the National Park Service through its listing on the National Register of Historic Places and its designation as a National Historic Landmark. All work shall be undertaken in accordance with the Secretary of the Interior's *Standards for the Treatment of Historic Properties* (Revised 2017).

G. Funding for this project is being provided by the County of Gloucester and the Preserve New Jersey Historic Preservation Fund, administered by the New Jersey Historic Trust.

H. The goal of this project is to repair and repaint exterior woodwork, repair/replace the windows and exterior door assemblies, and restore/repoint exterior brick and stone masonry.

2. **Products - Not Applicable To This Section**
3. **Execution - Not Applicable To This Section**

SECTION 01015 – Project Requirements

1. **General**

1.1 DESCRIPTION

A. Contractor will verify all field conditions and be familiar with all facets of the proposed work prior to submitting a bid to the Owners.

B. All existing historic fabric is to remain, be repaired, or be replaced in kind. Existing architectural elements, where original and/or historic are to be used as guides.

C. Building access is to be coordinated with the Owner's Representative. Contractor will be responsible for securing the building during construction. Any acts of damage, theft, or similar incidents will be the responsibility of the Contractor. Contractor agrees to indemnify and hold harmless Owner from any and all expense, claim, damages, losses, including attorney's fee, resulting from any accidents or injuries to any person who is an agent, workman and/or employee of the Contractor or any subcontractor, or who is at the premises at the request or invitation of the Contractor or subcontractor.

D. Contractor is to provide for all necessary temporary facilities and utilities on site as deemed necessary to complete the project. The Contractor will have access to the house's electric, water supply, and the Park bathrooms that are located in the main parking area during construction.

E. Contractor is to provide scaffolding for exterior access as needed, with the following requirements:

1. Scaffolding must not touch the building.
2. Any pipes or boards near the building must be covered with rubber or cloth.

F. Contractor shall be responsible for keeping the building and work site clean.

1. Contractor shall provide building paper or tarps to cover any interior flooring surfaces along the path to travel that the contractor must access for performance of the work, including (but not limited to) the path to the second floor bathroom, including the walkways and the back stairs that the contractor will use. Paper and tarps shall be replaced when soiled or ripped.
2. Contractor shall provide and use an entrance mat to prevent the tracking of dirt and moisture into the building.

G. Contractor shall photographically document all unforeseen conditions.

H. Contractor is responsible for obtaining or paying for all licenses, permits, and/or regulatory fees.

I. Prior to the start of any work, the successful Contractor will verify all dimensions and conditions, and report any unforeseen conditions or discrepancies to the Architect.

J. Architect is not responsible for work that the Architect does not review and/or work not completed in accordance with Architect's plans and/or instructions. No deviation from design drawings is permitted without written approval from the Architect. Field Changes

and Addenda must be in writing and must be approved by Architect and Owner prior to undertaking related work, except in an emergency situation.

K. The approved foreman (qualified by submission and approval of two projects in the past 5 years of similar scope and character, involving different buildings where the work met the Secretary of the Interior's *Standards* [Revised 2017]) **shall be on site every day that construction activity is underway.** The foreman is responsible for coordinating all trades, sequencing all work, and overseeing his own crew and the sub-contractors to ensure that work is being performed in strict accordance with the drawings and specifications and that quality workmanship is maintained.

L. If existing field conditions do not permit the installation of the work in accordance with the details shown, notify the Architect immediately and provide a sketch of the condition. Contractor shall not resolve problem conditions without prior approval of Architect except in case of an emergency.

M. In any case of conflict between notes, details, and specifications, the most stringent requirements govern.

N. Contractor shall protect pedestrians, motorists, and any other persons or property by restricting access throughout the project to any areas where persons or property may be injured by construction work.

O. Contractor shall protect all historic fabric in and adjacent to his work areas. Such protection shall include, but not be limited to, protective paper in walking areas inside the building, tarps in areas of painting and plastering, plastic coverings over all furnishings, etc. Contractor shall also provide protection for all foundation plantings so they are not damaged by falling debris during demolition.

P. Proper temporary bracing of all construction work in progress is the Contractor's responsibility. The Contractor shall maintain on site the proper materials for quickly reinforcing the existing structure should the need arise. Special care must be taken so that the existing structure is not damaged or its use impaired during construction.

Q. Open flames, heat guns, and all other hot work operations are prohibited unless prior written approval for their use has been obtained from the Architect. Smoking is prohibited within and adjacent to the building as well as anywhere on the property. All soldering of roof metal work must be done on the ground. Contractor(s) must post a fire watch and have appropriate fire extinguishers on hand for all hot work operations.

R. Parking is available for the contractor's staff in the main parking area. One parking space in the restricted parking area adjacent to the house may be used by the contractor to facilitate deliveries of equipment and storage of supplies for the work.

S. The building will be occupied and open to the public during construction. Contractor shall coordinate the repair of the exterior doors with the Owner to ensure access to the building and safe egress is maintained at all times.

T. Pre-scheduled special events may occur during the potential work period. These may include open houses, a Mothers' Day Tea, and a Father's Day Barbeque. NO WORK SHALL BE UNDERTAKEN ON SITE ON THESE DAYS. In addition, the History Tots program is held weekly on Fridays at 10am -- the contractor shall notify the owner by Thursday of the previous week when active construction will be occurring on a particular Friday.

2. Products

2.1 MATERIALS

A. All existing historic fabric is to remain, be repaired, or be replaced "in kind" to match existing in composition, size, species, grade, finish, and installation methodology (except where noted). Existing architectural elements are to be used as guides.

3. Execution

3.1 Contractor shall verify all field conditions and dimensions and be familiar with all facets of the proposed work prior to starting work on related items. If structural drawings are used for laying out column centers and wall lines, all dimensions shall first be verified with the architectural drawings. Layout shall be checked before work is begun. Verify and/or establish all existing conditions and dimensions at the site before ordering any material and commencing any work. Prior to start of any work, the successful contractor will verify all dimensions and conditions, and report any unforeseen conditions or discrepancies to the Architect.

3.2 Contractor is to provide for all necessary temporary facilities and utilities on site as deemed necessary to complete the project. Placement of any contractor-related facilities such as dumpsters, a project trailer, port-a-john, etc. must be coordinated with the Owner and approved in advance by the Architect.

3.3 Any acts of damage, theft or other similar incidents will be the responsibility of the Contractor. Contractor agrees to indemnify and hold harmless Owner from any and all expense, claim, damages, losses, including attorney's fee, resulting from any accidents or injuries to any person who is an agent, workman and/or employee of the Contractor or any subcontractor, or who is at the premises at the request or invitation of the Contractor or subcontractor.

SECTION 01020 – Allowances and Unit Prices

1. General

1.1 UNIT PRICES

A. Unit prices for additional areas of work not marked on the drawings.

1. Unit Price #1: additional cost per linear foot for spot repointing beyond the areas marked on the architectural drawings, or if Deduct-Alternate #1 is accepted, for any isolated spot repointing that might be undertaken as part of the repair work.
2. Unit Price #2: additional cost per square foot for stone pointing beyond the areas marked on the architectural drawings, or if Deduct-Alternate #1 is accepted, for any isolated spot repointing that might be undertaken as part of the repair work.
3. Unit Price #3: additional cost per square foot for brick patching beyond the areas marked on the architectural drawings, or if Deduct-Alternate #1 is accepted, for any isolated brick patching that might be undertaken as part of the repair work.

2. Products - Not Applicable To This Section

3. Execution

3.1 SCHEDULE

A. UNIT PRICES

1. **UNIT PRICE #1**: The additional cost per linear foot to repoint the exterior brick masonry in excess of the areas marked on the Architectural Drawings, or if

Deduct-Alternate #1 is accepted, for any isolated spot repointing that might be undertaken as part of the repair work.

2. **UNIT PRICE #2**: The additional cost per square foot to repoint the exterior stone masonry in excess of the areas marked on the Architectural Drawings, or if Deduct-Alternate #1 is accepted, for any isolated spot repointing that might be undertaken as part of the repair work.
3. **UNIT PRICE #3**: The additional cost per square foot to repair the brick masonry through brick patching in excess of the areas marked on the Architectural Drawings, or if Deduct-Alternate #1 is accepted, for any isolated brick patching that might be undertaken as part of the repair work.

SECTION 01030 – Alternates

1. General

1.1 DESCRIPTION

A. List price for substitution of each alternate. Include cost of modifications to other work to accommodate alternate.

1. Deduct Alternates are to decrease the scope of work in the Base Bid.

2. Products - Not Applicable To This Section

3. Execution

3.1 SCHEDULE

A. ALTERNATES:

1. Deduct-Alternate #1: Include as Deduct-Alternate #1 the cost to of all masonry repairs including isolated patching of bricks and spot repointing of the brick and stone masonry as shown on the Architectural Drawings.
3. Deduct-Alternate #2: Include as Deduct-Alternate #2 the cost to rehabilitate all of the windows except windows W1-W8 on the window schedule, including spot repainting of interior side of sash and interior trim.
4. Deduct-Alternate #3: Include as Deduct-Alternate #3 the cost to repair exterior wood trim through Dutchman repair and epoxy consolidation.
5. Deduct-Alternate #4: Include as Deduct-Alternate #4 the cost to restore windows W2, W3, W4, W6, and W7 as indicated on the Window Schedule on Sheet A1.

SECTION 01045 – Cutting and Patching

1. General

1.1 DESCRIPTION

A. "Cutting and patching" includes cutting into existing construction to provide for the installation or performance of other work and subsequent fitting and patching required to restore surfaces to their original condition.

B. The goal is to save as much historic fabric as possible. Repair rather than replace whenever possible.

C. See also individual sections of specifications for specific instructions regarding cutting and patching requirements and limitations as applicable to those products. Comply with project requirements for:

1. Visual requirements, including special detailing.
2. Operational and safety limitations.
3. Fire resistance ratings.
4. Inspection, preparation, and performance.
5. Cleaning.

2. Products

2.1 MATERIALS

A. Match existing materials for cutting and patching work with new materials conforming to project requirements.

B. Use materials for cutting and patching that are identical to existing materials. If identical materials are not available, or cannot be used, use materials that match existing adjacent surfaces to the fullest extent possible with regard to visual effect and that will result in equal-or-better performance characteristics. All alternate materials must be submitted to the Architect for approval prior to installation.

3. Execution

3.1 STRUCTURAL WORK

A. Do not cut-and-patch structural work in a manner resulting in a reduction of load-carrying capacity or load/deflection ratio.

B. To prevent failure, provide temporary support of work to be cut.

3.2 VISUAL/QUALITY LIMITATIONS

A. Do not cut-and-patch work exposed to view (exterior and interior) in a manner resulting in noticeable reduction of aesthetic and functional qualities, as judged by Architect.

B. Before cutting, examine surfaces to be cut and patched and conditions under which the work is to be performed. If unsafe or otherwise unsatisfactory conditions are encountered, take corrective action before proceeding with the work.

C. Protect other work during cutting and patching to prevent damage. Provide protection from adverse weather conditions for that part of the project that may be exposed during cutting and patching operations.

D. Where cutting is required, use hand or small power tools designed for sawing or grinding, not hammering and chopping. Cut through concrete and masonry using a cutting machine such as a Carborundum saw or core drill. Cut holes and slots neatly to size required with minimum disturbance of adjacent work. To avoid marring existing finished surfaces, cut and drill from the exposed or finished side into concealed surfaces. Temporarily cover openings when not in use.

E. Patch with seams which are durable and as invisible as possible. Restore exposed finishes of patched areas and where necessary extend finish restoration into retained adjoining work in a manner which will eliminate evidence of patching and refinishing.

3.3 INSTALLATION

A. Inspect conditions prior to work to identify scope and type of work required. Notify Owner of work requiring interruption to building services or Owner's operations. Conform to project requirements listed above.

B. Perform work with workmen skilled in the trades involved. Prepare sample area of each type of work involved for approval.

C. Clean work area and areas affected by cutting and patching operations.

SECTION 01100 – Procedures, Controls, and Payments

1. General

1.1 DESCRIPTION

A. Provide coordination of work.

1. Supervisory personnel.
2. Preconstruction conference.
3. Project job meetings (monthly or bi-weekly as determined at pre-con meeting).
4. Other meetings.

B. Submit monthly and special reports.

C. Submit progress schedule, bar-chart type, updated monthly.

D. Prepare submittal schedule; coordinate with progress schedule.

E. Submit schedule of values.

F. Submit schedule of required tests (including payment thereof and responsibility therefor).

G. Perform surveys:

1. Laying out the work and verifying locations during construction.
2. Final site survey.

H. Submit record drawings and specifications; to be maintained and annotated by Contractor as work progresses.

I. Submit payment request procedures.

J. Submit beginning, progress, and completion photographs, 3 sets (whether as digital files on three individual discs, or three hard copies with negatives in the Owner's set.)

K. Perform quality control during installation.

L. Perform cutting and patching.

M. Clean and protect the work.

2. Products - Not Applicable To This Section

3. Execution - Not Applicable To This Section

SECTION 01300 – Submittals, Products, and Substitutions

1. General

1.1 DESCRIPTION

A. Project Schedule: Within 15 days of the date established for "commencement of the work," submit a comprehensive progress schedule indicating a time bar or specific completion date for each significant category of work to be performed. Arrange schedule to indicate required sequencing and to show time allowances for submittals, inspections, and similar time margins.

B. Project Meetings: Attend bi-weekly or monthly progress and coordination meetings (as scheduled) attended by representatives of each entity engaged for performance of work. It is the Contractor's responsibility to coordinate with his subcontractors to attend meetings as necessary. The Architect will distribute copies of minutes to those attending and others affected.

C. Payment Requests: Submit a request each calendar month. Use AIA Form G702, fully completed and executed. The Contractor shall submit with each executed AIA Form G702, a triplicate set of progress photos, including negatives or digital images on disk. As the project is partially funded by grant sources, payment will be made within 60 days of Architect's Certification. As the Owner is a tax-exempt organization, there should not be any tax on any materials or labor.

D. Shop Drawings, Product Data, Samples:

1. Samples of materials which will be required to be provided to Architect, Owner, and NJHT include:
   a. Repointing mortar samples for color, texture, and hardness (unless Deduct-Alternate #1 is accepted).
   b. Tinted brick patching material (unless Deduct-Alternate #1 is accepted).
   c. Replacement bricks (unless Deduct-Alternate #1 is accepted).
   d. A list of manufacturer's product data to be supplied in advance (with printed data, maintenance manuals, warranty information, and related documents.)
2. Samples of techniques which will be required to be provided to the Architect, Owner, **and the New Jersey Historic Trust**:
   a. Brick and stone masonry repointing, brick patching, tooling and joint cleaning (mock-up demonstration will be required prior to final approval of joint raking technique), unless Deduct-Alternate #1 is accepted.
3. Comply with project format for submittals, all to be directed to the Architect.
   a. Contractor will be responsible for reviewing all submittals and shop drawings, whether prepared by his employees or sub-contractors, and completing revisions prior to submission to Architect for review. The Architect's contract with the Owner includes one initial review of each submittal and shop drawings and up to two reviews of revised submittals and shop drawings. If additional reviews by the Architect are required due to the Contractor's inability to submit acceptable submittals and shop drawings, the cost thereof will be the contractor's responsibility and will be deducted from the contractor's retainage on the final Application for Payment.
   b. Do not delay construction. Order samples with sufficient time for review and approval. Allow sufficient lead time for material order after approval of sample and before the material is required for construction.

c. Shop drawings, reviewed and annotated by the Contractor - 3 blackline prints.

d. Product data - 3 copies.

e. Samples -1, plus extra samples as required to indicate range of color, finish, and texture to be expected.

f. Mock-ups - as required in the individual sections.

g. Warranties - 2 copies.

h. Closeout submittals -3 copies.

i. Project photographs - 3 sets of discs or thumb-drives with digital color images with the Contractor's Application for Payment each month and at beginning and end of construction (one for the Architect, one for the NJHT, and one for the Owner). Each and every Application for Payment will not be processed without photographic documentation of work for which payment is requested, as the photographs are required for NJHT reimbursement. In addition, the first Application for Payment must be proceeded by submission of the photographic documentation showing the existing conditions at the beginning of the project.

4. Provide types of submittals listed in individual sections and number of copies required.
5. Provide required resubmittals; provide distribution of approved copies.
6. Samples and shop drawings shall be prepared specifically for this project. Shop drawings shall include dimensions and details, including adjacent construction.
7. Provide warranties as specified; warranties shall not limit length of time for remedy of damages Owner may have by legal statute. Warranties shall be signed by Manufacturer and Contractor.
8. Provide products selected or approved equal. Products submitted for substitution shall be submitted with acceptable documentation, and include costs of substitution including related work.
9. Substitutions shall be submitted prior to award of contract, unless otherwise acceptable. The cost of professional services to review substitutions requested by the Contractor after the award of contract shall be the responsibility of the Contractor.
10. Punch list — Contractor will be responsible for inspecting his work and completing all anticipated punchlist work in house so that all work is substantially complete when the Contractor calls for the Architect to prepare the project's Punchlist. One Architect's visit to prepare the punchlist and one visit to verify successful completion of the punchlist work are included in the Architect's contract with the Owner. If additional site visits by the Architect are required due to the Contractor's inability to successfully complete all punchlist work before the Architect's return visit, the cost thereof will be the contractor's responsibility and will be deducted from the contractor's retainage on the final Application for Payment.
11. As-Built Drawings — A separate set of documents shall be kept on the job to record any field changes or revisions during construction. This set shall be given to the Owner upon completion of all work, along with the required shop drawings, as the required "as built" documentation.

2. **Products - Not Applicable To This Section**
3. **Execution - Not Applicable To This Section**

SECTION 01500 – Temporary Facilities

1. **General**

1.1 DESCRIPTION

A. Provide security and protection requirements as required:

1. Fire extinguishers.
2. Site barricades and warning signs in construction areas as needed.
3. Building enclosure and lock-up.
4. Environmental protection as needed.
5. Pest control as needed.

B. Provide personnel support facilities as necessary:

1. Drinking water.
2. Cleaning and trash removal.

2. **Products - Not Applicable To This Section**
3. **Execution - Not Applicable To This Section**

SECTION 01700 – Project Closeout

1. **General**

1.1 PREREQUISITES TO SUBSTANTIAL COMPLETION

A. Punch list.

B. Submittal documentation.

C. Warranties.

D. Certifications.

E. Architect's Certificate of Substantial Completion.

1.2 PREREQUISITES TO FINAL ACCEPTANCE

A. Final payment request with supporting documentation.

B. Completed punch list.

C. Provide record document submittals.

D. As-Built Drawings based on the separate set of construction documents kept on site to record any field changes or revisions during entire construction period, along with the required shop drawings.

1.3 CLOSEOUT PROCEDURES

A. Final cleaning and touch-up.

B. Removal of temporary facilities.

C. Turnover to Owner's personnel.

2. **Products - Not Applicable To This Section**
3. **Execution - Not Applicable To This Section**

END OF DIVISION 1 – GENERAL REQUIREMENTS

SITE WORK 2

SECTION 02070 – Selective Demolition

1. General

1.1 DESCRIPTION

A. Perform selective demolition as required including, but not limited to, the following:

1. Loose or deteriorated pointing.
2. Woodwork requiring replacement, including two window sash.
3. Protect all portions of building adjacent to or affected by selective demolition.
4. Remove and legally dispose of demolished materials off-site.

B. Removed materials not desired by Owner shall become the property of the Contractor, and shall be promptly hauled away from the site and are to be disposed of legally.

C. It shall be the Contractor's responsibility to provide adequate shoring during all phases of the disassembly. It shall also be the Contractor's responsibility to protect adjacent structures, machinery, equipment, personnel, and the public.

1.2 SUBMITTALS

A. Submit pre-demolition photographs showing existing conditions of adjoining construction, including finished surfaces, that might be misconstrued as damage caused by demolition operations.

B. Submit for approval selective demolition schedule.

C. Submit schedule indicating proposed methods and sequence of operations for selective demolition work to Architect and Engineer for review prior to commencement of work.

D. Certification: Within 3 days of disposal, submit certification, evidence, or receipts clearly establishing that materials were properly and legally conveyed to, and deposited at, a legal disposal site.

1.3 QUALITY ASSURANCE

A. Comply with governing codes and regulations. Use experienced workmen.

1.4 PROJECT CONDITIONS

A. Areas of work will not be occupied by Owner's personnel during work.

B. The building will be open to the public during the construction period.

2. Products - Not Applicable To This Section

3. Execution

3.1 DEMOLITION

A. Perform selective demolition work in a systematic manner. Use such methods as required to complete work indicated on Drawings and in these specifications in accordance with progress schedule and governing regulations.

B. Perform all removals and cutting carefully to avoid damage to adjacent elements scheduled to remain.

C. Provide exterior and interior shoring, bracing, and support to prevent movement, settlement, or collapse of sections of the structure indicated to remain.

D. If safety of structure appears to be endangered at any time, cease operations immediately and notify Architect.

E. Use all measures required to protect the structure and its materials, finishes, fixtures, and assemblies from damage resulting from the work of this section. Provide all temporary protection and facilities required to ensure that no removed material damages surfaces not indicated to be removed.

F. Provide temporary protection to shield elements exposed to the weather as a result of the selective structural demolition.

G. Do not damage building elements and improvements indicated to remain.

H. Do not close or obstruct streets, walks, drives, parking areas, or other occupied or used spaces or facilities without the written permission of the Owner and the authorities having jurisdiction.

I. Cease operations if public safety or remaining structures are endangered. Perform temporary corrective measures until operations can be continued properly.

J. Carefully identify, disassemble, and demolish those features designated demolish or designated remove.

K. Perform disassembly, demolitions, and removals of all types in a controlled manner without damage to the historic structure or features, damage to the materials or construction to remain, injury or alteration to disassembled material or component, and leaving surfaces ready to receive new or assembled work.

3.2 CLEAN-UP

A. Remove all materials designated and approved to be discarded at the end of each shift.

B. Remove and dispose of temporary protective materials when complete.

C. Dispose of all materials off site in compliance with government regulations.

SECTION 02080 - Paints And Coatings Removal

1. General

NOTE: Exterior paint on wood or metal surfaces should be removed to sound substrate only. Complete paint removal from wood or metal is **not** permitted or required unless the paint is alligatored, or deteriorated down to bare wood or metal. Complete paint removal may be necessary on previously painted masonry surfaces. In areas where these conditions exist (alligatoring, exposed wood or metal, and/or deteriorated paint on masonry), the contractor shall completely remove paint coatings as specified

below. In areas where these conditions do not exist, see Specification Section 09900 for paint removal only to a sound substrate.

1.1 DESCRIPTION

A. Work included: Remove paint, sealants and coatings of all types from exterior wood and metal, and stone substrates (including interior door and window surfaces), without physical or chemical damage to the substrates, as indicated on Drawings, including:

1. Pre-testing of soil adjacent to building for lead levels to be paid by contractor and provided to the architect.
2. Protection of adjoining surfaces.
3. Chemical removal.
4. Scraping and wipe down.
5. Neutralizing of chemical removers.
6. Rinsing.
7. Complete containment and collection of chips, rinse water, runoff, residue, dusts and abrasives.
8. Clean-up and disposal. (Note: any disposal fees are the Contractor's responsibility.)
9. Post-paint removal testing of soil for lead levels to be paid by contractor and provided to the architect.

1.2 SUBMITTALS

A. Chemical paint removal systems product data: 7 days after award of contract, submit Manufacturer's:

1. Specifications and product data.
2. Application instructions.
3. Storage instructions.

B. Mock-ups: At least five (5) days before the start of paint removal or within 15 days after award of contract (whichever comes first), submit paint removal mock-up on all paint/ substrate combinations.

C. Procedure: At least ten (10) days before the start of paint removal or within 15 days after award of contract (whichever comes first), submit:

1. Procedure complying with the requirements of governmental agencies having jurisdiction over the removal and disposal of lead based paint.
2. Submit a notarized statement, signed by a responsible officer of the firm performing the work, attesting to the fact that the procedure complies with applicable government requirement.
3. Submit pre-paint removal soil analysis results for lead levels taken by an certified independent environmental consultant. Soil samples may not be taken by the Contractor, and the Owner shall be notified and be present when the samples are being taken, and labeled duplicate samples shall be provided to Owner.
4. Certification: Within three (3) days of disposal, submit certification, evidence, or receipts clearly establishing that materials were properly and legally conveyed to, and deposited at, a legal disposal site.

5. Submit post-paint removal soil analysis results for lead levels taken by an certified independent environmental consultant. Soil samples may not be taken by the Contractor, and the Owner shall be notified and be present when the samples are being taken.
6. If post-paint removal soil analysis for lead levels is higher than the pre-paint removal soil analysis for lead levels, the contractor shall take clean up measures (such as vacuuming the ground surface, removal of top inches of soil, etc.) until the post paint removal lead level is equal to or lower than the pre-paint removal lead levels.

1.3 QUALITY ASSURANCE

A. Lead Based Paint (if any): Comply with applicable health, safety, and environmental requirements of the government agencies having jurisdiction, as well as industry standards, that govern lead-based paint abatement work or hauling and disposal of hazardous waste materials, including, but not limited to, the following:

1. OSHA, including but not limited to:
   a. 29 CFR 1926.20: General safety and health provisions.
   b. 29 CFR 1926.28: Personal protective equipment.
   c. 29 CFR 1926.55: Gases, vapors, fumes, dusts, and mists.
   d. 29 CFR 1926.57: Ventilation.
   e. 29 CFR 1926.62: Lead Construction Standard.
2. DOT: U.S. Department of Transportation, including but not limited to:
   a. 49 CFR 171 and 172: Hazardous Substances.
3. EPA, including but not limited to:
   a. 40 CFR 745 (Proposed) Lead Based Paint Activities: Training, Certification, and Work Practice Requirements.
4. HUD: Department of Housing and Urban Development:
   a. 24 CFR 35, 905: Lead Based Paint Hazard Elimination; Interim Rule 941, 965 and 968.

B. Take all necessary actions and precautions to assure the safety of the public and workers, adjacent buildings and property, on and off site, and the environment.

C. Provide manufacturer's representative to observe each mock-up application and to make written recommendations on existing conditions, chemical paint removal.

D. Paint chips, rinse water, and residue must be contained and collected. Do not permit this material to become airborne, to enter the soil, or to contaminate other surfaces.

1.4 The following paint removal methods are prohibited: open flame or heat, water-abrasive or air-abrasive removal, pressure water blasting (with or without abrasives), power sanding, or mechanical impingement. Water pressure is not to exceed **400 p.s.i.** at the nozzle.

1.5 Chemical paint removal is limited to areas where there is no sound paint substrate and all paint must be removed down to the bare wood, metal, or masonry.

1.6 Contractor shall be responsible for compliant removal of any lead contamination that occurs as a result of painting operation as defined by an increase in lead level in post-paint soil samples in comparison with pre-paint soil samples.

1.7 If contractor fails to provide independent pre-paint soil testing, mitigation of any and all lead contamination of post-paint soil shall be the contractor's responsibility.

2. PRODUCTS

2.1 CHEMICAL PAINT REMOVAL

A. Chemical Paint Removal System:
One possible source is "Peel Away 7" non-alkaline, non-methylene chloride, proprietary organic solvent mixture, paste paint stripper with a fibrous laminated cloth applied as a backing/seal to the paste, available from Dumond Chemicals, Inc., 1501 Broadway, New York, NY 10036, tel: (212) 869-6350. However, use of "Peel Away 7" is not required provided other, non-methylene chloride chemical paint remover, demonstrated harmless to the substrate, and demonstrated equally effective by the contractor in removing the existing coatings is approved by the Architect.

B. Denatured alcohol or mineral spirits for final clean down.

2.2 TOOLS

A. Tools compatible with the chemical remover and the various substrates include: stiff non-metallic bristle brushes/medium natural bristle brushes and metallic and non-metallic scrapers of various sizes, a garden hose with spray nozzle.

2.3 MILDEWCIDE

A. Bleach or other approved substance.

2.4 OTHER MATERIALS

A. Gloves, protective and clean-up gear, sheeting and masking tape sufficient for proper protection, application, containment, and collection of residue and waste.

3. EXECUTION

3.1 SURFACE CONDITIONS

A. With careful study of the contract documents and the building, examine all paint to be removed, identify coatings removal methods required, and with the Architect, confirm the limits of paint removal.

3.2 ENVIRONMENTAL CONDITIONS

A. Do not apply chemical paint remover if air temperature falls below 40 degrees F at night or during application, or when weather conditions create drifting of spray or debris.

B. Do not allow paint chips to touch the ground or leave the work area. Contractor is responsible for laying tarps and providing all protective and collection measures.

3.3 PROTECTIVE MEASURES

A. Install protective measures prior to paint removal.

B. Install and secure temporary waterproof protection to prevent damage at wall openings, windows, door and architectural features, masonry, and interior finishes and furnishings. Contractor is responsible for laying tarps and providing all protective and collection measures.

C. Do not nail temporary protective coverings to the structure.

D. Install measures to contain, collect and dispose of all waste materials, residue, or liquids generated from this Work.

E. Provide protective measures so no paint chips reach the ground surface. Contractor is responsible for laying tarps and providing all protective and collection measures.

3.4 ACCEPTANCE CRITERIA

A. No loose or flaking paint is to remain on the substrate.

B. Remaining paint should be evenly distributed, and tightly adhered to the substrate.

C. Transitions between painted areas and areas where paint layers have been removed are to be hand-sanded smooth, so that the transition is not visible to the naked eye. If architect's fingernail catches on transitions, paint preparation will be deemed inadequate.

D. Substrate is to be undamaged or unstained by removal, and fully neutralized.

E. No paint chips or paint removal residue shall be on the ground or adjacent surfaces. Contractor is responsible for laying tarps and providing all protective and collection measures.

3.5 CHEMICAL PAINT REMOVAL

A. Apply chemical paint remover by trowel, brush, or roller, to the thickness recommended by the manufacturer.

B. Apply the laminated cloth backing, lapping edges to form a seal. Secure backing cloth with tape.

C. Let stand until paint has softened (2-96 hours).

D. Remove backing and residue in accordance with the manufacturer's instructions.

E. Wood: carefully scrape surface and recesses to remove softened paint and residue. Select and use scraping tools with care, keep scrapers sharp and clean, do not alter wood surface profile, and wipe down with cloth or sponge soaked with denatured alcohol or mineral spirits.

F. Repeat entire chemical remover sequence again.

G. Chemical paint removal must be followed by a neutralizing process.

3.6 CONTAINMENT AND COLLECTION

A. Construct and maintain a system to contain and collect all residue and runoff for disposal; do not permit runoff or residue to contact masonry foundations, surrounding soil, or surrounding hard surfaces. Contractor is responsible for laying tarps and providing all protective and collection measures.

3.7 CLEAN-UP

A. Remove all waste materials and liquids at the end of each shift.

B. Dispose of all materials off site in compliance with governmental requirements. Assist the Owner in obtaining an EPA number. Contractor will be responsible for all costs associated with disposal, including fees to obtain an EPA number if applicable.

C. Leave substrate free of contaminants or residues incompatible with the paint systems and ready to receive coatings.

D. Remove any soil contaminated by painting work, in accordance with all applicable regulations. Provide new topsoil to replace contaminated soil.

SECTION 02485 – Lawns and Grass

1. General

1.1 DESCRIPTION

A. Provide lawns and grass as indicated herein or on the Drawings, including but not limited to the following:

1. Seed for new lawn in areas disturbed by the contractor's work.

B. Mulching is required on all newly seeded areas.

2. Products

2.1 MATERIALS

A. Lime shall be pulverized dolomite limestone distributed at 90 pounds per 1000 square feet. Fertilizer shall be proportioned 10-20-10 at the rate 11 pounds per 1000 square feet. Work lime and fertilizer into soil with a disc, spring tooth harrow, etc.

B. Apply the following seed mixture at the following rates: spreading fescue (0.3 pounds per 1000 square feet), red fescue (0.3 pounds per 1000 square feet), Kentucky Bluegrass (0.6 pounds per 1000 square feet), and Perennial rye grass (0.2 pounds per 1000 square feet).

C. Mulch material shall be unrotted salt hay, hay, or small grain straw laid at the rate of 70-90 pounds per 1000 square feet. Mulch anchoring shall be placed immediately after mulching by means of a mulch anchoring tool.

3. Execution

3.1 SCHEDULE

A. Optimum seeding dates are 3/15 to 5/15 or 8/15 to 10/1.

1. Seed within these time periods if possible.
2. If seeding is done outside these time periods, contractor shall be prepared to completely reseed affected areas if necessary at no additional cost to Owner.

3.2 INSTALLATION

A. Apply seed uniformly by hand, cyclone seeded, drop seeder, drill, cultipacker, etc. Incorporate seed into the soil by raking or dragging.

B. Mulch.

C. Reseed any bald areas until successful.

END OF DIVISION 2 – SITE WORK

MASONRY 4

SECTION 04100 – Mortar

1. General

1.1 DESCRIPTION

A. Restoration of:

1. Existing brick masonry.
2. Existing stone masonry.

B. Work in this section is part of Deduct-Alternate #1.

1.2 RELATED WORK

A. Section 04520 - Masonry Restoration.

1.3 SUBMITTALS & MOCK-UPS

A. Product Data: Submit manufacturer's product data for lime to verify compliance with the requirements of this section.

B. Sand Samples: Submit two samples of sand for each type and color of sand in transparent containers of approximately one pint capacity. Identify source of each different type and color of sand (provide name and location of sand pit or other designation as appropriate to specifically identify sand).

C. Sand Grading: Grading of sand as provided by supplier prior to any sieving preparatory to use. Date of testing of sand for grading shall be from the month and year the work is being performed and grading must conform with ASTM C 144, *Standards Specification for Aggregate for Masonry Mortar*.

D. Provide samples of proposed matching mortar for Architect's and NJHT's review and approval prior to continuing masonry work. Contractor must not proceed with work until NJHT has reviewed and approved the sample. Submit three cured samples of each type of mortar. Samples shall be a minimum of one linear foot. Additional samples of mortar may be required to match the color of the existing mortar.

1. Existing brick masonry: high-lime mortar that matches the original in constituent composition, hardness, texture, color, and workmanship.

E. Required number of samples: 1 that matches, in the Architect's opinion.

F. Provide 2'x3' sample of proposed joint preparation workmanship.

G. Provide 2'x3' sample panel of proposed joint repointing workmanship.

H. No work shall proceed until an acceptable sample has been approved by architect.

1. Joint Preparation
2. Joint Repointing

I. Approval of mock-ups does not constitute approval of deviations from the Contract Documents (even if shown in mock-ups) unless Architect specifically approves such deviations in writing.

1.4 All masonry work shall be in conformance with American Building Standard Code Requirements for Masonry, ASA 41.1, and NCMA current specification.

1.5 QUALITY ASSURANCE

A. Do not change sources or manufacturers of mortar supplies during the course of the work.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to the site in unbroken containers, plainly marked and labeled with manufacturer's names and brands. Damaged packaging shall be examined immediately upon receipt, and damaged products shall be removed from site and replaced with new products.

B. Natural Hydrated Lime shall be stored above ground on pallets and covered with tarpaulins or plastic to prevent damage by water.

C. Store aggregates, covered and in a dry location, where grading and other required characteristics can be maintained and contamination avoided.

2. Products

2.1 MORTAR MATERIALS

A. Exposed mortar to be a natural hydraulic lime (NHL 2 or 3.5, lime putty not bagged dry hydrated lime), St. Astier Natural Hydraulic Lime, available from Limeworks.US or alternate approved by Architect.

B. Non-staining white Portland cement.

C. Mortar aggregate, composition to match existing as closely as possible, Schofield #107 or approved equivalent.

D. Potable water, free from injurious amount of oil, soluble salts, alkali, acids, organic impurities, and other deleterious materials.

E. No additives are allowed except stable, non-fading tinting agents if pre-approved by Architect to obtain exact mortar mix color or for mortar patches on deteriorated brick.

2.2 MORTAR MIXES

A. Mortar mix proportions shall be in accordance with mortar analysis provided by professional materials conservator in Appendix B. Basic proportions shall be as listed below. Color and texture of mortar shall match that of existing adjacent mortar. (See Section 04520 – Masonry Restoration, for test panel requirements.)

B. Mortar mix proportions shall be as follows:

1. Mortar for pointing brick and stone:

2 parts by volume non-staining white Portland cement.
7 parts by volume NHL 2 or 3.5
21 parts by volume sand

C. Mortar shall develop average compressive strength in 28 days, in accordance with ASTM C 270.

3. Execution

3.1 CONDITIONS

A. No work in this section shall be executed when the ambient temperature is less than 40° F and rising or 45° F and falling, or higher than 80° F.

B. No pointing shall be executed when freezing temperatures are expected within 48 hours.

C. No additives shall be used to extend these acceptable temperature ranges.

D. Heat materials and provide temporary protection of completed portions of the work in accord with the governing code and with "Construction and Protection Recommendations for Cold Weather Masonry Construction" of *Technical Notes on Brick and Tile Construction* by the Brick Institute of America.

3.2 MIXING PROCEDURES

A. In cold weather, heat the water and sand sufficiently to maintain the temperature of the mortar at time of use to above 50° F.

B. Measure materials with a known volume container. Do not measure by shovel.

1. Sand must be measured in a damp, loose condition to avoid oversanding.

C. Mix ingredients in clean mechanical batch mixer for a minimum of 10 minutes. Use only enough water to create a workable mix. Mortar may be allowed to sit for 1-3 hours; temper before use. After 3 hours, remaining mortar shall be discarded.

D. To ensure consistency between batches, Contractor shall designate one mechanic to be responsible for batching and mixing mortar.

E. Let setting mortar sit 20 minutes prior to use to allow for initial shrinkage.

F. Do **not** retemper mortar to extend workability. Discard entire batch.

3.3 PROCEDURE

A. After Architect's approval of joint sample panel, rake out deteriorated mortar joints of masonry by hand using a chisel ¼" or less in width (in combination with an electric saw blade if the workmanship was approved). Clean mortar from surfaces within the joint so that the new pointing mortar bonds to the building material, not old mortar. Do not chip or spall edges of the brick. If work is found unacceptable, raking shall cease, without additional cost to the Owner, until deficiencies in tools, workmanship, or methodologies have been corrected to the Architect's satisfaction.

B. Where brick surface is deteriorated, use a tinted, high-lime patching material to fill voids to create a flush surface. Patching material must match the color, texture, hardness, and surface finish of the original brickwork.

C. Joint depth shall be at least 2-1/2 times joint width, but no less than ½", and in all cases rake back to expose sound mortar. If voids are found in the bedding mortar during raking operations beyond the 1 inch depth, fill all voids to 1 inch depth in same manner as pointing mortar installation.

D. Brush, vacuum, or flush joints or cracks to remove dirt and loose debris. Joints shall be left in a damp condition, but without standing water, for repointing.

E. After Architect has approved mortar sample and repointing sample panel, apply mortar in ¼" thick layers, allowing each layer to reach thumb-print hardness before applying the succeeding layer. Final layer shall be slightly below face of masonry. Do not allow mortar to spread over edges, or to featheredge.

F. Discard batch of mortar when easy workability is lost. Do **not** retemper.

G. When the final layer of mortar is thumb-print hard, tool joint to match existing. Do not overlap face of masonry with new mortar. Remove excess mortar from joint edge by brushing. Pointing mortar shall be slightly **below** brick/stone surface, not **over** brick/stone surface. Do not, under any circumstances, use a chemical cleaning product to remove excess mortar without first submitting information to, and requesting approval from, the architect.

H. Keep joints damp for 72 hours after repointing.

I. When masonry cleaning is to take place after repointing, allow new pointing mortar to cure for at least 30 days before beginning cleaning operation.

SECTION 04200 – Unit Masonry

1. General

1.1 DESCRIPTION

A. Provide unit masonry:

1. Repair and restoration at existing construction.

1.2 SUBMITTALS

A. Submit for approval samples, product data, mock-ups, test reports.

B. Approval of mock-ups does not constitute approval of deviations from the Contract Documents (even if shown in mock-ups) unless Architect specifically approves such deviations in writing.

1.3 QUALITY ASSURANCE

A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

2. Products

2.1 MATERIALS

A. Brick Patching Material: Match historic brick in hardness, surface texture, and color range (see Section 04520).

B. Mortar: See Section 04100 - Mortar

3. Execution

3.1 INSTALLATION

A. Remove and replace damaged units. Enlarge holes in mortar (only) and re-point. Do not damage adjacent brick units. Clean brick using bucket and brush method; comply with

BIA Tech Note 20. No chemical cleaning to remove excess mortar is permitted without prior approval from the architect.

SECTION 04520 – Masonry Restoration

1. General

1.1 DESCRIPTION

A. Repair of damaged masonry through limited patching.

B. Raking out and repointing of deteriorated mortar joints in brick and stone masonry (see Section 04100 for mortar).

C. Areas included:

1. Areas of brick and stone masonry as marked on the Architectural Drawings.

D. Unit Prices

1. The Bidder shall provide the following unit prices where indicated on the Bid form:
   a. Rake out and repoint brick, per linear foot.
   b. Rake out and repoint stone, per linear foot.
   c. Patch deteriorated bricks per square foot.
2. Unit prices shall be used as the basis for adjusting the Contract price for the addition of the type of work listed.

E. Work in this section is part of Deduct-Alternate #1.

1.2 Related work:

A. Section 01020 - Allowances and Unit Prices

B. Section 02070 – Selective Demolition

C. Section 04100 – Mortar

1.3 QUALITY ASSURANCE

A. All masonry work shall be in conformance with American Standard Building Code Requirements for Masonry, ASA 41.1, and NCMA current specification.

B. Source of Materials: Obtain materials for the masonry restoration work from a single source for each type of material required to ensure consistency of quality, color, pattern, and texture.

1.4 SUBMITTALS

A. Provide sample panel 18" high by approximately 2' wide illustrating brick masonry repair, including tinted mortar patching, and mortar appearance and tooling for approval by Architect and NJHT. Notify Architect 7 days in advance of the dates and times when test panels will be ready for review. Contractor must not proceed with work until NJHT has reviewed and approved the sample.

1. Number of sample panels required: 1 matching.
2. Allow mortar to cure a minimum of 7 days before review by the Architect.
3. Contractor shall ascertain that matching acceptable test panels have been prepared prior to requesting Architect's visit. Should more than two visits by the Architect be

necessary to verify acceptability of test panels, the cost of additional trips shall be the responsibility of the contractor.

B. Provide sample panel 18" high by approximately 2' wide illustrating stone masonry repair, including mortar appearance and tooling for approval by Architect and NJHT. Notify Architect 7 days in advance of the dates and times when test panels will be ready for review. Contractor must not proceed with work until NJHT has reviewed and approved the sample.

1. Number of sample panels required: 1 matching.
2. Allow mortar to cure a minimum of 7 days before review by the Architect.
3. Contractor shall ascertain that matching acceptable test panels have been prepared prior to requesting Architect's visit. Should more than two visits by the Architect be necessary to verify acceptability of test panels, the cost of additional trips shall be the responsibility of the contractor.

C. Submit product data for each product indicated or, if not indicated, proposed for use. Include recommendations for application and use. Include test reports and certifications substantiating that products comply with specific requirements.

D. Verification Samples: Patching mortar and pointing installed as part of sample panel will serve as verification samples. Maintain sample panels during construction in an undisturbed condition. Approved sample panels shall become a part of the Work and serve as the standard for all similar type work on this Project. Contractor shall remove sample panels rejected by the Architect or NJHT and prepare additional sample panels for approval. Changes to patching mortar color may be required, and additional selection and verification samples shall be provided at no extra cost to the Owner until a satisfactory color match is achieved.

E. Approval of mock-ups does not constitute approval of deviations from the Contract Documents (even if shown in mock-ups) unless Architect specifically approves such deviations in writing.

2. Products

2.1 Obtain materials from one source to maintain color/texture/quality consistency.

2.2 Deliver materials to Project site in manufacturer's original and unopened containers, labeled with the type and name of products and manufacturers.

2.3 See Section 04100 for storage of cementitious materials and aggregate.

2.4 MASONRY MATERIALS

A. High-lime patching material tinted to match color of brick through the addition of brick dust or stable tinting agents.

3. Execution

3.1 INSTALLATION

A. Work only when ambient 45 degrees F to 80 degrees F will be maintained until 72 hours after completion.

B. Remove old mortar by hand chisel and mallet, unless Contractor can demonstrate how each operator's skilled use of power tools will not damage masonry. Width of chisel shall always be narrower than the width of the existing joint. Even if use of power tools has been

approved, the blade shall be thinner than the joint width and the power tools shall only be used to remove the center portion of the mortar; the edges shall be removed by hand chisel to prevent saw damage to the brickwork. Saws may not be used on vertical joints except in the very center, to prevent the saw from overshooting and cutting into the bricks above and below. Saws may not be used directly adjacent to brick as any slip would cut into the brick. Rake-out old mortar to depth equal to 2-1/2 times joint width and in no case less than ½" or depth required to expose sound, unweathered mortar. Do not damage masonry units. If voids are found in the bedding mortar during raking operations beyond the 1 inch depth, fill all voids to 1 inch depth in same manner as pointing mortar installation.

C. Remove mortar from masonry surfaces within raked-out joints to provide reveals with square backs and to expose masonry for contact with pointing mortar. Brush, vacuum, or flush joints to remove dirt and loose debris.

D. If work is found unacceptable, raking shall cease, without additional cost to the Owner, until deficiencies in tools, workmanship, or methodologies have been corrected to the satisfaction of the Architect and NJHT.

E. Point joints as follows:

1. Rinse masonry-joint surfaces with water to remove dust and mortar particles. Joints shall be left in a damp condition, but with no standing water, for repointing.
2. Apply the first layer of pointing mortar to areas where existing mortar was removed to depths greater than surrounding areas. Apply in layers not greater than ¼ inch until a uniform depth is formed. Compact each layer thoroughly and allow it to become thumbprint hard before applying the next layer.
3. Apply mortar in ¼ inch thick layers, allowing each layer to reach thumb-print hardness before applying the succeeding layer. Final layer shall be slightly below face of masonry. Do not allow mortar to spread over edges onto exposed masonry surfaces, or to featheredge. Remove all splatters before hardened with stiff natural bristle brush after dry.
4. When mortar is thumbprint hard, tool joints to match original appearance of joints, unless otherwise indicated. Remove excess mortar from edge of joint by brushing.
5. Follow manufacturer's recommendations for curing NHL mortars. Protect from direct sunlight, wind, and rapid drying by covering with wet burlap. Mist burlap periodically with water to keep moist.

F. After pointing, clean masonry using Tampico natural fiber brushes (or equal) and running water. No acid or deleterious products or methods shall be used to clean masonry.

G. Existing brickwork:

1. Repair spalled and damaged brick as required using a high-lime patching material tinted to match historic brick.

END OF DIVISION 4–MASONRY

WOOD 6

SECTION 06050 – Fasteners

1. General

1.1 DESCRIPTION

A. Work included: Fasteners for wood, including:
1. Nails for framing and finishing as required.

1.2 SUBMITTALS

A. Submit product data for approval.

1.3 PRODUCT HANDLING

A. Store fasteners under cover until installed.

2. Products

2.1 FASTENERS

A. Framing nails:
1. Common wire.
2. Steel.
3. Hot dip galvanized to ASTM A153.

B. Spikes
1. Flathead, smooth shank, diamond point.
2. Steel.
3. Hot dip galvanized to ASTM A153.

C. Finish nails:
1. Casting nail or brad.
2. Stainless steel.

D. Miscellaneous materials:
1. Rough hardware and fasteners: Provide, size, type, materials, and finish indicated and as recommended by applicable standards, comply with applicable Federal Specifications for nails, screws, bolts, nuts, washers, and anchoring devices as manufactured by the Simpson Strong-Tie Company, Inc. (2600 International Street, Columbus, OH 43228, 800/999-5099), or approved equal.

3. Execution

3.1 INSTALLATION

A. Nailing:

1. Penetrate the receiving piece at least ½ the nail length.
2. Prepare for all fasteners.
3. Do not split wood or timber member with nail or nails.
4. Remove split members and replace in kind.
5. Set nail head in finish carpentry items.

SECTION 06100 - Rough Carpentry

1. General

1.1 DESCRIPTION

A. Provide rough carpentry work:

1. Wood framing.
2. Blocking and small dimension framing.
3. Nailers, blocking, furring, and sleepers.
4. Shims.
5. Rough hardware.

1.2 SUBMITTALS

A. Submit product data for approval.

B. Samples: 21 days after award of contract submit sample of each grade stamp and material.

1.3 QUALITY ASSURANCE

A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

B. The Contractor performing the work of this section must have been determined a qualified restoration carpenter using the standards established by the New Jersey Historic Trust as follows: The contractor must have successfully completed two projects within the past five years of similar scope and character involving different buildings where the restoration work met the Secretary of the Interior's *Standards for the Treatment of Historic Properties* (Revised 2017). These projects should have involved the same foreman who will be on site during relevant construction activity for the proposed project.

1.4 PRODUCT HANDLING

A. Protection

1. Store replacement and salvaged wood on shoring, elevated at least 1 foot above the ground.
2. Place a vapor barrier on the bare soil.
3. Cover the wood with a breathable waterproof covering until installed.

2. Products

2.1 MATERIALS

A. Lumber, finished 4 sides, 15% maximum moisture content:

1. Light framing: Construction grade douglas fir or southern pine, appearance grade where exposed.
2. Structural framing and timbers: No. 1 grade Douglas fir or southern pine, appearance grade where exposed.
3. Boards: Construction grade.

B. Wood for nailers, blocking, furring and sleepers: Construction grade, finished 4 sides, 15% maximum moisture content. Pressure preservative treat items in contact with roofing, flashing, waterproofing, masonry, concrete or the ground.

C. Shims: Discontinuous blocking less than ½" in thickness. Construction grade, 15% maximum moisture content. Pressure preservative treat items in contact with roofing, flashing, waterproofing, masonry, concrete, or the ground. Shims used in a structural bearing situation (with wood framing) may not have less compressive strength than the surrounding components, and shall be hardwood.

D. Softwood dimension lumber:

1. Work stock to match original material in dimension, shape, and profile.
2. Identify each piece of dimension lumber stock by stamp, brand, mark, or tag showing, at a minimum, recognized grading bureau: SPIB, WCLIB, etc., mill, grade and species, and moisture content.
3. Dimension lumber: species, Grade #2 or better, surface finish: S4S; moisture content: S-dry, 15% maximum; length: full length; preservative treatment: CCA 0.040 cf for wood wherever required by code.

E. Salvaged wood:

1. Original wood, disassembled from the building for repair and reuse in accordance with Section 02070, sound throughout, and meeting the following:
   a. Thickness: min. 80% of original
   b. Open knots: none
   c. Perforations: None, repair nail holes per Section 06350
   d. Splits: Repair per Section 06350
   e. Deterioration/Rot: none
   f. Minimum length: 3 spans

F. Wood treatment:

1. Preservative treatment: Pressure-treated with waterborne preservatives compatible with the pressure treated preservatives, to comply with AWPB LP-2 or LP-22, as applicable. Kiln dry to 15% max. moisture content. Treat wood exposed to deterioration by moisture, such as items in contact with roofing, flashing, waterproofing, masonry, concrete, or the ground. Treat wood subject to insect attack.
2. Fire-retardant treatment: Pressure impregnated, to comply with ASTM E 84, Class A, and with AWPA C20 and C27; provide where indicated and where required by code.

3. Execution

3.1 INSTALLATION

A. Environmental conditions: Verify moisture content of finish carpentry material is less than 15% at the time of installation; do not install trim with moisture content exceeding 15%.

B. Fit and scribe pieces to match existing and original installation for: height and width, thickness, shapes, and finish.

C. Select and position pieces so knots, defects, and repairs do not interfere with locations of fasteners, joints, or connections.

1. Set loose knots with epoxy
2. Cut out and discard sections with knot holes or defects such as waney edges.

D. Field treatment of wood for durability: Saturate the surface of all field cuts in preservative treated members after trial fit-up, but before assembly or fastening (for wood at or below grade only).

E. Framing lumber: Make joints true, tight, and well nailed.

F. Provide nailers, blocking and grounds where required. Set work plumb, level and accurately cut.

G. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials and systems in proper relation with adjacent construction. Coordinate with work of other sections.

H. Comply with manufacturer's requirements for cutting, handling, fastening and working treated materials.

I. Remove and repair/replace any salvaged or replacement wood item which has split.

J. Restore damaged components. Protect work from damage.

SECTION 06200 - Finish Carpentry

1. General

1.1 DESCRIPTION

A. Work included: Provide various forms of new and salvaged wood and perform finish carpentry including, but not limited to, the following:

1. Exterior running and standing trim.

1.2 SUBMITTALS

A. Submit for approval samples, shop drawings, product data, mock-ups.

B. Samples: 14 days after award of contract submit sample of material for each sill or trim configuration.

C. Mock-ups: Prior to start of work, provide one mock-up for each sill or trim configuration.

1.3 QUALITY ASSURANCE

A. The Contractor performing the work of this section must have been determined a qualified restoration carpenter using the standards established by the New Jersey Historic Trust as follows: The contractor must have successfully completed two projects within the past five years of similar scope and character involving different buildings where the

restoration work met the Secretary of the Interior's *Standards for the Treatment of Historic Properties* (Revised 2017). These projects should have involved the same foreman who will be on site during relevant construction activity for the proposed project.

B. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

1.4 PRODUCT HANDLING

A. Protection:

1. Store wood on shoring, elevated at least 1 foot above the ground.
2. Place a vapor barrier on the bare soil, under the shoring.
3. Cover the wood with a breathable waterproof covering until installed.

2. Products

2.1 MATERIALS

A. Quality standard for fabrication and products: Architectural Woodwork Institute Quality Standards, Premium grade unless noted otherwise.

B. Finished wood:

1. Provide replacement stock from board or lumber stock.
2. Work stock to match original existing material in dimension, shape, profile, and surface finish (before weathering).
3. Stock for trim, sills, cornices, and Dutchmen:
   a. Species: Match existing original
   b. Grade: Clear of knots, close grained
   c. Strength: Not applicable
   d. Moisture content: Kiln dried
   e. Size: Match existing

C. Salvaged wood:

1. Original wood, disassembled from the building for repair and reuse in accordance with Section 02070, sound throughout, and meeting the following:
   a. Thickness: 80% of original
   b. Open knots: none
   c. Perforations: None, repair nail and staple holes per Section 06350
   d. Splits: Repair per Section 06350
   e. Deterioration/Rot: none
   f. Minimum length: 3 span

D. Exterior finish carpentry:

1. Trim and boards for painted finish: Softwood suitable for exposure and loading.

E. Wood treatment:

1. Preservative treatment: Pressure-treated with waterborne preservatives for items in contact with roofing, flashing, waterproofing, masonry, concrete, or the ground. Vehicle for preservative compatible with finish.
2. Fire-retardant treatment: ASTM E 84, Class A, where required by code or local authorities. Vehicle for preservative compatible with finish.

3. Execution

3.1 INSTALLATION

A. Environmental Conditions: Verify moisture content of finish carpentry material is less than 15% at the time of installation; do not install trim with moisture content exceeding 15%.

B. Fit and scribe pieces to match existing and original installation for: height and width, thickness, shapes, and finish.

C. Select and position pieces so knots, defects, and repairs do not interfere with locations of fasteners, joints, or connections.

1. Set loose knots with epoxy.
2. Cut out and discard sections with knot holes or defects such as waney edges.

D. Back prime work and install plumb, level and straight with tight joints; scribe work to fit. Field prime all cut edges.

E. Make joints true, tight, and well nailed.

F. For joints in building, window and door trim:

1. Make joints to conceal shrinkage and shed water
2. Miter exterior corners
3. Cope interior corners
4. Scarf or miter end to end joints

G. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials and systems in proper relation with adjacent construction. Coordinate with work of other sections.

H. Comply with manufacturer's requirements for cutting, handling, fastening and working treated materials.

I. Treatment of wood for durability: Prime all exposed and concealed surfaces of wood trim, after fit-up and trimming, and prior to fastening.

J. Fastening: remove and repair any salvaged or replacement wood item which has split.

K. Finishing exposed surfaces:

1. Putty all nail holes, screw holes, or imperfections.
2. Provide a smooth finish, equivalent of 200 grit sandpaper, sanded in the grain direction and removing any hammer marks, coarse sandpaper marks, and other surface imperfections.
3. Paint exposed finish carpentry surfaces in accordance with Section 09900.

L. Adjust, clean and protect.

SECTION 06350 - Wood Restoration

1. General

1.1 DESCRIPTION

A. Work included: Epoxy repair and restoration of existing wood, including:

1. Rough and finish carpentry

1.2 SUBMITTALS

A. Product data: 14 days after award of the Contract, submit:

1. Manufacturer's specifications and product data for epoxy repair system.
2. Manufacturer's application instructions for epoxy repair system.

1.3 QUALITY ASSURANCE

A. The Contractor undertaking this work must have been determined a qualified restoration carpenter using the standards established by the New Jersey Historic Trust: The firm should have successfully completed two projects involving cosmetic epoxy repairs within the part five years on different buildings where the restoration work met the Secretary of the Interior's *Standards for the Treatment of Historic Properties* (revised 2017). These projects should have involved the same foreman who will be on site during relevant construction activity for the proposed project.

B. Safety: Take all necessary actions and precautions to assure safety of:

1. The public and workers
2. Adjacent materials and surfaces
3. The environment, especially with respect to solvents and epoxies.

C. Comply with governing codes and regulations. Provide products of acceptable manufacturers that have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

2. Products

2.1 EPOXY REPAIR SYSTEM

A. Epoxy repair system:

1. Consolidating low viscosity epoxy resins and hardeners
2. Patching epoxy resins, hardeners and filler
3. Additives and catalysts
4. Provide from a single manufacturer/supplier as follows:
   a. Liquidwood and WoodEpox from Abatron, Inc., 33 Center Drive, Gilberts, IL 60136, tel: (800) 445-1754., www.abatron.com
   b. West System, from Gougeon Brothers, Inc., P.O. Box X908, Bay City, MI 48707, tel: (517) 684-7286, www.westsystem.com.
   c. or an approved equal.

B. Provide compatible solvents, tools, gloves, goggles, and safety equipment as necessary.

C. Provide wood for Dutchmen in accordance with:

1. Section 06200: Finish Carpentry for:
   a. Finish carpentry restoration
2. Section 08210: Wood Doors and Windows Restoration for:
   a. Wood Doors and Windows Restoration

3. Execution

3.1 ENVIRONMENTAL CONDITIONS

A. Perform wood epoxy restoration only when ambient weather conditions are within the recommended limits of the epoxy manufacturer for:

1. Temperature
2. Relative humidity
3. Moisture content of wood

3.2 EPOXY REPAIRS

A. Manufacturers' Instructions:

1. Follow manufacturers' instructions and safety recommendations exactly.
2. Plan for epoxies in mass placements that may result in high heat release.
3. Plan and execute epoxy placement to avoid dangerous curing temperatures.

B. Preparation of repair areas:

1. Remove all loose wood fiber, rotted wood, paint and paint chips, dirt, grease, mold, fungus, etc., to assure proper adhesion.
2. Prepare wood substrate per manufacturer's instructions.
3. Verify proper wood moisture content:
   a. If too high, dry the wood.

C. Epoxy consolidation (painted wood only):

1. Epoxy consolidate porous or "punky" deteriorated wood with liquid epoxy.
2. Drill holes and apply consolidant per manufacturer's instructions.

D. Split repair:

1. Apply epoxy adhesive to both faces of split.
2. Join pieces and clamp/restrain in place until cured.

E. Hole repair:

1. Use putty epoxy in layers. If not structural wood, fill larger holes with wood and finish with putty epoxy.

F. Cleaning:

1. Remove excess epoxy from exposed surfaces.
2. Use recommended solvents.
3. Do not drip or smear epoxy on exposed surfaces. Protect adjacent surfaces.

G. Finishing:

1. Sand, carve, and otherwise trim the exposed surface of the fully cured repair to match surface texture and elevation of the adjacent original existing materials.
2. All exposed wood surfaces not treated with epoxy will be treated with a combined "natural" consolidant composed of equal parts boiled linseed oil, gum turpentine, and spar varnish. Apply two coats, allow twenty four hours before application of primer coat.

END OF DIVISION 6 - WOOD

DOORS & WINDOWS 8

SECTION 08210 – Wood Doors

1. General

1.1 DESCRIPTION

A. Restoration of frames and leaves.

B. Repair doors as indicated herein and on the Architectural Drawings, including but not limited to the following:

1. Repair door sills.
2. Repair door jambs.
3. Repair rotted areas of doors.
4. Repair frame, secure hinges, replace deteriorated bottoms of vertical boards, install new watertable, and re-hang Door D3.
5. Repair and reset frame, secure hinges, re-hang, and recaulk jambs and head on Door D4.
6. Install new astragal on bulkhead doors per approved shop drawing.

C. Install concealed, bronze, spring-type weatherstripping on all 5 doors.

1.2 SUBMITTALS

A. Submit for approval samples, shop drawings, product data, warranty.

B. Samples: 28 days after award of contract, submit:

1. Samples of all profiles and sections for replacement parts.
2. Samples of weatherstripping.

C. Shop drawings: 28 days after award of contract, submit:

1. Shop drawings in sufficient detail to show design, fabrication, installation, anchorage, and interface of this work for replacement door components.

1.3 QUALITY ASSURANCE

A. The Contractor performing the work of this section must have been determined a qualified restoration carpenter using the standards established by the New Jersey Historic Trust as follows: The contractor must have successfully completed two projects within the past five years of similar scope and character involving different buildings where the restoration work met the Secretary of the Interior's *Standards for the Treatment of Historic Properties* (Revised 2017). These projects should have involved the same foreman who will be on site during relevant construction activity for the proposed project.

B. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use

experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

C. Comply with Quality Standards of Architectural Woodwork Institute (AWI), latest edition where referenced.

2. Products

2.1 MATERIALS

A. Dutchman repairs shall match existing in material, finish, and details.

B. Wood for Dutchmen/Restoration: Wood stock to match original material in dimension, shape, profile, and surface finish.

1. AWI quality grade: Premium.
2. Species: Math existing
3. Grade: Clear, close grained.
4. Strength: Not applicable.
5. Surface finish: Planed smooth.
6. Moisture content: less than 15%.

3. Execution

3.1 INSTALLATION

A. Undertake door repairs as shown on Architectural Drawings.

B. Restore existing door leaves/boards and frames by:

1. Filling fastener holes.
2. Filling hardware holes and voids with Dutchmen.
3. Replacing deteriorated wood sections with Dutchmen.
4. Consolidation.
5. Comply with Section 06350 – Wood Restoration.

C. Replace wood pieces where individual pieces are deteriorated beyond restoration complying with Section 06200.

D. Fill all nail holes, screw holes or other imperfections and sand to a smooth finish prior to painting.

E. Apply coatings and finishes in compliance with Section 09900.

F. Adjust, clean, and protect.

G. Install hardware in compliance with Section 08710.

SECTION 08300 – Temporary Closures

1. GENERAL

1.1 DESCRIPTION

A. Work included:

1. Provide temporary wood closures over any existing opening from which a door or window sash has been removed.

B. Related work:

1. Section 06050 – Fasteners.
2. Section 06100 – Rough Carpentry.

2. PRODUCTS

2.1 NEW WOOD FOR CLOSURES OVER WINDOWS AND DOORS

A. ½" CDX plywood.

3. EXECUTION

3.1 INSTALLATION

A. Install wood closures to provide secure protection from weather and intruders.

B. Provide method of installation to minimize damage to adjoining materials, while maintaining secure closure.

C. Fastening:

1. Comply with Section 06050.
2. Use minimal fasteners required to secure board (to reduce damage to adjoining materials).

SECTION 08610 – Wood Windows

1. General

1.1 DESCRIPTION

A. Provide replacement wood windows and window sash where indicated on the Architectural Drawings, repair wood deterioration as indicated on the Architectural Drawings, and restore all window sashes and frames, including spot repainting of interior side of sash and interior trim.

1. Rehang missing shutter leaf on Window W1 after repair/consolidation of rotten jamb frame and reinstallation of shutter pintles.
2. Replace Window W2 including frame, sash, and trim to match detailing at Window W1 per Section 1/A13 (part of Deduct-Alternate #2).
3. Replace lower sash of Window W3, matching detailing of upper sash (part of Deduct-Alternate #2).
4. Install locking hardware on Window W4 and reattach show sill (part of Deduct-Alternate #2).
5. Repair and reglaze lower sash on Window W5.
6. Epoxy-consolidate show sill on Window W6 (part of Deduct-Alternate #2).
7. Epoxy-consolidate show sill on Window W7 (part of Deduct-Alternate #2).
9. Repair and reglaze upper sash on Window W8.

B. Repair and reglaze all existing windows, including window sashes and frames with spot repainting of interior side of sash and interior trim, and cleaning of windows and existing storm sash. (Deduct-Alternate #2 for the windows other than windows W1-W8).

C. Wood window types:

1. Single and double-hung windows.

1.2 SUBMITTALS

A. Submit for approval samples, shop drawings for replacement Window W2 and replacement lower sash on Window W3, product data, mock-ups for window restoration (preparation of sash and reglazing) , warranty, test reports, maintenance data.

B. Approval of mock-ups does not constitute approval of deviations from the Contract Documents (even if shown in mock-ups) unless Architect specifically approves such deviations in writing.

C. Samples: 28 days after award of contract, submit:

1. Samples of all profiles and sections for replacement sash parts.
2. Samples of weatherstripping material.

D. Shop drawings: 28 days after award of contract, submit:

1. Shop drawings in sufficient detail to show fabrication, installation, anchorage, and interface of this repair work for replacement sash and frames.

E. Mock-ups: Prior to start of work in other areas, provide demonstration of window repair.

1.3 QUALITY ASSURANCE

A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

B. The Contractor performing the work of this section must have been determined a qualified restoration carpenter using the standards established by the New Jersey Historic Trust as follows: The contractor must have successfully completed two projects within the past five years of similar scope and character involving different buildings where the restoration work met the Secretary of the Interior's *Standards for the Treatment of Historic Properties (Revised 2017)*. These projects should have involved the same foreman who will be on site during relevant construction activity for the proposed project.

C. Comply with Quality Standards of Architectural Woodwork Institute (AWI), latest edition where referenced.

2. Products

2.1 MATERIALS

A. Wood Sash and Frames: New wood required to repair windows shall match original as closely as possible, as determined by Architect.

1. Primed wood units: Custom fine-grain clear lumber free of finger joints.

B. Glazing: New window glass cut to sizes required.

1. Clear float glass, FS DD-G-451, quality q3, glazing select.

C. Replacement elements for windows:

1. AWI quality grade premium
2. Solid wood: match original species
3. Moisture content: less than 15%
4. Joints: Match original, waterproof glue
5. Profiles: Match original
6. Hardware: Section 08710
7. Finish: Section 09900

D. Wood for Dutchmen/Restoration: Work stock to match original material in dimension, shape, profile, and surface finish.

1. AWI quality grade: premium
2. Species: match original
3. Grade: Clear, close grained
4. Strength: Not applicable
5. Surface finish: Planed smooth
6. Moisture content: Less than 15%

E. Bronze spring-type weatherstripping for existing wood windows.

3. Execution

3.1 INSTALLATION

A. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials and systems in proper relation with adjacent construction and with uniform appearance. Coordinate with work of other sections.

B. Replace broken or cracked panes of glass and repair all windows:

1. Carefully remove the interior trim, the lower window sash, and the parting bead, and put aside for re-use.
2. Window openings shall be secured with plywood while sash is removed. Nail holes from the plywood installation shall be filled prior to repainting (after sash is reinstalled).
3. Remove deteriorated putty manually, taking care not to damage the wood along the rabbet. Carefully remove glass if necessary (only if broken of if cracked modern glass), extracting glazing points and numbering panes for re-use in the same openings after cleaning.
4. With the glass out, remove remaining putty. Repair, sand, patch, and prime sash with a preservative primer. Oil and prime rabbet before beading with glazing compound and reinstalling glass. After pushing glazing points into the wood, install final glazing compound. Use a smooth, even bevel which does not lap further onto the glass than the wood muntin.
5. After the putty has cured 2 to 3 days (or as directed by manufacturer), paint the interior and exterior of the sash per painting specifications, lapping over glass slightly (putty side only) to seal.

6. While the sash is removed, inspect window frame and sill. Repair any deteriorated wood using epoxy consolidation, epoxy patches, Dutchman repairs, or in-kind replacement as directed by the Architect during construction.
7. Restore existing window sash and frames by:
   a. Filling fastener holes.
   b. Filling hardware holes and voids with Dutchman repairs using wood of the same species milled to the same profile and scarfed into the existing with waterproof glues.
   c. Replacing deteriorated wood sections with Dutchmen using wood of the same species milled to the same profile and scarfed into the existing with waterproof glues, complying with Section 06200.
   d. Consolidation - Comply with Section 06350: Wood Restoration
8. Replace wood pieces where individual pieces are deteriorated beyond restoration complying with Section 06200.
9. Treat decayed areas of wood with fungicide.
10. All surfaces not treated with epoxy will be treated with a combined "natural" consolidant composed of equal parts boiled linseed oil, gum turpentine, and spar varnish. Apply two coats, allow twenty four hours before application of primer coat.
11. Consolidated wood will be primed with primer as specified in Section 09900. All epoxy surfaces will be primed within 7 days of application to ensure proper adhesion of paint, and to prevent ultraviolet degradation of epoxy. All painting to occur when the ambient temperature is above 50 degrees F. All wood surfaces must be clean, dry, and free from oil or grease.
12. Reinstall restored frames and/or new replacement frames, and prime coat/finish coats in compliance with Section 09900.
13. Rehang replacement and repaired sash, adjusting trim to be weather, water, and wind tight.
14. Apply coatings and finishes in compliance with Section 09900.
15. After painting windows, open and close daily for the first three days to prevent sealing of the windows by the paint film. Spot repair any damaged surface treatments as required.
16. Restore damaged finishes and test for proper operation. Clean and protect work from damage.
17. Install hardware in compliance with Section 08710, replacing missing hardware to match.

SECTION 08710 – Builders Hardware

1. General

1.1 DESCRIPTION

A. Provide finish locking hardware for windows W2, W3, and W4.

B. Repair/refurbish other window and door hardware for proper operation.

1.2 SUBMITTALS

A. Submit for approval samples, product data, hardware schedule.

1.3 QUALITY ASSURANCE

A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

2. Products

2.1 MATERIALS

A. Windows W2, W3, and W4: Install wood sash window security pins, key-locking type: CR Laurence Co. or approved equal.

B. Locksets and latchsets: Match existing original where replacement is required. No hardware should be replaced without Architect's approval.

3. Execution

3.1 INSTALLATION

A. Reinstall existing hardware using original attachments wherever possible except where replacement hardware is indicated on the construction drawings. Where original attachments are missing or no longer serviceable, use new or salvaged attachments to match original in design and appearance., including finish.

B. Follow guidelines of DHI "Recommended Locations for Builder's Hardware for Standard Steel Doors and Frames" and hardware manufacturers' instructions.

C. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials and systems in proper relation with adjacent construction and with uniform appearance. Coordinate with work of other sections.

D. Adjust operation, clean and protect.

SECTION 08800 – Glass and Glazing

1. General

1.1 DESCRIPTION

A. Provide glass and glazing for windows.

1.2 SUBMITTALS

A. Submit for approval samples, shop drawings, product data, mock-ups, warranty, test reports, maintenance data, extra stock.

B. Approval of mock-ups does not constitute approval of deviations from the Contract Documents (even if shown in mock-ups) unless Architect specifically approves such deviations in writing.

1.3 QUALITY ASSURANCE

A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

2. Products

2.1 MATERIALS

A. Glazing sheets:

1. Primary glass, Fed. Spec DD-G-451:
   a. Clear float glass.

B. Glazing materials:

1. Window Sash Glazing Compound: DAP '33'mor approved equal.
2. Silicone glazing sealants.
   a. Structural sealant: Dow Corning 795 or approved equal.
   b. Weather seal: Dow Corning or approved equal.
3. Acrylic glazing sealant; Tremco Mono or approved equal.

3. Execution

3.1 INSTALLATION

A. Inspect framing and repair as necessary, matching existing construction.

B. Comply with FGMA "Glazing Manual" and manufacturers instructions and recommendations. Use manufacturer's recommended spacers, blocks, primers, sealers, gaskets and accessories.

1. Surfaces should be clean, dry, and free of frost. When re-glazing, if glass must be removed (only if broken for all glass and if cracked for modern glass), remove all old putty and bedding.
2. If any separation has occurred in glazing, mix entire contents of container until uniform. Do not thin glazing. If necessary, place glazing in hands to warm and soften.
3. Apply a thin layer of glazing compound to backstop of sash to provide back-bedding where glass is to be set.
4. Press glass firmly into place. For clear glass, maintain ¼" minimum contact area between glass and compound.

END OF DIVISION 8 – DOORS AND WINDOWS

FINISHES 9

SECTION 09900 - Painting and Coating

1. General

1.1 DESCRIPTION

A. Provide painting and surface preparation for all exterior wood surfaces, including all running and standing trim, windows, doors, and shutters.

B. Provide painting and surface preparation for the interior sides of the exterior doors.

C. Provide painting and surface preparation for interior side of window sash and interior trim if damaged by the window restoration process.

D. Provide painting and surface preparation for previously-painted exterior metal hardware, including shutter hinges, hooks, and shutter dogs, as well as other door or window hardware.

1.2 SUBMITTALS

A. Submit for approval samples, product data, mock-ups, extra stock.

B. Submit a drawdown of each color match to the Architect for approval of the color match and obtain a report to certify the approval of each color match.

1.3 QUALITY ASSURANCE

A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

B. Colors

1. Match the existing exterior and interior colors.

C. Color Matching

1. All color matching should be done in standard conditions of illumination. Illumination will be average daylight and tungsten light (3000K) for visual evaluation. Do not use fluorescent illumination in the color matching process.

D. Color Measurement and Evaluation

1. Each drawdown submitted to the Architect will be evaluated visually. The standard conditions of illumination will apply - average daylight and tungsten light (3000K) for visual evaluation.

E. Final Acceptance

1. The final acceptance of all samples for color and appearance will be from job applied samples. Provide a brush-out (drawdown) of each color of paint brought to the job. Present the dried brush-out to the Architect for visual comparison.

2. Provide final paint source and color formulation on each color in a letter to the Architect. This information will be used for any maintenance painting in the near future.
3. Provide any unused paint, in original containers, to Owner for future use (touch-ups).

2. Products

2.1 First-line standard products for all systems by Sherwin Williams, Benjamin-Moore, Pratt and Lambert, Finnaren & Haley, Glidden, or approved equal. If using Sherwin-Williams or other brands with a color-prime system, use the color-prime primer indicated for the chosen colors.

2.2 EXTERIOR PAINT SYSTEMS:

A. Wood for opaque finish: Paintable water repellent preservative; Alkyd primer; latex finish, Sherwin-Williams "Duration" or approved equal, 2 coats.

B. Ferrous metal: Zinc chromate primer; alkyd enamel, 2 coats.

2.3 INTERIOR PAINT SYSTEMS:

A. Wood for opaque finish: Alkyd enamel undercoat; latex finish, Sherwin-Williams "Interior Duration" or approved equal, 2 coats.

2.4 ACCESSORIES:

A. Chlorothalonil: Mildewcide supplement to be added to exterior paint if it is not already incorporated in the paint formula. Verify compatibility with manufacturer.

3. Execution

3.1 INSTALLATION

A. Inspect surfaces, report unsatisfactory conditions in writing; beginning work means acceptance of substrate.

B. Comply with manufacturer's instructions and recommendations for preparation, priming and coating work. Add mildewcide to exterior paints and apply paintable water repellent preservative to exterior wood. Coordinate with work of other sections.

1. General: Clean surfaces thoroughly to remove dirt, chalk, mildew, organic growth efflorescence, oil, grease or other surface deposits. Seal knots and sap streaks with a generous coat of Latex Primer/Stain Sealer after removing excess sap by treating with a heat gun and scraping. Remove rust and scale from ferrous material. .
2. Previously painted surfaces: To obtain proper adhesion, glossy or protected surfaces, such as porch ceilings, supports, overhangs, and areas not directly exposed to the weather, must be sanded and hosed down with plenty of water. Allow to dry. Scrape off all loose, scaling, or peeling paint and sand edges smooth. Sand all weathered bare wood areas. Old paint showing bad cracking, flaking, peeling, alligatoring, or blistering must be completely removed per Section 02080 above. Treat as an unpainted surface. Blistering and peeling are most often caused by moisture entering in, or trapped within a structure. Correct structural defects and provide venting where required before repainting. To remove dirt and chalk, scrub with detergent and water, thoroughly rinse and allow to dry. After cleaning, if mildew is present, remove by scrubbing with a mixture of one quart hypochlorite bleach in three quarts of water. Rinse thoroughly with clean water and allow to dry. All water applications shall be low pressure, maximum 600 psi at the nozzle.

3. Existing Wood: All surfaces not treated with epoxy will be treated with a combined "natural" consolidant composed of equal parts boiled linseed oil, gum turpentine, and spar varnish. Apply two coats, allow twenty four hours before application of primer coat.
4. New Wood: All newly installed wood must be primed and edge-primed on all surfaces prior to installation.
5. Hand apply with brush two (2) finish coats.

C. Match approved mock-ups for color, texture, pattern and coverage. Re-coat or remove and replace work which does not match.

D. Clean up, touch up and protect work.

END OF DIVISION 9 - FINISHES

END OF TECHNICAL SPECIFICATIONS

Appendix A

Bid Form to be submitted with Contractor's Bid

Bid Form

BID FORM

From: _____
(Name of General Contractor)

To: Kimberly Larter, QPA
Purchasing Department
Gloucester County
2 South Broad Street
Woodbury, NJ 08096
(856) 853-3415

Project: Exterior Restoration
James and Ann Whitall House,
Red Bank Battlefield

Date: _____

The undersigned Bidder acknowledges by his signature that he has visited and examined the site of the proposed construction and has received and examined the documents titled "Exterior Restoration, James and Ann Whitall House" Architectural Drawings dated Rev. 8/2/2024, the Project Manual dated August 2024 (Revised), and County-issued Bidding Documents, and has included their provisions in his Bid. The Bidder acknowledges that he has received the following Addenda by indicating the dates thereof:

Addendum No. 1	**Date**
2	
3	

In submitting this Bid, the Bidder agrees:

a. To hold his Bid for 60 days from the date shown above.
b. To enter into and execute a Contract, if awarded, on the basis of this Bid.
c. To accomplish Work in accordance with the Bid Documents within the specified time frame.

BASE BID: The Bidder agrees to construct the Work related to the Exterior Restoration at the James and Ann Whitall House as specified in the Bid Documents of this project for the lump sum of (show amount in both words and figures):

Dollars

$ _____

UNIT PRICE #1: The Bidder agrees to construct the Work related to Unit Price #1(brick repointing in excess of the areas marked on the Architectural Drawings) in the Bid Documents of this project for the price per linear foot of (show amount in both words and figures):

ADD **Dollars**

+ $ _____ **per linear foot**

UNIT PRICE #2: The Bidder agrees to construct the Work related to Unit Price #2 (stone repointing in excess of the areas marked on the Architectural Drawings) in the Bid Documents of this project for the price per square foot of (show amount in both words and figures):

ADD **Dollars**

+ $ **per linear foot**

UNIT PRICE #3: The Bidder agrees to construct the Work related to Unit Price #3 (brick patching in excess of the areas marked on the Architectural Drawings) in the Bid Documents of this project for the price per square foot of (show amount in both words and figures):

ADD **Dollars**

+ $ **per squar e foot**

DEDUCT-ALTERNATE #1: The Bidder agrees to eliminate the Work related to Deduct-Alternate #1 in the Bid Documents of this project (elimination of all masonry repairs and repointing) for the lump sum of (show amount in both words and figures):

DEDUCT **Dollars**

—$

DEDUCT-ALTERNATE #2: The Bidder agrees to eliminate the Work related to Deduct-Alternate #2 in the Bid Documents of this project (elimination of wood window restoration except the eight windows in the Window Schedule on Sheet A-1 of the Architectural Drawings) for the lump sum of (show amount in both words and figures):

DEDUCT **Dollars**

—$

DEDUCT-ALTERNATE #3: The Bidder agrees to eliminate the Work related to Deduct-Alternate #3 in the Bid Documents of this project (elimination of repair of exterior wood trim through Dutchman repair or epoxy consolidation) for the lump sum of (show amount in both words and figures):

DEDUCT **Dollars**

—$

DEDUCT-ALTERNATE #4: The Bidder agrees to eliminate the Work related to Deduct-Alternate #4 in the Bid Documents of this project (elimination of restoration of windows W2, W3, W4, W6, and W7 marked on the Architectural Drawings for the lump sum of (show amount in both words and figures):

DEDUCT **Dollars**

— $

Start-up Date: Completion Date:

Name of Firm:

Signed by: Title:

Bidder's address:

Bidder's email address & telephone number:

Signature Date

NOTE: Attach all required paperwork per the County's Bidding Documents.

Appendix B

Mortar Analysis

John Milner Associates, Inc.
"Whitall House Mortar Analysis"
27 February 1989

JOHN MILNER ASSOCIATES

ARCHITECTS · ARCHEOLOGISTS · PLANNERS

restoration & reuse · design · prehistoric & historic archeology · historical research · building materials conservation

principals:
John D. Milner
Allan H. Steenhusen
Daniel G. Roberts
Mary Werner DeNadai
F. Neale Quenzel
David A. Hollenberg

February 28, 1989

Ms. Penelope S. Watson
Watson and Henry Associates
5 Warren Street
Bridgeton, NJ 08302

Re: Whitall Mortar Analysis

Dear Penny:

Please find enclosed our report for the samples you sent us. In comparing the aggregate sizes, you might note that Sample A and Sample C are almost identical and definitely not to current ASTM C144 standards. My guess is that they were sieved through one, possibly two, screen sizes and you may want to keep that in mind if you are trying for a matching appearance.

If we can be of any further help, please don't hesitate to call.

Sincerely,

JOHN MILNER ASSOCIATES, INC.

Edward A. Smith
Architectural Conservator

EAS:mb

Enclosure

309 north matlack street, west chester, pennsylvania 19380 · 215-436-9000
1216 arch street, 5th floor, philadelphia, pennsylvania 19107 · 215-561-7637
alexandria, VA · 703-354-9737 mount laurel, NJ · 609-234-6644 washington, DC · 202-547-5050

WHITALL HOUSE
Mortar Analysis

The following Analysis Summary Sheets contain a chemical analysis and a physical analysis for mortar, plaster, and stucco samples gathered at the site. The chemical analysis is made to obtain a volumetric whole number ratio of cement, lime and sand in contemporary construction terms. This ratio indicates the strength of the existing mortar, an important consideration in preparing mortar for repointing or stucco for reparging. New mortar should be as soft or softer than the masonry units so that it does not cause spalling or cracking.

The physical analysis is an investigation and description of the sand and cementitious components. The characteristics described include color, opacity, aggregate size and shape, and impurities. All of these features and especially important in preparing the repointing mix so that its appearance matches the original mortar. The color is recorded by Munsell number and National Bureau of Standards nomenclature and is probably the most important physical characteristic to be matched. A color match can usually be achieved by mixing similar sands, lime and cement that approximate the original components: modern tinting agents can be used to get an exact match for colored mortars. The grayness of the color of Portland cement should be taken into account and white cement used when the grayness would be inappropriate for a high lime or natural cement mortar. It should also be kept in mind that the joint size and tooling of the new pointing should match the original to maintain the same profiles of the joints or rendered surface.

Sample A was a relatively soft mortar with high quality sands and some white lime inclusions. There did not appear to be any Portland cement present and the cementitious component of the findings may be due to impurities in the lime or sand. The general ratio was probably a 1:3-1/2 (lime:sand), a traditional pointing mix.

Sample B was a soft plaster sample consisting of a white finish coat and a brown scratch coat reinforced with hair. A gray, unreinforced scratch coat was also present in the sample and separated out before analysis; it probably represents a patch in the plaster. The weight of the hair had a slight affect on the calculations, but the general ratio was 1:2 (lime:sand).

Sample C was a moderately hard parging from an interior area consisting of a brownish-gray binder and densely packed sands; some of the adjacent brick face had adhered to the parging. The 2:5:11 ratio does not correspond with contemporary mixes, but if the fines are included as part of the aggregate's impurities, an approximate 1:2 (lime:sand) ratio results.

John Milner Associates, Inc.
309 North Matlack Street
West Chester, PA 19380

Project Name: Whitall House
Location: National Park, NJ

Sample No.: A (mortar)
Date: 2/7/89

MORTAR ANALYSIS SUMMARY SHEET

Chemical Analysis

A. CALCULATIONS (Weight is in grams)

1.	Container Weight:	104.37
2.	Container + Sample Weight:	120.35
3.	Sample Weight:	15.98
4.	Filter Paper Weight:	3.78
5.	Container + Sand Weight:	114.43
6.	Sand Weight:	10.06
7.	Paper + Residue Weight:	4.44
8.	Residue Weight:	0.66
9.	Sand + Residue Weight:	10.72
10.	CO_2 Weight:	0.26

11. Lime Content (Acid soluble fraction minus CO_2 absorbed and lime content of cement) = 0.22 P/V

12. Natural or Portland Cement = 0.06 P/V

13. Sand Content = 0.63 P/V

B. RATIOS

	VOLUMETRIC DECIMAL RATIO				VOLUMETRIC WHOLE NUMBER RATIO
Natural or Portland Cement	0.06	=	1	=	2
Lime	0.22	=	3.67	=	7
Sand	0.63	=	10.50	=	21

Project Name: Whitall House
Sample No.: A (mortar)

MORTAR ANALYSIS SUMMARY SHEET
Physical Analysis

Pre-Test

Description: Fine sands evenly distributed throughout white lime binder with small lime inclusions.

Color: Munsell Value: 10 YR 9/1 — N.B.S. Name: yellowish white

Relative Hardness: soft 1 2 (3) 4 5 6 7 8 9 10 hard

Post-Test

Sand -

Color: Munsell Value: 2.5 Y 6/4 — N.B.S. Name: dark yellowish gray

Opacity:
5 % opaque
65 % translucent
30 % transparent

Composition: 99% quartz, 1% other (crushed brick, biotite)

Angularity: 20 % angular 80 % rounded

Size:

Sieve No.	Weight (in grams)	Percentage
8	0.00	100
18	0.11	99
30	0.13	98
50	6.06	37
100	3.51	2
200	0.11	1
< 200	0.14	---

Fines -

Color: Munsell Value: 10 YR 6/4 — N.B.S. Name: light yellowish brown

Description: Fine, mostly uneven with some organic material.

Notes

(E.S.)

John Milner Associates, Inc.
309 North Matlack Street
West Chester, PA 19380

Project Name: Whitall House
Location: National Park, NJ

Sample No.: B (plaster)
Date: 2/7/89

MORTAR ANALYSIS SUMMARY SHEET

Chemical Analysis

A. CALCULATIONS (Weight is in grams)

1.	Container Weight:	109.01
2.	Container + Sample Weight:	127.81
3.	Sample Weight:	18.80
4.	Filter Paper Weight:	3.77
5.	Container + Sand Weight:	118.61
6.	Sand Weight:	9.60
7.	Paper + Residue Weight:	5.26
8.	Residue Weight:	1.49
9.	Sand + Residue Weight:	11.09
10.	CO_2 Weight:	0.38

11. Lime Content (Acid soluble fraction minus CO_2 absorbed and lime content of cement) = 0.26 P/V

12. Natural or Portland Cement = 0.11 P/V

13. Sand Content = 0.51 P/V

B. RATIOS

	VOLUMETRIC DECIMAL RATIO				VOLUMETRIC WHOLE NUMBER RATIO
Natural or Portland Cement	0.11	=	1	=	2
Lime	0.26	=	2.36	=	5
Sand	0.51	=	4.63	=	9

Project Name: Whitall House
Sample No.: B (plaster)

MORTAR ANALYSIS SUMMARY SHEET
Physical Analysis

Pre-Test

Description: Soft brown scratch coat of plaster reinforced with hair. Very fine white finish coat on top surface.

Color: Munsell Value 10 YR 8/2 — N.B.S. Name yellowish gray

Relative Hardness: soft 1 2 (3) 4 5 6 7 8 9 10 hard

Post-Test

Sand -

Color: Munsell Value 10 YR 6/4 — N.B.S. Name light yellowish brown

Opacity: 45 % opaque
45 % translucent
10 % transparent

Composition: 90% quartz, 10% other (gypsum, crushed brick, serpentine)

Angularity: 15 % angular 85 % rounded

Size:

Sieve No.	Weight (in grams)	Percentage
8	0.00	100
18	0.33	97
30	0.45	92
50	3.01	61
100	3.96	19
200	1.50	4
< 200	0.35	---

Fines -

Color: Munsell Value 10 YR 6/4 — N.B.S. Name yellowish gray

Description: Very fine, extremely even residue with a large quantity of hair.

Notes Patch sample of plaster included with original sample (hair).

(E.S.)

John Milner Associates, Inc.
309 North Matlack Street
West Chester, PA 19380

Project Name: Whitall House
Location: National Park, NJ

Sample No.: C (parge)
Date: 2/7/89

MORTAR ANALYSIS SUMMARY SHEET

Chemical Analysis

A. CALCULATIONS (Weight is in grams)

1.	Container Weight:	106.96
2.	Container + Sample Weight:	112.46
3.	Sample Weight:	5.50
4.	Filter Paper Weight:	4.00
5.	Container + Sand Weight:	110.07
6.	Sand Weight:	3.11
7.	Paper + Residue Weight:	4.35
8.	Residue Weight:	0.35
9.	Sand + Residue Weight:	3.46
10.	CO_2 Weight:	0.10

11. Lime Content (Acid soluble fraction minus CO_2 absorbed and lime content of cement) = 0.24 P/V

12. Natural or Portland Cement = 0.10 P/V

13. Sand Content = 0.57 P/V

B. RATIOS

	VOLUMETRIC DECIMAL RATIO				VOLUMETRIC WHOLE NUMBER RATIO
Natural or Portland Cement	0.10	=	1	=	2
Lime	0.24	=	2.4	=	5
Sand	0.57	=	5.7	=	11

Project Name: Whitall House
Sample No.: C (parge)

MORTAR ANALYSIS SUMMARY SHEET
Physical Analysis

Pre-Test

Description: Densely packed sands with brownish binder. The face of adjacent brick has come off with the parging.

Color: Munsell Value: 2.5 Y 5/2 — N.B.S. Name: light olive brown

Relative Hardness: soft 1 2 3 4 5 (6) 7 8 9 10 hard

Post-Test

Sand -

Color: Munsell Value: 2.5 Y 5/2 — N.B.S. Name: light olive brown

Opacity:
65 % opaque
30 % translucent
5 % transparent

Composition: 97% quartz, 3% other (brick dust, muscovite, biotite)

Angularity: 10 % angular 90 % rounded

Size:

Sieve No.	Weight (in grams)	Percentage
8	0.00	100
18	0.10	97
30	0.07	95
50	1.84	35
100	1.07	1
200	0.02	0
< 200	0.01	---

Fines -

Color: Munsell Value: 10 YR 8/1 — N.B.S. Name: yellowish gray

Description: Extremely fine; very even.

Notes

(J.L.)