

**SECTION 00 0010
BID SPECIFICATION FOR
RESTORATION OF SUPERINTENDENT'S COTTAGE,
DALE CEMETERY,
TOWN OF OSSINING**



**Dana Levenberg, Town Supervisor
Elizabeth R. Feldman, Council Member
Gregory G. Meyer, Council Member
Jackie G. Shaw, Council Member
Northern Wilcher, Jr., Council Member**

**PREPARED BY:
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**APRIL 10, 2019
SEPTEMBER 9, 2019 REV
SEPTEMBER 25, 2019 REV**

END OF PROJECT TITLE PAGE

SECTION 00 0020
PROJECT DIRECTORY

PROJECT LOCATION: Dale Cemetery, 104 Havell Street, Ossining, New York 10562

OWNER:

Town of Ossining

16 Croton Avenue, 3rd Floor
Ossining, NY 10562

Dana Levenberg, Town Supervisor

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ARCHITECT:

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END OF SECTION

SECTION 00 0100

LEGAL NOTICE TO BIDDERS

NOTICE IS HEREBY GIVEN THAT THE Town of Ossining will receive sealed bids at the Office of the Town Clerk, Municipal Building, 16 Croton Avenue-1st Floor, Ossining, New York 10562 until **10 a.m. on Monday, December 9th, 2019**, for the Restoration of the Superintendent's Cottage, Dale Cemetery, located at 104 Havell Street, Ossining, New York 10562, in accordance with the Bid Specifications available in the office of the Town Clerk, 16 Croton Avenue-1st Floor, Ossining, New York.

A pre-bid meeting/walkthrough is scheduled on **Tuesday, November 12th, 2019 at 10 a.m.** at the site at 104 Havell Street, Ossining, New York 10562. Attendance is mandatory and a pre-requisite to submitting a bid.

The bids will be publicly opened, read and compared in the Office of the Town Clerk on **Monday, December 9th, 2019 at 10 a.m.**

All Bids must be made on the supplied Bid Form and must be submitted in a sealed envelope plainly marked "Bid for Restoration of the Superintendent's Cottage, Dale Cemetery" submitted to the Town Clerk's Office.

Bids shall be accompanied by an executed "Statement of Non-Collusion" pursuant to Section 103-d of the New York State General Municipal Law.

The Town Board reserves the right to reject any or all Bids or to accept any bid it deems to be in the best interest of the Town of Ossining.

BY ORDER OF THE TOWN BOARD
OF THE TOWN OF OSSINING

Mary Ann Roberts
Town Clerk

Dated: xx, 2019
Ossining, New York 10562

END OF LEGAL NOTICE TO BIDDERS

SECTION 00 0103
SPECIAL CONDITIONS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Historic Significance Acknowledgement for Dale Cemetery Superintendent's Cottage:

This property has been determined to possess historic (e.g., architectural, engineering, artistic) significance and is listed in the National Register of Historic Places. The contractor shall recognize that all aspects of the property may potentially contribute to this significance and the contractor shall not judge the relative significance of any features nor the impact of any or all proposed work; this responsibility shall rest solely with the architect. Consequently, no deviations from the contract documents shall be performed and no features or materials shall be altered, removed, reused, or taken from the premises, without the written approval of the architect as being consistent with the requirements of the contract documents. All work shall be consistent with *The Secretary of the Interior's Standards for the Treatment of Historic Properties*.

B. All work should be done in accordance with the Secretary of the Interior's Standards for Rehabilitation and the Secretary of the Interior's Standards for Reconstruction. The Standards will be applied taking into consideration the economic and technical feasibility of each project. The Standards are printed here, but can also be viewed by accessing the National Park Service's web site: <https://www.nps.gov/tps/standards.htm>

C. Secretary of the Interior's Standards for Rehabilitation

1. A property shall be used for its historic purpose or be placed in a new use that requires minimal change to the defining characteristics of the building and its site and environment.
2. The historic character of a property shall be retained and preserved. The removal of historic materials or alteration of features and spaces that characterize a property shall be avoided.
3. Each property shall be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or architectural elements from other buildings, shall not be undertaken.
4. Most properties change over time; those changes that have acquired historic significance in their own right shall be retained and preserved.
5. Distinctive features, finishes, and construction techniques or examples of craftsmanship that characterize a property shall be preserved.
6. Deteriorated historic features shall be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old in design, color, texture, and other visual qualities and, where possible, materials. Replacement of missing features shall be substantiated by documentary, physical, or pictorial evidence.
7. Chemical or physical treatments, such as sandblasting, that cause damage to historic materials shall not be used. The surface cleaning of structures, if appropriate, shall be undertaken using the gentlest means possible.
8. Significant archeological resources affected by a project shall be protected and preserved. If such resources must be disturbed, mitigation measures shall be undertaken.

9. New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.
 10. New additions and adjacent or related new construction shall be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.
- D. The Contractor shall have at least five years of experience working with historic structures listed on the National Register of Historic Places. The following major subcontractors must also demonstrate such experience:
1. Selective Deconstruction and Salvage
 2. Masonry Restoration
 3. Carpentry Restoration

1.02 PROJECT DESCRIPTION

A. Summary Project Description:

This project includes: selective demolition; reconstruction of front porch; selective installation of new wood window sash, framing and trim; chimney repair/restoration; stucco repair; stone lintel installation and masonry repair; door restoration; and painting.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

**SECTION 00 0110
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END OF LIST OF DRAWING SHEETS

SECTION 00 0200

INSTRUCTIONS TO BIDDERS

FORM OF INSTRUCTIONS TO BIDDERS

1.01 INTENT

- A. The work outlined in this project manual detail the restoration work at the Superintendent's Cottage, Dale Cemetery, 104 Havell Street, Ossining in accordance with the Drawings and Specifications. The project is being placed out to bid for the purposes of securing a contract.

1.02 SPECIAL REQUIREMENTS

- A. Dale Cemetery, including the Superintendent's Cottage, has been determined to possess historic (e.g., architectural, engineering, artistic) significance and is listed in the New York State and National Registers of Historic Places.
 - 1. All work shall be consistent with *The Secretary of the Interior's Standards for the Treatment of Historic Properties*.
 - 2. Also see Sections 00 0103 Special Conditions and 01 3590 Treatment of Historic Properties.
- B. The Contractor shall recognize that all aspects and elements of the property may potentially contribute to its significance. The Contractor shall not be the judge of the relative significance of any feature nor of the impact of any or all proposed alterations. This judgment is entirely the responsibility of the Owner and the Architect. No work shall be performed on this property and no elements altered, removed, reused, or taken from the premises without the approval of the Owner or the Architect as being consistent with the requirements of the Contract Documents.
- C. Bidders and the selected Contractor shall have at least five years' experience working with historic structures listed on the National Register of Historic Places. Major subcontractors must also demonstrate such experience.
- D. Because Dale Cemetery is a significant historic property, there are certain expectations and requirements which the contractor will be expected to honor at no additional cost, as follows:
 - 1. All project managers, supervisors, superintendents, or foremen (plus any interested workers) of each Contractor and Subcontractor must participate in and attend a pre-bid conference scheduled by the Owner and Architect prior to commencement of the Work.
- E. Non-discrimination and Affirmative Action
 - 1. Bidders must pay particular attention to applicable Federal, State and local requirements including non-discrimination and affirmative action requirements.
- F. The project is being bid as a single prime contract.

1.03 BID DOCUMENTS

- A. The Bid Documents are identified by Stephen Tilly, Architect as Project Number 1718, Superintendent's Cottage, Dale Cemetery, as prepared by Stephen Tilly, Architect and are comprised of the Drawings listed in Spec Section 00 0115 and this entire Specification Manual.

1.04 AVAILABILITY

- A. The Bid Documents will be issued electronically in PDF format.
- B. Bid Specifications are available for review in the office of the Town Clerk, 16 Croton Avenue-1st Floor,

Ossining, New York.

- C. Bid Documents are made available only for the express purpose of obtaining cost estimates for this project. Their use does not grant a license for other purposes.

1.05 EXAMINATION

- A. Upon receipt of Bid Documents verify that documents are complete. Notify Architect should the documents be incomplete.
- B. Immediately notify Architect upon finding discrepancies or omissions in the Bid Documents.

1.06 INQUIRIES, REQUESTS FOR INFORMATION AND ADDENDA

- A. Direct questions in the form of a "Request for Information" in writing to:
 - 1. Stephanie Reinert and Sowmya Singh at Stephen Tilly, Architect, phone: 914-693-8898, fax number: 914-693-4235, and e-mail: stephanier@stillyarchitect.com and sowmyas@stillyarchitect.com.
- B. Clarifications requested by bidders must be in writing not more than 7 days after date set for pre-bid meeting/mandatory walkthrough. The reply will be in the form of an Addendum, a copy of which will be forwarded to known recipients.
- C. Answers will be provided to all bidders. Requests for Information will be answered in writing in a timely manner by the Architect via facsimile transmission or e-mail approximately one (1) week in advance of the bid due date.
- D. Addenda may be issued during the bidding period. All Addenda become part of the Contract Documents. Include resultant costs in the Bid Amount.
- E. Verbal answers are not binding on any party.

1.07 PRE-BID MEETING/WALKTHROUGH

- A. A pre-bid meeting/walkthrough is scheduled on **Tuesday, November 12th, 2019 at 10 a.m.** at the site at 104 Havell Street, Ossining, New York 10562. Attendance is mandatory and a pre-requisite to submitting a bid.
- B. All general contract bidders, their sub-contractors and suppliers are invited.

1.08 QUALIFICATIONS

- A. EVIDENCE OF QUALIFICATIONS
 - 1. To demonstrate qualification for performing the Work of this Contract, bidders may be requested to submit written evidence of financial position, license to perform work in the State and experience working on historic buildings.

1.09 CONTRACTOR'S QUALIFICATION FORM

- A. Bidders and the subcontractors shall complete and submit the Contractor's Qualification Form included in these documents to the Owner with their bid. See 00 0420.

1.10 INVESTIGATION OF CONTRACTOR'S QUALIFICATIONS

- A. The Owner and the Architect may make investigations to determine the ability of the bidders to perform the work. The bidders shall furnish all information requested for this purpose.

- B. The Owner and the Architect reserve the right to reject the Contractor's bid if the evidence submitted by or the investigation of the bidder fails to satisfy the Owner and the Architect that he/she is properly qualified to carry out the obligations of the contract and to complete the contemplated work.

1.11 BID SUBMISSION

A. SUBMISSION PROCEDURE

1. Bidders shall be solely responsible for the delivery of their bids in the manner and time prescribed.
2. Submit one copy of the executed offer on the Bid Form provided herein.
3. Sealed Bids will be received on **Monday, December 9th, 2019 at 10 a.m.** at the Office of the Town Clerk, Municipal Building, 16 Croton Avenue-1st Floor, Ossining, New York 10562. Bids can be delivered to this address at any time in advance of that time and date. Bids must be submitted in a sealed envelope plainly marked "Restoration of the Superintendent's Cottage, Dale Cemetery
4. Bids will be opened and read aloud immediately after the deadline for submission has passed.

1.12 FEES FOR CHANGES IN THE WORK

- A. Include in the Bid Form, the overhead and profit fees on own Work and Work by subcontractors, applicable for Changes in the Work, whether additions to or deductions from the Work on which the Bid Amount is based.

1.13 BID FORM SIGNATURE

- A. The Bid Form shall be signed by the bidder, as follows:
 1. Sole Proprietorship: Signature of sole proprietor. Insert "Sole Proprietor" under the signature.
 2. Partnership: Signature of all partners. Insert "Partner" under each signature.
 3. Corporation: Signature of a duly authorized signing officer(s) in their normal signatures. Insert the officer's capacity in which the signing officer acts, under each signature. If the bid is signed by officials other than the president and secretary of the company, or the president/secretary/treasurer of the company, a copy of the by-law resolution of their board of directors authorizing them to do so, must also be submitted with the Bid Form in the bid envelope.
 4. Joint Venture: Each party of the joint venture shall execute the Bid Form under their respective signatures in a manner appropriate to such party as described above, similar to the requirements of a Partnership.

1.14 ADDITIONAL BID INFORMATION

- A. Submit the following supplements concurrent with the Bid Form 00 0410:
 1. Section 00 0420 - Contractor's Qualification Form
 2. Section 00 0470 - Non-Collusive Bidding Certification

1.15 DURATION OF OFFER

- A. Bids shall remain open to acceptance and shall be irrevocable for a period of forty-five (45) days after the bid closing date.

1.16 ACCEPTANCE OF OFFER

- A. Owner and Architect reserve the right to waive any informalities, or to accept or reject any or all offers.
- B. After acceptance by Owner, Architect on behalf of Owner, will issue to the successful bidder, a written letter of Contract Award.

1.17 CONTRACT TIME

- A. The bidder, in submitting an offer, accepts the Contract Time Period stated on the bid form for performing the Work. The completion date in the Agreement shall be the Contract Time added to the commencement date. The bidder may suggest a revision to the Contract Time Period during bidding. The Owner and Architect will consider the suggested revision. Any change to the Contract Time will be conveyed in an Addendum. Such information/change will be made available to all bidders.

END OF INSTRUCTIONS TO BIDDERS

SECTION 00 0410

BID FORM

THE PROJECT AND THE PARTIES

1.01 TO:

A. **Town of Ossining**

16 Croton Avenue, 3rd Floor
Ossining, NY 10562
(914) 762-6001

1.02 FOR: **Restoration of Superintendent's Cottage, Dale Cemetery**

1.03 DATE: _____ (Bidder to enter date)

1.04 SUBMITTED BY: (Bidder to enter name and address)

A. Bidder's Full Name _____

1. Address _____

2. City, State, Zip _____

1.05 OFFER

A. Having examined the Place of The Work and all matters referred to in the Instructions to Bidders and the Contract Documents prepared by Stephen Tilly, Architect for the above mentioned project, we, the undersigned, hereby offer to enter into a Contract to perform the Work for the Sum of:

B. _____
_____ dollars (\$ _____),
in lawful money of the United States of America.

C. All applicable federal taxes are included and State of _____ taxes are included in the Bid Sum.

1.05 ITEM DESCRIPTIONS

1.06 Itemization of Base Bid by Specification Division:

A. Division 01 - General Requirements \$ _____

B. Division 02 - Existing Conditions \$ _____

C. Division 04 – Masonry \$ _____

D. Division 06 – Wood, Plastics and Composites \$ _____

E. Division 07 - Thermal and Moisture Protection \$ _____

F. Division 08 – Doors and Windows \$ _____

G. Division 09 – Finishes \$ _____

H. Other	\$ _____
I. <u>Overhead and Profit</u>	\$ _____
J. Total	\$ _____

1.06 ALTERNATES

A. The Owner shall have the right to accept Alternates in any order or combination. The prices for the Alternates listed below shall be expressed in the amount to be added to the Base Proposal if the corresponding change in work, as described in the Plans and Specifications, is accepted. Include additional General Requirements and Staging costs to individual Alternates, if applicable.

B. Provide *alternate costs (deduct or add)* for the following:

1. **ALTERNATE #1: FRONT DOOR**

RESTORE THE EXISTING FRONT DOOR, INCLUDING TRANSOM AND SIDELITES. REPLACE PLEXIGLASS LITES WITH CATEGORY I SAFETY GLASS PER CODE. REPAIR/REPLACE MUNTINS AS REQUIRED. RETAIN AND CLEAN EXISTING DOOR HARDWARE. PREP AND PAINT.

Alternate 1 (ADD): + \$ _____

2. **ALTERNATE #2: ADDITIONAL NEW WINDOWS**

REPLACE THE 1ST. AND 2ND. FLOOR WINDOWS ON THE EAST AND SOUTH ELEVATIONS WITH CUSTOM OR MARVIN WINDOWS. SEE DRAWING A-810. WINDOWS MATCH OR ARE SIMILAR IN DETAIL TO THOSE OF THE BASE SCOPE ON THE NORTH AND WEST ELEVATIONS, INCLUDING MUNTINS, NEW TRIM.

Alternate 2 (ADD): + \$ _____

3. **ALTERNATE #3: PORCH ROOF UPGRADE**

UPGRADE THE PORCH ROOF FROM THE BASE SCOPE OF ROLLED ASPHALT TO SOLDERED, FLAT-SEAM, LEAD COATED COPPER.

Alternate 3 (ADD): + \$ _____

4. **ALTERNATE #4: MAIN ROOF, ASPHALT SHINGLE**

REPLACE EXISTING ROOF WITH NEW ASPHALT SHINGLE ROOF, INCLUDING COPPER FLASHING/DRIP EDGE; RESTORE/REPLACE AND PAINT ROOF EAVES, RAFTER TAILS; INSTALL NEW COPPER-PAINTED ALUMINUM 5" HALF-ROUND GUTTERS AND 4" ROUND LEADERS.

Alternate 4 (ADD): + \$ _____

5. **ALTERNATE #5: MAIN ROOF, METAL PANEL**

REPLACE EXISTING ROOF WITH NEW ATAS STANDING SEAM METAL PANEL ROOF, INCLUDING COPPER/APPROPRIATE FLASHING/DRIP EDGE; RESTORE/REPLACE AND PAINT ROOF EAVES, RAFTER TAILS; INSTALL NEW COPPER PAINTED ALUMINUM 5" HALF-ROUND GUTTERS AND 4" ROUND LEADERS. CHANGE EXISTING COPPER CHIMNEY FLASHING TO ALUMINUM.

Alternate 5 (ADD): + \$ _____

6. **ALTERNATE #6: PAINT ALL STUCCO**

PAINT ENTIRE STUCCO EXTERIOR ONE COLOR, AS IDENTIFIED BY ARCHITECT.

Alternate 6 (ADD): + \$ _____

7. **ALTERNATE #7: CHIMNEY UPGRADE**

UPGRADE FROM BASE SCOPE OF REBUILDING EXISTING TO MATCHING BRICK WITH CORBELS AS SHOWN IN 1865 IMAGE.

Alternate 7 (ADD): + \$ _____

1.07 ACCEPTANCE

- A. This offer shall be open to acceptance and is irrevocable for forty-five days from the bid closing date.
- B. If this bid is accepted by Owner within the time period stated above, we will:
 - 1. Execute the Agreement within seven days of receipt of Notice of Award.
 - 2. Commence work within seven days after written Notice to Proceed of this bid or on date identified in Section 00 0410 1.09C.

1.08 CONTRACT TIME

- A. If this Bid is accepted, we will:
- B. Complete the Work in _____ calendar weeks from Notice to Proceed or date to commence work as identified in Section 00 0410 1.09C.
- C. Commence work on _____, 2019.

1.09 CHANGES TO THE WORK

- A. When Architect establishes that the method of valuation for Changes in the Work will be net cost plus a percentage fee in accordance with General Conditions, our percentage fee will be:
 - 1. ____ percent overhead and profit on the net cost of our own Work;
 - 2. ____ percent on the cost of work done by any Subcontractor.
- B. On work deleted from the Contract, our credit to Owner shall be Architect-approved net cost plus _____ of the overhead and profit percentage.

1.10 ADDENDA

- A. The following Addenda have been received. The modifications to the Bid Documents noted below have been considered and all costs are included in the Bid Sum.
 - 1. Addendum # _____ Dated _____.
 - 2. Addendum # _____ Dated _____.
 - 3. Addendum # _____ Dated _____.

1.11 BID FORM SUPPLEMENTS

- A. Submit the following supplements concurrent with the Bid Form 00 0410:
 - 1. Section 00 0420 - Contractor's Qualification Form
 - 2. Section 00 0470 - Non-Collusive Bidding Certification

1.12 BID FORM SIGNATURE(S)

- A. The Corporate Seal of
- B. _____
- C. (Bidder - print the full name of your firm)
- D. was hereunto affixed in the presence of:
- E. _____
- F. (Authorized signing officer, Title)
- G. (Seal)
- H. _____
- I. (Authorized signing officer, Title)

1.13 If the Bid is a joint venture or partnership, add additional forms of execution for each member of the joint venture in the appropriate form or forms as above.

END OF BID FORM

SECTION 00 0420

CONTRACTOR'S QUALIFICATION FORM

DALE CEMETERY SUPERINTENDENT'S COTTAGE IS A SIGNIFICANT HISTORIC STRUCTURE LISTED ON THE NATIONAL REGISTER OF HISTORIC PLACES. EACH BIDDER MUST DEMONSTRATE, TO THE SATISFACTION OF THE OWNER, THAT HIS OR HER FIRM AND PERSONNEL TO BE EMPLOYED IN THE EXECUTION OF THE WORK POSSESS REQUISITE EXPERIENCE IN COMPARABLE WORK ON OTHER BUILDINGS LISTED AS A NATIONAL HISTORIC LANDMARK OR THE NATIONAL REGISTER OF HISTORIC PLACES.

THE SUBMISSION OF THIS SIGNED FORM IS A REQUIREMENT OF THE BIDDING DOCUMENTS. ALL ITEMS MUST BE ANSWERED AND THE DATA GIVEN MUST BE CLEAR AND COMPREHENSIVE. FAILURE TO ANSWER THESE QUESTIONS IN A COMPLETE MANNER WILL RESULT IN REJECTION OF THE BID. THE OWNER RESERVES THE RIGHT TO REJECT ANY BIDDER WHOM, IN THE JUDGMENT OF THE OWNER AND BASED ON THE QUALIFICATION STATEMENT, IS NOT QUALIFIED TO PERFORM THE WORK OF THE CONTRACT AS SPECIFIED. THE OWNER'S DECISIONS REGARDING REJECTION OF THE BIDS BASED ON BIDDER'S QUALIFICATIONS SHALL BE FINAL.

THE UNDERSIGNED CERTIFIES UNDER OATH THE TRUTH AND CORRECTNESS OF ALL STATEMENTS AND OF ALL ANSWERS TO QUESTIONS MADE HEREINAFTER. ANSWER ALL QUESTIONS IN A CLEAR AND COMPREHENSIVE MANNER. THIS FORM MUST BE COMPLETED IN FULL AND SEALED (IF CORPORATION) OR SIGNED BY ALL PARTNERS. THE BIDDER MAY SUBMIT ANY ADDITIONAL INFORMATION HE/SHE DESIRES.

NOTE: THIS STATEMENT MUST BE NOTARIZED.

COMPANY NAME: _____

FEDERAL IDENTIFICATION NUMBER: _____

PERMANENT PRINCIPAL OFFICE ADDRESS:

TELEPHONE: _____

FACSIMILIE: _____

EMAIL: _____

COMPANY IS A: _____ CORPORATION _____ PARTNERSHIP
 _____ INDIVIDUAL _____ JOINT VENTURE _____ OTHER

ALL THE FOLLOWING QUESTIONS MUST BE ANSWERED. DATA GIVEN MUST BE CLEAR AND COMPREHENSIVE. IF NEEDED, ANSWERS MAY BE ON SEPARATE SHEETS. PHOTOGRAPHIC DATA MAY BE FURNISHED ON JOBS LISTED.

DATE WHEN FIRM WAS ORGANIZED? _____

HOW MANY YEARS HAS YOUR ORGANIZATION BEEN IN BUSINESS UNDER ITS PRESENT NAME?

STATE OF INCORPORATION : _____

HOW MANY YEARS UNDER PREVIOUS BUSINESS NAMES (IF ANY)? _____

LIST PREVIOUS NAMES:

HAVE YOU EVER FAILED TO COMPLETE ANY WORK AWARDED TO YOU? _____

IF SO, NOTE WHEN, WHERE AND WHY:

HAS ANY OFFICER OR PARTNER OF YOUR ORGANIZATION EVER BEEN AN OFFICER OR PARTNER OF ANOTHER ORGANIZATION THAT FAILED TO COMPLETE A CONSTRUCTION CONTRACT?

IF SO, STATE CIRCUMSTANCES:

WILL YOU SUBCONTRACT ANY PART OF THE WORK? _____

IF SO, LIST SUBCONTRACTORS AND THEIR TRADE:

LIST AT LEAST THREE (3) JOBS OF COMPARABLE SIZE FOR EACH MAJOR TRADE THAT YOUR FIRM HAS EXECUTED IN THE PAST FIVE (5) YEARS ON BUILDINGS LISTED AS A NATIONAL HISTORIC LANDMARK OR ON THE NATIONAL REGISTER OF HISTORIC PLACES. INCLUDE NARRATIVE DESCRIPTION OF RESTORATION WORK COMPLETED. IT IS IMPORTANT THAT BIDDERS DEMONSTRATE EXPERIENCE IN EACH/ALL OF THESE AREAS; LIST MORE THAN THREE PROJECTS IF NECESSARY. IF CONTRACTORS WILL BE DELEGATING WORK TO SUBCONTRACTORS THEN SUBCONTRACTORS MUST PROVIDE THIS INFORMATION.

PROJECT NAME & ADDRESS	YEAR	COST OF WORK	OWNER, TEL. #	ARCHITECT, TEL. #
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END OF CONTRACTOR'S QUALIFICATION FORM

SECTION 00 0470

NON-COLLUSIVE BIDDING CERTIFICATION

By signing of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury that to the best of their knowledge and belief:

1. The prices in this bid have been arrived at independently, without collusion, consultation, communication or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other bidder or with any other competitor.
2. Unless otherwise required by law, the prices which have been quoted in this bid have not been knowingly disclosed by the bidder and will not knowingly be disclosed by the bidder prior to the opening directly or indirectly, to any other bidder or to any competitor; and
3. No attempt has been made or will be made by the bidder to induce any other person, partnership or corporation to submit or not to submit a bid for the purpose of restricting competition.

SIGNED:_____

TITLE:_____

FIRM:_____

DATE:_____

END OF NON-COLLUSIVE BIDDING CERTIFICATION

SECTION 00 0590

CONTRACTING FORMS & SUPPLEMENTS

PART 1 GENERAL

1.01 AGREEMENT AND CONDITIONS OF THE CONTRACT

- A. AIA A101 - Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum, 2017.
- B. AIA A101 Exhibit A - Insurance and Bonds, 2017.
- C. AIA A201 - General Conditions of the Contract for Construction, 2017.
- D. Contract Insurance Requirements, Town of Ossining
- E. Supplementary General Conditions, Town of Ossining

1.02 FORMS

- A. Use the following forms for the specified purposes unless otherwise indicated elsewhere in the Contract Documents.
- B. Bond Forms:
 - 1. Performance and Payment Bond Form: AIA A312.
- C. Post-Award Certificates and Other Forms:
 - 1. Schedule of Values Form: AIA G703.
 - 2. Application for Payment Form: AIA G702 and G703.
- D. Clarification and Modification Forms:
 - 1. Construction Change Directive Form: AIA G714.
 - 2. Change Order Form: AIA G701.
- E. Closeout Forms:
 - 1. Certificate of Substantial Completion Form: AIA G704.

1.03 REFERENCE STANDARDS

- A. AIA A312 - Performance Bond and Payment Bond; 2010.
- B. AIA G701 - Change Order; 2017.
- C. AIA G702 - Application and Certificate for Payment; 1992.
- D. AIA G703 - Continuation Sheet; 1992.
- E. AIA G704 - Certificate of Substantial Completion; 2017.
- F. AIA G714 - Construction Change Directive; 2017.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF CONTRACTING FORMS & SUPPLEMENTS

SECTION 01 0200

PRICE AND PAYMENT PROCEDURES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Procedures for preparation and submittal of applications for progress payments.
- B. Documentation of changes in Contract Sum and Contract Time.
- C. Change procedures.
- D. Correlation of Contractor submittals based on changes.
- E. Procedures for preparation and submittal of application for final payment.

1.02 SCHEDULE OF VALUES

- A. Electronic media printout including equivalent information will be considered in lieu of standard form specified; submit sample to Architect for approval.
- B. Forms filled out by hand will not be accepted.
- C. Submit a printed schedule on AIA Form G703 - Application and Certificate for Payment Continuation Sheet. Contractor's standard form or electronic media printout will be considered.
- D. Submit Schedule of Values in duplicate within 15 days after date of Owner-Contractor Agreement.
- E. Format: Utilize the Table of Contents of this Project Manual. Identify each line item with number and title of the specification Section. Identify site mobilization and bonds and insurance.
- F. Include separately from each line item, a direct proportional amount of Contractor's overhead and profit.
- G. Revise schedule to list approved Change Orders, with each Application For Payment.

1.03 APPLICATIONS FOR PROGRESS PAYMENTS

- A. Payment Period: Monthly, or as otherwise established in the Agreement.
- B. Electronic media printout including equivalent information will be considered in lieu of standard form specified; submit sample to Architect for approval.
- C. Forms filled out by hand will not be accepted.
- D. Present required information on electronic media printout.
- E. Form: AIA G702 Application and Certificate for Payment and AIA G703 - Continuation Sheet including continuation sheets when required.
- F. Execute certification by signature of authorized officer.
- G. Use data from approved Schedule of Values. Provide dollar value in each column for each line item for portion of work performed.
- H. List each authorized Change Order as a separate line item, listing Change Order number and dollar amount as for an original item of Work.
- I. Submit Four copies of each Application for Payment to Architect and Owner.
- J. When Architect requires substantiating information, submit data justifying dollar amounts in question.
- K. Retainage: 5% (five percent) retainage to be reserved throughout project.

1.04 MODIFICATION PROCEDURES

- A. For minor changes not involving an adjustment to the Contract Sum or Contract Time, Architect will issue instructions directly to Contractor.
- B. Architect will advise of minor changes in the Work not involving an adjustment to Contract Sum or Contract Time as authorized by the Conditions of the Contract by issuing supplemental instructions in written format.
- C. For changes for which advance pricing is desired, Architect will issue a document that includes a detailed description of a proposed change with supplementary or revised drawings and specifications, a change in Contract Time for executing the change with a stipulation of any overtime work required and the period of time during which the requested price will be considered valid. Contractor shall prepare and submit a fixed price quotation within 7 days.
- D. Contractor may propose a change by submitting a request for change to Architect, describing the proposed change and its full effect on the Work, with a statement describing the reason for the change, and the effect on the Contract Sum and Contract Time with full documentation.
- E. Substantiation of Costs: Provide full information required for evaluation.
 - 1. On request, provide following data:
 - a. Quantities of products, labor, and equipment.
 - b. Taxes, insurance, and bonds.
 - c. Overhead and profit.
 - d. Justification for any change in Contract Time.
 - e. Credit for deletions from Contract, similarly documented.
- F. Execution of Change Orders: Architect will issue Change Orders for signatures of parties as provided in the Conditions of the Contract.

1.05 APPLICATION FOR FINAL PAYMENT

- A. Prepare Application for Final Payment as specified for progress payments, identifying total adjusted Contract Sum, previous payments, and sum remaining due.
- B. Application for Final Payment will not be considered until the following have been accomplished:
 - 1. All closeout procedures specified in Section 01 7000.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 3000
ADMINISTRATIVE REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Preconstruction meeting.
- B. Site mobilization meeting.
- C. Progress meetings.
- D. Construction progress schedule.
- E. Progress photographs.
- F. Coordination drawings.
- G. Submittals for review, information, and project closeout.
- H. Number of copies of submittals.
- I. Submittal procedures.

1.02 PROJECT COORDINATION

- A. Contractor/Construction Manager.
- B. Make the following types of submittals to Architect:
 - 1. Requests for interpretation.
 - 2. Requests for substitution.
 - 3. Shop drawings, product data, and samples.
 - 4. Test and inspection reports.
 - 5. Manufacturer's instructions and field reports.
 - 6. Applications for payment and change order requests.
 - 7. Progress schedules.
 - 8. Coordination drawings.
 - 9. Closeout submittals

PART 2 PRODUCTS

2.01 MOCKUPS

- A. Mockups and "in place" samples shall be made of the materials specified and/or indicated in drawings, for approval by the Architect and/or Owner.
- B. Mockup and "in place" samples shall be provided for the following items and other items as directed by the Architect:

1. New roofing, including built-in gutter
2. New trim to match existing
3. Stucco patches/repairs for texture, color, etc.
4. Repointing mortar

PART 3 EXECUTION

3.01 PRECONSTRUCTION MEETING

- A. Contractor will schedule a meeting after drawings and specifications are approved.
- B. Attendance Required:
 1. Owner.
 2. Architect.
 3. Construction Manager.
- C. Agenda:
 1. Distribution of Contract Documents.
 2. Submission of list of Products, schedule of values, and progress schedule.
 3. Designation of personnel representing the parties to Contract, Owner and Architect.
 4. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
 5. Scheduling.
- D. Record minutes and distribute copies within two days after meeting to participants via email or provide two hard copies to Architect, Owner, participants, and those affected by decisions made.

3.02 SITE MOBILIZATION MEETING

- A. Attendance Required:
 1. Construction Manager.
 2. Owner.
 3. Architect.
- B. Agenda:
 1. Use of premises by Owner and Contractor.
 2. Survey and building layout.
 3. Security and housekeeping procedures.
 4. Schedules.
 5. Application for payment procedures.
 6. Procedures for testing.

7. Procedures for maintaining record documents.
 8. Requirements for start-up of equipment.
 9. Inspection and acceptance of equipment put into service during construction period.
- C. Record minutes and distribute copies within two days after meeting to participants via email or provide two hard copies to Architect, Owner, participants, and those affected by decisions made.

3.03 PROGRESS MEETINGS

- A. Schedule and administer meetings throughout progress of the Work at maximum monthly intervals.
- B. Attendance Required: Construction Manager, major Subcontractors and suppliers, Owner, Architect, as appropriate to agenda topics for each meeting.
- C. Agenda:
 1. Review minutes of previous meetings.
 2. New discussion items.

3.04 ATTENDANCE REQUIRED: CONSTRUCTION MANAGER, MAJOR SUBCONTRACTORS AND SUPPLIERS, OWNER, STEPHEN TILLY, ARCHITECT, AS APPROPRIATE TO AGENDA TOPICS FOR EACH MEETING.

- A. Field observations, problems, and decisions.
- B. Party representatives shall be sufficiently familiar with the Project and have authority to make immediate decisions.
- C. Identification of problems that impede, or will impede, planned progress.
- D. Review of submittals schedule and status of submittals.
- E. Quorum shall consist of not less than the Owner's Representative, the Architect, the Construction Manager, and the party calling the meeting or their representatives.
- F. Maintenance of progress schedule.
 1. Corrective measures to regain projected schedules.
 2. Planned progress during succeeding work period.
 3. Maintenance of quality and work standards.
 4. Effect of proposed changes on progress schedule and coordination.
 5. Other business relating to Work.
- G. Record minutes and distribute copies within two days after meeting to participants via email or provide two hard copies to Architect, Owner, participants, and those affected by decisions made.

3.05 CONSTRUCTION PROGRESS SCHEDULE

- A. Within 10 days after date of the Agreement, submit preliminary schedule defining planned operations for the first 60 days of Work, with a general outline for remainder of Work.
- B. If preliminary schedule requires revision after review, submit revised schedule within 10 days.

- C. Within 20 days after review of preliminary schedule, submit draft of proposed complete schedule for review.
 - 1. Include written certification that major contractors have reviewed and accepted proposed schedule.
- D. Within 10 days after joint review, submit complete schedule.
- E. Submit updated schedule with each Application for Payment.

3.06 PROGRESS PHOTOGRAPHS

- A. Photography Type: Digital; electronic files.
- B. Provide photographs of construction throughout progress of Work produced by a person qualified as a photographer, acceptable to Architect.
- C. Take photographs of Work Areas as follows:
 - 1. Prior to the start of Work.
 - 2. Daily and upon completion of deconstruction Work.
 - 3. Daily and upon completion of porch reconstruction Work.
 - 4. Daily and upon completion of chimney repair Work.
 - 5. Daily and upon completion of stucco patching/ repair Work.
 - 6. Daily and upon completion of window replacement and door restoration Work
- D. Views:
 - 1. Provide non-aerial photographs from 3-4 views appropriate to document the progress of the Work at each specified time, until Date of Substantial Completion.
 - 2. Consult with Architect for instructions on views required.
 - 3. Provide factual presentation.
 - 4. Provide correct exposure and focus, high resolution and sharpness, maximum depth of field, and minimum distortion.
- E. Digital Photographs: 24 bit color, minimum resolution of 1024 by 768, in JPG format; provide files unaltered by photo editing software.
 - 1. Minimum quantity: ten photographs per diem.
 - 2. Delivery Medium: Via email or compact disc.
 - 3. File Naming: Include project identification, date and time of view, and view identification.
 - 4. PDF File: Assemble all photos into printable pages in PDF format, with 2 to 3 photos per page, each photo labeled with file name; one PDF file per submittal.

3.07 COORDINATION DRAWINGS

- A. Provide information required by Contractor/ Construction Manager for preparation of coordination drawings.

3.08 SUBMITTALS FOR REVIEW

- A. When the following are specified in individual sections, submit them for review:
 - 1. Product data.
 - 2. Shop drawings.
 - 3. Samples for selection.
 - 4. Samples for verification.
 - 5. Mockups, or "in place" samples.
- B. Submit to Architect for review for the limited purpose of checking for conformance with information given and the design concept expressed in the contract documents.
- C. Samples will be reviewed only for aesthetic, color, or finish selection.
- D. Construct all mockups and "in place" samples on site or deliver to site.
- E. Mockups and "in place" samples shall remain on site until the Work is completed, and then they shall be removed.

3.09 SUBMITTALS FOR INFORMATION

- A. When the following are specified in individual sections, submit them for information:
 - 1. Design data.
 - 2. Certificates.
 - 3. Test reports.
 - 4. Inspection reports.
 - 5. Manufacturer's instructions.
 - 6. Manufacturer's field reports.
 - 7. Other types indicated.
- B. Submit for Architect's knowledge as contract administrator or for Owner. No action will be taken.

3.10 SUBMITTALS FOR PROJECT CLOSEOUT

- A. When the following are specified in individual sections, submit them at project closeout:
 - 1. Project record documents.
 - 2. Operation and maintenance data.
 - 3. Warranties.
 - 4. Bonds.
 - 5. Other types as indicated.
- B. Submit for Owner's benefit during and after project completion.

3.11 NUMBER OF COPIES OF SUBMITTALS

- A. Documents for Review:
 - 1. Small Size Sheets, Not Larger Than 8-1/2 x 11 inches: Submit the number of copies that Contractor requires, plus two copies that will be retained by Architect.
 - 2. Larger Sheets, Not Larger Than 24 x 36 inches: Submit the number of opaque reproductions that Contractor requires, plus four copies that will be retained by Architect.
- B. Documents for Information: Submit five copies.
- C. Documents for Project Closeout: Make one reproduction of submittal originally reviewed. Submit one extra of submittals for information.
- D. Documents may be submitted electronically.
- E. Samples: Submit the number specified in individual specification sections; one of which will be retained by Architect.
 - 1. After review, produce duplicates.
 - 2. Retained samples will not be returned to Construction Manager unless specifically so stated.

3.12 SUBMITTAL PROCEDURES

- A. Sequentially number the transmittal form. Revise submittals with original number and a sequential alphabetic suffix.
- B. Identify Project, Construction Manager, Subcontractor or supplier; pertinent drawing and detail number, and specification section number, as appropriate on each copy.
- C. Apply Construction Manager's stamp, signed or initialed certifying that review, approval, verification of Products required, field dimensions, adjacent construction Work, and coordination of information is in accordance with the requirements of the Work and Contract Documents.
- D. Deliver submittals to Architect at business address.
- E. Schedule submittals to expedite the Project, and coordinate submission of related items.
- F. For each submittal for review, allow 15 days excluding delivery time to and from the Construction Manager.
- G. Identify variations from Contract Documents and Product or system limitations that may be detrimental to successful performance of the completed Work.
- H. Provide space for Architect review stamps.
- I. When revised for resubmission, identify all changes made since previous submission.
- J. Architect will distribute executed copies of submittals to Owner's Representative and Construction Manager.
- K. Submittals not requested will not be recognized or processed.
- L. Mockup or "in place" sample:
 - 1. Notify Architect when mockup or in place sample is ready for inspection.

2. Architect shall have seven working days to inspect, approve, modify, or reject each mockup or in place sample.
3. The Architect shall distribute a letter outlining his action to the Owner's Representative and the Construction Manager.

3.13 WORKING HOURS

- A. Hours available for construction include:
 1. Weekdays (Monday through Friday): 8am to 5pm
 2. Weekends (Saturday only): 9am to 5pm
- B. Construction work may need to temporarily cease to respectfully allow funerals or related activities to proceed in the nearby grounds of the cemetery. If a stoppage is required, the Superintendent will provide a minimum of 24 hour notice prior to the designated timeframe.

END OF SECTION

SECTION 01 3590
TREATMENT OF HISTORIC PROPERTIES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Procedures for work on Dale Cemetery Superintendent's Cottage
- B. This property has been determined to possess historic (e.g., architectural, engineering, artistic) significance and is listed in the National Register of Historic Places. The contractor shall recognize that all aspects of the property may potentially contribute to this significance and the contractor shall not judge the relative significance of any features nor the impact of any or all proposed work; this responsibility shall rest solely with the architect. Consequently, no deviations from the contract documents shall be performed and no features or materials shall be altered, removed, reused, or taken from the premises, without the written approval of the architect as being consistent with the requirements of the contract documents. All work shall be consistent with *The Secretary of the Interior's Standards for the Treatment of Historic Properties*.
- C. This Section includes special procedures for historic treatment on the Project including, but not limited to, the following:
 - 1. Temporary protection of historic materials during construction.
 - 2. Definitions of Preservation, Rehabilitation, Restoration, Reconstruction, Stabilize, Protect and Maintain, Repair, Replace, Remove, Remove and Salvage, Remove and Reinstall, Existing to Remain or be Retained, Material in Kind.

1.02 PROTECTION OF HISTORIC MATERIALS

- A. Existing Historic Materials to Remain: Protect construction indicated to remain against damage and soiling during historic treatment. When permitted by Architect, items may be removed to a suitable, protected storage location during historic treatment and cleaned and reinstalled in their original locations after historic treatment operations are complete.
- B. Protect landscape work adjacent to or within work areas as follows:
 - 1. Proved barriers to protect historic features and tree trunks.
 - 2. Bind spreading shrubs.
 - 3. Use coverings that allow plants to breathe and remove coverings at the end of each day. Do not cover plant material with a waterproof membrane for more than 8 hours at a time.
 - 4. Set scaffolding and ladder legs away from historic features and plants.
 - 5. Keep all construction equipment off historic and landscape features.

1.03 DEFINITIONS

- A. Preservation: Preservation is defined as the act or process of applying measures necessary to sustain the existing form, integrity, and materials of an historic property. Work, including preliminary measures to protect and stabilize the property, generally focuses upon the ongoing maintenance and repair of historic materials and features rather than extensive replacement and new construction. New exterior additions are not within the scope of this treatment; however, the limited and sensitive upgrading of mechanical, electrical, and plumbing systems and other code-required work to make properties functional is appropriate within a preservation project.

- B. Rehabilitation: Rehabilitation is defined as the act or process of making possible a compatible use for a property through repair, alterations, and additions while preserving those portions or features which convey its historical, cultural, or architectural values.
- C. Restoration: Restoration is defined as the act or process of accurately depicting the form, features, and character of a property as it appeared at a particular period of time by means of the removal of features from other periods in its history and reconstruction of missing features from the restoration period. The limited and sensitive upgrading of mechanical, electrical, and plumbing systems and other code-required work to make properties functional is appropriate within a restoration project.
- D. Reconstruction: Reconstruction is defined as the act or process of depicting, by means of new construction, the form, features, and detailing of a non-surviving site, landscape, building, structure, or object for the purpose of replicating its appearance at a specific period of time and in its historic location.
- E. Stabilize: Deteriorated portions of a historic building may need to be protected thorough preliminary stabilization measures until additional work can be undertaken. Stabilizing may include structural reinforcement, weatherization, or correcting unsafe conditions. Temporary stabilization should always be carried out in such a manner that it detracts as little as possible from the historic building's appearance. Although it may not be necessary in every preservation project, stabilization is nonetheless an integral part of the treatment Preservation; it is equally applicable, if circumstances warrant, for the other treatment.
- F. Protect and Maintain: After identifying those materials and features that are important and must be retained in the process of Preservation work, then protecting and maintaining them are addressed. Protection generally involves the least degree of intervention and is preparatory to other work. For example, protection includes the maintenance of historic materials through treatments such as rust removal, caulking, limited paint removal, and re-application of protective coatings; the cyclical cleaning of roof gutter systems; or installation of fencing, alarm systems and other temporary protective measures. Although a historic building will usually require more extensive work, an overall evaluation of its physical condition should always begin at this level.
- G. Repair: When the physical condition of character-defining materials and features requires additional work, repairing by stabilizing, consolidating, and conserving is recommended. Preservation strives to retain existing materials and features while employing as little new material as possible. Consequently, guidance for repairing a historic material, such as masonry, again begins with the least degree of intervention possible such as strengthening fragile materials through consolidation, when appropriate, and repointing with mortar of an appropriate strength. Repairing masonry as well as wood and architectural metal features may also include patching, splicing, or otherwise reinforcing them using recognized preservation methods. Similarly, within the treatment Preservation, portions of a historic structural system could be reinforced using contemporary materials such as steel rods. All work should be physically and visually compatible, identifiable upon close inspection and documented for future research
- H. Replace: If repair by stabilization, consolidation, and conservation proves inadequate, the next level of intervention involves the limited replacement in kind of extensively deteriorated or missing parts of features when there are surviving prototypes (for example, brackets, dentils, steps, plaster, or portions of roofing materials). The replacement material needs to match the old both physically and visually, i.e., wood with wood, etc. Thus, with the exception of hidden structural reinforcement and new mechanical system components, substitute materials are not appropriate in the treatment Preservation. Again, it is important that all new material be identified and properly documented for future research. If prominent features are missing, such as an interior staircase, exterior cornice, or a roof dormer, then a Rehabilitation or Restoration treatment may be more appropriate.

- I. Remove: To take away or off of the existing structure. Removal procedures should include all care necessary to prevent damage to existing construction to remain.
- J. Remove and Salvage: To take away or off of the existing structure and save for reuse. Care should be taken to preserve the condition of the removed component.
- K. Remove and Reinstall: To temporarily take away and subsequently put back in same place or another place. Care should be taken to prevent damage to removed component.
- L. Existing to Remain or be Retained: Existing construction to stay in place and not be impacted by the Work.
- M. Material in Kind: To match in every respect including composition, design, shape, profile, color texture, strength, durability, look, finish and aesthetic.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 5000
TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Temporary sanitary facilities.
- B. Temporary Controls: barriers, enclosures, and fencing.
- C. Security and fire safety requirements.
- D. Vehicular access and parking.
- E. Waste removal facilities and services.

1.02 TEMPORARY SANITARY FACILITIES

- A. Provide and maintain required facilities and enclosures. Provide at time of project mobilization.
- B. Maintain daily in clean and sanitary condition.

1.03 BARRIERS

- A. Provide barriers to prevent unauthorized entry to construction areas, to prevent access to areas that could be hazardous to workers or the public, to allow for owner's use of site and to protect existing facilities and adjacent properties from damage from construction operations and demolition.
- B. Provide barricades and covered walkways required by governing authorities for public rights-of-way and for public access to existing building.
- C. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.

1.04 FENCING

- A. Provide 6 foot (1.8 m) high chain link fence around construction area; equip with pedestrian gate with lock.

1.05 SECURITY

- A. Provide for a secured project site during non-work hours to protect Work, buildings and site, and Owner's operations from unauthorized entry, vandalism, arson, or theft.
- B. Secure site at all times as required to prevent any breach of security or safety. Secure building(s) at the end of each work period.

1.06 FIRE SAFETY

- A. Provide and maintain a fire prevention program, fire extinguishers and other fire prevention and protection measures for compliance with NFPA 241. Ensure that the proper number of fire protection and extinguishing devices are available within required distances and in working order throughout construction work.
- B. The construction manager will be designated as the fire prevention program manager in accordance with paragraph 5-1.1 of NFPA 241.
- C. Provide proper containers for storage of flammable materials and disposal of waste. Do not allow soiled rags to accumulate.
- D. Conduct hot work operations (e.g. welding, sweating, soldering, brazing, burning, flame cutting) on the ground at a safe distance away from the building. Request the Owner's permission in writing if any hot work operations must be conducted within or on the building. If permission is granted, appoint a fire watchman in hot work areas to protect combustible materials and watch for fires during and after hot work. Cease using heat devices at least two hours before the end of the workday to increase chances of early detection of fire.
- E. Do not smoke tobacco or use tobacco products at the project site. Request the Owner's permission in writing if a tobacco smoking area is desired.

- F. Do not use heat guns for paint removal unless absolutely necessary and approved by Architect and Owner in writing
- G. Do not allow open flame devices for paint removal.
- H. Do not allow open flame heating devices.

1.07 VEHICULAR ACCESS AND PARKING

- A. Coordinate access and haul routes with governing authorities and Owner.
- B. Provide and maintain access to fire hydrants, free of obstructions.
- C. Provide temporary parking areas to accommodate construction personnel. When site space is not adequate, provide additional off-site parking.

1.08 WASTE REMOVAL

- A. Provide waste removal facilities and services as required to maintain the site in clean and orderly condition.
- B. Provide containers with lids. Remove trash from site periodically.
- C. If materials to be recycled or re-used on the project must be stored on-site, provide suitable non-combustible containers; locate containers holding flammable material outside the structure unless otherwise approved by the authorities having jurisdiction.
- D. Open free-fall chutes are not permitted. Terminate closed chutes into appropriate containers with lids.

1.09 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

- A. Remove temporary utilities, equipment, facilities, materials, prior to Substantial Completion inspection.
- B. Clean and repair damage caused by installation or use of temporary work.
- C. Restore existing facilities used during construction to original condition.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 7000
EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Examination, preparation, and general installation procedures.
- B. Requirements for alterations work, including selective demolition, except removal, disposal, and/or remediation of hazardous materials and toxic substances.
- C. Cutting and patching.
- D. Surveying for laying out the work.
- E. Cleaning and protection.
- F. Closeout procedures, except payment procedures.

1.02 RELATED REQUIREMENTS

- A. Section 01 3000 - Administrative Requirements: Submittals procedures.
- D. Section 01 5000 - Temporary Facilities and Controls: Temporary exterior enclosures.
- F. Section 01 7800 - Closeout Submittals: Project record documents, operation and maintenance data, warranties and bonds.

1.03 REFERENCE STANDARDS

- A. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations; 2013.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Cutting and Patching: Submit written request in advance of cutting or alteration that affects:
 - 1. Structural integrity of any element of Project.
 - 2. Integrity of weather exposed or moisture resistant element.
 - 3. Efficiency, maintenance, or safety of any operational element.
 - 4. Visual qualities of sight exposed elements.
 - 5. Work of Owner or separate Contractor.

1.05 QUALIFICATIONS

- A. For demolition work, employ a firm specializing in the type of work required.
 - 1. Minimum of five years of documented experience.

1.06 PROJECT CONDITIONS

- A. Use of explosives is not permitted.
- B. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.
- C. Dust Control: Execute work by methods to minimize raising dust from construction operations. Provide positive means to prevent air-borne dust from dispersing into atmosphere and over adjacent property.
- D. Noise Control: Provide methods, means, and facilities to minimize noise produced by construction operations.
- E. Pest and Rodent Control: Provide methods, means, and facilities to prevent pests and insects from damaging the work.

1.07 COORDINATION

- A. Coordinate scheduling, submittals, and work of the various sections of the Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.
- B. Notify affected utility companies and comply with their requirements.
- C. Verify that utility requirements and characteristics of new operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.
- D. Coordinate space requirements, supports, and installation of mechanical and electrical work that are indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, and conduit, as closely as practicable; place runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
- E. In finished areas except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.
- F. Coordinate completion and clean-up of work of separate sections.
- G. After Owner occupancy of premises, coordinate access to site for correction of defective work and work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

PART 2 PRODUCTS

2.01 PATCHING MATERIALS

- A. New Materials: As specified in product sections; match existing products and work for patching and extending work.
- B. Type and Quality of Existing Products: Determine by inspecting and testing products where necessary, referring to existing work as a standard.
- C. Product Substitution: For any proposed change in materials, submit request for substitution

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent work. Start of work means acceptance of existing conditions.
- B. Verify that existing substrate is capable of structural support or attachment of new work being applied or attached.
- C. Examine and verify specific conditions described in individual specification sections.
- D. Take field measurements before confirming product orders or beginning fabrication, to minimize waste due to over-ordering or mis-fabrication.
- E. Verify that utility services are available, of the correct characteristics, and in the correct locations.
- F. Prior to Cutting: Examine existing conditions prior to commencing work, including elements subject to damage or movement during cutting and patching. After uncovering existing work, assess conditions affecting performance of work. Beginning of cutting or patching means acceptance of existing conditions.

3.02 PREPARATION

- A. Clean substrate surfaces prior to applying next material or substance.
- B. Seal cracks or openings of substrate prior to applying next material or substance.
- C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

3.03 LAYING OUT THE WORK

- A. Verify locations of survey control points prior to starting work.

- B. Promptly notify Architect of any discrepancies discovered.
- C. Utilize recognized engineering survey practices.
- D. Establish elevations, lines and levels. Locate and lay out by instrumentation and similar appropriate means:
 - 1. Grid or axis for structures.
- E. Periodically verify layouts by same means.

3.04 GENERAL INSTALLATION REQUIREMENTS

- A. Install products as specified in individual sections, in accordance with manufacturer's instructions and recommendations, and so as to avoid waste due to necessity for replacement.
- B. Make vertical elements plumb and horizontal elements level, unless otherwise indicated.
- C. Install equipment and fittings plumb and level, neatly aligned with adjacent vertical and horizontal lines, unless otherwise indicated.
- D. Make consistent texture on surfaces, with seamless transitions, unless otherwise indicated.
- E. Make neat transitions between different surfaces, maintaining texture and appearance.

3.05 ALTERATIONS

- A. Drawings showing existing construction and utilities are based on casual field observation and existing record documents only.
 - 1. Verify that construction and utility arrangements are as shown.
 - 2. Report discrepancies to Architect before disturbing existing installation.
 - 3. Beginning of alterations work constitutes acceptance of existing conditions.
- B. Remove existing work as indicated and as required to accomplish new work.
 - 1. Remove items indicated on drawings.
 - 2. Relocate items indicated on drawings.
 - 3. Where new surface finishes are to be applied to existing work, perform removals, patch, and prepare existing surfaces as required to receive new finish; remove existing finish if necessary for successful application of new finish.
 - 4. Where new surface finishes are not specified or indicated, patch holes and damaged surfaces to match adjacent finished surfaces as closely as possible.
- C. Protect existing work to remain.
 - 1. Prevent movement of structure; provide shoring and bracing if necessary.
 - 2. Perform cutting to accomplish removals neatly and as specified for cutting new work.
 - 3. Repair adjacent construction and finishes damaged during removal work.
- D. Adapt existing work to fit new work: Make as neat and smooth transition as possible.
- E. Patching: Where the existing surface is not indicated to be refinished, patch to match the surface finish that existed prior to cutting. Where the surface is indicated to be refinished, patch so that the substrate is ready for the new finish.
- F. Refinish existing surfaces as indicated:
 - 1. Where rooms or spaces are indicated to be refinished, refinish all visible existing surfaces to remain to the specified condition for each material, with a neat transition to adjacent finishes.
 - 2. If mechanical or electrical work is exposed accidentally during the work, re-cover and refinish to match.
- G. Clean existing systems and equipment.
- H. Remove demolition debris and abandoned items from alterations areas and dispose of off-site; do not burn or bury.
- I. Do not begin new construction in alterations areas before demolition is complete.
- J. Comply with all other applicable requirements of this section.

3.06 CUTTING AND PATCHING

- A. Whenever possible, execute the work by methods that avoid cutting or patching.
- B. See Alterations article above for additional requirements.
- C. Perform whatever cutting and patching is necessary to:
 - 1. Complete the work.
 - 2. Fit products together to integrate with other work.
 - 3. Provide openings for penetration of mechanical, electrical, and other services.
 - 4. Match work that has been cut to adjacent work.
 - 5. Repair areas adjacent to cuts to required condition.
 - 6. Repair new work damaged by subsequent work.
 - 7. Remove samples of installed work for testing when requested.
 - 8. Remove and replace defective and non-conforming work.
- D. Execute work by methods that avoid damage to other work and that will provide appropriate surfaces to receive patching and finishing. In existing work, minimize damage and restore to original condition.
- E. Employ original installer to perform cutting for weather exposed and moisture resistant elements, and sight exposed surfaces.
- F. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval.
- G. Restore work with new products in accordance with requirements of Contract Documents.
- H. Fit work air tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- I. Patching:
 - 1. Finish patched surfaces to match finish that existed prior to patching. On continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.
 - 2. Match color, texture, and appearance.
 - 3. Repair patched surfaces that are damaged, lifted, discolored, or showing other imperfections due to patching work. If defects are due to condition of substrate, repair substrate prior to repairing finish.

3.07 PROGRESS CLEANING

- A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.
- B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.
- C. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.
- D. Collect and remove waste materials, debris, and trash/rubbish from site periodically and dispose off-site; do not burn or bury.

3.08 PROTECTION OF INSTALLED WORK

- A. Protect installed work from damage by construction operations.
- B. Provide special protection where specified in individual specification sections.
- C. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.
- D. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.
- E. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.
- F. Prohibit traffic or storage upon waterproofed or roofed surfaces. If traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.

- G. Remove protective coverings when no longer needed; reuse or recycle plastic coverings if possible.

3.09 ADJUSTING

- A. Adjust operating products and equipment to ensure smooth and unhindered operation.

3.10 FINAL CLEANING

- A. Use cleaning materials that are nonhazardous.
- B. Clean interior and exterior glass, surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.
- C. Remove all labels that are not permanent. Do not paint or otherwise cover fire test labels or nameplates on mechanical and electrical equipment.
- D. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.
- E. Clean filters of operating equipment.
- F. Clean debris from roofs, gutters, downspouts, and drainage systems.
- G. Clean site; sweep paved areas, rake clean landscaped surfaces.
- H. Remove waste, surplus materials, trash/rubbish, and construction facilities from the site; dispose of in legal manner; do not burn or bury.

3.11 CLOSEOUT PROCEDURES

- A. Make submittals that are required by governing or other authorities.
- B. Notify Architect when work is considered ready for Substantial Completion.
- C. Submit written certification that Contract Documents have been reviewed, work has been inspected, and that work is complete in accordance with Contract Documents and ready for Architect's review.
- D. Correct items of work listed in executed Certificates of Substantial Completion and comply with requirements for access to Owner-occupied areas.
- E. Notify Architect when work is considered finally complete.
- F. Complete items of work determined by Architect's final inspection.

END OF SECTION

**SECTION 01 7800
CLOSEOUT SUBMITTALS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Project Record Documents.

1.02 RELATED REQUIREMENTS

- A. Section 01 3000 - Administrative Requirements: Submittals procedures, shop drawings, product data, and samples.
- B. Section 01 7000 - Execution and Closeout Requirements: Contract closeout procedures.

1.03 SUBMITTALS

- A. Project Record Documents: Submit documents to Architect with claim for final Application for Payment.
- B. Warranties and Bonds:
 - 1. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within 10 days after acceptance.
 - 2. Make other submittals within 10 days after Date of Substantial Completion, prior to final Application for Payment.
 - 3. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within 10 days after acceptance, listing the date of acceptance as the beginning of the warranty period.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 PROJECT RECORD DOCUMENTS

- A. Maintain on site one set of the following record documents; record actual revisions to the Work:
 - 1. Drawings.
 - 2. Addenda.
 - 3. Change Orders and other modifications to the Contract.
- B. Ensure entries are complete and accurate, enabling future reference by Owner.
- C. Store record documents separate from documents used for construction.
- D. Record information concurrent with construction progress.
- E. Record Drawings: Legibly mark each item to record actual construction including:
 - 1. Field changes of dimension and detail.
 - 2. Details not on original Contract drawings.

END OF SECTION

SECTION 02 4100
SELECTIVE DEMOLITION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Selective demolition of building elements for restoration, renovation and alteration purposes. Elements to be selectively demolished include the following:
 - 1. Porch (existing columns, standoffs, brackets, rafter tails and other trim to be salvaged for re-use or to serve as templates for replacements).
 - 2. Window sash, frames and trim as identified in drawings
 - 3. Chimney cap and bricks
 - 4. Stucco
 - 5. Masonry lintel

1.02 RELATED REQUIREMENTS

- A. See Demolition Drawing D-100
- B. See Appendix A: Dale Cemetery Environmental Survey completed by Spores Environmental Sciences (July 3, 2019) which provides information on the presence of asbestos, lead and mold in the building.
- C. Hazardous Materials
 - 1. Structure is currently being tested for hazardous materials. Forthcoming Asbestos, Lead, and Mold reports will identify any hazardous materials that exceed limits as established by Federal, State and local guidelines. Removal and disposal of hazardous materials shall be executed or supervised by an EPA certified contractor or staff member and in accordance with all federal, state, and local governing bodies having jurisdiction.
 - 2. Work shall not proceed before contractor has reviewed the completed reports.
 - 3. Note that condition may have changed since the investigation.
 - 4. Lead
 - a. Due to the age of the existing structure lead-based paint is assumed to exist in some layers of paint, particularly on the exterior woodwork.
 - b. See Spec Section 02 8300 Lead-Based Paint Removal.
 - c. An EPA Lead-Safe certified staff member has to be at the jobsite during activities involving lead paint.

1.03 REFERENCE STANDARDS

- A. 29 CFR 1926 - U.S. Occupational Safety and Health Standards; current edition.
- B. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations; 2013.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Demolition Plan: Submit demolition plan as specified by OSHA and local authorities.
- C. Project Record Documents: Accurately record actual locations of capped and active utilities and subsurface construction.

1.05 QUALITY ASSURANCE

- A. Demolition Firm Qualifications: Company specializing in the type of work required.
 - 1. Minimum of five years of documented experience.

PART 2 PRODUCTS

2.01 MATERIALS

- A. None

PART 3 EXECUTION

3.01 SCOPE

- A. Remove portions of the existing buildings as outlined in Part 1.01.A above.

3.02 GENERAL PROCEDURES AND PROJECT CONDITIONS

- A. Comply with other requirements specified in Section 01 7000.
- B. Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public.
 - 1. Obtain required permits.
 - 2. Comply with applicable requirements of NFPA 241.
 - 3. Use of explosives is not permitted.
 - 4. Take precautions to prevent catastrophic or uncontrolled collapse of structures to be removed; do not allow worker or public access within range of potential collapse of unstable structures.
 - 5. Provide, erect, and maintain temporary barriers and security devices.
 - 6. Conduct operations to minimize effects on and interference with adjacent structures and occupants.
 - 7. Do not close or obstruct roadways or sidewalks without permit.
 - 8. Conduct operations to minimize obstruction of public and private entrances and exits; do not obstruct required exits at any time; protect persons using entrances and exits from removal operations.
 - 9. Obtain written permission from owners of adjacent properties when demolition equipment will traverse, infringe upon or limit access to their property.
- C. Do not begin removal until receipt of notification to proceed from Owner.
- D. Protect existing structures and other elements that are not to be removed.
 - 1. Provide bracing and shoring.
 - 2. Prevent movement or settlement of adjacent structures.
 - 3. Stop work immediately if adjacent structures appear to be in danger.
 - 4. Protect all interior spaces during demolition and construction, including attic floor, doors, etc. Install plastic curtain at first floor doorway to stair to attic to prevent demolition dust and debris from migrating to the first floor.
- E. Minimize production of dust due to demolition operations; do not use water if that will result in ice, flooding, sedimentation of public waterways or storm sewers, or other pollution.
- F. Hazardous Materials: Comply with 29 CFR 1926 and state and local regulations.
- G. Perform demolition in a manner that maximizes salvage and recycling of materials.
 - 1. Dismantle existing construction and separate materials.
 - 2. Set aside reusable, recyclable, and salvageable materials; store and deliver to collection point or point of reuse.

3.03 EXISTING UTILITIES

- A. Coordinate work with utility companies; notify before starting work and comply with their requirements; obtain required permits.
- B. Protect existing utilities to remain from damage.
- C. Do not disrupt public utilities without permit from authority having jurisdiction.
- D. Do not close, shut off, or disrupt existing life safety systems that are in use without at least 7 days prior written notification to Owner.

- E. Do not close, shut off, or disrupt existing utility branches or take-offs that are in use without at least 3 days prior written notification to Owner.
- F. Locate and mark utilities to remain; mark using highly visible tags or flags, with identification of utility type; protect from damage due to subsequent construction, using substantial barricades if necessary.
- G. Remove exposed piping, valves, meters, equipment, supports, and foundations of disconnected and abandoned utilities.

3.04 SELECTIVE DEMOLITION FOR RESTORATION, RENOVATION AND ALTERATIONS

- A. Drawings showing existing construction and utilities are based on casual field observation and existing record documents only.
 - 1. Verify that construction and utility arrangements are as shown.
 - 2. Report discrepancies to Architect before disturbing existing installation.
 - 3. Beginning of demolition work constitutes acceptance of existing conditions that would be apparent upon examination prior to starting demolition.
- B. Maintain weatherproof exterior building enclosure except for interruptions required for replacement or modifications; take care to prevent water and humidity damage.
- C. Remove existing work as indicated and as required to accomplish new work.
 - 1. Remove rotted wood, corroded metals, and deteriorated masonry and concrete; replace with new construction specified.
 - 2. Remove items indicated on drawings.
- D. Protect existing work to remain.
 - 1. Prevent movement of structure; provide shoring and bracing if necessary.
 - 2. Perform cutting to accomplish removals neatly and as specified for cutting new work.
 - 3. Repair adjacent construction and finishes damaged during removal work.
 - 4. Patch as specified for patching new work.

3.05 DEBRIS AND WASTE REMOVAL

- A. Debris and Waste Removal shall be in accordance with the NYSDEC Rules and Regulations for Solid Waste.
- B. Remove debris, junk, and trash from site.
- C. Remove from site all materials not to be reused on site
- D. Leave site in clean condition, ready for subsequent work.
- E. Clean up spillage and wind-blown debris from public and private lands.

3.06 SELECTIVE DEMOLITION SCHEDULE

- A. See Sub-section 1.01 above

END OF SECTION

SECTION 02 8300
LEAD-BASED PAINT REMOVAL

PART 1 - SCOPE OF WORK

WORK IDENTIFICATION:

The Contractor shall furnish all labor, materials, services, insurance, patents, and equipment necessary to perform the Work of this Contract. All work will be conducted in compliance with HUD, OSHA, NYS and NYC regulations, any other applicable federal, state, and local regulations.

The project may include the abatement of lead based paint from ceilings, walls, doorway components, window components, and woodwork that are to remain that will be impacted by restoration activities. The scope of work includes the on-site removal and disposal of lead based paint from targeted surfaces identified with actionable (1.0 mg/cm²) level of lead. Work will involve the removal of Lead Based Painted components from within the Work Zones in accordance with all applicable rules and regulations and this scope of work. The Contractor shall be responsible for establishing exact quantities and locations.

Intent: It is the intent of this Section to provide proper public and worker safety in the treatment of lead containing paints. It is NOT the intent of this Section that all lead containing paints shall be removed from all elements of the building. Following appropriate preparation procedures (removal of loose, flaking, deteriorated and alligatored paint), surfaces with lead containing paints will be encapsulated with new coatings.

The Architect will instruct the Contractor to retain existing paint layers in several small sample areas to maintain a record of historic paint stratigraphy.

WORK INCLUDED:

Furnish all labor, material, supervision, tools and equipment necessary to perform the following:

1. On site removal and disposal of all actionable Lead-Based Paint (LBP) components, as called out in this scope of work, and removal and disposal of all waste generated by abatement activities from within the work zones in accordance with all applicable rules and regulations and this scope of work. The Contractor shall adhere to all provisions in the Occupational Safety and Health Administration's (OSHA) Lead in Construction Standard and the Resource Conservation and Recovery Act (RCRA) and HUD Guidelines.
2. Provision of continuous on-site supervision by personnel licensed and knowledgeable in all aspects of LBP abatement and disposal.
3. Provision and maintenance of environmental and personnel protective measures, equipment and procedures at the Work site to comply with all applicable regulations.
4. Packaging, transport and disposal of all waste generated through LBP Abatement activities in accordance with RCRA and other applicable regulations.
5. Cooperation with the Owner's designated representatives with regard to project monitoring procedures. Ensure that employees and Subcontractors do same.

PART 2 – DOCUMENT SUBMISSION

THE FOLLOWING ITEMS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW SEVEN (7) DAYS PRIOR TO THE COMMENCEMENT OF WORK ASSOCIATED WITH THIS SECTION. NO WORK SHALL BEGIN UNTIL ALL SUBMITTALS ARE RETURNED WITH AN ACTION STAMP INDICATING THAT THE SUBMISSION IS IN ACCORDANCE WITH THIS SCOPE OF WORK.

- A. LEAD-BASED PAINT ABATEMENT PLAN: Submit as a written report.
- B. CONTRACTOR'S CERTIFICATION: Any required documentation confirming licensing by an Authorized Regulatory Agency.

- C. **WORKER TRAINING/LICENSING:** Copies of the EPA certificates, New York State Department of Labor Lead Abatement Worker Certificates and New York City Department of Environmental Protection Licenses for all employees performing the Work of this Section.
- D. **WASTE TRANSPORTATION AND DISPOSAL:** Submit documentation that all required permits, disposal site locations, and arrangements for transportation and disposal of lead-contaminated waste and industrial waste have been obtained. Submit a written description and blank log forms for Contractor's waste manifest system.
- E. **SCHEDULES:** A copy of construction, staffing, and equipment schedules:
 - 1. A construction schedule stating critical dates of the job including start and completion of mobilization, activation, deactivation, and demobilization of all Work activities (including mobilization, Work Zone preparation, lead abatement, inspection and clearance monitoring, each phase of refinishing, and final inspections). Allow 48 hour turnaround time for receipt of final clearance sample results. Update schedule with each partial payment request. Changes in schedule are subject to the Engineer's approval and require three (3) days prior notice;
- F. **INSURANCE POLICIES:** A copy of the Insurance policies required by this contract. Include insurance policies of any subcontractor, including the Sudden and Accidental Pollution Liability Insurance required of the Hauler. Name the Owner and Engineer in the list of Additional Named Insured.

DURING THE CONDUCT OF ABATEMENT ACTIVITIES THE FOLLOWING RECORDS SHALL BE MAINTAINED AND SUBMITTED AT THE CLOSE OF ABATEMENT ACTIVITIES:

- A. Identification of units abated.
- B. Results of all detection analysis (i.e. personal air monitoring, area air monitoring and TCLP tests).
- C. General description of abatement methods and materials/equipment used.
- D. Results of clearance tests.
- E. Pertinent Federal, State and local requirements under which abatement was undertaken.
- F. Within thirty (30) days of removal from the premises, submit to the Owner the disposal certificate(s) from the landfill receiving the Project Waste stating dates and quantities received. In addition, the Contractor shall maintain a copy of the disposal record for 30 years.

WITHIN SEVEN (7) DAYS OF COMPLETION OF ALL WORK ASSOCIATED WITH THIS SECTION SUBMIT TO THE OWNER, A BOUND COPY OF THE JOB LOG BOOK SHOWING SIGN IN AND SIGN OUT OF ALL PERSONS ENTERING THE WORK ZONE, INCLUDING NAME, DATE, TIME, AND POSITION OR FUNCTION AND A GENERAL DESCRIPTION OF DAILY ACTIVITY, RESULTS OF DETECTION ANALYSIS, AND RESULTS OF CLEARANCE TESTS.

PART 3 – PRODUCTS AND STANDARDS

MATERIALS

- A. Use sealable polyethylene disposal bags of 6 mil minimum thickness.
- B. Provide protective devices such as, but not limited to, disposable clothing, respirators, gloves, hard hats, etc.
- C. Provide soap, shampoo and disposable towels for temporary hand wash and shower units.
- D. Use waste receptacles that meet federal, state and local regulations.
- E. All costs associated with materials and equipment are the responsibility of the Contractor.
- F. **TOOLS AND EQUIPMENT**
 - 1. Provide suitable tools for the proposed work. Any mechanical equipment used to cut, drill or in any way disturb lead containing surfaces must be equipped with a HEPA-filtered vacuum to properly contain generated dust. The tool itself shall be equipped with HEPA filtration to minimize lead contamination inside the tool.
 - 2. Provide HEPA-filtered vacuum cleaners equipped to pick up loose paint and debris.

3. Transportation Equipment: Transportation equipment, as required, shall be suitable for loading, temporary storage, and unloading of contaminated waste without exposure to persons and shall properly contain generated dust.
4. Provide suitable hand wash facility.
5. Provide portable eye-wash station consistent with OSHA requirements.

LEAD CAUTION SIGNS

Use Lead Caution Signs as specified in OSHA Title 29 CFR 1910.1025 and 29 CFR 1926.62.

PLASTIC

Use only new fire retardant plastic sheets of polyethylene, which have a minimum thickness of 6-mil, true grade.

RESPIRATORS

Use only respirators approved by the Mine Safety and Health Administration (MSHA), Department of Labor, or the National Institute for Occupational Safety and Health (NIOSH), Department of Health and Human Services.

VACUUMS

Use only vacuums equipped with HEPA filters.

CLEANING SOLUTIONS

Use cleaning solutions that do not contain phosphate, but that are formulated to be effective at removing lead.

APPLICABLE STANDARDS AND REGULATIONS:

- A. Perform all Work in compliance with the most current version of all pertinent laws, rules, and regulations, existing at the time of Work, including, but not limited to:
 1. Code of Federal Regulations
 - a. Title 29 CFR Parts 1910.1025 and 1926.62;
 - b. [The Occupational Safety and Health (OSHA) Standards]
 - c. Title 40 CFR Part 262;
 - 1) [The Resource Conservation and Recovery Act]
 - d. Title 24 CFR Part 35;
 - 1) [The Lead-Based Paint Hazard Elimination]
 - e. Title 49 CFR Parts 106, 107, and 171-179;
 - 1) [Transportation Safety Act of 1974 and the Hazardous Material Transportation Act]
 - B. New York State Official Compilation of Codes, Rules and Regulations.
 1. Title 10 NYCRR, Section 206, Subpart 67.
 2. [The Lead Poisoning and Prevention Act]
 3. Title 6, Parts 364, 370-374
 - C. Applicable Standards
 1. The American National Standard Institute (ANSI) Practices for Respiratory Protection
 - a. ANSI Z88.2-1980.
 2. The American National Standard Institute (ANSI) Fundamentals Governing the Design and Operation of Local Exhaust Systems.
 3. UL 586 Test Performance of High Efficiency Particulate Air-Filter Units.
 - D. HUD Guidelines.

In the event there is a conflict between these provisions, the most stringent one shall apply.

PART 4 - LEAD BASED PAINT ABATEMENT PROCEDURES EXECUTION

GENERAL REQUIREMENTS

- A. Satisfy all Worker protection requirements in accordance with OSHA 29 CFR Part 1926.62.

- B. Provide protective work clothing and equipment for use by Workers and designated representatives of the Owner including disposable full body coveralls, nonskid disposable footwear, respirators and approved cartridges, gloves, hard hats, goggles, change areas, and hand washing facilities. Maintain on site, two (2) sets of protective equipment for the exclusive use of representatives of the Owner.
- C. Provide respiratory protection to all employees involved with lead paint abatement at no cost to the employees. At a minimum, the Contractor is required to have implemented, prior to award of bid, a respirator program at least as stringent as 29 CFR 1926.62. Workers must wear appropriate respiratory protection at all times during lead paint removal and lead-based paint related activities.
 - 1. Minimum Level of Protection:
 - a. All employees engaged in any of the following tasks shall be provided with half mask air purifying respirators, with a protection factor of 10: manual demolition; manual (wet) scraping; encapsulation; enclosures; manual sanding; chemical stripping; heat gun applications; general cleanup; power tool cleaning with dust collection systems; and spray painting.

WORK ZONE ISOLATION

- A. Contractor shall coordinate with the Building Owner work area lockout during wall and/or ceiling demolition and lead paint abatement. Work area entrances and exits shall be secured by the Contractor. Only the Contractor, the Environmental Consultant and the Owner representatives shall be allowed in the removal areas. Anyone entering the work area shall don appropriate respiratory protection and disposable coveralls.
- B. Outside of the perimeter barrier and at all entrances and exits to the Work Zone, post signs in English, Spanish and any other language spoken at the project location. Post signs at such a distance from the area that an employee will read these signs before entering the area. The signs shall read as follows:

**WARNING
LEAD WORK AREA
POISON
DO NOT ENTER
NO SMOKING OR EATING**

WORK AREA CONTAINMENT PROCEDURES

A successful abatement job will contain all lead dust and debris within the work area so that lead is not dispersed to adjacent areas or units and/or the outside environment. Containment systems which are not adequately ventilated may increase exposure to workers. Exposure may also occur during disassembly of the containment.

Containment is necessary whenever a lead-based paint surface is broken or disturbed. Even when encapsulation is the only abatement strategy to be utilized, there is not enough scientific data to preclude the need for containment measures. Therefore, containment measures are still necessary in order to protect surfaces and personal belongings from unnecessary contamination.

To ensure a safe containment system and make cleanup easier, maintenance of the containment system is necessary. Daily inspections ensure the integrity of the system. Tears and breaks shall be repaired immediately with 6-mil plastic and duct tape. Additionally, an ongoing cleanup to minimize contamination should include the regular cleaning of all tools, equipment and worker protection gear. Tools and equipment should be cleaned using a wet detergent wash or cleaning agent formulated to be effective in removing lead dust. Daily cleaning of respirators with water is also required, depending on the type of respirators used. Follow the manufacturer's suggested cleaning procedures.

ON-SITE CHEMICAL REMOVAL

- A. Work Included Under this Section: Work under this Section includes the furnishing of all labor, materials, and equipment required to remove lead based paint by scraping and/or brushing after

the paint has been softened by the application of a chemical stripping agent, as called out in this scope of work. This method is recommended only for metal substrates and non-textured masonry, if the method meets the criteria outlined below. This method will not be used for historic area surfaces.

- B. Chemical Stripping Removers: Chemical removers shall contain no methylene chloride products. Chemical removers shall be compatible with, and not harmful to the substrate that they are applied to. Chemical removers used on masonry surfaces shall contain anti-stain formulation that inhibits discoloration of stone, granite, brick, and other masonry construction. Chemical removers used shall not raise or discolor the surface being abated. Chemical removers shall be labeled and stored in appropriate containers at designated locations in accordance with all applicable regulations.
- C. Chemical Stripping Agent Neutralizer: Chemical stripping agent neutralizers may be used on exterior surfaces only. Neutralizers shall be compatible with and not harmful to the substrate that they are applied to. Neutralizers shall be compatible with the stripping agent applied to the surface substrate.
- D. Execution: Chemical stripping agents and neutralizers shall be applied in accordance with the recommendations of the manufacturer. Care must be taken to adhere to all health/safety code and other scope of work Section requirements. Stripping agents shall not be allowed to penetrate wood or other fibrous substrates. The softened paint shall be removed by scraping or stiff bristle brush. All treated surfaces shall be tested for pH prior to repainting to ensure proper binding of paint to substrate.
- E. All waste generated must be disposed of in accordance with all applicable Laws and Regulations and with Section 3.13 of this scope of work.

ABATEMENT METHODOLOGY FOR COMPONENTS SCHEDULED FOR DEMOLITION

- A. Work Included Under This Section: Work under this Section includes the furnishing of all labor, materials, and equipment required to remove lead-based painted surfaces, as called out in this scope of work. This method is recommended only for those components scheduled for removal and replacement.
- B. Execution:
 - 1. All components scheduled for demolition, must be prepared by removing peeling or flaking paint with a HEPA filtered vacuum or by wet scraping from the surface of the component ready for demolition.
 - 2. The components scheduled for demolition by Contractor shall be misted or wet sprayed before demolition / removal work is started.
 - 3. All seams and gaps must be sealed with caulking that meets all ASTM applicable standards.
 - 4. All removed components must be wrapped in 6-mil plastic, sealed and disposed of in accordance with all applicable Laws and Regulations and with Section 3.13 of this scope of work. All metal components shall be sent to a metal recycling facility.
- C. Damages: The Contractor shall protect adjacent areas from damage from stripping agent during the course of work. Damages to non protected adjacent areas from stripping agent shall be repaired at the Contractor's expense.
- D. All waste generated must be disposed of in accordance with all applicable Laws and Regulations and with Section 3.13 of this scope of work.

FINAL CLEANING

- A. Upon completion of all abatement activities within each work area, all waste materials shall be removed from the work area.
- B. After waste has been removed, the following cleaning sequenced shall be followed. Contractor shall pay particular attention to problem areas such as room corners, window sills, sashes and wells.

1. HEPA vacuum all surfaces starting from the ceiling and working down, and clean all surfaces using an approved cleaning solution. Change water solution after cleaning each room to prevent spread of contamination.
2. Upon completion of the cleanup, the Contractor's supervisor shall perform a preliminary inspection. If any visible dust or debris is observed, workers shall be instructed to repeat cleaning until adequately cleaned.
3. All sponges, rags, mopheads, and other materials used in cleanup must be properly disposed of with other abatement debris as lead contaminated.
4. Upon completion of the cleaning, request the clearance inspection by the Environmental Consultant.

CLEARANCE INSPECTION

- A. After the final cleanup is complete, the final inspection will take place. As with the preliminary visual inspection, the final inspection has two primary goals. The first is to ensure that the abatement work is complete. The second is to detect the presence of lead dust. The primary post abatement hazard is lead-contaminated surface dust. The abatement process often releases large amounts of lead, even when methods that do not release much visible dust are used. Acceptable levels of lead in dust are only a few hundred micrograms per square foot (ug/ft²). Abatement without proper cleanup can yield lead dust levels of several thousand micrograms per square foot or higher.

To meet the two goals of the final inspection, the inspector will perform a visual inspection. In addition, the inspector may conduct random clearance testing of lead levels in surface dust to meet the QA/QC requirements. If the wipe sample results are above the stated objective, the Abatement Contractor will be notified and the area will be re-cleaned until satisfactory results are achieved.

- B. Any extra costs incurred by the Environmental Consultant due to additional clearance sampling because of clearance failure shall be borne by the Contractor.

PART 5 - WASTE DISPOSAL

- A. Contractor shall follow all Federal, State and Local Regulations for the handling and disposal of construction and demolition debris.
- B. Contractor is responsible for evaluating all categories of waste produced by any Lead Paint Abatement activities to determine which types are hazardous.
- The categories of lead-based waste products shall include any or all of the following:
1. Lead paint chips
 2. Lead paint dust
 3. Old woodwork, plaster, windows, doors, and similar bulky components removed from the building
 4. Plastic sheets and tape used to cover floors and other surfaces during lead paint removal
 5. Solvents and caustics used during the stripping process
 6. Sludge from paint stripping operations
 7. Liquid waste, such as wash water from general cleanup or from decontaminating surfaces after solvents have been used, and liquid waste from exterior blasting
 8. Rags, sponges, mops, HEPA filters, air monitoring cartridges, scrapers, and other materials used for testing, abatement, and cleanup
 9. Disposable work clothes and respirator filters
 10. Any other items contaminated with lead-based paint or lead-based paint debris
- C. Contractor shall sample each of the waste categories generated from any project-related Lead Paint abatement activities with a Toxicity Characteristic Leachate Procedure (TCLP) for Lead. A Lead concentration of 5 mg/L (ppm) or greater for any of the tested categories requires all waste within that category to be disposed of by the Contractor as hazardous waste. All costs associated with TCLP testing shall be borne by the Contractor.
- D. Non-Hazardous Solid Waste: For all waste found to be non-hazardous by TCLP testing, the following waste disposal procedures shall be followed:

1. Contractor shall place lead-based paint chips, debris, and lead dust in double (4-mil) or single (6-mil) polyethylene bags that are air-tight and puncture-resistant. Pieces of wood or other types of substrates that do not fit into plastic bags will be wrapped and labeled "DANGER, LEAD DUST."
 2. Contractor shall place all disposable cleaning materials, such as sponges, mop heads, filters, disposable clothing, and brooms in double (4-mil) or single (6-mil) plastic bags which are then sealed.
 3. Contractor shall clean equipment and bag large debris. Contractor shall then remove plastic sheeting and tape from covered surfaces. Prior to removing the plastic sheeting, Contractor shall lightly mist the sheeting in order to keep dust down and fold inward to form tight small bundles to bag for disposal. Contractor shall place all plastic sheeting in double (4-mil) or single (6-mil) thick plastic bags and seal.
 4. Contractor shall bag and seal vacuum bags and filters in double (4-mil) or single (6-mil) thick plastic bags.
 5. Contractor shall place all contaminated clothing or clothing covers used during abatement and cleanup in plastic bags for disposal.
 6. Contractor shall ensure that all waste is transported in covered vehicles to a NYSDEC permitted landfill.
 7. If Contractor subcontracts the removing of the lead-based paint waste, he shall insure that the company removing the waste material adequately covers all loads so as to insure that no dust or debris is released.
- E. Hazardous Solid Waste: For all waste found to be hazardous by TCLP testing, the following waste disposal procedures shall be followed:
1. Contractor shall comply with all Federal, State and Local Regulations governing hazardous waste storage, transport and disposal.
 2. Contractor shall apply for an EPA identification number from the appropriate regional EPA office; if more than 100 kg of hazardous waste will be generated from the abatement process during any calendar month. If less than 100 kg of hazardous waste is generated, the Contractor shall obtain provincial EPA generator numbers for each property address.
 3. Contractor shall bag all hazardous waste and containerize it within the work area from which it originated. Waste container shall comply with all Federal, State and Local criteria and shall be properly labeled and transported to the hazardous waste dumpster. Labels shall indicate the hazardous waste component and the accumulation date.
 4. If Contractor is not a certified hazardous waste transporter, a contract shall be entered into with a certified transporter to move the waste at the Contractor's expense. Contractor shall complete hazardous waste manifests for all hazardous waste removed from the project site.
 5. Final manifests and receipts, signed by the Contractor, transporter and Hazardous Waste Treatment, Storage and Disposal (TSD) facility, must be provided to the Environmental Consultant and building Owner within ten (10) days of removal of waste from the site.

END OF SECTION

SECTION 04 0130

EXTERIOR MASONRY REPOINTING

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Work of this Section consists of providing all labor, materials, equipment and services to rake and repoint the masonry joints of the Dale Cemetery Cottage as noted on the Contract Drawings. Work includes, but is not limited to:

To be done using hand tools, no mechanical grinders are allowed.

- 1. Repoint joints using the mortar identified in section 2.03 and as identified in the Mortar and Stucco Analyses completed by Jablonski Building Conservation

B. Related Documents:

- 1. **Appendix B: Mortar and Stucco Analyses, Dale Cemetery Superintendent's Cottage completed by Jablonski Building Conservation Inc., dated June 6, 2019.**

1.02 REFERENCES

- A. National Park Service Preservation Brief #2 Repointing Mortar Joints in Historic Masonry Buildings.
- B. ANSI A41.1 Building Code Requirements for Masonry (ANSI)
American Society for Testing and Materials
- C. ASTM C270 Standard Specifications for Mortar for Unit Masonry
- D. ASTM C150 Standard Specifications for Portland Cement
- E. ASTM C207 Standard Specifications for Hydrated Lime for Masonry Purposes
- F. ASTM C144 Standard Specifications for Aggregate for Masonry Mortar
- G. ASTM C114 Standard Test Method for Chemical Analysis of Hydraulic Cement.
- H. Portland Cement Association
- I. Manufacturer's printed recommendations

1.03 SUBMITTALS

- A. Product Literature: The Contractor shall submit copies of the manufacturer's technical data for each product including their recommendations for installation and use. Include test reports and certificates that verify the products' compliance with the specification's requirements.
- B. Program of Work: Submit a written program of work for this Section. Include schedule, method of protection of surrounding materials on the building and site during operations, as well as proposed methods and procedures for protection of personnel, the public and adjacent buildings.
- C. Include the name of all workers who will be raking the joints.

- D. If alternate methods and materials to those specified are proposed for any phase of the restoration work, provide written description. Provide evidence of successful use on comparable projects and demonstrate its effectiveness for use on this project.

1.04 MOCK-UPS

- A. At an area of the site where approved by the Architect, Contractor shall provide a sample of mortar raking and re-pointing.
- B. At an area of the site where approved by the Architect, Contractor shall provide a sample of pointing mortar following the Stone Mortar Replication Mix identified in Appendix B: Mortar and Stucco Analyses completed by Jablonski Building Conservation Inc.
 - 1. Mock-up measuring approximately two (2) feet high by two (2) feet wide, demonstrating quality of materials and workmanship expected in pointing joints. The joints are not to exceed the existing width or overlap the edges of the masonry. Color, appearance, size, and tooling of the joint shall match that recommended in the Materials Testing Report.
 - 2. Submit with precise measurements of ingredients, proportions, gradations, and sources of colored sands from which the sample was made.
 - 3. Provide a sample (minimum 50 grams) of each aggregate to be used in the pointing mortar.
- C. Mock-ups may be part of the Work, and may be incorporated into the finished work when so approved by the Architect.
- D. Revise mock-ups as necessary to secure this approval.
- E. Mock-ups shall serve as a standard for the acceptance or rejection for the work of this contract.

1.05 QUALITY ASSURANCE

- A. The Masonry Contractor shall submit resume demonstrating a minimum of five (5) years of experience working on historic masonry including re-pointing and will be required to provide at least three (3) references for work of similar size and materials. Mechanics shall have skill and experience of sufficient level to accomplish the work described. Workers shall be carefully supervised to ensure that the work is accomplished to meet or exceed the highest standards of the trade. In acceptance or rejection of the work of this Section, no allowance will be made for lack of skill on the part of mechanics.
- B. The Contractor shall provide one crew of mechanics for the duration of the project. Substitutions and additions of work force shall be permitted with the Architect's consent, so long as there is no adverse effect on quality or performance of work.
- C. Mechanics shall be highly skilled in the art and craft of re-pointing, with the work of this Section to the highest standard for such work.

1.06 DELIVERY, STORAGE AND HANDLING

- A. Deliver materials to site in manufacturer's original and unopened containers and packaging, bearing labels as to type and name of product and manufacturer.
- B. Store and handle in strict compliance with manufacturer's instructions and recommendations. Protect from moisture damage.

- C. Arrangement shall be made with the Owner to store equipment and materials in designated areas. The Owner shall not be responsible for damaged or stolen materials or equipment left on the premises by the Contractor.

1.07 JOB CONDITIONS

- A. The Contractor shall take extreme care in protecting the surrounding materials, buildings, vehicles and pedestrians. It is the Contractor's responsibility to ensure that protective measures are in place and are adequate for the work being performed.
- B. Contractor shall maintain access to entrances, exists, and egress paths at all times. Disruption of building use and service, including blocking entrances, sidewalks, etc. shall not be permitted without prior arrangement with the Owner.
- C. Any damage made to the building elements by the scaffolds, other access equipment, or the work of this section will be repaired by the Contractor to the satisfaction of the Architect at no cost to the Owner.
- D. Protection: Prevent mortar from staining faces of masonry that are to be left exposed. Protect all adjacent surfaces, buildings, ledges, and projections from mortar droppings.
- E. Pointing work may only be performed as long as the temperature remains above 40 degrees Fahrenheit. If in any given 24 hour period the temperature drops or is expected to drop below 40 degrees Fahrenheit at any time, work will not recommence until a constant temperature of 40 degrees Fahrenheit or higher is projected for a minimum period of 72 hours. Once stopped for reason of temperature, work will recommence only upon approval of the Architect.
- F. Hot-Weather Requirements: Comply with hot-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602. Protect mortar joint pointing when temperature and humidity conditions produce excessive evaporation of water from mortar. Provide artificial shade and wind breaks and use cooled materials as required to minimize evaporation. Do not apply mortar to substrates with temperatures of 90 deg F and above.
- G. Pointing shall be protected during hot weather from premature drying or rapid curing by the use of dampened fabric coverings or controlled misting with water.
- H. Materials shall be used only at the manufacturer's recommended temperature tolerances.

PART 2 – PRODUCTS

2.01 TOOLS

- A. USE OF ROTARY GRINDERS, POWER CHISELS, OR ANY OTHER POWER TOOLS WILL NOT BE PERMITTED.
- B. CHISELS SHALL BE NARROWER THAN THE JOINTS IN WHICH THEY ARE USED.
- C. Brushes for cleaning joints shall be stiff, natural bristle brushes.

2.02 POINTING MORTAR MIX – GENERAL

- A. Match color, texture, joint size and type of historic mortar as closely as possible. Mortar is to be approved by the Architect prior to installation.
- B. Contractor shall use Custom Replication Mortar Mix as defined by the Architect in consultation with the Architectural Conservator's Report dated June 6, 2019.
- C. Water: As required to achieve a workable mix.

- D. Measure lime and aggregate materials in a dry condition by volume. Do not measure by shovel, use known volume measure. Mix materials in a clean dry mechanical batch mixer.
- E. Produce mortar of colors required to match historic mortars. Do not adjust mix proportions after obtaining Owner's Representative's approval.
- F. Do not use admixtures of any kind in mortar.

2.03 MORTAR MATERIALS:

- A. Natural Hydraulic Lime: Edison Coatings BioLime (1 part)
 - 1. NHL 5.0 Grey (1/2 part)
 - 2. NHL 3.5 White (1/2 part)
 - 3. Available from Edison coatings, 3 Northwest Drive, Plainville, CT 06062, (800) 341-6621
- B. Mortar Sand: Schofield (2-1/4 parts), passed through #4 sieve
 - 1. "181" as manufactured by Geo. Schofield Stone, described as predominantly fine to coarse sized natural white concrete sand, with the addition of light colored pebbles up to 10mm in size, available from Geo. Schofield Stone, P.O. Box 110, Bound Brook, NJ (732) 356-0858, or approved equal.
- C. Water: Potable.

PART 3 - EXECUTION

3.01 INSPECTION

- A. The Contractor shall examine substrates, supports and conditions under which this work is to be performed and notify the Architect, in writing, of conditions detrimental to the proper completion of the work. Do not proceed with work until unsatisfactory conditions are corrected. Beginning work signifies installer's acceptance of substrates and conditions.
- B. Review the amount and extent of work to be accomplished and review area with Architect prior to the execution of the work.
- C. Quantity and Location: The Contractor and Architect shall review all of the areas mentioned to confirm quantities and locations of raking and re-pointing.

3.02 JOINT RAKING AND PREPARATION

- A. Rake out all re-pointing mortars. Remove mortar to provide reveals with square backs and to expose masonry for contact with pointing mortars. Brush, vacuum or flush joints to remove all dirt and loose debris.
- B. For hand-held chisels and hammers, the diameter of the chisels should be narrower than the original joint width.
- C. Do not break or mar edges of masonry units or widen joints. Replace in kind all masonry or joints which have become damaged at no expense to the Owner.

3.03 POINTING

- A. Rinse masonry joint surfaces with fresh water to remove all dust and loose mortar particles. Time application of rinsing so that, at time of pointing, excess water has evaporated or run off, and joint surfaces are damp, but free of standing water.

- B. Apply first layer of pointing mortar to areas where existing mortar was removed to depths greater than surrounding areas. Apply in layers not greater than 3/8 inch. Compact each layer thoroughly and allow to become thumbprint-hard before applying next layer.
- C. After joints have been filled to a uniform depth, place remaining pointing mortar in three steps. Each of the first and second steps should fill approximately 2/5 of joint depth and the third step the remaining 1/5. Fully compact mortar at each step and allow to become thumbprint-hard before applying next step. Take care not to spread mortar over edges onto exposed masonry surfaces or to feather edge the mortar.
- D. When mortar is thumbprint-hard, tool joints to match period-appropriate appearance of joints and approved mock-ups. Remove excess mortar from edges of joints by brushing.
- E. Dampen fresh mortar using a pump sprayer or a garden hose on mist setting. Repeat misting procedure if the wall begins to dry out.
- F. Cure mortar by maintaining a damp condition for no less than 72 hours.

3.04 CLEANING

- A. After mortar has fully hardened, thoroughly clean exposed masonry surfaces of excess mortar and foreign matter using stiff nylon or Tampico bristle brushes and clean water spray applied at low pressure.
- B. The use of metal scrapers or brushes will not be permitted.

END OF SECTION

SECTION 04 9000
MASONRY RESTORATION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. This Section includes masonry repair and restoration work whether or not indicated on the Drawings:
 - 1. Stone restoration
 - a. Replacement of incorrectly sized lintel and restoration of missing or displaced stones at opening.
 - 2. Brick masonry restoration at Chimney
 - a. Removal of existing mortar and repointing of mortar joints.
 - b. Replacement of missing and damaged brick.
 - c. Repair including removal and resetting of brick.
 - d. **Alternate #7** – Restore brick corbels as shown in 1865 image.

1.02 REFERENCES

- A. ASTM C144: Standard Specification for Aggregate for Masonry Mortar
- B. ASTM C150: Standard Specification for Portland Cement
- C. ASTM C207: Standard Specification for Hydrated Lime for Masonry Purposes
- D. BIA Technical Note 8A (M1-88): Standard Specification for Portland Cement-Lime Mortar for Brick Masonry.

1.03 SUBMITTALS

- A. Product Data: Provide data on cleaning compounds.
- B. Product Data: Manufacturer's printed literature for each product, including test data indicating compliance with requirements, and installation instructions.
- C. Restoration Plan: Written description of restoration process, including materials, methods, equipment, and sequencing of work.
- D. Cleaning Plan: Written description of cleaning process, including materials, methods, equipment, and sequencing of work.

1.04 QUALITY ASSURANCE

- A. Masonry Restorer: The Contractor for the Work of this Section shall be regularly engaged in the restoration of historic masonry who has at least five years of documented experience in this type of work and similar experience on National Register-listed historic buildings or structures.
- B. Manufacturer Qualifications: Capable of providing field service representation during installation and who will approve the installer and application method.
- C. Mock-up
 - 1. Remove mortar from and repoint a 3' x 3' section of the each existing exterior masonry type, with mortar sample for review and approval of mortar type, texture, color and joint tooling.
 - 2. Clean a portion of chimney or other location with brick with low pressure mist or water to determine feasibility of cleaning method.
 - 3. Mock-up may remain as part of the Work.

1.05 PRE-INSTALLATION MEETING

- A. Convene one week prior to commencing work of this section.

- B. Require attendance of parties directly affecting work of this section.
- C. Review conditions of installation, installation procedures, and coordination with related work.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products in time to avoid construction delays.
- B. Deliver masonry neatly stacked and tied on pallets. Store clear of ground with adequate waterproof covering.
- C. Packaged Products:
 - 1. Deliver materials to the site in manufacturer's original, sealed containers. Do not deliver materials which have exceeded shelf life limitation set forth by the manufacturer.
 - 2. Comply with manufacturer's printed instructions for storing and protecting materials.
 - 3. Protect packaged products from water, dampness and high humidity.
- D. Bulk Aggregate: Store in a manner which will keep aggregate clean and protected from the weather elements.
 - 1. Keep different colored aggregates segregated.
- E. Discard and remove from the site any deteriorated or contaminated materials.

1.07 FIELD CONDITIONS

- A. Perform work only when surface and ambient air temperatures, relative humidity and other conditions comply with the manufacturer's printed instructions and the requirements of this Section.
- B. Maintain materials and surrounding air temperature to minimum 40 degrees F prior to, during, and 48 hours after completion of masonry restoration and cleaning work.
- C. Maintain materials and surrounding air temperature to maximum 90 degrees F prior to, during, and 48 hours after completion of masonry work.
- D. Do not clean or use process creating dust & dirt when wind is over 10 mph, or will be within 48 hours.
- E. Pointing Mortars: Do not mix or use mortars when surface or ambient air temperature is below 40 degrees F, or when the air temperature is forecasted to drop below 40 degrees F within 48 hours after filling mortar joints.
- F. Protect materials from excessively rapid drying or curing.

1.08 PROJECT CONDITIONS

- A. Perform repointing before cleaning masonry surfaces.
- B. Do not apply products under conditions outside manufacturer's requirements, which include:
 - 1. Surfaces that are frozen; allow complete thawing prior to installation.
 - 2. Surface and air temperatures below 40 degrees F.
 - 3. Surface and air temperatures above 95 degrees F.
 - 4. When surface or air temperature is not expected to remain above 40 degrees F for at least 48 hours after application.
 - 5. Wind conditions that may blow materials onto surfaces not intended to be treated.
 - 6. Less than 24 hours after a rain.
 - 7. When rain is expected less than 6 hours after installation.
 - 8. Do not allow cleaning runoff to drain into sanitary or storm sewers.

PART 2 PRODUCTS

2.01 CLEANING MATERIALS

- A. Potable water.
- B. Cleaning Agent: Detergent type.

2.02 MORTAR MATERIALS

- A. Conform to requirements of Section 04 0130.

2.03 STONE

- A. Provide replacement marble lintel, either salvaged or new where quantity of salvaged existing historic stone is inadequate to complete rebuilding and restoration work.
- B. Provide replacement stone, either salvaged or new stone surrounding opening where quantity of salvaged existing historic stone is inadequate to complete rebuilding and restoration work
- C. Stone shall match existing historic stone in every respect including composition, strength, color, texture, shape and size.

2.04 BRICK

- A. Provide replacement brick, either salvaged or new where quantity of salvaged existing historic brick is inadequate to complete rebuilding and restoration work.
- B. Brick shall match existing historic brick in every respect including composition, strength, color, texture, shape and size.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Visually inspect and note the condition of masonry and mortar joints and surfaces at areas whether or not indicated on the Drawings and at other locations where deterioration may exist.
 - 1. Probe deteriorated surfaces to assess the extent of damage.
- B. Review findings and establish the extent of repairs with the Owner and Architect prior to commencing the Work of this Section.

3.02 PREPARATION

- A. Carefully remove, tag, and store removable items located in areas to be restored; reinstall in original location upon completion.

3.03 PROTECTION

- A. Protect near-by elements and surfaces from damage by restoration procedures.
- B. Mask immediately adjacent surfaces with material that will withstand cleaning and restoration procedures.
- C. Close off adjacent occupied areas with dust proof and weatherproof partitions.
- D. Protect roof membrane and flashings from damage with 1/2 inch plywood laid on roof surfaces over full extent of work area and traffic route.

- E. When using cleaning methods that involve water or other liquids, install drainage devices to prevent runoff over adjacent surfaces unless those surfaces are impervious to damage from runoff.
- F. Separate areas to be protected from restoration areas using means adequate to prevent damage.
- G. Protect surface of masonry not being worked on at all times during and after installation to prevent damage, deterioration, staining or freezing of masonry construction.
- H. Protect building occupants, passersby, vehicles, foliage, and adjacent properties from damage and injury by restoration procedures and wind drift. Coordinate the required pedestrian and auto traffic.
- I. Collect and properly dispose of debris resulting from joint or surface preparation work at the end of each day.

3.04 COORDINATION

- A. Masonry Restoration should be performed after low-pressure washing and scrubbing for the removal of loose and scaling paint.

3.05 REBUILDING

- A. Dismantling
 - 1. Stone Removal
 - a. Cut out damaged and deteriorated stone with care in a manner to prevent damage to any adjacent remaining materials.
 - b. Support structure as necessary in advance of cutting out units.
 - c. Cut away loose or unsound stone, leaving rough surface.
 - d. Undercut the edges of repair areas to a slight dovetail. Drill 1/2" diameter holes 1/2" deep, at varied angles, spaced 2-3 inches apart in staggered rows.
 - e. Wash thoroughly with water and remove dust and stone fragments.
 - 2. Brick removal
 - a. Remove spalled and cracked bricks so new or salvaged brick can key into existing work unless otherwise indicated, matching the coursing and bond of the original work whether or not drawn.
- B. Salvage
 - 1. Clean mortar from stone or bricks for salvage and reuse. Obtain maximum amount of whole stone and bricks possible for reuse.
 - 2. Identify and salvage for reuse as possible all original stone and bricks on site. Use salvaged stone or bricks in areas exposed to the exterior and where most visible first, with best face exposed where visible..
- C. Stone and Bricklaying
 - 1. Wet or soak stone or brick before installing so that stones and bricks are nearly saturated but surface dry when laid.
 - 2. Lay stone or brick in pattern to match existing or original. Match coursing and wall thickness.
 - a. Do not shove or pound units into place.
 - b. Do not slush head joints.
 - 3. Ensure that anchors are correctly located and built in.
 - 4. Install built in masonry work to match and align with existing, with joints and coursing true and level, faces plumb and in line. Build in all openings, accessories and fittings.
 - 5. Lay masonry so that each course shall key into and be flush with existing work.
- D. Install lintels, sills, headers, blocking, etc. embedded in masonry walls as walls are being repointed so that they are set in a full mortar bed.

- E. Mixing Mortar, Tooling, Curing, Cleaning and Adjustment, Defective Work:
 - 1. Comply with Specifications 04 0130 for Masonry Repointing.

3.06 CLEANING AND ADJUSTMENT:

- A. Within 48 hours after placing mortar, clean masonry surfaces to remove mortar stains and smears.
 - 1. Use wooden scrapers or short fiber bristle brushes and clean, potable water to remove residues without damaging mortar or masonry.
 - 2. Do not use wire brushes.
 - 3. Do not use chemical cleaners or an acid wash.
 - 4. Repair cracks, holes and other defects in the finished surface of pointed joints within 72 hours of initial placement.

3.07 CLEANING NEW MASONRY

- A. Verify mortar is fully set and cured.
- B. Clean surfaces and remove large particles with wood scrapers, brass or nylon wire brushes.
- C. Scrub walls with detergent type cleaning agent solution using stiff brush. Thoroughly rinse and wash off cleaning solution, dirt and mortar crumbs using clean, pressurized water.

3.08 CLEANING

- A. Immediately remove stains, efflorescence, or other excess resulting from the work of this section.
- B. Remove excess mortar, smears, and droppings as work proceeds and upon completion.
- C. Clean surrounding surfaces.

END OF SECTION

SECTION 06 1000
ROUGH CARPENTRY

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Structural dimension lumber framing for the following locations:
 - 1. Roof and Porch rafters, framing
- B. Sheathing as follows:
 - 1. Replacement of deteriorated existing sheathing
- C. Miscellaneous framing and sheathing.

1.02 REFERENCE STANDARDS

- A. AFPA (WFCM) - Wood Frame Construction Manual for One- and Two-Family Dwellings; American Forest and Paper Association; 2012.
- B. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2009.
- C. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2011
- D. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2013a.
- E. AWWA U1 - Use Category System: User Specification for Treated Wood; American Wood Protection Association; 2012.
- F. PS 1 - Structural Plywood; 2009.
- G. PS 2 - Performance Standard for Wood-Based Structural-Use Panels; National Institute of Standards and Technology, U.S. Department of Commerce; 2010.
- H. PS 20 - American Softwood Lumber Standard; National Institute of Standards and Technology, Department of Commerce; 2010.
- I. SPIB (GR) - Grading Rules; Southern Pine Inspection Bureau, Inc.; 2002.

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide technical data on wood preservative materials and dimensional lumber.
- C. Samples: For rough carpentry members that will be exposed to view, submit two samples, illustrating wood grain, color, and general appearance.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. General: Cover wood products to protect against moisture. Support stacked products to prevent deformation and to allow air circulation.
- B. Fire Retardant Treated Wood: Prevent exposure to precipitation during shipping, storage, or installation.

1.05 WARRANTY

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.
- B. Correct defective Work within a one year period after Date of Substantial Completion.

PART 2 PRODUCTS

2.01 GENERAL REQUIREMENTS

- A. Dimension Lumber: Comply with PS 20 and requirements of specified grading agencies.
 - 1. If no species is specified, provide any species graded by the agency specified; if no grading agency is specified, provide lumber graded by any grading agency meeting the specified requirements.

2. Grading Agency: Any grading agency whose rules are approved by the Board of Review, American Lumber Standard Committee (www.alsc.org) and who provides grading service for the species and grade specified; provide lumber stamped with grade mark unless otherwise indicated.

B. Lumber fabricated from old growth timber is not permitted.

2.02 EXPOSED DIMENSION LUMBER AND ENGINEERED LUMBER

A. Size, surfacing, moisture content, grade and species as indicated on drawings.

2.03 CONSTRUCTION PANELS

A. Plywood Concealed from View but Located within Exterior Enclosure: PS 1, C-C Plugged or better, exterior grade.

2.05 ACCESSORIES

A. Fasteners and Anchors:

1. Metal and Finish: Hot-dipped galvanized steel per ASTM A 153/A 153M for high humidity and preservative-treated wood locations, unfinished steel elsewhere.

B. Die-Stamped Connectors: Hot dipped galvanized steel, sized to suit framing conditions.

1. For contact with preservative treated wood in exposed locations, provide minimum G185 galvanizing per ASTM A653/A653M.

C. Joist Hangers: Hot dipped galvanized steel, sized to suit framing conditions.

1. For contact with preservative treated wood in exposed locations, provide minimum G185 galvanizing per ASTM A653/A653M.

2.06 FACTORY WOOD TREATMENT

A. Treated Lumber and Plywood: Comply with requirements of AWWA U1 - Use Category System for wood treatments determined by use categories, expected service conditions, and specific applications.

1. Preservative-Treated Wood: Provide lumber and plywood marked or stamped by an ALSC-accredited testing agency, certifying level and type of treatment in accordance with AWWA standards.

B. Preservative Treatment:

1. Preservative Pressure Treatment of Lumber Above Grade: AWWA U1, Use Category UC3B, Commodity Specification A using waterborne preservative to 0.25 lb/cu ft retention.
 - a. Kiln dry lumber after treatment to maximum moisture content of 19 percent.

PART 3 EXECUTION

3.01 PREPARATION

A. Coordinate installation of rough carpentry members specified in other sections.

3.02 INSTALLATION - GENERAL

A. Select material sizes to minimize waste.

B. Reuse scrap to the greatest extent possible; clearly separate scrap for use on site as accessory components, including: shims, bracing, and blocking.

C. Where treated wood is used on interior, provide temporary ventilation during and immediately after installation sufficient to remove indoor air contaminants.

3.03 FRAMING INSTALLATION

A. Set structural members level, plumb, and true to line. Discard pieces with defects that would lower required strength or result in unacceptable appearance of exposed members.

B. Make provisions for temporary construction loads, and provide temporary bracing sufficient to maintain structure in true alignment and safe condition until completion of erection and installation of permanent bracing.

C. Install structural members full length without splices unless otherwise specifically detailed.

- D. Comply with member sizes, spacing, and configurations indicated, and fastener size and spacing indicated, but not less than required by applicable codes and AFPA Wood Frame Construction Manual.
- E. Construct double joist headers at floor and ceiling openings and under wall stud partitions that are parallel to floor joists; use metal joist hangers unless otherwise detailed.
- F. Frame wall openings with two or more studs at each jamb; support headers on cripple studs.

3.04 ROOF-RELATED CARPENTRY

- A. Coordinate installation of roofing carpentry with deck construction, framing of roof openings, and roofing assembly installation.

3.05 INSTALLATION OF CONSTRUCTION PANELS

- A. Roof Sheathing: Secure panels with long dimension perpendicular to framing members, with ends staggered and over firm bearing.
 - 1. Nail panels to framing; staples are not permitted.

3.06 TOLERANCES

- A. Framing Members: 1/4 inch from true position, maximum.
- B. Variation from Plane (Other than Floors): 1/4 inch in 10 feet maximum, and 1/4 inch in 30 feet maximum.

3.07 CLEANING

- A. Waste Disposal:
 - 1. Comply with applicable regulations.
 - 2. Do not burn scrap on project site.
 - 3. Do not burn scraps that have been pressure treated.
 - 4. Do not send materials treated with pentachlorophenol, CCA, or ACA to co-generation facilities or "waste-to-energy" facilities.
- B. Do not leave any wood, shavings, sawdust, etc. on the ground or buried in fill.
- C. Prevent sawdust and wood shavings from entering the storm drainage system.

END OF SECTION

**SECTION 06 1500
HARDWOOD DECKING**

PART 1 GENERAL

1.01 SECTION INCLUDES

lpe wood decking/floor boards (to match existing in size at the entry porch)

1.02 RELATED SECTIONS

- A. Section 06 1000 - Rough Carpentry.
- B. Section 06 2000 - Finish Carpentry.
- C. Section 09 9000 - Painting and Coating.

1.03 REFERENCE STANDARDS

- A. FSC - Forest Stewardship Council Certification
- B. NFPA - Fire Safety Code
- C. UBC - 1979 Edition, Part VIII, Fire Resistive Standard for Fire Protection.

1.04 SUBMITTALS

- A. Submit under provisions of Section 01 30 00 - Administrative Requirements.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
 - i. Preparation instructions and recommendations.
 - ii. Storage and handling requirements and recommendations.
 - iii. Installation methods.
- C. Shop Drawings: Shop Drawings: Indicate deck framing system, loads and cambers, bearing details, framed openings
- D. FSC Submittals: Provide documentation indicating manufacturer is FSC Chain-of-Custody certified
- E. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.
- F. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) long, representing actual product, and color.
- G. Manufacturer's Certificates: Certify products meet or exceed specified requirements.
- H. Closeout Submittals: Provide manufacturer's maintenance instructions that include recommendations for periodic cleaning and maintenance of all components.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with minimum 5 years documented experience.
- B. Installer Qualifications: Company specializing in performing Work of this section with minimum 2 years documented experience.
- C. Design decking under direct supervision of Professional Engineer experienced in design of this Work and licensed at Project location.
- E. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
- F. Finish areas designated by Architect.
- G. Do not proceed with remaining work until workmanship is approved by Architect.
- H. Refinish mock-up area as required to produce acceptable work.
- I. Accepted mock-up shall be comparison standard for remaining Work

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver and store products in manufacturer's unopened packaging bearing the brand name and manufacturer's identification until ready for installation.
- B. Protect from soiling, damage and construction operations. Allow for proper on site acclimation of wood materials.

1.07 SEQUENCING

Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.

1.08 PROJECT CONDITIONS

Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

PART 2 PRODUCTS

2.01 DESIGN / PERFORMANCE REQUIREMENTS

- A. General Characteristics:
 - 1. Appearance: An extremely dense, tight grained wood. Generally a deep rich brown with some pieces displaying red and amber hues.
 - 2. Hardness: 3600 lbs
 - 3. Bending Strength: 22,560 psi
 - 4. Decay Resistance: Very durable and naturally resistant to decay and insects. Offers up to 75 plus year lifespan.
 - 5. Weight: Basic specific gravity (oven dry weight/green volume) 0.85 to 0.97, air dry density 66 to 75 pounds per cubic foot.
 - 6. Moisture Content of Decking:
 - 7. Ipe Decking is specially dried for use on exterior projects. DO NOT use kiln dried interior lumber in exterior projects as it will expand.
 - 8. Janka side hardness: 3,060 lbs for green material and 3,680 lbs at 12 percent moisture content.
- B. Slip Resistance:

ASTM C 1028 tested; exceeds the Americans with Disabilities Act requirements for Static Coefficient of friction in a wet environment.
- C. Fire Rating
 - 1. Decking Flame Spread (10) Minutes - 0
 - 2. Decking Flame Spread (30) Minutes - 5
 - 3. Decking Smoke Developed Values (10) minutes - 3
 - 4. Decking Fuel Contribution (10) Minutes - 0
 - 5. NFPA Class - A
 - a. UBC Class - 1

2.02 MANUFACTURERS

- A. Acceptable Manufacturer: Advantage Trim & Lumber Co., which is located at: 601 Ohio St.; Buffalo, NY 14203; Toll Free Tel: 877-232-3915 ; Tel: 716-827-3915 ; Fax: 716-827-3916; Email:[request info \(jon@advantagelumber.com\)](mailto:jon@advantagelumber.com); Web:www.advantagelumber.com
- B. Substitutions: as approved by Owner and Architect.
- C. Requests for substitutions will be considered in accordance with provisions of Section 01 6000 - Product Requirements.

2.03 HARDWOOD DECKING :

- A. FSC Standard Ipe Decking:
1 x 4 FSC Standard, Net Finished Dimensions 3/4 inch by 3-1/2 inch
- B. Span Chart for Ipe Decking : Nominal Dimension 1 x 4 or match existing, Finish Dimension 3/4 inch by 3-1/2 inches, Joist Spacing 16 inches
- C. Wood Plugs: 3/8 inch tapered wood plugs for plugging holes in face-screwed exotic wood decking planks.
OR :
- D. Ipe Clip: IPE CLIP System is an edge mount deck fastening system No surface screws showing.
- E. Polymer molded and reinforced with a stainless steel insert, for use on 3/4 inch, 1 inch or thicker material. Comes with high grade 305 grade stainless steel screws with painted heads and a T15 torx drive.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. Verify support framing is ready to receive decking.
- C. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.02 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Coordinate placement of bearing or support items.
- C. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.03 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Install decking perpendicular to framing members, with ends staggered over firm bearing. On sloped surfaces, lay decking with tongue upward.
- C. Allow expansion space at edges and ends.
- D. Scribe and cope as required for accurate fit to adjacent construction.

3.04 CLEANING AND PROTECTION

- A. Protect installed products until completion of project.
- B. Protect from damage during construction operations. Promptly repair any damaged surfaces. Remove and replace work which cannot be satisfactorily repaired.
- C. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

SECTION 06 2000
FINISH CARPENTRY - NEW & RESTORATION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Exterior Items
 - 1. Fascia
 - 2. Deck Fascia
 - 3. Trim
 - 4. Other miscellaneous wood trim

1.02 RELATED REQUIREMENTS

- A. Section 06 1000 - Rough Carpentry: Support framing, grounds, and concealed blocking.
- B. Section 06 9000 - Wood Restoration Systems: Restoration of all existing historic finish carpentry items.
- C. Section 09 9000 – Paints and Coatings: Painting and finishing of finish carpentry items.

1.03 REFERENCE STANDARDS

- A. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards; 2009.
- B. BHMA A156.9 - American National Standard for Cabinet Hardware; Builders Hardware Manufacturers Association; 2010 (ANSI/BHMA A156.9).
- C. HPVA HP-1 - American National Standard for Hardwood and Decorative Plywood; Hardwood Plywood & Veneer Association; 2004.
- D. PS 1 - Structural Plywood; 2007.

1.04 QUALITY ASSURANCE

- A. Fabricator Qualifications: Company specializing in fabricating the products specified in this section with minimum five years of documented experience.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Protect work from moisture damage.

PART 2 PRODUCTS

2.01 FINISH CARPENTRY ITEMS

- A. Quality Grade: Unless otherwise indicated provide products of quality specified by AWI/AWMAC/WI Architectural Woodwork Standards for Premium Grade.
- B. AZEK® Trimboards manufactured by The AZEK® Company, which is located at: 888 N Keyser Ave Scranton, PA 18508

2.02 WOOD-BASED COMPONENTS

- A. Wood fabricated from old growth timber is not permitted.

2.03 FINISH CARPENTRY MATERIALS

- A. RESTORATION CARPENTRY: Restoration of existing historic components or replacement of historic components with new materials.
 - 1. Exterior Finish Carpentry Components
 - a. Including the following:
 - 1) Fascia
 - 2) Deck Fascia – Azek trim
 - 3) Trim
 - 4) Other miscellaneous wood trim
 - b. For all wood components:
 - 1) Species: match existing adjoining historic material
 - 2) Grade: match existing adjoining historic material
 - 3) Cut: match existing adjoining historic material

- 4) Grain pattern: match existing adjoining historic material

2.04 FASTENINGS

- A. Fasteners: Of size and type to suit application; steel finish in concealed locations and putty and painted finish over recessed steel nail finish in exposed locations.
- B. Concealed Joint Fasteners: Threaded steel for all stair components.

2.05 ACCESSORIES

- A. Lumber for Shimming, Blocking, and furring: Softwood lumber of eastern white pine or red cedar species.
- B. Wood Filler: Solvent base, tinted to match surface finish color.

2.06 FABRICATION

- A. Provide materials with ample allowance for cutting. Provide trim for scribing and site cutting.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify adequacy of backing and support framing.
- B. Verify mechanical, electrical, and building items affecting work of this section are placed and ready to receive this work.

3.02 INSTALLATION

- A. Install all finish carpentry and stair work in accordance with AWI/AWMAC/WI Architectural Woodwork Standards requirements for grade indicated and in accordance with industry standards.
- B. Set and secure materials and components in place, plumb and level.
- C. Carefully scribe work abutting other components, with maximum gaps of 1/32 inch. Do not use additional overlay trim to conceal larger gaps.

3.04 GENERAL INSTALLATION REQUIREMENTS

- A. All interior and exterior wood replacement components shall be cut, tooled to match existing historic wood components being restored and to remain.

3.05 PREPARATION FOR SITE FINISHING

- A. Backprime all concealed edges of all exterior finish wood carpentry items.
- B. Set exposed fasteners. Apply wood filler in exposed fastener indentations. Sand work smooth.
- C. Site Finishing: See Section 09 9133.
- D. Before installation, prime paint surfaces of items or assemblies to be in contact with cementitious materials.

3.06 TOLERANCES

- A. Maximum Variation from True Position: 1/16 inch.
- B. Maximum Offset from True Alignment with Abutting Materials: 1/32 inch.

END OF SECTION

SECTION 06 9000
WOOD RESTORATION SYSTEMS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. All labor, materials, equipment and services necessary to complete the work of wood restoration including consolidation, patching and repairs to wood framing, architectural woodwork, wood doors and windows, as shown on drawings, specified herein, and as required by conditions and authorities having jurisdiction, including the following:
 - 1. Consolidate deteriorated wood to restore wood member to sound condition.
 - 2. Consolidate and patch elements where portions of wood are deteriorated and portions are missing to restore wood member to sound condition and original configuration, profile and dimension.
 - 3. Replace deteriorated wood members with new wood members to restore deteriorated wood elements to sound condition and original configuration, profile and dimension.
- B. Intent of Wood Restoration: It is the specific intent of this Section that elements of wood repair indicated on the drawings and specified elsewhere to be restored under this Contract shall be completely restored to sound condition and original planes and profiles, except as specifically indicated otherwise. Replacement components must replicate the size, shape and profile of the original.

1.02 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide Product data and general recommendations from manufacturer for types of repair required including technical data sheets defining performance properties.
 - 1. Wood epoxy resins and fillers.
 - 2. Wood glue.
 - 3. Wood epoxy adhesives.
- C. Manufacturer's Instructions: Provide installation instructions and general recommendations from manufacturer for each type of repair required.
- D. Restoration Schedule: Submit schedule for each wood component to be restored, outlining in detail proposed restoration work to be performed on each component. Obtain written approval from Architect prior to commencement of repair work.
- E. Field Samples (Mock-Ups):
 - 1. Prepare field sample at a location designated by the Owner and Architect. Do not proceed further with the Work of this Section until the field sample is approved.
 - a. Engage the approved Restoration Specialist to prepare the field sample.
 - b. Utilize only approved materials and methods, and comply with product manufacturer's instructions and other requirements of this Section to prepare field sample.
 - 2. Approved field sample will be used as quality control standard for acceptance or rejection of the Work of this Section.
 - a. Maintain and protect approved field sample from damage, deterioration or alteration for the duration of the Contract.

3. Field Samples Required:
 - a. One sample of consolidated and patched architectural woodwork element.
 - b. One sample of wooden Dutchman repair to architectural woodwork element.
 - c. One sample of partial replacement of an element or member of architectural woodwork.
- F. Certification that materials comply with local VOC limitations.

1.03 DEFINITIONS

- A. "Consolidate": Solidify friable and decayed wood that still retains its original dimensions and profile through application of a wood epoxy consolidant.
- B. "Consolidate and Patch": Replacement of localized areas of rot or decay in a wooden member with a wood epoxy filler. Includes consolidation of adjacent areas of soft or friable wood through application of a wood epoxy consolidant.
- C. "Dutchman Repair": Replacement of localized areas of rot or decay in a wooden member with a wood patch.
- D. "Partial Replacement": Replacement of a section of a wooden member, encompassing the full width and thickness, with new wood.

1.04 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than three years of documented experience.
- B. Installer Qualifications: Company specializing in performing the work of this section with minimum 5 years of experience.

1.05 DELIVERY, STORAGE, AND PROTECTION

- A. Deliver all materials in original unopened containers labeled with the manufacturer's name, brand name, item name and installation instructions.
- B. Store materials in compliance with the manufacturer's requirements for temperature, maximum and minimum, and other conditions. Keep all materials under cover and dry. Protect against exposure to the weather.
- C. Discard and remove from the job site any materials damaged in handling or storage and any materials that have been subjected to conditions contrary to the manufacturer's recommendations or whose maximum shelf life has expired.

1.06 PROJECT CONDITIONS

- A. Lead: Existing paint may contain lead. Take all necessary precautions to ensure the safety of all persons engaged in removing lead-based paint and dispose of all residues generated from lead-based paint stripping in a legal manner in accordance with all local, state and federal codes. See Section 02-8300 Lead-Based Paint Removal.
- B. Coordination: Coordinate wood repair with paint stripping so that the affected surfaces are exposed for a minimal time to avoid further damage to bare wood. Coordinate with painting so that all restored surfaces are primed as soon as possible after repair.
- C. Substrate Conditions: Do not proceed with product applications until substrates have been inspected and are determined to be in satisfactory conditions. Substrate moisture content shall not be in excess of 18% during preparation and application
 1. Remove all decayed wood to a clean, sound, unaffected substrate

2. Remove all built up paints, and other debris to a clean sound substrate.
 3. Remove all wood sawdust to a clean sound substrate.
- D. Environmental Conditions: Proceed with work of this Section only when existing and forecasted weather conditions permit work to be performed in accordance with manufacturer's or with requirements specified herein, whichever is more stringent.
1. Mix and use epoxy resins only when temperatures of air, wood to be patched, and epoxy resins are between 50 deg F and 85 deg F.
 2. Use polyurethane glue only when temperatures of air, wood to be glued, and glue are between 40 deg F and 100 deg F.
- E. Surface Conditions: Proceed with work of this Section only when wood moisture levels are within the limits recommended by manufacturers of materials being used.
1. Use Epoxy Resins only on wood that is completely dry.
 2. Use polyurethane glue on wood that has a moisture level as recommended by glue manufacturer. Dampen substrates as recommended by manufacturer when moisture level is below acceptable level.
- F. Protection:
1. Use all necessary means to protect interior of building from all damage caused by precipitation and other environmental conditions during the work of the Section
 2. Protect all adjacent building surfaces from damage, staining or deterioration resulting from wood restoration work.
 3. Protect the restoration work in progress to prevent further deterioration exposed wood surfaces. Protect the completed work until the time of final inspection and acceptance by the architect.
- G. Dimensions: Field measure dimensions of all existing and in-place elements to be altered or repaired before preparing shop drawings or beginning work. Contractor is responsible for all dimensions.
- H. Retention of Existing Building Fabric: Carefully remove, store, and reinstall all existing building fabric that must be removed to undertake architectural woodwork repair and restoration, except where Contract Documents indicate that element is to be modified or replaced.
- I. Removal of Existing Construction: Where removal of existing construction is required to perform the Work, take all necessary measures to carefully remove and salvage sound materials without damage and without marring finished surfaces.
1. Tag or otherwise label removed items to facilitate reinstallation at the same location, position and orientation.
 2. Protect and store removed items. Reinstall items as soon as possible within the limits of the construction schedule and to ensure the work is not damaged.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Compatibility: provide products recommended by the manufacturers to be fully compatible with indicated substrate.
- B. Epoxy repair systems may include the following:
1. West System 105 Epoxy Resin, 206 Hardener
 2. Abatron Liquid Wood, Wood Epox A and B, Abosolv
 3. Owner and Architect approved equal
- C. Epoxy repair materials shall consist of 2 separate systems, a 2 part low viscosity epoxy primer/coupling agent and a 2 part thixotropic paste

- D. Repair Products
 - 1. Low viscosity epoxy coupling/bonding agent
 - 2. Epoxy repair compound.
 - 3. Injectable borate gel
 - 4. Borate rods
 - 5. Manufacturers
 - a. Advanced Repair Technology, Cherry Valley, NY
 - b. Owner and Architect approved equal
- E. Wood Preservatives
 - 1. Manufacturer: Abatron, Inc., www.abatron.com
 - 2. Product: Bora-Care: Boron-based concentrated wood preservative
 - 3. Owner and Architect approved equal
- F. Paint Strippers
 - 1. Products: Subject to compliance with requirements, provide the following, or approved equal
 - a. ProSoCo: 509 Stripper: Chemical Stripping Agent. Methylene chloride based, Thixotropic stripper. ProSoCo 3741 Greenway Circle Lawrence, KS 66040 phone 1-800-255-4255. www.prosoco.com
 - b. ProSoCo: Enviro Klean Safety Peel: Designed for removal of lead-based paint and clear coatings where removal, containment and disposal of lead-containing wastes are of primary concern. ProSoCo 3741 Greenway Circle Lawrence, KS 66040 phone 1-800-255-4255. www.prosoco.com.
 - c. Peel-Away 1: For the removal of lead-based paint from interior and exterior surfaces. Product contains line to stabilize lead.
 - d. Or Architect approved equal
 - 2. Paint stripper shall only be used on wood requiring restoration.
 - 3. For items removed to a shop for restoration the contractor may also consider using low temperature heat plate, no open flame. Use of heat is not permitted on in-place component restoration.

2.02 MISCELLANEOUS MATERIALS

- A. Adhesive for assembly of Architectural Woodwork and Wood Door and Window components: One-component moisture activated polyurethane glue, fast curing, creating boil-resistant bonds in accordance with classification requirements in EN 204/205-D4:
 - 1. Gorilla Glue, manufactured by Lutz File and Tool Co., 3929 Virginia Ave., Cincinnati, OH 45227; 800-966-3458.
 - 2. Titebond Polyurethane by Franklin International.
 - 3. Excel One by The Ambel Corporation.
 - 4. Owner and Architect approved equal
- B. Adhesive for Installing Dutchman: Two-part epoxy adhesive formulated and sold for use with wood.
- C. Linseed Oil – Turpentine Solution: Solution of 50 percent boiled linseed oil and 50 percent turpentine.
- D. Primer: Refer to Section 09 90 00 Painting

PART 3 EXECUTION

3.00 GENERAL

- A. Where the level of repair or replacement is not specifically indicated on the plans, every reasonable effort shall be made to repair existing historic building materials rather than replace them.
- B. Do not use units of material with defects which impair the quality of the Work and units which are too small to fabricate the Work with minimum joints or optimum joint arrangement.
- C. Install work accurately to required lines and levels with members plumb and true, accurately cut and fitted and securely fastened. Closely fit rough carpentry to other associated construction and to existing construction. Where existing construction is not level or plumb, match lines of existing construction.

3.01 TEMPORARY PROTECTION

- A. General: Provide temporary protection of exposed building fabric and interior of building at all locations from which elements are removed for work of this Section. Install, maintain and remove temporary protection without altering or damaging historic building fabric.
- B. Protection at Openings from which Window Sash Are Removed: provide plywood panels or framed plywood panels to replace sash that are removed for more than one day. Use wood wedges, security bars or other devices to avoid attachment to historic building fabric where possible.
- C. Protection of Building Fabric Where Running or Standing Trim Elements Are Removed: Where moisture infiltration or safety or security risks exist, install temporary protection.

3.02 REMOVAL AND DISASSEMBLY

- A. General: Carefully disassemble architectural woodwork and other elements as required to perform the work indicated and to allow removal of window sash, doors, standing and running wood trim and other elements to be restored or repaired. Use all reasonable care in removing elements without causing damage or deterioration to historic building fabric. Do not crush, split or gouge wood that will remain or be reinstalled. Pull heads of finish nails through from concealed surface to avoid splintering wood.
- B. Identification and Labeling: Identify each element removed, label each element on surface to be concealed when element is reinstalled or on tag tied to element with wire.
- C. Storage: Carefully handle and store elements to be reinstalled to protect from damage or loss.

3.03 INSPECTION OF WOOD MEMBERS AND WOOD ELEMENTS

- A. General: Following preparation for removal or disassembly, inspect all wood elements in conjunction with the Architect to determine method and extent of treatment.
 - 1. Elements having minor instances of rotten or spongy wood will require consolidation.
 - 2. Areas that do not match original profiles due to minor deterioration and damage will require consolidation and filling to original profiles.
 - 3. Areas of major damage or deterioration require Dutchman repairs or member replacement to restore the original profile depending on the amount of damage and structural integrity of the element.
 - 4. The Architect's or Owner's decision regarding extent of required consolidation, consolidation and patching, Dutchman repairs, and member replacement shall be final.

3.04 WOODWORK REPAIR & RESTORATION

- A. General: Restore architectural woodwork, doors and windows as shown on Drawings, and as specified herein. Comply with American Woodworks Institute's *Architectural Woodwork Quality Standards*, Sections 300 (Standing and Running Trim) and 700 (Ornamental/Historic Work), Custom Grade.

B. Disassembly: Where required, carefully disassemble woodwork as required to perform restoration and repair work. Identify and label all parts identifying original locations to ensure that the elements are reconstructed with all parts in their original location and orientation.

C. Restoration

1. Carefully chemically strip or scrape and sand paint from surfaces of wood requiring consolidation and consolidation and patching. Use all care necessary to remove paint without damaging sound wood to remain.
2. Consolidate and fill, provide Dutchman repairs, glue cracked elements and failed joints, and replace severely deteriorated members as indicated, following procedures specified below.
3. Prepare and prime new and repaired wood.

3.05 EPOXY CONSOLIDATION AND PATCHING

A. Preparation

1. Cut back and remove all loose, friable and flaking deteriorated wood. Do not disturb soft spongy wood. For patching, use small power or hand tools to produce clean, straight cuts.
2. Scrape and sand or chemically strip as required to properly roughen surfaces without removing sound wood or changing existing profiles and areas to remain.
3. Take steps necessary to ensure areas to be consolidated, or consolidated and patched are free of dirt, paint, oil, grease and other substances that might inhibit proper wood consolidation and filling.
4. Ensure that wood is dry. No open flames will be permitted.

B. Epoxy Consolidation

1. Preparation: Drill 1/8-inch diameter holes into deteriorated wood at a 90 degree angle to finished surface. Stagger holes to ensure complete penetration of epoxy consolidant throughout deteriorated portions of member and into adjacent sound wood.
2. Application: Mix epoxy consolidant following manufacturer's directions. Flow consolidant onto wood continuously with a brush until wood is saturated. Ensure that consolidant completely fills areas where wood is deteriorated. Apply epoxy consolidant when surface and ambient air temperatures are optimal for complete penetration of consolidant.
3. Curing: Cure following manufacturer's instructions. Fill holes that require patching as specified below.
4. Protection: Protect consolidated wood from sunlight and other sources of ultraviolet light until the wood is painted.

C. Epoxy Patching

1. General: patch holes and losses in wood with epoxy patching compound (filler) to match original planes and profiles.
2. Patching Consolidated Wood: Apply epoxy fillers before consolidant has completely cured, unless otherwise recommended by the manufacturer, to ensure a chemical bond between the consolidated wood and the patching material.

3. Patching Non-Consolidated Wood: When patching areas of wood that have not been consolidated, apply a liberal coat of consolidant to wood substrate brushing well to ensure penetration. Apply patching mixture before epoxy consolidant has completely cured.
4. Application: Mix and apply epoxy paste filler according to the manufacturer's printed instructions. Fill holes and cracks completely. Build up losses and depressions, leaving filled surfaces slightly raised above the surface of the finished wood. Do not feather epoxy over wood surfaces.
 - a. Do not span joints in original woodwork with epoxy paste filler. If patch spans both sides of a joint, form and cure each area separately.
 - b. Prepare only enough material to repair one element at each mixing. Do not allow patching material to exceed pot life. Work material into areas of wood requiring repair.
5. After epoxy paste filler has completely cured, sand and tool filled areas flush with the adjoining surfaces. Match the dimensions and profile exactly. Blend repair flush with the surface of the wood before painting. Leave filled surfaces smooth and without gouges, depressions or other imperfections that will show through paint layers. When painted, the patching material should not be visible.
6. Protection: Protect patched wood surfaces from exposure to sunlight and other sources of ultraviolet light until the wood is painted.

3.06 DUTCHMAN REPAIRS

- A. General: Provide Dutchmen in an invisible manner at all locations indicated and at all areas where existing wood is missing or deteriorated so extensively as to require replacement.
- B. Preparation: Cut out rotted and decayed wood down to sound surfaces. Use small power or hand tools to produce clean, straight cuts. Remove paint and other surface coatings from adjacent surfaces. Cut out sound wood to provide mortise with edges parallel and perpendicular to edges of member with straight sides to receive Dutchman.
 1. Form scarf joints at end cuts within exposed faces.
 2. Provide a mechanical key for Dutchmen repairs that are less than 1-inch thick.
 3. Where Dutchman replaces the entire end of an element, form end of Dutchman to exactly match the joinery to the adjacent member to which the repaired member will be connected
 4. Treat cut surfaces with epoxy consolidant
- C. Install Dutchman meeting the following requirements:
 1. Fabricate Dutchmen out of solid wood to match the original dimensions and profiles and to fit tightly within repaired area.
 2. Where Dutchman replaces the end of a member, fabricate the end of the Dutchman to match the joint of the mating member.
 3. Use biscuits or dowels where wood thickness is sufficient.
 4. Provide Dutchman with grain running in the same direction as that of the existing member.
 5. Form Dutchman so that its surface is slightly proud of existing wood surface.

6. Attach Dutchman to wooden member with polyurethane glue. Clamp or nail in place until set. Countersink nails and fill nail holes.
- D. Finishing: finish Dutchman to match adjacent member.
1. Plane or shave Dutchman surface to match plane and profile of adjacent wood. Do not damage profiles or surfaces of adjacent wood.
 2. Sand to produce a uniformly smooth surface without sandpaper marks or other imperfections.
 3. Location of Dutchman shall not be visible at a distance of 2 feet after the member has been painted.

3.07 MEMBER REPLACEMENT

- A. Preparation: Remove deteriorated member and clean adjacent wood surfaces to provide sound, clean surfaces for mating with new member.
1. Remove and replace pins fixing mortise and tenon joints without damaging existing member to remain.
 2. Consolidate joints in adjacent wood surfaces where water stained or spongy. Patch or install wooden dutchman at mating surfaces where rotted or decayed.
- B. Provide new member matching original member in plane, dimensions, profile and direction of grain. Fabricate end joints in running or standing trim with scarf joints.
- C. Install new member using the same joinery methods as used to install the original member (e.g. mortise and tenon, pegs, dowels, adhesive, etc.) to provide sound wood element matching original condition.
- D. Install and secure new member to wooden element in the same manner as originally used. Produce tight, neat, and full joints. Countersink nails and fill nail holes.

3.08 ADJUST AND CLEAN

- A. Remove and replace any architectural woodwork repair and restoration work that does not match existing planes and profiles or meet other specified requirements to Architect's or Owner's satisfaction at no additional cost to Owner.
- B. Remove and replace any consolidant and filler that is loose and has not bonded or cured properly to the Architect's or Owner's satisfaction at no additional cost to Owner.
- C. Clean all surfaces or materials damaged or stained by work of this Section.
- D. Protect architectural woodwork restoration work and maintain conditions necessary to ensure that the work will be without damage or deterioration at time of acceptance.

3.09 PRIMING, PAINTING, STAINING AND FINISHING

- A. Prime and paint all exterior and interior wood as specified in drawings (exterior within 48 hours after completion of paint removal or repair procedures, including all drying and curing time). Prime paint only after the wood has reached a maximum moisture content of 18 percent as measured by a moisture meter.
1. Areas of wood in exterior locations prone to excessive moisture or standing water and exposed end grain shall be treated with a paintable fungicide and water repellent/preservative.
- B. Stain and finish all exterior and interior wood as specified in drawings, finishing exterior within 48 hours after completion of paint removal or repair procedures, including all drying and curing time.

END OF SECTION

07 2200
ROOF AND DECK INSULATION

PART 1 GENERAL

1.01 SUMMARY OF WORK

This Section specifies roof and deck insulation.

1.02 REFERENCE STANDARDS

- A. ASTM International (ASTM).
 - 1. ASTM C165 - 2012 Standard Test Method for Measuring Compressive Properties of Thermal Insulations.
 - 2. ASTM C209 - 2007ae 1, Standard Test Methods for Cellulosic Fiber Insulating Board.
 - 3. ASTM C303 - 2010, Standard Test Method for Dimensions and Density of Preformed Block and Board-Type Thermal Insulation.
 - 4. ASTM C356 - 2010, Standard Test Method for Linear Shrinkage of Preformed High-Temperature Thermal Insulation Subjected to Soaking Heat.
 - 5. ASTM C518 - 2010, Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus.
 - 6. ASTM C665 - 2011, Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing.
 - 7. ASTM C692 - 2013, Standard Test Method for Evaluating the Influence of Thermal Insulations on External Stress Corrosion Cracking Tendency of Austenitic Stainless Steel.
 - 8. ASTM C726 - 2012, Standard Specification for Mineral Fiber Roof Insulation Board.
 - 9. ASTM C871 - 2011, Standard Test Methods for Chemical Analysis of Thermal Insulation Materials for Leachable Chloride, Fluoride, Silicate, and Sodium Ions.
 - 10. ASTM C1104/C1104M - 2013, Standard Test Method for Determining the Water Vapor Sorption of Unfaced Mineral Fiber Insulation.
 - 11. ASTM E84 - 2012, Standard Test Method for Surface Burning Characteristics of Building Materials.
 - 12. ASTM E96/E96M - 2014, Standard Test Methods for Water Vapor Transmission of Materials.
- B. Factory Mutual Global Inc.(FM).
 - 1. FM 4450-1989, Approval Standard for Class 1 Insulated Steel Decks.
 - 2. FM 4470-2012, Approval Standard for Single-Ply, Polymer-Modified Bitumen Sheet, Built-Up Roof (BUR) and Liquid Applied Roof Assemblies for use in Class 1 and Noncombustible Roof Deck Construction.
 - 3. FM 4473-2011, Impact Resistance Testing of Rigid Roofing Materials by Impacting with Freezer Ice Balls.
- C. Underwriters' Laboratories (UL).
 - 1. UL 263 - 2011, Fire Tests of Building Construction and Materials.

1.03 ADMINISTRATIVE REQUIREMENTS

- A. Co-ordination: Co-ordinate work of this Section with roofing or deck work and with work of other trades for proper time and sequence to avoid construction delays.

- B. Pre-installation Meeting: Convene pre-installation meeting after Award of Contract before starting work of this Section to verify project requirements, substrate conditions and coordination with other building sub-trades, and to review manufacturer's written installation instructions.
 - 1. Ensure meeting agenda includes review of methods and procedures related to insulation installation including co-ordination with related work.
 - 2. Record meeting proceedings including corrective measures and other actions required to ensure successful completion of work and distribute to each attendee within 1 week of meeting.

1.04 ACTION AND INFORMATIONAL SUBMITTALS

- A. Make submittals in accordance with Contract Conditions.
- B. Product Data: Submit product data including manufacturer's literature for insulation materials and accessories, indicating compliance with specified requirements and material characteristics.
 - 1. Submit list on insulation manufacturer's letterhead of materials and accessories to be incorporated into Work.
 - 2. MSDS report.
 - 3. Include product name.
 - 4. Include preparation instructions and recommendations, installation methods, and storage and handling requirements.
 - 5. Include contact information for manufacturer and their representative for this Project.
- C. Samples:
 - 1. Submit 6 x 6 inches minimum sample of insulation in thickness used on Project.
- D. Test Reports:
 - 1. Submit evaluation service reports or other independent testing agency reports showing compliance with specified performance characteristics and physical properties.
- E. Field Reports: Submit manufacturer's field reports within 3 days of each manufacturer representative's site visit and inspection.
- F. Roofing Subcontractor Qualifications:
Submit letter verifying roofing subcontractor's experience with work similar to work of this Section.

1.05 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: Supply maintenance data for insulation materials.
- B. Record Documentation:
 - 1. List materials used in insulation work.
 - 2. Warranty: Submit warranty documents specified.

1.06 QUALITY ASSURANCE

- A. Roofing Subcontractor Quality Assurance: Work experience of 5 years minimum with work similar to work of this Section.

1.07 DELIVERY STORAGE AND HANDLING

- A. Delivery and Acceptance Requirements:
 - 1. Deliver materials and accessories in insulation manufacture's original packaging with identification labels intact and in sizes to suit project.
 - 2. Ensure insulation materials are not exposed to moisture during delivery.
 - 3. Replace wet or damaged insulation materials.
- B. Storage and Handling Requirements: Store materials off ground in dry location and protected from exposure to harmful weather conditions and at temperature conditions recommended by manufacturer. Store in original packaging until installed.
- C. Packaging Waste Management:
 - 1. Separate and recycle waste packaging materials.
 - 2. Remove waste packaging materials from site and dispose of packaging materials at appropriate recycling facilities.

3. Collect and separate for disposal paper and plastic material in appropriate on-site storage containers for recycling.

1.08 WARRANTY

- A. Project Warranty: Refer to Contract Conditions for project warranty provisions.
- B. Manufacturer's warranty: Submit, for Owner's acceptance, manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty is in addition to and not intended to limit other rights Owner may have under Contract Conditions.
- C. Warranty period: 1 years commencing on Date of Substantial Performance of Work.

PART 2 PRODUCTS

2.01 MANUFACTURER

Manufacturer: ROCKWOOL , 4594 Cayce Road, Byhalia, MS 38611-7550,
Phone: 905-878-8474, Toll Free: 1-800-265-6878, e-mail: contactus@rockwool.com, URL:
www.rockwool.com.

2.02 DESCRIPTION

Rigid, monolithic, dual-density mineral wool insulation board intended for use with mechanically fastened or ballasted roofing membranes to ASTM C726, complete with high density top layer, no cover board required.

2.03 PERFORMANCE CRITERIA

- A. Low-Slope Roofing Insulation Board: To ASTM C726.
 1. Fire performance:
 - a. Rated roof insulation: To FM Approval 4450/4470, [Class 1-NCC (non-combustible core)] [Class 1-90].
 - b. Non-combustibility: To ASTM E136.
 - c. External spread of flame on roof surface: To UL 790, Class A.
 - d. Thermal degradation and charring: To UL 263.
 - e. Surface Burning Characteristics: To ASTM E84.
 - 1) Flame spread: 0.
 - 2) Smoke developed: 0.
 2. Water Vapor Transmission: To ASTM E96, 40.8 Perm.
 3. Moisture Resistance: To ASTM C1104, moisture sorption of 0.15 %.
 4. Water absorption less than 1.0 %: To ASTM C209.
 5. Thermal resistance: To ASTM C518,
 - a. R 4.3 hr.ft².F/Btu at 25 °F.
 - b. R 4.2 hr.ft².F/Btu at 40 °F.
 - c. R 3.8 hr.ft².F/Btu at 75 °F.
 - d. R 3.6 hr.ft².F/Btu at 110 °F.
 6. Hail damage resistance: To FM 4470, Class 1-SH.
 7. Impact resistance: To FM 4473, Class 4 and UL 2218, Class 4.
 8. Corrosive resistance: To ASTM C665, Corrosive to steel - Pass.
 9. Stainless steel stress corrosion: To ASTM C871 and ASTM C692.
 10. Compressive strength of entire board: To ASTM C165, at 10 %: 10.88 psi.
 11. Density: To ASTM C303.
 - a. Top layer: 13.7 lb/ft³.
 - b. Bottom layer: 9.36lb/ft³
 12. Recycled content: 16 % minimum.

2.04 MATERIALS

- A. Low-Slope Roofing Insulation: Stone wool fiber insulation board.
 1. Size: 48 x 48 inches.
 2. Thickness: 5.5 inches.
 3. Acceptable Material: ROCKWOOL, TOPROCK® DD.

2.05 ACCESSORIES

Mechanical fasteners in accordance with insulation manufacturer's written recommendations.

2.06 SOURCE QUALITY CONTROL

Ensure insulation components and accessories are supplied or approved in writing by single manufacturer.

2.07 PRODUCT SUBSTITUTIONS

Substitutions: As per architect

PART 3 EXECUTION

3.01 INSTALLERS

Use only installers with 5 years minimum experience with work similar to work of this Section.

3.02 EXAMINATION

- A. Verification of Conditions: Verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for insulation installation in accordance with manufacturer's written recommendations.
 - a. Visually inspect substrate in presence of Consultant.
 - b. Ensure surfaces are free of snow, ice, frost, grease and other deleterious materials.
 - c. Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Consultant.
- B. Start of insulation installation indicates installer's acceptance of substrate installation conditions.

3.03 INSTALLATION

- A. Install insulation in accordance with manufacturer's written recommendations.
- B. Install roof insulation in layers and in thicknesses indicated and in accordance with the drawings.
- C. Install protection or cover board where indicated.
 - 1. Install protection or cover board in courses parallel to decking flutes with board ends staggered.
 - 2. Ensure board joints are flush and tightly butted together without gaps.
 - 3. Mechanically fasten boards where indicated and in accordance with manufacturer's written recommendations.
- D. Temporarily seal exposed edges at completion of each work day.

3.04 FIELD QUALITY CONTROL

- A. Field Inspection: Coordinate field inspection in accordance with Section [01 45 00 - Quality Control].
- B. Manufacturer's Services:
 - 1. Coordinate manufacturer's services :
 - a. Arrange for payment for manufacturer's services.
 - b. Have manufacturer review work involved in handling, installation, protection, and cleaning of insulation and accessories, and submit written reports in acceptable format to verify compliance of Work with Contract conditions.
 - 2. Manufacturer's Field Services: Provide manufacturer's field services consisting of product use recommendations and periodic site visits for product installation review in accordance with manufacturer's instructions.
 - a. Report any inconsistencies from manufacturer's recommendations immediately to Consultant.
 - 3. Schedule site visits to review work at stages listed:
 - a. After delivery and storage of drainage sheet and accessories, and when preparatory work on which Work of this Section depends is complete, but before installation begins.
 - b. Twice during progress of work at 25% and 60% complete.

- c. Upon completion of Work, after cleaning is carried out.
- d. Obtain reports within three days of review and submit immediately to Consultant.

3.05 CLEANING

- A. Progress Cleaning: Perform cleanup as work progresses. Leave work area clean at end of each day.
- B. Final Cleaning: Upon completion, remove surplus materials, rubbish, tools, and equipment
- C. Waste Management: Collect recyclable waste and dispose of or recycle field generated construction waste created during construction or final cleaning related to work of this Section. Remove recycling containers and bins from site and dispose of materials at appropriate facility.

3.06 PROTECTION

- A. Protect installed products and accessories from damage during construction.
- B. Repair damage to adjacent materials caused by insulation installation.

END OF SECTION

SECTION 07 3113
ASPHALT SHINGLES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. **Alternate #4:** alternate includes the following at the Main Roof: New asphalt roof shingles on new 30# roof felt underlayment on existing sheathing or new CDX plywood matching thickness of existing sheathing. Asphalt roof shingles to be three tab shingles nailed in with 3" 8d common nails. Roof underlayment, shingles including ridges and valleys, and ice/water shield to be installed according to industry standards and manufacturer's installation requirements.
- B. Flexible sheet membranes for eave protection, underlayment, and valley protection.

1.02 RELATED REQUIREMENTS

- A. Section 07 4113 - Metal Roof Panels
- B. Section 07 5200 - Modified Bitumen
- C. Section 07 6200 - Sheet Metal Flashing and Trim

1.03 REFERENCE STANDARDS

- A. ASTM D226/D226M - Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing; 2009.
- B. ASTM D1970/D1970M - Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection; 2013.
- C. ASTM D3161 - Standard Test Method for Wind-Resistance of Asphalt Shingles (Fan-Induced Method); 2013.
- D. ASTM D3462 - Standard Specification for Asphalt Shingles Made From Glass Felt and Surfaced With Mineral Granules; 2010a.
- E. ASTM D4586/D4586M - Standard Specification for Asphalt Roof Cement, Asbestos-Free; 2007 (Reapproved 2012)e1.
- F. ASTM 3018 Type 1 - Standard Specification for Class A Asphalt Shingles Surfaced with Mineral Granules
- G. ASTM D7158 - Standard Test Method for Wind Resistance of Sealed Asphalt Shingles (Uplift Forces/Uplift Resistance Method)
- F. NRCA MS104 - The NRCA Steep Roofing Manual; National Roofing Contractors Association; 2001, Fifth Edition, with interim updates.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data indicating material characteristics.
- C. Samples: Submit two samples of each shingle color indicating color range and finish texture/pattern; for color selection.

1.05 QUALITY ASSURANCE

- A. Perform Work in accordance with the recommendations of NRCA Steep Roofing Manual.

1.06 MOCK-UP

- A. Provide mock-up of 16 sq ft, including underlayment.
- B. Locate where directed.
- C. Mockup may remain as part of the Work.

1.07 FIELD CONDITIONS

- A. Do not install shingles or eave protection membrane when surface temperatures are below 45 degrees F.

PART 2 PRODUCTS

2.01 SHINGLES

- A. Manufacturers:
 - 1. GAF; Royal Sovereign Series: www.gaf.com
 - 2. Owner and Architect approved equal
- B. Asphalt Shingles: Fiberglass Asphalt construction, mineral granule surfaced, complying with ASTM D3462, ASTM3018 Type 1; Class A fire resistance.
 - 1. Wind Resistance: Class F, when tested in accordance with ASTM D3161; Class H when tested in accordance with ASTM D7158
 - 2. Warranted Wind Speed: Not less than tested wind resistance.
 - 3. Self-sealing type.
 - 4. UL listed to ANSI/UL 790 Class A
 - 5. Style: three-tab.
 - 6. Color: as approved by Owner and Architect.

2.02 SHEET MATERIALS

- A. Eave Protection Membrane: Self-adhering polymer-modified asphalt sheet complying with ASTM D1970; 40 mil total thickness; with strippable treated release paper and polyethylene sheet top surface.
- B. Underlayment: Asphalt-saturated organic roofing felt, unperforated, complying with ASTM D226/D226M, Type II ("No.30").

2.03 ACCESSORIES

- A. Nails: Standard round wire shingle type, of hot-dipped zinc coated steel, 12 gage, 0.105 inch shank diameter, 3/8 inch head diameter, of sufficient length to penetrate through roof sheathing or 3/4 inch into roof sheathing or decking.
- B. Staples: Standard wire shingle type, of hot dipped zinc coated steel, 16 gage, 0.062 inch diameter, 15/16 inch crown width, of sufficient length to penetrate through roof sheathing or 3/4 inch into roof sheathing or decking.
- C. Plastic Cement: ASTM D4586, asphalt roof cement.
- D. Lap Cement: Fibrated cutback asphalt type, recommended for use in application of underlayment, free of toxic solvents.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions prior to beginning work.
- B. Verify that deck is of sufficient thickness to accept fasteners.
- C. Verify that roof penetrations and plumbing stacks are in place and flashed to deck surface.
- D. Verify deck surfaces are dry, free of ridges, warps, or voids.

3.02 PREPARATION

- A. Broom clean deck surfaces before installing underlayment or eave protection.

3.03 INSTALLATION - EAVE PROTECTION MEMBRANE

- A. Install eave protection membrane from eave edge to minimum 2 ft up-slope beyond interior face of exterior wall.
- B. Install eave protection membrane in accordance with manufacturer's instructions.

3.04 INSTALLATION - UNDERLAYMENT

- A. At Roof Slopes Up to 4:12: Install two layers of underlayment over area not protected by eave protection, with ends and edges weather lapped minimum 4 inches. Stagger end laps of each consecutive layer. Nail in place.
- B. At Roof Slopes Greater Than 4:12: Install underlayment perpendicular to slope of roof, with ends and edges weather lapped minimum 4 inches. Stagger end laps of each consecutive layer. Nail in place. Weather lap minimum 4 inches over eave protection.
- C. Items projecting through or mounted on roof: Weather lap and seal watertight with plastic cement.

3.05 INSTALLATION - VALLEY PROTECTION

- A. Install flexible flashing in accordance with manufacturer's instructions.
- B. At Exposed Valleys: Install one layer of sheet metal flashing, minimum 24 inches wide, centered over open valley and crimped to guide water. Weather lap joints minimum 2 inch wide band of lap cement along each edge of first, press roll roofing into cement, and nail in place minimum 18 inches on center, 1 inch from edges.

3.06 INSTALLATION - METAL FLASHING AND ACCESSORIES

- A. Install flashings in accordance with NRCA requirements.
- B. Weather lap joints minimum 2 inches and seal weather tight with plastic cement.
- C. Secure in place with nails at 12 inches on center. Conceal fastenings.
- D. Items Projecting Through or Mounted on Roofing: Flash and seal weather tight with plastic cement.

3.07 INSTALLATION - SHINGLES

- A. Install shingles in accordance with manufacturer's instructions.
 - 1. Fasten individual shingles using 2 nails per shingle, or as required by code, whichever is greater.
 - 2. Fasten strip shingles using 4 nails per strip, or as required by code, whichever is greater.
- B. Place shingles in straight coursing pattern with 5 inch weather exposure to produce double thickness over full roof area. Provide double course of shingles at eaves.
- C. Project first course of shingles 3/4 inch beyond fascia boards.
- D. Extend shingles 1/2 inch beyond face of gable edge fascia boards.
- E. Complete installation to provide weather tight service.

3.08 PROTECTION

- A. Do not permit traffic over finished roof surface.

END OF SECTION

SECTION 07 4113
METAL ROOF PANELS

PART 1 GENERAL

1.01 SECTION INCLUDES:

Alternate #3: Porch roof to be upgraded from rolled asphalt to soldered, flat-seam, lead coated copper.

- A. New copper flat-seam roofing panels at entire new porch roof.
- B. Fastening system.
- C. Accessories and miscellaneous components.

1.02 RELATED REQUIREMENTS

- A. Section 07 6200 - Sheet Metal Flashing and Trim.

1.03 REFERENCE STANDARDS

- A. ASTM D226/D226M - Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing; 2009.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Include layouts of roof panels, details of edge and penetration conditions, spacing and type of connections, flashings, underlayments, and special conditions.
 - 1. Show work to be field-fabricated or field-assembled.
- C. Mock-up: Prepare in-place mockup of replacement metal roofing at front porch for review by Owner and Architect.

PART 2 PRODUCTS

2.01 ARCHITECTURAL METAL ROOF PANELS

- A. Metal Panels: Flat seam copper panels, 20 ounce cold rolled copper, not more than 18" x 24" before forming locks.

2.02 ACCESSORIES AND MISCELLANEOUS ITEMS

- A. Underlayment for Wood Substrate: ASTM D226/D226M roofing felt, perforated type; covered by water-resistant rosin-sized building paper.

2.03 FABRICATION

- A. Panels: Fabricate panels and accessory items on-site, using Revere Copper and Common Sense Standards..

PART 3 EXECUTION

3.01 PREPARATION

- A. Broom clean wood sheathing prior to installation of roofing system.
- B. Coordinate roofing work with provisions for roof drainage, flashing, trim, penetrations, and other adjoining work to assure that the completed roof will be free of leaks.
- C. Separate dissimilar metals by applying a bituminous coating, self-adhering rubberized asphalt sheet, or other permanent method approved by roof panel manufacturer.
- D. Where metal will be in contact with wood or other absorbent material subject to wetting, seal joints with sealing compound and apply one coat of heavy-bodied bituminous paint.

3.02 INSTALLATION

- A. Overall: Install roofing system in accordance with approved shop drawings and panel manufacturer's instructions and recommendations, as applicable to specific project conditions. Anchor all components of roofing system securely in place while allowing for thermal and structural movement.

1. Minimize field cutting of panels. Where field cutting is absolutely required, use methods that will not distort panel profiles. Use of torches for field cutting is absolutely prohibited.
- B. Accessories: Install all components required for a complete roofing assembly, including flashings, gutters, downspouts, trim, moldings, closure strips, preformed crickets, caps, equipment curbs, rib closures, ridge closures, and similar roof accessory items.
- C. Install roofing felt and building paper slip sheet on roof deck before installing preformed metal roof panels. Secure by methods acceptable to roof panel manufacturer, minimizing use of metal fasteners. Apply from eaves to ridge in shingle fashion, overlapping horizontal joints a minimum of 2 inches and side and end laps a minimum of 3 inches. Offset seams in building paper and seams in roofing felt.

3.03 CLEANING

- A. Clean exposed sheet metal work at completion of installation. Remove grease and oil films, excess joint sealer, handling marks, and debris from installation, leaving the work clean and unmarked, free from dents, creases, waves, scratch marks, or other damage to the finish.

3.04 PROTECTION

- A. Do not permit storage of materials or roof traffic on installed roof panels. Provide temporary walkways or planks as necessary to avoid damage to completed work. Protect roofing until completion of project.
- B. Touch-up, repair, or replace damaged roof panels or accessories before date of Substantial Completion.

END OF SECTION

SECTION 07 4120

STANDING SEAM ROOFING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. **Alternate #5:** alternate includes the following at the Main Roof: Preformed, prefinished metal roofing and flashings.
- B. Miscellaneous trim, flashing, closures, drip flashing, and accessories.
- C. Sealant
- D. Fastening devices.

1.02 RELATED SECTIONS

- A. Section 07 6200: Sheet Metal Flashing and Trim

1.03 REFERENCES

- A. American Iron & Steel Institute (AISI) Specification for the Design of Coldformed Steel Structural Members.
- B. ASTM A-653 & ASTM A924 Steel Sheet, Zinc-Coated (Galvanized)
- C. ASTM E-283-84
- D. ASTM E-331-86
- E. Spec Data Sheet - Galvalume Sheet Metal by Bethlehem Corp.
- F. SMACNA - Architectural Sheet Metal Manual.
- G. Building Materials Directory - Underwriter's Laboratories, Test Procedure 580.

1.04 PERFORMANCE REQUIREMENTS

- A. General: Provide metal roof panel assemblies that comply with performance requirements specified as determined by testing manufacturers' standard assemblies similar to those indicated for this Project, by a qualified testing and inspecting agency.
- B. Wind-Uplift Resistance: Capable of resisting design negative uplift pressures based upon maximum wind speeds. Provide clips, fasteners, and clip spacing of type indicated and with capability to sustain, without failure, a load equal to 2 times the design negative uplift pressure.
- C. Meets Energy Star® requirements in steep slope applications only.

1.05 SUBMITTALS

- A. Product Data: Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each type of metal roof panel and accessory, including each type of underlayment product indicated:
 - 1. Metal shingle panel and accessories.
 - 2. Underlayment.
- B. Shop Drawings: Show layouts of sheet metal roofing, including plans, elevations, and keyed references to termination points. All fastening patterns shall be clearly designated to meet the specified wind speed requirements.
 - 1. Include details for forming, joining, and securing sheet metal roofing, including pattern of seams, termination points, expansion joints, roof penetrations, edge conditions, special conditions, connections to adjoining work, and accessory items.
- C. Coordination Drawings: Roof plans drawn to scale and coordinating penetrations and roof-mounted items. Show the following:
 - 1. Roof panels and attachments.
 - 2. Purlins and rafters.
 - 3. Roof-mounted items including roof hatches, equipment supports, pipe supports and penetrations, lighting fixtures, snow guards, and items mounted on roof curbs.
- D. Samples: For each exposed finish.
- E. Field quality control inspection reports, to be submitted for warranty program level, if applicable.
- F. Product test reports. Based on evaluation of comprehensive tests performed by a qualified testing agency, for the following:

1. Metal Roof Panels: Include reports for UL 790/ASTM E 108, Field Tested, PA 100-95 (R&D Only), UL 2218, ASTM E 84 Flame Spread Rating, Paint Performance Tests, ICBO AC166 Penetration.
2. Insulation and Vapor Retarders: Include reports for thermal resistance, fire-test-response characteristics, water-vapor transmission, and water absorption.

1.06 QUALITY ASSURANCE

- A. Installer Qualifications: Installer of sheet metal roofing for a minimum of 10 years.
- B. Roll-Formed Sheet Metal Roofing Fabricator Qualifications: Minimum of 10 years factory forming experience.
- C. Testing Agency Qualifications: Qualified according to ASTM E 329 for testing indicated, as documented according to ASTM E 548.
- D. Source Limitations: Obtain each type of metal roof panels through one source from a single manufacturer.
- E. Sheet Metal Roofing Standard: Comply with SMACNA's "Architectural Sheet Metal Manual" and NRCA Waterproofing Manual and manufacturer's installation guidelines.
- F. Fire-Resistance Ratings: Where indicated, provide metal roof panels identical to those of assemblies tested for fire resistance that comply with ASTM E 108 in accordance with UL790.
- G. Pre-installation Conference: Conduct conference at project location with building owner, architect, installing contractor, general contractor and sheet metal roofing manufacturer a minimum of 10 days prior to start of work. All details shall be reviewed including; underlayments, substrates, fastening patterns, scheduling, trim and flashing components, accessories such as fasteners and sealants.

1.07 DELIVERY, STORAGE & HANDLING

- A. Do not deliver materials of this section to project site until suitable facilities for storage and protection are available.
- B. Protect materials from damage during transit and at project site. Store under cover, but sloped to provide positive drainage. Do not expose materials with strippable protective film to direct sunlight or extreme heat.
- C. Do not allow storage of other materials or allow staging of other work on installed metal panel system.
- D. Upon receipt of delivery of metal panel system, and prior to signing the delivery ticket, the installer is to examine each shipment for damage and for completion of the consignment.

1.08 PROJECT CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit assembly of metal roof panels to be performed according to manufacturers' written instructions and warranty requirements.
- B. Field Measurements: Verify locations of roof framing and roof opening dimensions by field measurements before metal roof panel fabrication and indicate measurements on Shop Drawings.

1.09 SCHEDULING

- A. Coordinate installation of roof curbs, equipment supports, and roof penetrations, which are specified in Division 7 Section "Roof Accessories."
- B. Coordinate metal panel roof assemblies with rain drainage work, flashing, trim, and construction of decks, purlins and rafters, parapets, walls, and other adjoining work to provide a leakproof, secure, and non-corrosive installation.

1.10 WARRANTY

- A. Special Warranty on Finishes: Manufacturer's standard form in which manufacturer agrees to repair finish or replace sheet metal roofing that shows evidence of deterioration of factory-applied finishes within specified warranty period.
 1. Fluoropolymer Finish Warranty Period: 30 years from date of Substantial Completion.
- B. Special Installer's Warranty: Specified form in which Roofing Installer agrees to repair or

replace components of custom-fabricated sheet metal roofing that fail in materials or workmanship within 5 years from date of Substantial Completion.

PART 2 PRODUCT

2.01 ACCEPTABLE MANUFACTURERS

- A. ATAS International, Inc.; Style: 16" X 36" Standing Seam Shingle style, "Silversmith (28) color
- B. Substitutions shall fully comply with specified requirements.
- C. Manufacturer's Qualifications:
All panels are to be factory formed and packaged per job requirements.
- D. Manufacturer shall have a minimum of ten (10) years experience in the factory fabrication of metal wall panels.
- E. Specification is based upon the products of ATAS International, Inc. No other manufacturer shall be accepted as an alternate product without prior written approval. These substitution requests must meet specifications and must be submitted a minimum of ten (10) days prior to date of bid.
- F. Manufacturer must be certified to ISO 9001:2008 with design.

2.02 METAL SHINGLE PANELS

- A. General: Provide factory-formed metal roof shingles, attaching shingles to supports using concealed fasteners. Include accessories required for weathertight installation.
- B. Rectangular, interlocking shingles, with hidden fastener
 - 1. Basis-of-Design Product: ATAS International, Inc.; Standing Seam Shingle™, HSS164 or a comparable product.
 - 2. Manufacturer:
 - a. ATAS International, Inc.
 - 3. Material: Aluminum .032
 - a. Texture: Smooth
 - b. Exposure: 16" by 36"
 - c. Seam Height: 1"
 - d. KYNAR 5000® PDVF or HYLAR 5000® Finish
 - e. Silversmith (28) PREMIUM COLOR

2.03 UNDERLAYMENT

- A. Felt: minimum 30 pound or high strength synthetic material conforming to ASTM D 226
- B. Slip sheet: Not required with the use of asphalt free felt materials noted.

2.04 MISCELLANEOUS MATERIAL

- A. Fasteners: Self-tapping screws, self-locking rivets and bolts, and other suitable fasteners designed to withstand design loads. Manufacturer shall provide or authorize all fasteners utilized with the sheet metal roofing system.
 - 1. Exposed Fasteners: Heads matching color of sheet metal roofing by means of plastic caps or factory-applied coating.
 - 2. Fasteners for Flashing and Trim: Blind fasteners or screws spaced to resist wind uplift loads.
- B. Sealing Tape: Pressure-sensitive, 100 percent solid polyisobutylene compound sealing tape with release-paper backing. Provide permanently elastic, non-sag, non-toxic, non-staining tape.
- C. Elastomeric Joint Sealant: ASTM C 920, of base polymer, type, grade, class, and use classifications required to produce joints in sheet metal roofing that will remain weathertight.
- D. Expansion-Joint Sealant: For hooked-type expansion joints, which must be free to move, provide non-setting, non-hardening, non-migrating, heavy-bodied polyisobutylene sealant.
- E. Bituminous Coating: Cold-applied asphalt mastic, SSPC-Paint 12, compounded for 15 mil dry film thickness per coat.

2.05 ACCESSORIES

- A. Sheet Metal Roofing Accessories: Provide components required for a complete sheet metal roofing assembly including trim, copings, fasciae, corner units, ridge closures, clips, flashings, sealants, gaskets, fillers, closure strips, and similar items. Match material and finish of sheet metal roofing, unless otherwise indicated. All trim and flashing components shall be supplied in a minimum of 10'-0" lengths and shall conform to manufacturer's standard part dimensions and details.
 - 1. 24 ga. Steel Side clips designed to withstand negative-load requirements.
 - 2. Closures: Closed-cell, expanded, cellular, rubber or cross linked, polyolefin-foam or closed-cell laminated polyethylene; minimum 1-inch thick, flexible closure strips; cut or premolded to match sheet metal roofing profile. Provide closure strips where indicated or necessary to ensure weathertight construction.
 - 3. Sealants as recommended by manufacturer.
 - 4. Fasteners as recommended by manufacturer.
- B. Flashing and Trim: Formed from matching materials as sheet metal roof panel in gauges noted. Provide flashing and trim in heavier gauge materials as required to seal against weather and to provide finished appearance. Locations include, but are not limited to, eaves, rakes, corners, bases, framed openings, ridges, fasciae, and fillers. Finish flashing and trim with same finish system as adjacent sheet metal roofing.

2.06 EQUIPMENT

- A. Manufacturer must maintain quality control and maintenance procedures of all equipment. Verification of quality control procedures must be validated by a 3rd party entity.
 - 1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - 2. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. ATAS International, Inc.

2.07 FABRICATION

- A. General: Fabricate sheet metal roofing and components to comply with details shown, manufacturers installation details and recommendations in SMACNA's "Architectural Sheet Metal Manual" and NRCA Waterproofing Manual that apply to the design, dimensions (pan width and seam height), geometry, metal thickness, and other characteristics of installation indicated. Fabricate sheet metal roofing and accessories at the manufacturer's location to the greatest extent possible.
 - 1. All exposed edges of metal roof panel to be concealed with interlocking seam.
- B. General: Fabricate sheet metal roofing panels to comply with details shown and sheet metal roofing manufacturer's written instructions.
- C. Fabricate sheet metal roofing to allow for expansion in running work sufficient to prevent leakage, damage, and deterioration of the Work. Form exposed sheet metal work to fit substrates without excessive oil canning, buckling, and tool marks, true to line and levels indicated, and with exposed edges folded back to form hems.
 - 1. Fold and cleat eaves as required by manufacturer to insure weathertightness and wind uplift resistance.
 - 2. Form and fabricate sheets, seams, strips, cleats, valleys, ridges, edge treatments, integral flashings, and other components of metal roofing to profiles, patterns, and drainage arrangements shown and as required for leak proof construction and wind uplift resistance.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances, metal roof panel supports, and other conditions affecting performance of work.

1. Examine primary and secondary roof framing to verify that rafters, purlins, angles, channels, and other structural panel support members and anchorages have been installed within alignment tolerances required by metal roof panel manufacturer.
 2. Examine solid roof sheathing to verify that sheathing joints are supported by framing or blocking and that installation is within flatness tolerances required by metal roof panel manufacturer.
 3. For the record, prepare written report for the General Contractor, endorsed by Installer, listing conditions detrimental to performance of work.
- B. Examine roughing-in for components and systems penetrating metal roof panels to verify actual locations of penetrations relative to seam locations of metal roof panels before metal roof panel installation.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

- A. Lay out and examine substrate before installation of sheet metal roofing. Space fasteners as required to resist design uplift, but not more than 24 inches o.c.
- B. Install flashings and other sheet metal to comply with requirements specified in Division 7 Section "Sheet Metal Flashing and Trim."

3.03 UNDERLAYMENT INSTALLATION

- A. Felt Underlayment; Install felt underlayment or high strength synthetic material conforming to ASTM D 226 on roof sheathing under metal roof panels, unless otherwise recommended by metal roof panel manufacturer. Use adhesive for temporary anchorage, where possible, to minimize use of mechanical fasteners under metal roof panels. Apply at locations indicated on Drawings, in shingle fashion to shed water, with lapped joints of not less than 2 inches.

3.04 INSTALLATION, GENERAL

- A. General: Anchor sheet metal roofing and other components of the Work securely in place, with provisions for thermal and structural movement. Install fasteners, protective coatings, separators, sealants, and other miscellaneous items as required for a complete roofing system and as recommended by fabricator for sheet metal roofing.
1. Field cutting of sheet metal roofing by torch is not permitted.
 2. Rigidly fasten ridge end of sheet metal roofing and allow for positive panel attachment as per manufacturer's recommendations. All flashing details shall accommodate thermal movement.
 3. Provide metal closures at peaks, ridge, gable and hip caps.
 4. Flash and seal sheet metal roofing with weather closures at eaves, rakes, and at perimeter of all openings. Fasten with self-tapping screws.
 5. Locate roofing splices over, but not attached to, structural supports. Stagger roofing splices and end laps to avoid a four-panel lap splice condition.
 6. Lap metal flashing over sheet metal roofing to allow moisture to run over and off the material.
- B. Fasteners: Use fasteners of size and length as required for compatibility with substrate.
- C. Metal Protection: Where dissimilar metals will contact each other or corrosive substrates, protect against galvanic action by painting contact surfaces with bituminous coating, by applying rubberized-asphalt underlayment to each contact surface, or by other permanent separation as recommended by fabricator of sheet metal roofing or manufacturers of dissimilar metals.
1. Separate sheet metal roofing from bituminous coating where roofing will contact wood, ferrous metal, or cementitious construction. Interlock and overlap shingles and stagger end joints from shingles above and below according to shingle manufacturer's written instructions.
- D. Conceal fasteners and expansion provisions where possible in exposed work and locate to minimize possibility of leakage. Cover and seal fasteners and anchors as required for a tight installation.

3.05 ACCESSORY INSTALLATION

- A. General: Install accessories with positive anchorage to building and weathertight mounting and provide for thermal expansion. Coordinate installation with flashings and other components.
 - 1. Install components required for a complete sheet metal roofing assembly including trim, copings, ridge closures, seam covers, flashings, sealants, gaskets, fillers, closure strips, and similar items.
 - 2. Comply with performance requirements, manufacturer's written installation instructions, and SMACNA's "Architectural Sheet Metal Manual" and NRCA Waterproofing Manual. Provide concealed fasteners where possible, and set units true to line and level as indicated. Install work with laps, joints, and seams that will be permanently watertight and weather resistant.
- B. Coordinate with installation of:
 - 1. Rough Carpentry
 - 2. Sheet Metal Flashing and Trim
- C. Pipe Flashing: Form flashing around pipe penetration and metal roof panels. Fasten and seal to metal roof panels as recommended by manufacturer.

3.06 CLEANING AND PROTECTION

- A. Remove temporary protective coverings and strippable films, if any, as sheet metal roofing is installed. On completion of sheet metal roofing installation, clean finished surfaces, including removing unused fasteners, metal filings, pop rivet stems, and pieces of flashing. Maintain in a clean condition during construction.

END OF SECTION

SECTION 07 5200
MODIFIED BITUMINOUS ROOFING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Rolled asphalt roofing at the Porch roof.

1.02 RELATED REQUIREMENTS

- A. Section 06 1000: Rough Carpentry
- B. Section 07 6200: Sheet Metal Flashing and Trim

1.03 REFERENCE STANDARDS.

- A. Factory Mutual (FM Global) - *Approval Guide*
- B. Underwriters Laboratories (UL) - *Roofing Systems and Materials Guide* (TGFU R1306)
- C. American Society for Testing and Materials (ASTM) - *Annual Book of ASTM Standards*
- D. Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA) - *Architectural Sheet*
- E. *Metal Manual*
- F. Asphalt Roofing Manufacturers Association (ARMA)
- G. National Roofing Contractors Association (NRCA)
- H. American Society of Civil Engineers (ASCE)

1.04 SUBMITTALS

- A. Product Data: Provide product data sheets for each type of product indicated in this section.
- B. Shop Drawings: Provide manufacturers standard details and approved shop drawings for the roof system specified.
- C. Samples: Provide samples of insulation(s), fasteners and roll goods for verification of quality.
- D. Certificates: Installer shall provide written documentation from the manufacturer of their authorization to install the roof system, and eligibility to obtain the warranty specified in this section.

1.05 PERFORMANCE ASSURANCE

- A. Provide an installed roofing membrane and base flashing system that does not permit the passage of water, and will withstand the design pressures calculated in accordance with the most current revision of ASCE 7.
- B. GAF® shall provide all primary roofing materials that are physically and chemically compatible when installed in accordance with manufacturers current application requirements.

1.06 QUALITY ASSURANCE

- A. Manufacturer's Qualifications: GAF® shall provide a roofing system that meets or exceeds all criteria listed in this section.
- B. Installer's Qualifications:
 - a. Installer shall be classified as a **Master or Master Select™** contractor as defined and certified by GAF®.
- C. Source Limitations: All components listed in this section shall be provided by a single manufacturer or approved by the primary roofing manufacturer.
- D. Final Inspection: Manufacturer's representative shall provide a comprehensive final inspection after completion of the roof system. All application errors must be addressed and final punch list completed.

1.07 PRE-INSTALLATION CONFERENCE

- A. Prior to scheduled commencement of the roofing installation and associated work, conduct a meeting at the project site with the installer, architect, owner, GAF® representative and any other persons directly involved with the performance of the work. The installer shall record conference discussions to include decisions and agreements reached (or disagreements), and furnish copies of recorded discussions to each attending party. The main purpose of this meeting is to review foreseeable methods and procedures related to roofing work.

1.08 REGULATORY REQUIREMENTS

- A. All work shall be performed in a safe, professional manner, conforming to all federal, state and local codes.

1.09 DELIVERY, STORAGE AND HANDLING

- A. Deliver all roofing materials to the site in original containers, with factory seals intact. All products are to carry either a GAF® or BMCA® label.
- B. Store all pail goods in their original undamaged containers in a clean, dry location within their specified temperature range.
- C. Store roll goods on end on pallets in a clean, dry, protected area. Take care to prevent damage to roll ends or edges. Do not double stack modified bitumen products.
- D. Do not expose materials to moisture in any form before, during, or after delivery to the site. Reject delivery of materials that show evidence of contact with moisture.
- E. Remove manufacturer supplied plastic covers from materials provided with such. Use "breathable" type covers such as canvas tarpaulins to allow venting and protection from weather and moisture. Cover and protect materials at the end of each work day. Do not remove any protective tarpaulins until immediately before the material is to be installed.
- F. Materials shall be stored above 55°F (12.6°C) a minimum of 24 hours prior to application.

1.10 PROJECT CONDITIONS

- A. Weather
 - a. Proceed with roofing only when existing and forecasted weather conditions permit.
 - b. Ambient temperatures must be above 45°F (7.2°C) when applying hot asphalt or water based adhesives.

1.11 WARRANTY

- A. Provide Manufacturers standard WeatherStopper® Diamond Pledge□ Guarantee with single source coverage* and no monetary limitation, where the manufacturer agrees to repair or replace components in the roofing system, which cause a leak due to a failure in materials or workmanship.
 - a. Duration: Twenty (20) years from the date of completion.
- B. *Materials and workmanship of listed products within this section when installed in accordance with current GAF® application and specification requirements. Contact GAF® Contactor Services for the full terms and conditions of the guarantee.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURER

- A. GAF® - 1 Campus Drive, Parsippany, NJ 07054

2.02 BASE / PLY SHEETS - 2 plies

- A. Durable, film surfaced asphalt modified bitumen membrane containing a core glass mat coated with flexible, SBS polymer-modified asphalt, and a self-adhering underside. Underside is protected with a silicone coated release film. Each roll contains two squares of material, 39.4" x 66' (1 m x 20.1 m), 82 lbs. (37.2 kg), **Liberty™ SBS Self Adhering Base Sheet**.

2.03 MEMBRANE MATERIALS

- A. Premium, granule surfaced asphalt modified bitumen membrane containing a core of non-woven polyester mat coated with flexible, SBS polymer-modified asphalt, and a self-adhering underside. Underside is protected with a silicone coated release film. Each roll contains one square of material, 39.4" x 34' (1 m x 10.4 m), 94.5 lbs. (42.9 kg), **Liberty™ SBS Self-Adhering Cap Sheet**.
- B. Color: to be selected by owner or architect from standard GAF® selections.

2.04 OTHER MATERIALS

- A. Roof board, insulation and flashing per drawings.

2.05 ACCESSORIES

- A. Mechanical Fasteners
 - 1. **Drill•Tec □ Standard Roofing Fastener:** Alloy steel fastener with CR-10 coating with a .220" diameter thread: Factory Mutual Standard 4470 Approved, #3 Phillips truss head or hex head.
 - 2. **Drill•Tec □ 3" Galvalume □ Plate:** Galvalume, 3" (7.5 cm) diameter, center hole .25" (inch), for use with Standard, Heavy Duty, CD-10, Fluted Nail or Toggle Bolt.
- B. Expansion Joint Covers
 - 1. Factory fabricated assemblies used to accommodate three-dimensional joints in a roof structure. Heavy reinforced flexible cover with a flexible flame retardant foam bellows for support. Nailing flanges conform to curb irregularities. The **Metalastic® Expansion Joint Cover**, by BMCA®.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that the surfaces and site conditions are ready to receive work.
- B. Verify that the deck is supported and secured.
- C. Verify that the deck is cleaned and smooth, free of depressions, waves, or projections, and properly sloped to drains, valleys, eaves, scuppers or gutters.
- D. Verify that the deck surfaces are dry and free of ice or snow.
- E. Verify that all roof openings, curbs, pipes, sleeves, ducts, vents or other penetrations through the roof are solidly set, and that all flashings are tapered.

3.02 SUBSTRATE PREPARATION

- A. Wood Deck (Plank / Heavy Timber)
 - a. Wood boards must be at least 1" nominal thickness and have a nominal width of 4'-6". Tongue and groove or shiplap lumber is preferred to square edge material since subsequent shrinkage or warping of square edge planks may cause ridging of the roof system above adjacent boards.
 - b. All boards must have a bearing on rafters at each end and be securely nailed.
 - c. Lumber should be kiln dried.
 - d. Preservatives or fire retardants used to treat decking must be compatible with roofing materials.
 - e. Decking should be kept dry and roofed promptly after installation.
 - f. Knotholes or large cracks in excess of ¼" (6 mm) shall be covered with securely nailed sheet metal.
 - g. Light metal wall ties or other structural metal exposed on top of the wood deck shall be covered with one ply of a heavy roofing sheet, such as Stratavent® Eliminator™ Nailable Base Sheet, extending 2"-6" (5.1 cm – 15.2 cm) beyond the metal in all directions. Nail in place before applying the base ply.
 - h. Attach an acceptable base sheet through flat metal caps or use nails with attached 1" (25 mm) square or round metal caps that have a minimum withdrawal resistance of 40 pounds each (178 N).

- i. Tape and staple fastening systems may be used on wood decks when they comply with local building codes.
- j. In all retrofit roof applications, it is required that deck be inspected for defects. Any defects are to be corrected per the deck manufacturer's recommendations and standards of the APA/Engineered Wood Association prior to new roof application.

3.03 INSTALLATION - GENERAL

- A. Install GAF®'s Ruberoid® roofing system according to all current application requirements in addition to those listed in this section.
- B. GAF® Ruberoid Specification #: I03LC
- C. Start the application of membrane plies at the low point of the roof or at the drains, so that the flow of water is over or parallel to, but never against the laps.

3.04 INTERPLY SHEETS 2-plies

- A. Coiled rolls should be unrolled and allowed to relax prior to installation. Cut sheets into manageable lengths that will allow for a wrinkle and void free installation.
- B. Prior to installation, clean the surface of the installed insulation, removing all debris, dirt, moisture and other contaminants. Repair any punctures, fishmouths, wrinkles, open seams and other defects prior to installation of succeeding courses.
- C. Starting at the low point of the roof, install two plies of Liberty™ SBS Self-Adhering Base Sheet lapping 3" (7.6 cm) on sides and 6" (15.2 cm) on ends. Fold the bottom half of the sheet back and remove the release film from this part of the roll. Working from the center of the sheet, carefully roll and hand press the sheet back into place over the base ply being careful to avoid wrinkles and trapped air while maintaining proper alignment. Fold the upper portion of the sheet back on itself to expose and remove the remaining release film and finish the roll. Install the upper portion of the roll working from the center of the sheet outward toward the ends. Firmly hand press the sheet to avoid wrinkles and trapped air and finish with a weighted roller over the entire sheet to insure full contact with the base sheet. All side and end laps must be staggered and offset from underlying courses a minimum of 6" (15.2 cm).
- D. Interply End Lap Detail: End laps must be a minimum of 6" (15.2 cm), staggered and offset from adjacent courses a minimum of 3' (91.4 cm). On the overlapping sheet, cut the selvage edge at a 45° angle to provide a tapered transition at the "T" joints formed by succeeding courses. See "T"-Joint Selvage Cuts drawing in paragraph 8.01 N. in the GAF® Application and Specifications Manual. Remove the release film from the underside of the overlapping sheet and form the lap without wrinkles or voids. Firmly press and roll this overlap seam with a weighted roller to complete.
- E. Prior to installing succeeding courses, apply a 3/8" bead of Matrix™ 201 SBS Flashing Cement along the top edge of each course and along the 45° angle at all selvage edge "T" joint to minimize the potential for voids, blisters or open seams. Install subsequent courses as detailed above, carefully working each sheet into the laps without wrinkles or trapped air. Firmly hand press the sheet and complete the side lap by rolling with a weighted hand roller.

3.05 CAP SHEET

- A. SBS membranes must not be applied during adverse weather or without precautionary measures in temperatures below 60°F. Contact GAF® Contractor Services for details.
- B. Installation of Liberty™ SBS Self-Adhering Cap sheet in temperatures below 60° F requires heat welding of membrane side laps with a hot air welder.
- C. Coiled rolls should be unrolled, placed upside down and allowed to "relax" prior to installation. Then re-roll to apply.
- D. Starting at the low point of the roof install one ply of Liberty™ SBS Self-Adhering Cap sheet lapping 4" (10.2 cm) on sides and 6" (15.2 cm) on ends. Fold the bottom half of the sheet back and remove the release film from this part of the roll leaving approximately 8" (20.3 cm) at the end of the roll where it will lap the previous sheet. Working from the center of the sheet, carefully roll and hand press the sheet back into place over the interply being careful to avoid wrinkles and trapped air while maintaining proper alignment. Fold the upper portion of the sheet back on itself to expose and remove the remaining release film and finish the roll. Install the upper portion of

the roll working from the center of the sheet outward toward the ends. Firmly hand press the sheet to avoid wrinkles and trapped air and finish with a weighted roller over the entire sheet to insure full contact with the underlying membrane. All side and end laps must be staggered and offset from underlying courses a minimum of 6" (15.2 cm).

- E. Cap sheet end lap detail: End laps must be a minimum of 6" (15.2 cm), staggered and offset from adjacent courses a minimum of 3' (91.4 cm). After aligning end lap, fold back the overlapping sheet and apply a 1/16" (1.6 mm) to 1/8" (3.8 mm) thick troweling of Matrix™ 201 SBS Flashing Cement to the underlying granule surface. On the overlapping sheet, cut the selvage edge at a 45° angle to provide a tapered transition at the "T" joints formed by succeeding courses. Remove the release film from the underside of the overlapping sheet and form the lap without wrinkles or voids, pressing the sheet firmly so that a uniform bead is squeezed out at the lap edges and along the transition cut. Firmly press and roll the completed end lap with a weighted roller. Prior to installing succeeding courses, apply a bead of Matrix™ 201 SBS Flashing Cement along the top edge of each course and along the 45° angle at all selvage edge, "T" joints to minimize the potential for voids, blisters or open seams. Install subsequent courses as detailed above, carefully working each sheet into the laps without wrinkles or trapped air. Firmly hand press the sheet and complete the side lap by rolling with a weighted hand roller.

3.06 ROOF PROTECTION

- A. Protect all partially and fully completed roofing work from other trades until completion.
- B. Whenever possible, stage materials in such a manner that foot traffic is minimized over completed roof areas.
- C. When it is not possible to stage materials away from locations where partial or complete installation has taken place, temporary walkways and platforms shall be installed in order to protect all completed roof areas from traffic and point loading during the application process.
- D. Temporary tie-ins shall be installed at the end of each workday and removed prior to commencement of work the following day.

3.07 CLEAN-UP

- A. All work areas are to be kept clean, clear and free of debris at all times.
- B. Do not allow trash, waste, or debris to collect on the roof. These items shall be removed from the roof on a daily basis.
- C. All tools and unused materials must be collected at the end of each workday and stored properly off of the finished roof surface and protected from exposure to the elements.
- D. Dispose of or recycle all trash and excess material in a manner conforming to current EPA regulations and local laws.
- E. Properly clean the finished roof surface after completion, and make sure the drains and gutters are not clogged.
- F. Clean and restore all damaged surfaces to their original condition.

END OF SECTION

SECTION 07 6200
SHEET METAL FLASHING AND TRIM

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Fabricated sheet metal items including trims, flashings, counter-flashings, gutters, and downspouts.
- B. Reglets and accessories.

1.02 REFERENCE STANDARDS

- A. ASTM B32 - Standard Specification for Solder Metal; 2008.
- B. ASTM D4586/D4586M - Standard Specification for Asphalt Roof Cement, Asbestos-Free; 2007 (Reapproved 2012)e1.
- C. CDA A4050 - Copper in Architecture - Handbook; Copper Development Association, Inc.; current edition.
- D. SMACNA (ASMM) - Architectural Sheet Metal Manual; Sheet Metal and Air Conditioning Contractors' National Association; 2012.

1.03 ADMINISTRATIVE REQUIREMENTS

- A. Pre-installation Meeting: Convene one week before starting work of this section.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Samples: Submit two samples of each flashing component to the Architect for review and approval.

1.05 QUALITY ASSURANCE

- A. Perform work in accordance with SMACNA Architectural Sheet Metal Manual requirements and standard details, except as otherwise indicated.
- B. Maintain one copy of each document on site.
- C. Fabricator and Installer Qualifications: Company specializing in sheet metal work with five years of documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Stack material to prevent twisting, bending, and abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.
- B. Prevent contact with materials that could cause discoloration or staining.

PART 2 PRODUCTS

2.01 ACCESSORIES

- A. Fasteners: Copper, with soft neoprene washers.
- B. Primer: Zinc chromate type.
- C. Protective Backing Paint: Zinc molybdate alkyd.
- D. Plastic Cement: ASTM D4586, Type I.
- E. Solder: ASTM B32; Sn50 (50/50) type.
- F. Pipe Boots:
 - 1. Manufacturer: Architectural Metal Specialties, Inc.
 - a. 4333 Lynwood Ct, Douglasville, GA 30134
 - b. dtrefzger@amsisupply.com
 - c. (800) 943-9771
 - 2. Model: Renner-Cap-ZU
 - 3. Size: As required to fit existing pipe vent through roof
 - 4. Substitutions: Architect approved equal
- G. Metal base at porch columns: Repair and reuse existing.

2.02 FABRICATION

- A. Form sections true to shape, accurate in size, square, and free from distortion or defects.
- B. Form pieces in longest possible lengths.

- C. Hem exposed edges on underside 1/2 inch; miter and seam corners.
- D. Form material with flat lock seams, except where otherwise indicated. At moving joints, use sealed lapped, bayonet-type or interlocking hooked seams.
- E. Fabricate corners from one piece with minimum 18 inch long legs; seam for rigidity, seal with sealant.
- F. Fabricate flashings to allow toe to extend 2 inches over roofing gravel. Return and brake edges.

2.03 GUTTER AND DOWNSPOUT FABRICATION

- A. Acceptable Manufacturer:
 - 1. Berger Building Products
 - 2. 805 Pennsylvania Blvd Feasterville, PA 19053
 - 3. (800) 523-8852 or (215) 355-1200
 - 4. info@bergerbp.com
- B. Gutters: Semi-circular profile.
- C. Downspouts: Round profile.
- D. Gutters and Downspouts: Size indicated.
- E. Accessories: Profiled to suit gutters and downspouts.
 - 1. Anchorage Devices: see drawings.
 - 2. Gutter Supports: see drawings.
 - 3. Downspout Supports: see drawings.
- F. Solder all gutter and downspout joints.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify roof openings, curbs, pipes, sleeves, ducts, and vents through roof are solidly set, reglets in place, and nailing strips located.
- B. Verify roofing termination and base flashings are in place, sealed, and secure.

3.02 PREPARATION

- A. Install starter and edge strips, and cleats before starting installation.
- B. Back paint concealed metal surfaces with protective backing paint to a minimum dry film thickness of 15 mil.

3.03 INSTALLATION

- A. Conform to drawing details and SMACNA Architectural Sheet Metal standards.
- B. Insert flashings into reglets to form tight fit. Secure in place with copper wedges. Pack remaining spaces with lead wool. Seal flashings into reglets with sealant.
- C. Secure flashings in place using concealed fasteners. Use exposed fasteners only where permitted.
- D. Apply plastic cement compound between metal flashings and felt flashings.
- E. Fit flashings tight in place. Make corners square, surfaces true and straight in planes, and lines accurate to profiles.
- F. Solder metal joints for full metal surface contact. After soldering, wash metal clean with neutralizing solution and rinse with water.
- G. Secure gutters and downspouts in place using concealed fasteners.
- H. Slope gutters 1/8 inch per 1/8 feet, minimum.
- I. Set concrete splash pads under downspouts.

3.04 FIELD QUALITY CONTROL

- A. See Section 01 4000 - Quality Requirements, for field inspection requirements.
- B. Inspection will involve surveillance of work during installation to ascertain compliance with specified requirements.

3.05 SCHEDULE

- A. Reglet Base and Counter Step Flashing in Chimneys
- B. Gutters and Downspouts
- C. Flashings Associated with porch roofing

- D. Flashings Associated with main roofing, including Valley, Hip, Ridge, Eave, Gutter Edge, Gable Edge, Chimney
- E. Counterflashings at Roofing Terminations (over roofing base flashings)
- F. Roofing penetration pipe boots for pipe vents through roofs.
- G. Metal base at porch wood columns

END OF SECTION

SECTION 08 2120

WOOD DOORS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. **Alternate #1:** Front Door – Restoration of the front door, including transom and sidelites.

1.02 RELATED REQUIREMENTS

- A. Section 09 9000 – Paints and Coatings

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Indicate work in a shop drawing. Submit for review and approval.

PART 2 PRODUCTS

2.01 DOORS

- A. Existing door, transom and sidelites in existing opening and frame.

2.02 ACCESSORIES

- A. Casing: match existing

2.03 FINISHING

- A. Opaque (primer and paint) finishes may either be spray applied in a shop or spray applied in the field.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify that opening sizes and tolerances are acceptable.
- C. Do not install restored doors in frame openings that are not plumb or are out of tolerance for size or alignment.

3.02 INSTALLATION

- A. Coordinate installation of door with installation of frames and hardware.
- B. Coordinate installation of glazing.

3.03 TOLERANCES

- A. Conform to specified quality standard for fit, clearance, and joinery tolerances.
- B. Maximum Width Distortion (Cup): 1/8 inch measured with straight edge or taut string, edge to edge, over an imaginary 36 x 84 inch surface area.

3.04 ADJUSTING

- A. Adjust doors for smooth and balanced door movement.
- B. Adjust closers for full closure.

END OF SECTION

SECTION 08 5500

WOOD WINDOWS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Wood and Glazed Windows
 - 1. New windows. Includes use of existing components as templates for new windows.
 - 2. Restore existing windows.
- B. Operating hardware.
- C. Wood jambs, sills and trim for exterior and interior finishing.

1.02 RELATED SECTIONS

- A. Section 06 9000 – Wood Restoration Systems
- B. Section 09 9000 - Paints and Coatings

1.03 REFERENCES

- A. AAMA/WDMA/CSA 101/I.S.2/A440 - Voluntary Specifications for Aluminum, Vinyl (PVC) and Wood Windows and Glass Doors; American Architectural Manufacturers Association; 2005.
- B. *Preservation Brief 9: The Repair of Historic Wooden Windows*:
<http://www.nps.gov/history/hps/tps/briefs/brief09.htm>

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings for new windows: Illustrate window construction details; sizes, thicknesses and profiles of all components; window opening criteria, elevations, types, special beveling, special blocking for hardware, factory machining criteria, factory finishing criteria, identify cutouts for hardware.
- C. Samples:
 - 1. Submit one new window. Sample shall demonstrate assembly technique, glazing, wood grain, paint color and sheen.

1.05 QUALITY ASSURANCE

- A. Contractor shall specialize in replicating and restoring historic single or double-hung sash wood windows with minimum three years of documented experience.
- B. Contractor shall provide a warranty for installer and manufacturer to guarantee quality of workmanship and function for five years from acceptance.

1.06 DELIVERY, STORAGE, AND PROTECTION

- A. Protect factory-finished surfaces with wrapping. Do not use adhesive papers or sprayed coatings that bond when exposed to sunlight or weather.

1.07 ENVIRONMENTAL REQUIREMENTS

- A. Do not install sealants, coatings, or paint when ambient temperature is less than 40 degrees F.
- B. Maintain this minimum temperature during and after installation of sealants, coatings or paint.

PART 2 PRODUCTS

2.01 WINDOW COMPONENTS

- A. New windows in configuration of historic size, location and pairing per historic image. Includes replacement of existing wood and glazed windows deteriorated beyond repair. Replacement windows shall match existing, historic window sash #W23 (north) and second floor casements in terms of size, wood species, muntin profile, dimensions, craftsmanship, etc.
- B. Glass and Glazing:
 - 1. Glass:
 - a. Salvaged glass from windows of the same period is preferable.
 - b. New glass to match existing historically correct glass.
 - 2. Glazing:
 - a. Elastic Glazing Compound (Linseed Oil Putty) by Sterling-Clark-Lurton Corp, PO Box 130, Norwood, MA 02062 Telephone: (800) 225-9872 Fax: (781) 762-1095 info:info@sclsterling.com <mailto:info@sclsterling.com
 - b. DAP '33' Glazing Compound by DAP Products Inc., 2400 Boston Street, Suite 200, Baltimore, MD 21224, Telephone: (800) 543-3840 Fax (410) 534-2650
 - c. SARCO Type "M" Glazing Compound Telephone: (773) 735-5577 or equal as approved by Owner and Architect

2.02 HARDWARE

- A. Operable Sash: For new operable sash the method of operation including all attendant components required to facilitate operation. Components shall match existing historically correct components in every respect.

2.03 FABRICATION

- A. Fabricate sash members with wood-pinned mortise and tenon joints. Fabricate frames with glue and steel pin joints to hairline fit, weather tight.
- B. Provide spring bronze weatherstripping.
- C. Fabricate components with minimum clearances and shim spacing around perimeter of assembly, yet allowing installation of weatherstripping.
- D. Arrange fasteners to be concealed from view.

2.04 WINDOW PRODUCT ALTERNATE:

- A. Acceptable Manufacturer: Custom preferable or Marvin Doors and Windows
- B. Style: Ultimate Wood Double Hung to match existing historical windows.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify wall openings are ready to receive work of this section.

3.02 INSTALLATION

- A. Installation shall match installation of historically correct windows in every respect.
- B. Attach window frame and shims to perimeter opening to accommodate construction tolerances and other irregularities.
- C. Align window plumb and level, free of warp or twist. Maintain dimensional tolerances and alignment with adjacent work.
- D. Install operating hardware.
- E. Air-seal around each window and new framing sections as feasible during construction. Review conditions, details and proposed products with architect prior to installation.

3.03 ERECTION TOLERANCES

- A. Maximum Variation from Level or Plumb: 1/8 inches every 3 ft non-cumulative or 1/4 inches per 10 ft, whichever is less.

3.04 ADJUSTING

- A. Adjust hardware for smooth operation and secure weather-tight closure.

3.05 CLEANING

- A. Wash glass clean and free of dirt.

3.06 SCHEDULE – See Window Schedule A-810.

END OF SECTION

SECTION 09 2800

STUCCO REPAIR AND RESTORATION

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Work of this Section consists of providing all labor, materials, equipment, and services to complete the Work of repair and restoration of the exterior cement stucco finishes on the Superintendent's Cottage of the Dale Cemetery located in Ossining, NY as noted on the Contract Drawings or as specified herein, and as required by job condition. Work shall include, but is not limited to:
 - 1. Cleaning existing stucco finish and adjacent stone masonry to remain to remove overpainting, biological growth, and general soiling.
 - 2. Repair of cracked, missing, or poorly matched previous repair stucco to match original adjacent work.
- B. Related Sections:
 - 1. Section 04 0130 Exterior Masonry Repointing
 - 2. Section 04 9000 Masonry Restoration
- C. Related Documents – See Appendix B
 - 1. "Mortar and Stucco Analyses Dale Cemetery Superintendent's Cottage" report completed by Jablonski Building Conservation, Inc., dated June 6, 2019.

1.2 REFERENCES

- A. Materials and methods shall conform to the following guidelines:
 - 1. "Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings," Preservation Assistance Division, National Park Service, 1995.
 - 2. "Preservation Brief 22: The Preservation and Repair of Historic Stucco," Preservation Assistance Division, National Park Service, 1990.
- B. Comply with provisions of the most recent versions of the following codes and standards, except as otherwise indicated:
 - 1. American Society of Testing and Materials (ASTM):
 - a. C144 Standard Specifications for Aggregate for Masonry Mortar
 - b. C150 Standard Specification for Portland Cement
 - c. C847 Standard Specification for Metal Lath
 - d. C979 Standard Specification for Pigments for Integrally Colored Concrete
 - e. C897 Standard Specification for Aggregate for Job-Mixed Portland Cement-Based Plasters
 - f. C926 Standard Specification for Application of Portland Cement-Based Plaster
 - g. C932 Standard Specification for Surface-Applied Bonding Agents for Exterior Plastering
 - h. C1063 Standard Specification for Installation of Lathing and Furring to Receive Interior and Exterior Portland Cement-Based Plaster
 - 2. Portland Cement Association
 - a. EB049 Portland Cement Plaster/Stucco Manual
 - b. IS526 Repair of Portland Cement Plaster
 - 3. Manufacturer's printed recommendations.

1.3 QUALITY ASSURANCE

- A. Contractor Qualifications: All work of this Section shall be done by a qualified restoration Contractor with a minimum of five (5) years' experience working with historic masonry, including cement stucco finishes. The Contractor must demonstrate three (3) projects similar in scope and type to the required work involving facilities designated as Landmarks by local governments, or buildings listed on the National or State Register of Historic Places.
- B. Mechanic Qualifications: The Contractor shall maintain a steady work crew consisting of skilled mechanics who are experienced with the materials and methods specified, and are familiar with the design requirements. Mechanics shall have skill and experience of sufficient level to accomplish the work described. Workers shall be carefully supervised to ensure that the work is accomplished to meet or exceed the highest standards of the trade. Contractor shall maintain a full-time Foreperson who fluently speaks, reads, and writes English. In acceptance or rejection of the work of this Section, no allowance will be made for lack of skill on the part of mechanics.
 - 1. The Contractor shall provide one crew of mechanics for the duration of the project. Substitutions and additions of work force shall be permitted with the Architect's consent, so long as there is no adverse effect on quality or performance of work.
- C. Architect shall be given regular access to the Contractor's scaffolding or work site so that he/she may inspect work being performed.
- D. Obtain materials for from a single source for each type of material required to ensure a match in quality, color, and texture.
- E. Contractor shall replace at no additional expense to the Owner all broken, lost, or damaged materials resulting from the work of this Section.
- F. Repair Appearance Standard: Repaired surfaces are to have a uniform appearance as viewed from 10 feet away by the Architect. The samples can be viewed at any angle from the scaffold.

1.4 SUBMITTALS

- A. Contractor qualification data: Submit qualification data and references for firms and persons specified in Section 1.3 "Quality Assurance" to demonstrate their capabilities and experience. Bidders shall visit the site and make themselves familiar with the site conditions.
- B. Contractor shall submit a work plan including detailed descriptions of how the work of this Section will be accomplished. This should include products to be used, methods for installation, and schedule for the work, etc.
 - 1. If materials and methods other than those indicated are proposed for any phase of restoration work, include a written description of such materials and methods, including evidence of successful use on comparable projects, and demonstrations to show their effectiveness for this Project and worker's ability to use such materials and methods properly.
- C. Provide written descriptions, drawings and diagrams outlining proposed methods and procedures for protection of personnel, the public, and the existing construction during the work of this Section.
- D. Containment Plan including detailed descriptions, drawings, and diagrams of methods for the protection of all surrounding landscaping and the general public during cleaning activities. Include shop drawing that shows how the effluent will be collected, contained, and disposed of according to federal and local regulations.

- E. Contractor shall submit copies of the manufacturer's technical data, including Safety Data Sheets (SDS), for handling, storage, and application of each product used in stucco restoration and installation, including the manufacturer's recommendations for application and use. Include test reports and certificates that verify the product's compliance with the specification's requirements. Safety Data Sheets shall indicate the Volatile Organic Compound (VOC) content of products submitted. If an SDS does not include a product's VOC content, then product data sheets, manufacturer literature, or a letter of certification from the manufacturer can be submitted in addition to the SDS to indicate the VOC content.
- F. The Contractor shall bring to the attention of the Architect any items not included in the documents that require repair work, such as cracked, loose, bulging, or displaced stucco.
- G. Samples
 - 1. One (1) sample of cured finish stucco for each type or variation of finish specified measuring nine (9) inches square (3x3 inch). Submit with precise measurements of ingredients, proportions, gradations, and sources of aggregate from which each sample is made.
 - 2. One (1) sample for each type of lath, cornerite, cornerbead, lath fastener, or other stucco accessory required.

1.5 MOCK-UPS

- A. Prior to executing work, provide in-place mockups for the Architect's approval. Resubmit panels until the Architect is fully satisfied. Mockups shall be prepared by the Contractor using the same workmen, methods, and materials that will be employed for the remainder of the work. Approved mockups shall be retained, undisturbed and suitably marked, as the standard of work throughout construction. Mockups may be incorporated into the finished work when so approved by the Architect.
- B. No mockups shall be made until the methods and locations are approved by the Architect.
- C. Architect will be present during the creation of all mockups. Do not proceed with the work unless the Architect is present. Notify the Architect no less than forty-eight (48) hours in advance of any mockup.
- D. Provide protection for adjacent surfaces during the mockup phase.
- E. Cleaning Tests:
 - 1. Some products may cause permanent/irreversible damage to the masonry.
 - 2. Follow all manufacturers' written instructions including testing multiple concentrations and dwell times.
 - 3. Test in locations that are the least visible.
 - 4. Test on each substrate for intended use.
 - 5. Tests should be evaluated no less than seven (7) days after they have been performed in order to allow test panels to fully dry and to assess any latent reactions that may have occurred.
 - 6. Provide the following for initial product selection in locations selected by the Architect:
 - a. Paint Removal: Prepare one (1) test panel measuring approximately six (6) square inches (3 x 3 inches) for each product specified for removal of overpainting.
 - b. Biological Growth Removal: Prepare one (1) test panel measuring approximately one (1) square foot (1 x 1 ft.) for each product specified for removal of biological growth.

- c. General Soiling Removal: Prepare one (1) test panel measuring approximately one (1) square foot (1 x 1 ft.) for each cleaning agent specified for removal of general soiling.
- 7. Items to be evaluated include, but are not limited to, the following:
 - a. Cleanliness of the test area.
 - b. Evenness of surface appearance of cleaned area.
 - c. Any discoloration.
 - d. Alteration of stucco or masonry surface or loss of material.
 - e. Duration of water rinse and pressure.
- F. Mockups: Provide the following:
 - 1. Coating Removal: One (1) panel measuring at least one (1) square foot (1 x 1 ft.), in a location selected by the Architect, that is representative of the effect of the coating removal materials and methods selected through testing.
 - 2. Cleaning: One (1) panel measuring at least four (4) square feet (2 x 2 ft.), in a location selected by the Architect, that is representative of the effect of the cleaning materials and methods selected through testing, including biological growth removal and general soiling removal.
 - 3. Repair of Detached Stucco: Repair one (1) area of detached existing stucco in a location selected by the Architect.
 - 4. Repair of Cracks: Repair one (1) crack in existing stucco that measures at least 12 inches in length, in a location selected by the Architect.
 - 5. Repair by Patching: Repair one (1) area of existing stucco measuring approximately one (1) square foot, in a location selected by the Architect.

1.6 COORDINATION

- A. At least three weeks prior to commencing the work of this Section, a meeting must be scheduled at the jobsite to discuss conformance with the requirements of specifications and job site conditions. Representatives of the Contractor, Architect, and other parties involved in the scope of this work shall attend the meeting.
- B. Contractor shall coordinate his or her work with that of other trades related to the successful completion of the work of this Section. Contractor shall not proceed with aspects of this work that require completion of other trades until all such work of other trades is completed.

1.7 JOB CONDITIONS

- A. All repair materials shall be used only within the manufacturer's recommended temperature tolerances or as indicated below, whichever is more conservative.
- B. Cold Weather Requirements: Work involving stucco and other cementitious materials or wet cleaning may only be performed as long as the temperature remains above 40° Fahrenheit. If in any given 24 hour period the temperature drops or is expected to drop below 40° Fahrenheit at any time, work will not recommence until a constant temperature of 40° Fahrenheit or higher is projected for a minimum period of 72 hours. Once stopped for reason of temperature, work will recommence only upon approval of the Architect.

- C. Hot Weather Requirements: Protect stucco and other cementitious materials when temperature and humidity conditions produce excessive evaporation of water. Provide artificial shade and wind breaks and use cooled materials as necessary to minimize evaporation. Stuccowork shall be protected during hot, dry weather from premature drying or rapid curing by the use of dampened fabric coverings or controlled misting with water as required to keep stucco moist for seventy-two (72) hours following final tooling. Do not apply stucco to substrates with temperatures of 90° Fahrenheit and above unless otherwise indicated. If temperatures rise above 85°F (29°C), protect areas being cleaned using chemical cleaning agents with tarps or other shading devices to reduce exposure to direct sunlight. Do not allow chemicals to dry on stucco or masonry

1.8 PROTECTION

- A. The Contractor shall take extreme care in protecting the surrounding materials, buildings, vehicles, and pedestrians. It is the Contractor's responsibility to ensure that protective measures are in place and are adequate for the work being performed.
- B. Protect persons, motor vehicles, adjacent surfaces, surrounding buildings, equipment, and landscape materials from chemicals and runoff from cleaning operations. Erect temporary protection covers, which will remain in place during the course of the work, over pedestrian walkways and at personal and vehicular points of entrance and exit.
- C. Protect adjacent masonry and other work from stucco and grout drippings or other damage. Immediately remove misplaced stucco or grout.
- D. Scaffold work required to accomplish the work of this Section shall be the responsibility of the Contractor, and shall be made available to all required trades and the Architect without charge. All scaffolding, staging, and appurtenances will be adequately and safely maintained, and shall comply, in total, with the requirements of the Safety and Health Regulations for Construction, and any and all other government agencies having jurisdiction. The most stringent requirements shall govern.
- E. Any damage made to the structure by the scaffold(s) will be repaired by the Contractor to the satisfaction of Architect at no cost to the Owner.
- F. Prevent chemical cleaning agents from spilling or dripping down surfaces, on to adjacent materials, or on to the ground. Remove any spilled or dripped materials immediately and rinse well.
- G. Provide adequate protection from chemical cleaning agents and rinse water for all glass, metal, and polycarbonate surfaces around and beneath the surfaces being worked on and any adjacent surfaces not included in this work. Apply masking agent to comply with manufacturer's recommendations. Do not apply liquid masking agent to painted or porous surfaces.
- H. Surrounding areas shall be protected from contact with chemical cleaning agents and rinse water. Surrounding areas shall include, but shall not be limited to, adjacent surfaces and structures, private property including automobiles, vegetation, and all other surfaces that would be adversely affected if placed in contact with the cleaning agents. Contractor vehicle parking and deliveries must be coordinated accordingly.
- I. Do not allow run-off from the cleaning process to enter storm sewer system, contaminate water supplies, or to enter natural bodies of water. Dispose of effluent in safe and legal way as outlined in the approved Containment Plan.

1.9 DELIVERY, STORAGE AND HANDLING

- A. All materials shall be delivered to the job site in factory-sealed containers clearly labeled as to product, manufacturer, color, and other pertinent characteristics.
- B. All materials for use in the work of this Section shall be stored under environmental conditions recommended by the manufacturer. Materials should be kept dry (includes protection from liquid moisture and water vapor), well-ventilated, and free of foreign matter.
 - 1. Do not use cementitious materials that have become damp.
- C. Arrangement shall be made with the Architect to store equipment and materials in designated areas. The Architect shall not be responsible for damaged or stolen materials or equipment left on the premises by the Contractor.
- D. Protect materials from tampering, acts of vandalism, and possible injury to workers or the general public.

PART 2 - PRODUCTS

2.1 PAINT REMOVAL

- A. Before Proceeding with paint removal, perform test patch at each area/item to be stripped. Acceptable paint removers include:
 - 1. Peel Away 7 manufactured by Dumond Chemicals Inc 83 General Warren Blvd. Suite 190 Malvern, PA 19355 (800)245-1191.
 - 2. Smart Strip manufactured by Dumond Chemicals Inc 83 General Warren Blvd. Suite 190 Malvern, PA 19355 (800)245-1191.
 - 3. Enviro Klean SafStrip 8 manufactured by ProSoCo 3741 Greenway Circle Lawrence, KS 66046 (800)255-4255.
 - 4. Or approved equal.

2.2 CLEANING AGENTS

- A. General Soiling Removal:
 - 1. Enviro Klean EK Restoration Cleaner, manufactured by ProSoCo, Inc., (800) 255-4255, <http://www.prosoco.com>
 - 2. Enviro Klean SafRestorer, manufactured by ProSoCo, Inc., (800) 255-4255, <http://www.prosoco.com>
 - 3. Light Duty Cleaner, manufactured by Cathedral Stone Products, Inc., (410) 782-9150, <http://www.cathedralstone.com>
 - 4. Safe n' Easy Heavy Duty Masonry Restoration Cleaner, manufactured by Dumond Chemicals, (800) 245-1191, <https://www.dumondchemicals.com>
 - 5. Safe n' Easy Ultimate Stone and Masonry Restoration Cleaner, manufactured by Dumond Chemicals, (800) 245-1191, <https://www.dumondchemicals.com>
 - 6. Sure Klean Light Duty Restoration Cleaner, manufactured by ProSoCo, Inc., (800) 255-4255, <http://www.prosoco.com>
 - 7. Or approved equal.
- B. Biological Soiling Removal:
 - 1. D/2 Biological Solution, manufactured by D/2 Biological Solutions, Inc., (917) 693-7441, <http://d2bio.com>

2. Enviro Klean ReKlaim Cleaner and Activator, manufactured by ProSoCo, Inc., (800) 255-4255, <http://www.prosoco.com>
3. Enviro Klean ReVive, manufactured by ProSoCo, Inc., (800) 255-4255, <http://www.prosoco.com>
4. Or approved equal.

2.3 CLEANING EQUIPMENT

- A. Scrub Brushes: stiff, natural or synthetic-bristle brushes. Metal-bristle brushes shall not be used.
- B. Pressure Washer: Only electric-powered pressure washers shall be used (no gas-powered). The maximum operating pressure shall not exceed 500 psi; unit shall be capable of providing a flow rate of 6 gallons per minute. Spray wand shall be fitted with a 45° dissipating fan-shaped tip.
 1. The wand nozzle is to be kept at minimum 1 foot away from the masonry surface. A dowel may be taped to the wand that projects 1 foot beyond the nozzle to ensure that the nozzle remains at minimum 1 foot way from the surface.
 2. If a pressure washer with a maximum operating pressure of 500 psi cannot be obtained then the use of a hose and high flow nozzle is acceptable. Acceptable products include:
 - a. Westward Fireman's High Flow Nozzle 5" Maximum psi 250 with a flow rate of 24 gpm available from W.W. Grainger Inc. www.grainger.com.
 - b. Nelson Water Nozzle. Maximum psi 200 with a flow rate of 2.5-5.0gpm available from W.W. Grainger Inc., www.grainger.com.
 - c. Or approved equal.
 3. No metal fittings that can corrode or deposit materials on the masonry are to be used.
- C. Scrapers: Plastic or wood. Metal scrapers shall not be used.
- D. Liquid Strippable Masking Agent: If required, acceptable products include:
 1. Diedrich Acid Guard, manufactured by Diedrich Chemicals,
 2. Sure Klean Acid Stop, manufactured by ProSoCo,
 3. ABR Rubber Mask manufactured by Bonstone Materials Corporation,
 4. Or approved equal.
- E. Plastic Sheeting
- F. pH Measurement: Use pH strips which show the full range of acidity/alkalinity from 1 to 14. Available from:
 1. Talas, www.talasonline.com,
 2. Fisher Scientific, www.fishersci.com,
 3. Edmund Scientific, www.scientificonline.com,
 4. Or approved equal.

2.4 STUCCO

- A. The Stucco Analysis completed by Jablonski Building Conservation, found that the exterior stucco was a cement and sand mix. It was applied in two layers and the scratch and finish coats appear to be the same mix.
 1. Scratch and Finish Coats:
 - a. 1 part Portland Cement to be composed of:

- 1) 1/8 part Grey Portland Cement, Type I
 - 2) 7/8 part White Portland Cement, Type I
 - b. 3 parts Schofield "181" sand passed through a #4 sieve.
 - c. 1/32 part Raw Umber Dark Pigment #40660, by Kremer Pigments.
 2. All parts should be measured by volume (not by weight). Dry ingredients should be well blended before the addition of water.
- B. Stucco Materials and Suppliers (Note: Substitution of any of the materials specified below may alter the appearance of the stucco finish).
1. Portland cement: ASTM C150 Type I, white and gray, as required for color matching to historic stucco. Do not use masonry cement. Acceptable products include:
 - a. White Portland Cement, Type I as manufactured by Lehigh Cement, call for local supplier (800) 638-1716
 - b. Gray Portland Cement, Type I as manufactured by Lehigh Cement, call for local supplier (800) 638-1716
 - c. Or approved equal white, gray, and brown cements.
 2. Aggregates: ASTM C897 natural sand blend, rounded to sub-angular in shape, washed, screened and dried. Aggregate to be selected to match the color and texture of the original stucco aggregates as closely as possible while remaining in compliance with ASTM C897 grading and soundness requirements. Acceptable products include:
 - a. Schofield "181" as available from George Schofield Co., P.O. Box 110, Bound Brook, NJ 08805, (732) 356-0858
 - 1) This sand is to be passed through a #4 sieve to match the size of the original aggregate.
 - b. Or approved equals for Schofield aggregates.
 3. Dry Pigments: Pigments shall be non-fading, UV-stable pigments, blended with other dry components, in proportions not to exceed those specified in ASTM C979. Acceptable products include:
 - a. Raw Umber Dark (Kremer Stock #40660) as manufactured by Kremer Pigments, 247 West 29th Street New York, NY 10001, (212) 219-2394, <http://shop.kremerpigments.com>.
 - b. Or approved equal.

2.5 STUCCO ACCESSORIES

- A. Metal Lath: Expanded or woven-wire lath, self-furring type, constructed from AISI Type 304 or 316 Stainless Steel, of a gauge suitable to support three-coat stuccowork.
- B. Cornerite: AISI Type 304 or 316 Stainless Steel
- C. Cornerbead: AISI Type 304 or 316 Stainless Steel
- D. Weep Screed/Kick-out Flashing (if required): AISI Type 304 or 316 Stainless Steel
- E. Fasteners: AISI Type 304 or 316 Stainless Steel

- F. Bonding Agent: Surface-applied bonding agent for Portland cement based stucco products complying with ASTM C932. Acceptable products include:
 - 1. Weld-Crete as manufactured by Larsen Products Corporation
 - 2. Polyweld as manufactured by Chem-Master Corporation
 - 3. SikaLiquid Weld as manufactured by Sika Corporation
 - 4. Or approved equal.
- G. Reinforcing Fiber (if required): Glass or synthetic fiber, alkali and UV resistant, designed for use with cementitious materials.
- H. Distilled White Vinegar (for removing laitance)
- I. Coating, Rust-inhibiting: For application to all abandoned anchors or other ferrous materials that are not being removed, but which were exposed during this work. Acceptable products include:
 - 1. Series 90-97 Tnemec-Zinc Primer as manufactured by Tnemec
 - 2. Steeltech Universal Primer as manufactured by Pratt and Lambert
 - 3. Iron Clad Rust Inhibitive Paint as manufactured by Benjamin Moore Paints
 - 4. Or approved equal.

PART 3 - EXECUTION

3.1 INSPECTION

- A. The Contractor shall examine substrates, supports, and conditions under which this work is to be performed and notify the Architect, in writing, of conditions detrimental to the proper completion of the work. Do not proceed with work until unsatisfactory conditions are corrected. Beginning work signifies installer's acceptance of substrates and conditions.
- B. Correct any conditions that are detrimental to the successful completion of the work. Sequencing of work should be scheduled to ensure that completed work will match existing.
- C. After scaffolding has been erected and prior to starting work, thoroughly inspect, with the Architect, the entire surface of stucco.

3.2 PAINT REMOVAL

- A. Remove overpainting from all stucco surfaces and adjacent stone masonry.
- B. Apply coating remover in accordance with manufacturer's directions.
- C. Apply chemical paint and coating remover to dry surfaces 1/8" to 1/4" thick, using a corrosion resistant plastic trowel or non-metallic brush. Work paint remover well into crevices. Ensure that the coating remover is applied in an even coat.
- D. Allow coating remover to remain on the surface for the dwell time determined during testing, or until coating is dissolved, whichever is less. Do not leave coating remover on surface longer than the maximum dwell time recommended by the manufacturer. Periodically agitate the coating remover with a stiff bristle brush to improve penetration.
- E. Do not allow coating removers to dry on surfaces. If coating removers dry on the surface, mist the surface with water and allow coating remover to remain on the surface another 15 minutes until softened.

- F. Carefully remove the coating remover and dissolved coatings by rinsing with a low-pressure water rinse, pressure not to exceed 500 psi.
- G. Using pH test strips with a scale of 0-14, check the treated surfaces to ensure that neutralization has been achieved. If surface is pH above 9 or lower than 6 continue rinsing until pH is the same as the rinse water.
- H. Allow treated surfaces to thoroughly dry.

3.3 CLEANING

- A. Test the specified products and procedures prior to full-scale use. Do not proceed with full-scale use until mockup is approved.
- B. Clean all stucco surfaces and adjacent stone masonry to remain to remove general soiling and biological growth except where otherwise noted.
- C. General Chemical Cleaning Procedures:
 - 1. Products and procedures employed shall comply with the approved mock-up panels.
 - 2. Treat biological soiling prior to general soiling removal, otherwise biological soiling may reoccur.
 - 3. Follow all manufacturers' instructions regarding protection, mixing, dilution, application, and neutralization of each product.
 - a. Pre-wet substrates where required.
 - 4. Comply with all Local, State, and Federal regulations regarding the containment and disposal of effluent.
 - 5. Immediately remove all spills or stains on adjacent surfaces and restore effected surfaces at no expense to the Owner.
 - 6. Monitor interior walls during cleaning operations and immediately halt cleaning if interior wetting or drips occur. Resume cleaning only once protective measures have been taken to prevent damage to interior finishes.
 - 7. Cleaning shall begin at the bottom of walls and progress continuously upwards.
 - 8. Agitate surfaces during treatment using only stiff natural or synthetic –bristle scrub brushes.
 - 9. Finished work shall show no signs of stains, scratches, streaks, etching, or runs resulting from the cleaning procedure. Leave all exposed surfaces neat and clean.
 - a. To avoid streaking, pre-wet surfaces immediately before product application and maintain a wet surface throughout the procedure through reapplication of the product.
 - b. Following treatment, rinse surface using plenty of water.
 - 10. Following rinsing and neutralization, if required, cleaned surfaces shall be pH-neutral as confirmed using pH strips.
 - a. Rinse surface until pH strips, pressed against the wet surface, read neutral (pH 7) or equal to that of the rinse water.
 - 11. Reapply cleaning product as required to achieve a uniformly clean appearance. Obtain Architect's approval prior to reapplication.

3.4 PREPARATION OF ADJOINING SURFACES

- A. Carefully remove all broken, loose, delaminated, non-adhering, mis-matched, or deteriorated stucco back to lath or to solid, sound adjacent stucco, making clean and sharp edges, beveled inward to provide mechanical key. Ensure that remaining stucco is completely bonded to substrate.
- B. Remove deteriorated or rusted existing metal lath, wire ties and support systems.
- C. Lapping: Lap or step each operation during the removal process. Lap over existing lath at least 2-inches. Cut out the stucco beyond the edges of the new lath to permit new stucco to extend onto the old lath where possible. Then step each subsequent coat similarly to permit new material to extend over the old.
- D. Where existing metal lath is reused, clean keys and surfaces of all existing stucco and rust.
- E. Bonding Agent: Apply bonding compound on stucco surfaces in strict accordance with manufacturer's recommendations

3.5 SUBSTRATE PREPARATION

- A. Preparing void: All affected areas of stuccowork shall be removed. Depth of removal will vary between locations due to the degree of repair necessary.
- B. Damaged Lath: All damaged or deteriorated lath shall be removed and replaced with galvanized metal diamond lath.
- C. Missing Lath: If no lath is present and will be required for proper stucco attachment and keying, attach galvanized metal diamond mesh lath using galvanized nails and galvanized wire. Lath should be mounted through existing stucco or onto existing lath to hold it securely in place.
- D. Securing Lath:
 - 1. Space fasteners not more than 6" apart.
 - 2. Attach lath to supports with fasteners appropriate to rigidly secure lath.
- E. Do not continue lath across expansion or control joints, if any.

3.6 CRACK REPAIR (1/8 INCH AND SMALLER)

- A. Crack should be free from dirt, grease, and vegetation. Blow cracks clean with compressed air, not to exceed 150 psi.
- B. As appropriate, coat crack with a bonding agent following manufacturer's instructions.
- C. Prepare a slurry coat of stucco to match the color and finish of the existing stucco.
- D. Apply a light coat of the slurry along the crack and work to match the finish level and surface texture of the existing stucco. .

3.7 CRACK REPAIR (LARGER THAN 1/8-INCH)

- A. Rout cracks to a minimum 1/4 inch width for the full-depth of the finish stucco coat and a minimum 1/2 inch deep.
 - 1. Is possible, the edges of the cut shall be undercut. If not, square the edges.
 - 2. Do not feather the edges of repairs (i.e. do not overlap existing stucco).
- B. Cracks measuring greater than 1 inch wide shall be repaired according to Paragraph 3.7 Patching Repair.
- C. Remove loose material, dust, and debris from void and flush with clean water.
- D. Install lath where required.
- E. Pre-wet substrates to a saturated, surface dry (SSD) condition prior to stucco application. Re-wet substrate as required to maintain SSD condition during application.
 - 1. If bonding agent is used, follow manufacturer's instructions for pre-wetting.
- F. Prepare a slurry coat and apply to void.
- G. Prepare base coat mix using integral bonding agent according to bonding agent manufacturer's written instructions.
- H. Apply stucco according to Paragraph 3.8 Patch Repair.
- I. Remove laitance from repair to expose aggregate and simulate the appearance of weathered stucco after patch has fully cured.
 - 1. Pre-wet the repair and surrounding area, including the area immediately below the patch, with water.
 - 2. Apply white vinegar to the repair using a paint brush. Rinse off any spills or runs immediately using water.
 - 3. Scrub the repair with a stiff natural or synthetic bristle brush until desired effect is achieved.
 - 4. Flush the area with clean water

3.8 PATCH REPAIR

- A. Remove all loose, deteriorated, severely cracked, or poorly matched previous repair stucco to the masonry substrate. Avoid excessive vibration or impact to prevent damage to adjacent stucco bond to substrate.
- B. Undercut edges if possible, if not, square the edges of the repair area for the full-depth of the repair. Do not feather the edges of repairs (i.e. do not overlap existing stucco).
- C. Remove loose material, dust, and debris from void and flush with clean water.
- D. Pre-wet substrates to a saturated, surface dry (SSD) condition prior to stucco application. Re-wet substrate as required to maintain SSD condition during application.
- E. Prepare base coat mix using integral bonding agent according to bonding agent manufacturer's written instructions.
- F. Apply the scratch coat to the lath. Number and thickness of the repair coats are to match the historic stucco. The scratch coat is generally 1/4 to 3/8-inch thick, and must be scratched or

crosshatched with a comb to provide a key for the finish coat. Allow scratch coat to dry 24 to 72 hours.

- G. Apply the final or finish coat when the leveling coat is initially set. Work the finish coat to match the texture of the historic stucco.
- H. Surface of finish coat shall be flush with adjacent work and surface shall match the tooling or texture of adjacent work.
- I. Remove laitance from repair to expose aggregate and simulate the appearance of weathered stucco after patch has fully cured.
 - 1. Pre-wet the repair and surrounding area, including the area immediately below the patch, with water.
 - 2. Apply white vinegar to the repair using a paint brush. Rinse off any spills or runs immediately using water.
 - 3. Scrub the repair with a stiff natural or synthetic bristle brush until desired effect is achieved.
 - 4. Flush the area with clean water

END OF SECTION

SECTION 09 9000

PAINTS AND COATINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Surface preparation.
- B. Field application of finishes including primers, paints, stains, varnishes, and other coatings.

1.02 RELATED SECTIONS

- A. Section 06 2000: Finish Carpentry – New & Restoration
- B. Section 09 2800 : Stucco Repair & Restoration

1.03 REFERENCES

- A. In addition to the references listed in the Reference Standards the following apply:
 - 1. Manufacturer's technical manuals.
 - 2. Gola, Edward F. "Avoiding Mistakes in Exterior Painting." The Old House Journal. Vol. 4, No. 6 (June 1976), pp. 1, 45.
 - 3. "Special Issue: Exterior Painting." The Old House Journal. Vol. 4, No. 4 (April 1981), pp. 71, 94.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide product data on all finishing products.
- C. Samples: Submit two painted samples, illustrating selected colors and textures for each color and system selected with specified coats cascaded. Submit on specified substrate, 12x 12 inch in size.
- D. Mockups
 - 1. 4' square of stucco. Provide 3 color samples
 - 2. 4 l.f. of each type of trim.
 - 3. Revise and resubmit mock-ups as requested until the required gloss, color and texture is achieved.
 - 4. Do not commence painting until mock-ups have been approved.
- E. Manufacturer's Instructions: Provide and indicate special surface preparation procedures for each product.
- F. Maintenance Data: Submit data on cleaning, touch-up, and repair of painted and coated surfaces.

1.05 QUALITY ASSURANCE

- A. Applicator Qualifications: Company specializing in performing the work of this section with minimum 5 years documented experience on historic buildings. Painting Contractor to submit Contractor's Qualification Statement. See Spec Section 00 0420 - Contractor's Qualification Form.
- B. Finish coordination:
 - 1. Provide finish coats which are compatible with the prime coats actually used.
 - 2. Provide barrier coats over compatible primers or remove the primer and reprise as required.
 - 3. Notify the Architect in writing of anticipated problems in using the specified coating systems over primer coating specified in other sections.

1.06 REGULATORY REQUIREMENTS

- A. Conform to applicable code for procurement and application requirements for products and finishes.

1.07 DELIVERY, STORAGE, AND PROTECTION

- A. Deliver products to site in Manufacturer's original sealed and labeled containers; inspect to verify acceptability.
- B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, application instructions, drying time, cleanup and disposal requirements, color designation, and instructions for tinting, mixing and reducing.
- C. Paint Materials: Store at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in a well ventilated area, and as required by manufacturer's instructions.

1.08 ENVIRONMENTAL REQUIREMENTS

- A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer. Maintain temperature ranges a minimum of 24 hours prior to and 48 hours after application.
- B. Do not apply exterior coatings during rain, fog, mist or snow, or when relative humidity is outside the humidity ranges required by the paint product manufacturer.
- C. Do not apply finishes to wet or damp surfaces.
- D. Provide lighting level of 80 ft candles measured mid-height at substrate surface.

1.09 EXTRA MATERIALS

- A. Supply 1 gallon of each color and type; store where directed.
- B. Label each container with color, type, room locations, and exterior surface or element in addition to the manufacturer's label.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. Paints:
 - 1. Benjamin Moore & Co
 - 2. Sherwin Williams
 - 3. Owner and Architect approved equal

2.02 PAINT SYSTEMS

- A. Wood: All wood components except door sills shall be painted as follows:
 - 1. Acrylic Latex Primer - One coat
 - 2. Acrylic Latex Paint - Two coats
 - 3. Sheen:
 - a. Doors, Windows, Trim and all other wood components - Semi-gloss
 - c. Walls and Ceilings - satin
- B. Door Sills
 - 1. Alkyd primer sealer - One coat
 - 2. Alkyd enamel - Two Coats
 - 3. Sheen: Semi-gloss
- C. Stucco
 - 1. Paint entire exterior stucco one color as approved by architect – Two coats. System to be determined by Architect.

2.03 ACCESSORY MATERIALS

- A. Accessory Materials: Putty, linseed oil, shellac, turpentine, paint thinners and other materials not specifically indicated but required to achieve the finishes specified; commercial quality.
- B. All miscellaneous materials shall be proposed by the Contractor and approved by the Architect.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that surfaces are ready to receive Work as instructed by the product manufacturer.
- B. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.
- C. Test shop-applied primer for compatibility with subsequent cover materials.

3.02 PREPARATION - GENERAL

- A. Site:
Protect vegetation & adjacent surfaces; cover with plastic drop sheets and/or tape off.
- B. Surface Appurtenances: Remove or mask electrical plates, hardware, light fixture trim, escutcheons, and fittings prior to preparing surfaces or finishing.
- C. General Surfaces:
 - 1. Correct defects and clean surfaces which affect work of this section.
 - 2. Remove or repair existing coatings which exhibit surface defects.
 - 3. Do not use power equipment, including grit blasters, sanding or grinding equipment for surface preparation unless approved in advance by the Architect.
 - 4. Do not use open flame for paint stripping.
 - 5. Remove all obsolete hardware from areas to be painted. Patch.
- D. Marks: Seal with shellac those which may bleed through surface finishes.
- E. Materials:
 - 1. Mix and prepare materials as per manufacturer's recommendations.
 - 2. Store materials not in use in tightly covered containers.
 - 3. Maintain containers used in storage, mixing, and application of paint in a clean condition, free from foreign materials and residue.
 - 4. Stirring:
 - a. Stir materials before application, produce a mixture of uniform density.
 - b. Do not stir any film which may form on the surface into the material. Remove film. If necessary strain material before using.
 - 5. Thinning:
 - a. Use only thinners recommended by the paint manufacturer, and use only to recommended limits.

3.03 SURFACE PREPARATION

- A. General:
 - 1. Protect adjacent surfaces; cover with plastic drop sheets and/or tape off.
 - 2. All surfaces shall be suitably prepared and cleaned as per the manufacturer's recommendations and as approved by the Architect prior to application of any paint, primer, or any other finish.
 - 3. No power equipment, including grit blasters, sanding or grinding equipment shall be used in surface preparation unless approved in advance by the Architect. No open flame shall be allowed to be used in stripping.
 - 4. Remove all hardware from areas to be painted. Patch as per other Sections of this Specification.
 - 5. Remove removable items which are in place and are not scheduled to receive paint finish; or provide surface-applied protection prior to surface preparation and painting operations.
 - 6. Following completion of painting in each space or area, reinstall the removed items by using workmen who are skilled in the necessary trades.
 - 7. Clean each surface to be painted prior to apply paint or surface treatment.
 - 8. Remove oil and grease with clean cloths and cleaning solvent of low toxicity and flash point in excess of 200 degrees F, prior to the start of mechanical cleaning.
 - 9. Schedule the cleaning and painting so that dust and other contaminants from the cleaning process will not fall onto newly painted surfaces.

- B. Preparation of existing painted wood surfaces prior to new painting:
 - 1. Weathered or Deteriorated paint Areas
 - a. Scrape and remove all loose and failing paint.
 - b. Completely remove all paint with a steam paint stripper system.
 - 1) Steam paint stripping equipment can be obtained from the following suppliers:
 - (a) The Portable Steam Paint Stripper Dave Bowers P.O. Box 542 Weare, NH 03281 (603) 529-0261 www.oldwindowrestorer.com/steamstripper.html
 - (b) The Steam Stripper Window Restoration Systems 535 River Road Brunswick, ME 04011 (207) 725-0051 www.steamstripper.com
 - c. Seal all knots in wood before priming
 - 2. Unweathered paint areas
 - a. Unweathered areas or areas where paint finish is sound with no noticeable craters in existing paint finish (such as eaves) do not need to undergo the steam paint removal process. These areas shall be washed with Moorwood Multi-Purpose Cleaner & Brightener (063) by Benjamin Moore (or Owner and Architect approved equal) and/or rinsed with a strong stream from a garden hose to remove surface salts.
 - b. For paint areas where minor voids or unnoticeable craters in paint exist perform the following:
 - 1) All paint edges and voids shall be sanded smooth and even to "feather in" unnoticeably with the surrounding areas. Thick edges of remaining old paint shall be sanded and "feathered in" so that the repainted surface can have a smooth appearance.
 - 2) The remaining old paint shall have sufficient adhesion so that it cannot be lifted as a layer by inserting the blade of a dull putty knife under it.
 - 3. General
 - a. Back prime concealed surfaces of new or salvaged materials before installation.
 - b. Fill nail holes with exterior caulking compound after prime coat has been applied.

3.04 APPLICATION

- A. Apply products in accordance with manufacturer's instructions.
- B. Verify that proposed equipment is actually compatible with the material to be applied. Proposed equipment must not jeopardize the integrity of the finish.
 - 1. Apply trim paint or stain with a brush.
- C. Do not apply paint in snow, rain, fog or mist or when the humidity exceeds 85%.
- D. Apply finishes to dry surfaces. Allow applied coats to dry before next coat is applied.
- E. Apply each coat to uniform appearance. Apply each coat of paint slightly darker than preceding coat unless otherwise approved.
- F. Sand wood surfaces lightly between coats to achieve required finish.
- G. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.
- H. No runs, drips, sags or holidays will be permitted.
- I. Paint or finish shall not cause doors, windows or other operable building components to stick or bind.
- J. Application of paint to wood surfaces:
 - 1. Apply one coat of primer and two coats of paint to all surfaces as drawn and specified with a high quality brush or roller.
 - 2. Do not paint wood if moisture content exceeds 12%.
- K. Application of stain:
 - 1. Do not apply stain in direct hot sun.
 - 2. Do not apply stain when air and surface temperatures are below 50°F (10°C), nor over damp surfaces or during threatening weather.
 - 3. Do not stain wood if moisture content exceeds 12%.

4. Apply stain with a brush as per manufacturer's directions.
5. Apply 2 coats of stain, wet on wet.
6. Maintain a wet edge to minimize lapping.
7. Apply the stain on a section of 2 or 3 courses completely across the structure. Lower the ladder and continue in the same manner until the side is completed. Never stop staining in mid-wall; continue until a natural break is reached, such as a window.
8. Stir stain periodically to retain uniformity of color.

3.05 FIELD QUALITY CONTROL

- A. Architect will provide field inspection.
- B. Protect all painted and finished surfaces from moisture and damage until the end of the Project.

3.06 CLEANING

- A. Collect waste material which may constitute a fire hazard, place in closed metal containers, and remove daily from site.
- B. Use all products completely or dispose of properly. Dispose of all materials properly in an appropriate hazardous waste collection program.

3.07 SCHEDULE

- A. Prime all surfaces of new wood components including exposed faces, back surface and cut edges.
- B. Paint all surfaces exposed to view.
- C. Do Not Paint or Finish the Following Items:
 1. Items fully factory-finished unless specifically noted.
 2. Fire rating or other required labels; equipment serial number, identification and capacity labels; performance rating, name or nomenclature plates.
 3. Any parts of operating units; mechanical or electrical parts such as valve operators; linkages, sensing devices; and motor shafts, unless otherwise indicated.
- D. Paint the surfaces described below.
 1. Stucco
Color: To Be Determined
 2. Exterior Trim
Color: To Be Determined

END OF SECTION