Roof Replacement and Selective Masonry Repairs
Hutchinson Chapel

EPISCOPAL CHURCH HOME

Busti and Rhode Island
Buffalo, New York 14203
ESD
Buffalo,
Fa # 220014.00
Roof Replacement and Selective Masonry Repairs
Hutchison Chapel
FA# 220014.00

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DOCUMENT 004321 - ALLOWANCE FORM

1.1 BID INFORMATION
A. Bidder: ______________________________________________________.
B. Project Name: Hutchinson Chapel.
C. Project Location: Busti and Rhode Island, Buffalo, New York, 14203, United States.
D. Owner: ESD.

1.2 BID FORM SUPPLEMENT
A. This form is required to be attached to the Bid Form.
B. The undersigned Bidder certifies that Base Bid submission to which this Bid Supplement is attached includes those allowances described in the Contract Documents and scheduled in Section 012100 "Allowances."

1.3 SUBMISSION OF BID SUPPLEMENT
A. Respectfully submitted this ___ day of __________, __________ (year)
B. Submitted By: ___________________________ (Insert name of bidding firm or corporation).
C. Authorized Signature: ___________________________ (Handwritten signature).
D. Signed By: ___________________________ (Type or print name).
E. Title: ___________________________ (Owner/Partner/President/Vice President).

END OF DOCUMENT 004321
DOCUMENT 004322 - UNIT PRICES FORM

1.1 BID INFORMATION
A. Bidder: ____________________________________________________.
B. Prime Contract: .
C. Project Name: Hutchinson Chapel.
D. Project Location: Busti and Rhode Island, Buffalo, New York, 14203, United States.
E. Owner: ESD.
F. Architect: Daniel Sullivan.

1.2 BID FORM SUPPLEMENT
A. This form is required to be attached to the Bid Form.
B. The undersigned Bidder proposes the amounts below be added to or deducted from the Contract Sum on performance and measurement of the individual items of Work and for adjustment of the quantity given in the Unit-Price Allowance for the actual measurement of individual items of the Work.
C. If the unit price does not affect the Work of this Contract, the Bidder shall indicate "NOT APPLICABLE."

1.3 UNIT PRICES
A. Unit-Price No. 1: Removal and replacement of deteriorated 1 x 8 wood roof decking.
   1. ______________________________________ dollars ($__________) per square foot.
B. Unit-Price No. 2: Stone Masonry repointing
   1. ______________________________________ dollars ($__________) per linear foot.
C. Unit-Price No. 3: Decorative Formed Metal Replacement
   1. ______________________________________ dollars ($__________) per linear foot.

END OF DOCUMENT 004322
SECTION 010000 - GENERAL REQUIREMENTS

PART 1 - GENERAL (Not Used)

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 010000
PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Project information.
2. Work covered by Contract Documents.
3. Contractor's use of site and premises.

1.2 PROJECT INFORMATION

A. Project Identification: Hutchinson Chapel.

1. Project Location: Busti and Rhode Island, Buffalo, New York.

B. Owner: ESD, Buffalo, New York.

1. Owner's Representative: The LiRo Group, Jason Colvin.


1. Architect's Representative: Daniel Sullivan, RA

1.3 WORK COVERED BY CONTRACT DOCUMENTS

A. The Work of Project is defined by the Contract Documents and consists of the following:


B. Type of Contract:

1. Project will be constructed under a single prime contract.

1.4 CONTRACTOR'S USE OF SITE AND PREMISES

A. Unrestricted Use of Site: Contractor shall have full use of Project site for construction operations during construction period. Contractor's use of Project site is limited only by Owner's right to perform work or to retain other contractors on portions of Project.
B. Limits on Use of Site: Limit use of Project site to exterior re-roofing, minor masonry work at the chimney area and fence repair work as indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.

C. Condition of Existing Building: Maintain portions of existing building affected by construction operations in a weathertight condition throughout construction period. Repair damage caused by construction operations.

D. Condition of Existing Grounds: Maintain portions of existing grounds, landscaping, and hardscaping affected by construction operations throughout construction period. Repair damage caused by construction operations.

1.5 SPECIFICATION AND DRAWING CONVENTIONS

A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:

1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.

2. Hypertext: Text used in the Specifications may contain hyperlinks. Hyperlinks may allow for access to linked information that is not residing in the Specifications. Unless otherwise indicated, linked information is not part of the Contract Documents.

3. Specification requirements are to be performed by Contractor unless specifically stated otherwise.

B. Division 00 Contracting Requirements: General provisions of the Contract, including General and Supplementary Conditions, apply to all Sections of the Specifications.

C. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011000
SECTION 012100 - ALLOWANCES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements governing allowances.

B. Types of allowances include the following:

1. Quantity allowances.

C. Related Requirements:

1. Section 012200 "Unit Prices" for procedures for using unit prices, including adjustment of quantity allowances when applicable.

1.2 SELECTION AND PURCHASE

A. At the earliest practical date after award of the Contract, advise Architect of the date when final selection, or purchase and delivery, of each product or system described by an allowance must be completed by the Owner to avoid delaying the Work.

B. At Architect's request, obtain proposals for each allowance for use in making final selections. Include recommendations that are relevant to performing the Work.

C. Purchase products and systems selected by Architect from the designated supplier.

1.3 ACTION SUBMITTALS

1.4 QUANTITY ALLOWANCES

A. Allowance shall include cost to Contractor of specific products and materials ordered by Owner or selected by Architect under allowance and shall include taxes, freight, and delivery to Project site.

B. Unless otherwise indicated, Contractor's costs for receiving and handling at Project site, labor, installation, overhead and profit, and similar costs related to products and materials ordered by Owner or selected by Architect under allowance shall be included as part of the Contract Sum and not part of the allowance.
3.1 EXAMINATION
   A. Examine products covered by an allowance promptly on delivery for damage or defects. Return damaged or defective products to manufacturer for replacement.

3.2 PREPARATION
   A. Coordinate materials and their installation for each allowance with related materials and installations to ensure that each allowance item is completely integrated and interfaced with related work.

3.3 SCHEDULE OF ALLOWANCES
   A. Allowance No. 1: Quantity Allowance: Include 400 S.F. new 1 x 8 structural wood roof decking to allow for any/all deteriorated existing decking uncovered during the demolition/removal process of the existing slate roofing and flashing system. This shall include all costs for labor and material.
      1. Coordinate quantity allowance adjustment with unit-price requirements in Section 012200 "Unit Prices for 1 x 8 wood roof decking"
SECTION 012200 - UNIT PRICES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for unit prices.

B. Related Requirements:

1. Section 012100 "Allowances" for procedures for using unit prices to adjust quantity allowances.

1.2 DEFINITIONS

A. Unit price is a price per unit of measurement for materials, equipment, or services, or a portion of the Work, added to or deducted from the Contract Sum by appropriate modification, if the scope of Work or estimated quantities of Work required by the Contract Documents are increased or decreased.

1.3 PROCEDURES

A. Unit prices include all necessary material, plus cost for delivery, installation, insurance, applicable taxes, overhead, and profit.

B. List of Unit Prices: A schedule of unit prices is included in Part 3. Specification Sections referenced in the schedule contain requirements for materials described under each unit price.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF UNIT PRICES

A. Unit Price No. 1: Removal and replacement of deteriorated 1 x 8 wood roof decking.

1. Description: Removal of deteriorated 1 x 8 wood roof decking and replace with 1 x 8 (or as determined from existing building conditions) decking in kind. Remove and replace to sound material at the next nearest wood structural rafters as indicated on drawings.

2. Unit of Measurement: square foot.

B. Unit Price No. 2 - Stone Masonry repointing:
1. Description: Repoint mortar joints according to Section 040343 "Historic Stone Masonry Repointing."
2. Unit of Measurement: Linear Foot.

C. Unit Price No. 3 – Decorative Formed Metal Replacement
1. Description: Replace sections of Eaves/Gable molding component(s) at areas of minor missing or excessively damaged/deteriorated components.
2. Unit of Measurement: Linear Foot.

END OF SECTION 012200
SECTION 012300 - ALTERNATES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for alternates.

1.2 DEFINITIONS

A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the bidding requirements that may be added to or deducted from the base bid amount if the Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.

1. Alternates described in this Section are part of the Work only if enumerated in the Agreement.
2. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate alternates into the Work. No other adjustments are made to the Contract Sum.

1.3 PROCEDURES

A. Coordination: Revise or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.

1. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of alternate.

B. Execute accepted alternates under the same conditions as other work of the Contract.

C. Schedule: A schedule of alternates is included at the end of this Section. Specification Sections referenced in schedule contain requirements for materials necessary to achieve the work described under each alternate.
PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF ALTERNATES

A. Alternate No. 1: Replication and installation of historic decorative Metal Finial Assemblies where indicated on drawings.

1. Base Bid: Restore/refinish Finials in place as indicated on drawings
2. Alternate: Replicate existing Finials Type 1, 2 or 3 as indicated on drawings and as specified in Section 050374.

END OF SECTION 012300
PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for handling and processing Contract modifications.

1.2 MINOR CHANGES IN THE WORK

A. Architect will issue supplemental instructions authorizing minor changes in the Work, not involving adjustment to the Contract Sum or the Contract Time, on AIA Document G710.

1. Work Change Proposal Requests issued by Architect are not instructions either to stop work in progress or to execute the proposed change.

1.3 PROPOSAL REQUESTS

A. Owner-Initiated Proposal Requests: Architect will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.

1. Work Change Proposal Requests issued by Architect are not instructions either to stop work in progress or to execute the proposed change.
2. Within 20 days, when not otherwise specified, after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.
   a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
   b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
   c. Include costs of labor and supervision directly attributable to the change.
   d. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.

B. Contractor-Initiated Proposals: If latent or changed conditions require modifications to the Contract, Contractor may initiate a claim by submitting a request for a change to Architect.
1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.

2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.

3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.

4. Include costs of labor and supervision directly attributable to the change.

5. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.

6. Comply with requirements in Section 012500 "Substitution Procedures" if the proposed change requires substitution of one product or system for product or system specified.

1.4 CHANGE ORDER PROCEDURES


1.5 CONSTRUCTION CHANGE DIRECTIVE


1. Construction Change Directive contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.

B. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive.

1. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

1.6 WORK CHANGE DIRECTIVE


1. Work Change Directive contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.
B. Documentation: Maintain detailed records on a time and material basis of work required by the Work Change Directive.

1. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012600
SECTION 012900 - PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements necessary to prepare and process Applications for Payment.

1.2 SCHEDULE OF VALUES

A. Coordination: Coordinate preparation of the schedule of values with preparation of Contractor's construction schedule.

1. Coordinate line items in the schedule of values with items required to be indicated as separate activities in Contractor's construction schedule.
2. Submit the schedule of values to Architect at earliest possible date, but no later than [seven] days before the date scheduled for submittal of initial Applications for Payment.

1.3 APPLICATIONS FOR PAYMENT

A. Each Application for Payment following the initial Application for Payment shall be consistent with previous applications and payments as certified by Architect and paid for by Owner.

B. Payment Application Times: The date for each progress payment is indicated in the Agreement between Owner and Contractor. The period of construction work covered by each Application for Payment is the period indicated in the Agreement.

C. Application for Payment Forms: Use AIA Document G702 and AIA Document G703 as form for Applications for Payment.

D. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Architect will return incomplete applications without action.

1. Entries shall match data on the schedule of values and Contractor's construction schedule. Use updated schedules if revisions were made.
2. Include amounts for work completed following previous Application for Payment, whether or not payment has been received. Include only amounts for work completed at time of Application for Payment.
3. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.
E. Transmittal: Submit three signed and notarized original copies of each Application for Payment to Architect by a method ensuring receipt within 24 hours. One copy shall include waivers of lien and similar attachments if required.

1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.

F. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:

1. List of subcontractors.
2. Schedule of values.
3. Contractor's construction schedule (preliminary if not final).
4. Schedule of unit prices.
5. Copies of building permits.
7. Initial progress report.
8. Certificates of insurance and insurance policies.

G. Application for Payment at Substantial Completion: After Architect issues the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.

1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.

H. Final Payment Application: After completing Project closeout requirements, submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited to, the following:

1. Evidence of completion of Project closeout requirements.
2. Updated final statement, accounting for final changes to the Contract Sum.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012900
SECTION 013300 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Submittal schedule requirements.
   2. Administrative and procedural requirements for submittals.

1.2 DEFINITIONS

A. Action Submittals: Written and graphic information and physical samples that require Architect's responsive action. Action submittals are those submittals indicated in individual Specification Sections as "action submittals."

B. Informational Submittals: Written and graphic information and physical samples that do not require Architect's responsive action. Submittals may be rejected for not complying with requirements. Informational submittals are those submittals indicated in individual Specification Sections as "informational submittals."

1.3 SUBMITTAL SCHEDULE

A. Submittal Schedule: Submit, as an action submittal, a list of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or revisions to submittals noted by Architect and additional time for handling and reviewing submittals required by those corrections.

1.4 SUBMITTAL FORMATS

A. Submittal Information: Include the following information in each submittal:
   1. Project name.
   2. Date.
   4. Name of Contractor.
   5. Category and type of submittal.
   6. Number and title of Specification Section, with paragraph number and generic name for each of multiple items.
   7. Drawing number and detail references, as appropriate.
   8. Signature of transmitter.
Roof Replacement and Selective Masonry Repairs
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SECTION 013300 - SUBMITTAL PROCEDURES

B. Options: Identify options requiring selection by Architect.

C. Deviations and Additional Information: On each submittal, clearly indicate deviations from requirements in the Contract Documents, including minor variations and limitations; include relevant additional information and revisions, other than those requested by Architect on previous submittals. Indicate by highlighting on each submittal or noting on attached separate sheet.

D. Paper Submittals:
   1. Place a permanent label or title block on each submittal item for identification; include name of firm or entity that prepared submittal.
   3. Informational Submittals: Submit [two] paper copies of each submittal unless otherwise indicated. Architect will not return copies.

E. Electronic Submittals: Prepare submittals as PDF package, incorporating complete information into each PDF file. Name PDF file with submittal number.

1.5 SUBMITTAL PROCEDURES

A. Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.
   1. Email: Prepare submittals as PDF package and transmit to Architect by sending via email. Include PDF transmittal form. Include information in email subject line as requested by Architect.

B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
   1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
   2. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.
   3. Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals.

C. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on [Architect’s] receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.
   1. Initial Review: Allow [15] days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. [Architect] will advise Contractor when a submittal being processed must be delayed for coordination.
D. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.

E. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.

F. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Architect's action stamp.

1.6 SUBMITTAL REQUIREMENTS

A. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.

1. If information must be specially prepared for submittal because standard published data are unsuitable for use, submit as Shop Drawings, not as Product Data.
2. Mark each copy of each submittal to show which products and options are applicable.
3. Include the following information, as applicable:
   a. Manufacturer's catalog cuts.
   b. Standard color charts.
   c. Availability and delivery time information.
4. Submit Product Data before Shop Drawings, and before or concurrent with Samples.

B. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data unless submittal based on Architect's digital data drawing files is otherwise permitted.

1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
   a. Identification of products.
   b. Notation of dimensions established by field measurement.
   c. Relationship and attachment to adjoining construction clearly indicated.
2. Paper Sheet Size: Except for templates, patterns, and similar full-size Drawings, submit Shop Drawings on sheets at least .
   a. Three opaque copies of each submittal. Architect will retain two copies; remainder will be returned.

C. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other materials.

1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
2. Identification: Permanently attach label on unexposed side of Samples that includes the following:
   a. Project name and submittal number.
   b. Generic description of Sample.
   c. Product name and name of manufacturer.
   d. Sample source.
e. Number and title of applicable Specification Section.

f. Specification paragraph number and generic name of each item.

3. Email Transmittal: Provide PDF transmittal. Include digital image file illustrating Sample characteristics, and identification information for record.

4. Paper Transmittal: Include paper transmittal including complete submittal information indicated.

5. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
   a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
   b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.

6. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
   a. Number of Samples: Submit one full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return submittal with options selected.

7. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.

D. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of architects and owners, and other information specified.

1.7 ARCHITECT'S REVIEW

A. Action Submittals: Architect will review each submittal, indicate corrections or revisions required, and return it.

B. Informational Submittals: Architect will review each submittal and will not return it or will return it if it does not comply with requirements. Architect will forward each submittal to appropriate party.

C. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from Architect.

D. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.

E. Architect will discard submittals received from sources other than Contractor.
F. Submittals not required by the Contract Documents will be returned by Architect without action.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013300
SECTION 014339 - MOCKUPS

PART 1 - GENERAL

1.1 SUMMARY
A. Section Includes:
   1. Integrated exterior mockups.

1.2 DEFINITIONS
A. Integrated Exterior Mockups: Mockups of the exterior envelope constructed on-site as part of permanent construction, consisting of multiple products, assemblies, and subassemblies.

1.3 ACTION SUBMITTALS

1.4 INFORMATIONAL SUBMITTALS

1.5 QUALITY ASSURANCE
A. Build mockups to do the following:
   1. Verify selections made under Sample submittals.
   2. Demonstrate aesthetic effects.
   3. Demonstrate the qualities of products and workmanship.
   4. Demonstrate acceptable coordination between components and systems.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

2.2 INTEGRATED EXTERIOR MockUPS
A. Construct integrated exterior mockups as indicated. Construct mockups to demonstrate constructability, coordination of trades, and sequencing of Work; and to ensure materials, components, subassemblies, assemblies, and interfaces integrate into a system complying with indicated performance and aesthetic requirements.
B. Build integrated exterior mockups using installers and construction methods that will be used in completed construction.

C. Use specified products that have been approved by Architect. Coordinate installation of materials and products specified in individual Specification Sections that include Work included in integrated exterior mockups.

D. The Work of integrated exterior mockups includes, but is not limited to, the following:
   1. Stone cladding.
   2. Flashing and sheet metal trim.
   3. 

E. Provide and document modifications to construction details and interfaces between components and systems required to properly sequence the Work, or to pass performance testing requirements. Obtain Architect's approval for modifications.

F. Retain approved mockups constructed in place. Incorporate fully into the Work.

PART 3 - EXECUTION

END OF SECTION 014339
SECTION 017300 - EXECUTION

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes general administrative and procedural requirements governing execution of the Work, including, but not limited to, the following:
   1. Installation of the Work.
   2. Cutting and patching.
   3. Progress cleaning.
   4. Starting and adjusting.
   5. Protection of installed construction.
   6. Correction of the Work.

B. Related Requirements:
   1. Section 017700 "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, replacing defective work, and final cleaning.
   2. Section 024119 "Selective Demolition" for demolition and removal of selected portions of the building.

1.2 DEFINITIONS

A. Cutting: Removal of in-place construction necessary to permit installation or performance of subsequent work.

B. Patching: Fitting and repair work required to restore construction to original conditions after installation of subsequent work.

1.3 INFORMATIONAL SUBMITTALS

A. Certificates: Submit certificate signed by , certifying that location and elevation of improvements comply with requirements.

1.4 CLOSEOUT SUBMITTALS

1.5 QUALITY ASSURANCE

A. Manufacturer's Installation Instructions: Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of specified products and equipment.
PART 2 - PRODUCTS

2.1 MATERIALS

A. Comply with requirements specified in other Sections.

B. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.

   1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to Architect for the visual and functional performance of in-place materials. Use materials that are not considered hazardous.

C. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.

   1. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
   2. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.

B. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

B. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
C. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents, submit a request for information to Architect in accordance with requirements in Section 013100 "Project Management and Coordination."

3.3 INSTALLATION

A. Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
   1. Make vertical work plumb and make horizontal work level.
   2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.

B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.

C. Install products at the time and under conditions that will ensure satisfactory results as judged by Architect. Maintain conditions required for product performance until Substantial Completion.

D. Conduct construction operations, so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy of type expected for Project.

E. Sequence the Work and allow adequate clearances to accommodate movement of construction items on-site and placement in permanent locations.

F. Templates: Obtain and distribute to the parties’ involved templates for Work specified to be factory prepared and field installed. Check Shop Drawings of other portions of the Work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.

G. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions with manufacturer.
   1. Allow for building movement, including thermal expansion and contraction.
   2. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

H. Joints: Make joints of uniform width. Where joint locations in exposed Work are not indicated, arrange joints for the best visual effect, as judged by Architect. Fit exposed connections together to form hairline joints.
3.4 CUTTING AND PATCHING

A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.

1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.

B. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during installation or cutting and patching operations, by methods and with materials so as not to void existing warranties.

C. Temporary Support: Provide temporary support of Work to be cut.

D. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.

E. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.

1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.

2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.

3. Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.

4. Proceed with patching after construction operations requiring cutting are complete.

F. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as practicable, as judged by Architect. Provide materials and comply with installation requirements specified in other Sections, where applicable.

1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.

2. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition and ensures thermal and moisture integrity of building enclosure.

G. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

3.5 PROGRESS CLEANING

A. Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.
2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F.
3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
   a. Use containers intended for holding waste materials of type to be stored.
4. Coordinate progress cleaning for joint-use areas where Contractor and other contractors are working concurrently.

B. Site: Maintain Project site free of waste materials and debris.

C. Work Areas: Clean areas where Work is in progress to the level of cleanliness necessary for proper execution of the Work.
   1. Remove liquid spills promptly.
   2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.

D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.

E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.

F. Exposed Surfaces: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

G. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways. Comply with waste disposal requirements in Section 017419 "Construction Waste Management and Disposal."

H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

J. Limiting Exposures: Supervise construction operations to ensure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.
3.6 PROTECTION OF INSTALLED CONSTRUCTION

A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.

B. Protection of Existing Items: Provide protection and ensure that existing items to remain undisturbed by construction are maintained in condition that existed at commencement of the Work.

C. Comply with manufacturer's written instructions for temperature and relative humidity.

3.7 CORRECTION OF THE WORK

A. Repair or remove and replace damaged, defective, or nonconforming Work. Restore damaged substrates and finishes.
   1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.

B. Repair Work previously completed and subsequently damaged during construction period. Repair to like-new condition.

C. Restore permanent facilities used during construction to their specified condition.

D. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.

E. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.

F. Remove and replace chipped, scratched, and broken glass or reflective surfaces.

END OF SECTION 017300
SECTION 017419 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for the following:

1. Salvaging nonhazardous demolition and construction waste.
2. Disposing of nonhazardous demolition and construction waste.

1.2 DEFINITIONS

A. Construction Waste: Building, structure, and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.

B. Demolition Waste: Building, structure, and site improvement materials resulting from demolition operations.

C. Disposal: Removal of demolition or construction waste and subsequent salvage, sale, recycling, or deposit in landfill, incinerator acceptable to authorities having jurisdiction, or designated spoil areas on Owner’s property.

D. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.

E. Salvage: Recovery of demolition or construction waste and subsequent sale or reuse in another facility.

F. Salvage and Reuse: Recovery of demolition or construction waste and subsequent incorporation into the Work.

1.3 ACTION SUBMITTALS

A. Waste Management Plan: Submit plan within [7] days of date established for the Notice to Proceed.
1.4 INFORMATIONAL SUBMITTALS

1.5 QUALITY ASSURANCE

1.6 WASTE MANAGEMENT PLAN

A. General: Develop a waste management plan according to requirements in this Section. Plan shall consist of waste identification, waste reduction work plan, and cost/revenue analysis. **Distinguish between demolition and construction waste.** Indicate quantities by weight or volume but use same units of measure throughout waste management plan.

B. Waste Identification: Indicate anticipated types and quantities of **demolition and construction waste** generated by the Work. Include estimated quantities and assumptions for estimates.

C. Waste Reduction Work Plan: List each type of waste and whether it will be salvaged, recycled, or disposed of in landfill or incinerator. Include points of waste generation, total quantity of each type of waste, quantity for each means of recovery, and handling and transportation procedures.

1. Salvaged Materials for Reuse: For materials that will be salvaged and reused in this Project, describe methods for preparing salvaged materials before incorporation into the Work.

2. Handling and Transportation Procedures: Include method that will be used for separating recyclable waste including sizes of containers, container labeling, and designated location where materials separation will be performed.

PART 2 - PRODUCTS

PART 3 - EXECUTION

3.1 PLAN IMPLEMENTATION

A. General: Implement approved waste management plan. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.

B. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

1. Designate and label specific areas on Project site necessary for separating materials that are to be salvaged and recycled.

2. Comply with Section 015000 "Temporary Facilities and Controls" for controlling dust and dirt, environmental protection, and noise control.
3.2 SALVAGING DEMOLITION WASTE

A. Comply with requirements in Section 024296 "Historic Removal and Dismantling for salvaging demolition waste.

B. Salvaged Items: Permitted on Project site.

C. Salvaged Items for Owner's Use:

1. Clean salvaged items.
2. Store items in a secure area until delivery to Owner.
3. Transport items to Owner's storage area designated by Owner.
4. Protect items from damage during transport and storage.

3.3 DISPOSAL OF WASTE

A. General: Except for items or materials to be salvaged or recycled, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.

1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.
2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

B. General: Except for items or materials to be salvaged or recycled, remove waste materials, and legally dispose of.

C. Burning: Do not burn waste materials.

3.4 ATTACHMENTS

END OF SECTION 017419
SECTION 017700 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for Contract closeout, including, but not limited to, the following:
   1. Substantial Completion procedures.
   2. Final completion procedures.
   3. Warranties.
   4. Final cleaning.

B. Related Requirements:
   1. Section 017823 "Operation and Maintenance Data" for additional operation and maintenance manual requirements.
   2. Section 017839 "Project Record Documents" for submitting Record Drawings, Record Specifications, and Record Product Data.
   3. Section 017900 "Demonstration and Training" for requirements to train the Owner's maintenance personnel to adjust, operate, and maintain products, equipment, and systems.

1.2 ACTION SUBMITTALS

1.3 CLOSEOUT SUBMITTALS

1.4 SUBSTANTIAL COMPLETION PROCEDURES

A. Contractor's List of Incomplete Items: Prepare and submit a list of items to be completed and corrected (Contractor's "punch list"), indicating the value of each item on the list and reasons why the Work is incomplete.

B. Inspection: Submit a written request for inspection to determine Substantial Completion a minimum of 10 days prior to date the Work will be completed and ready for final inspection and tests. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.
1.5 FINAL COMPLETION PROCEDURES

A. Submittals Prior to Final Completion: Before requesting final inspection for determining Final Completion, complete the following:

1. Certified List of Incomplete Items: Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. Certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.

1.6 LIST OF INCOMPLETE ITEMS

A. Organization of List: Include name and identification of each item and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.

1. Include the following information at the top of each page:
   a. Project name.
   b. Date.
   c. Name of Architect.
   d. Name of Contractor.
   e. Page number.

2. Submit list of incomplete items in the following format:

1.7 SUBMITTAL OF PROJECT WARRANTIES

A. Time of Submittal: Submit written warranties on request of Architect for designated portions of the Work where warranties are indicated to commence on dates other than date of Substantial Completion, or when delay in submittal of warranties might limit Owner's rights under warranty.

B. Organize warranty documents into an orderly sequence based on the table of contents of Project Manual.

C. Warranty Electronic File: Provide warranties and bonds in PDF format. Assemble complete warranty and bond submittal package into a single electronic PDF file with bookmarks enabling navigation to each item. Provide bookmarked table of contents at beginning.

1. Bind warranties and bonds in heavy-duty, three-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.

D. Provide additional copies of each warranty to include in operation and maintenance.
1.8 MATERIALS

A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

   1. Use cleaning products that comply with Green Seal's GS-37, or if GS-37 is not applicable, use products that comply with the California Code of Regulations maximum allowable VOC levels.

PART 2 - EXECUTION

2.1 FINAL CLEANING

A. Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.

2.2 REPAIR OF THE WORK

A. Complete repair and restoration operations required by Section 017300 "Execution" before requesting inspection for determination of Substantial Completion.

END OF SECTION 01770
Roof Replacement and Selective Masonry Repairs Hutchison Chapel FA# 220014.00

SECTION 024296 - HISTORIC REMOVAL AND DISMANTLING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Historic treatment procedures for removal and dismantling work for the designated following specific work:
      a. Salvage of existing Chapel Spire.

1.2 DEFINITIONS

A. Dismantle: To disassemble or detach a historic item from a surface, or a nonhistoric item from a historic surface, using gentle methods and equipment to prevent damage to historic items and surfaces; disposing of items unless indicated to be salvaged or reinstalled.

B. Existing to Remain: Existing items that are not to be removed or dismantled, except to the degree indicated for performing required Work.

C. Remove: To take down or detach a nonhistoric item located within a historic space, area, or room, using methods and equipment to prevent damage to historic items and surfaces; disposing of items unless indicated to be salvaged or reinstalled.

D. Retain: To keep an element or detail secure and intact.

E. Salvage: To protect removed or dismantled items and deliver them to Owner.

1.3 PRECONSTRUCTION MEETINGS

A. Preconstruction Conference(s): Conduct conference(s) at Project site.
   1. Review list of items indicated to be salvaged.
   2. Review methods and procedures related to removal and dismantling work.

1.4 INFORMATIONAL SUBMITTALS

A. List of Items Indicated to Be Salvaged: Prepare a list of items indicated on Drawings to be salvaged for Owner's use or for reinstallation. Submit 15 days before preconstruction conference.

B. Inventory of Salvaged Items: After removal or dismantling Work is complete, submit a list of items that have been salvaged.
1.5 QUALITY ASSURANCE

1.6 FIELD CONDITIONS

A. Conditions existing at time of inspection for bidding purposes will be maintained by Owner as long as practicable.

B. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with removal and dismantling work.

C. Hazardous Materials:

   1. Hazardous materials are present in construction affected by removal and dismantling work. A report on the presence of hazardous materials is on file for review and use. Examine report to become aware of locations where hazardous materials are present.
      a. Hazardous material remediation is specified in referenced Section(s).
      b. Do not disturb hazardous materials or items suspected of containing hazardous materials, except under procedures specified in those removal Section(s).

D. Storage or sale of removed or dismantled items on-site is not permitted unless otherwise indicated.

PART 2 - PRODUCTS - (Not Used)

PART 3 - EXECUTION

3.1 HISTORIC REMOVAL AND DISMANTLING

A. General: Have removal and dismantling work performed by a qualified historic removal and dismantling specialist.

B. Perform work according to the historic treatment program.

C. Anchorages:

   1. Remove anchorages associated with removed items.
   2. Dismantle anchorages associated with dismantled items.
   3. In nonhistoric surfaces, patch holes created by anchorage removal or dismantling according to the requirements for new work.
   4. In historic surfaces, patch or repair holes created by anchorage removal or dismantling according to Section that is specific to the historic surface being patched.

END OF SECTION 024296
1.1 SCOPE OF WORK
   A. This asbestos abatement Project will include the removal and disposal of asbestos containing materials in support of the Episcopal Church Home Roof and Selective Masonry located at Busti Avenue and Rhode Island Street, Buffalo, NY.

   B. The below listed asbestos containing materials will require removal as part of the Contract Work:
      1. Roof Repair/Patching Tar, Black: 70 SF (Non-Friable, Intact)
      2. Silver Paint: 300 SF (Non-Friable, Intact)

   C. The Contractor shall be aware of all conditions of the Project and is responsible for verifying quantities and locations of all Work to be performed. Failure to do so shall not relieve the Contractor of its obligation to furnish all labor and materials necessary to perform the Work.

   D. All Work shall be performed in strict accordance with the Project Documents and all governing codes, rules, and regulations. Where conflicts occur between the Project Documents and applicable codes, rules, and regulations, the more stringent shall apply.

   E. The Contractor is required to ensure cooperation of its personnel with the 3rd party asbestos project monitor and air sampling technician. The Contractor shall be responsible for the provision of sufficient electric power and safe access to all locations as necessary for the asbestos project monitor and air sampling technician to fulfill his/her duties.

1.2 SPECIAL JOB CONDITIONS:
   A. Any special job conditions are described below:
      1. The Contractor shall be responsible for the provision of sufficient electric power and safe access to all locations as necessary for the asbestos project monitor and air sampling technician to fulfill his/her duties.
      2. The Contractor shall be responsible for the provision of suitable disposable suites (e.g. Tyvek) and P100 respirator filters for all Authorized Visitors and the 3rd party project monitor and air sampling technician to conduct inspections of regulated work areas.

1.3 PERMITS AND COMPLIANCE:
   A. The Contractor shall assume full responsibility and liability for compliance with all applicable Federal, State, and local laws, rules, and regulations pertaining to Work practices, protection of Workers, authorized visitors to the site, persons, and property adjacent to the Work.

   B. Perform asbestos related Work in accordance with New York State Department of Labor Industrial Code Rule, 12 NYCRR Part 56, effective 3/21/07, as specified herein. Where more stringent requirements are specified, adhere to the more stringent requirements.

   C. The Contractor must maintain current licenses pursuant to New York State Department of Labor and Department of Environmental Conservation for all Work related to this Project, including the removal, handling, transport, and disposal of asbestos containing materials.
D. The Contractor must have and submit proof upon request that all persons employed by the Contractor to engage in or supervise Work on any asbestos Project have a valid NYS asbestos handling certificate pursuant to Industrial Code Rule, 12 NYCRR Part 56, effective 3/21/07.

E. Should the Contractor choose to apply for any variance, approval of the Owner and Construction Manager is first required.

1.4 SUBMITTALS:

A. Pre-Work Submittals: Within 7 days prior to the pre-construction conference, the Contractor shall submit 3 copies of the documents listed below:
   1. Contractor license issued by New York State Department of Labor.
   2. Progress Schedule:
      a. Show the complete sequence of abatement activities and the sequencing of Work within each building or building section.
      b. Show the dates for the beginning and completion of each major element of Work including substantial completion dates for each Work Area, building, or phase.
   3. Project Notifications: As required by Federal and State regulatory agencies together with proof of transmittal (i.e. certified mail return receipt).
   4. Building Occupant Notification: As required by regulatory agencies.
   5. Abatement Work Plan: Provide plans that clearly indicate the following:
      a. All Work Areas/containments numbered sequentially.
      b. Locations and types of all decontamination enclosures.
      c. Entrances and exits to the Work Areas/containments.
      d. Type of abatement activity/technique for each Work Area/containment.
      e. Number and location of negative air units and exhaust. Also provide calculations for determining number of negative air pressure units.
      f. Proposed location and construction of storage facilities and field office.
      g. Location of water and electrical connections to building services.
      h. Waste transport routes through the building to the waste storage container.
   6. Disposal Site/Landfill Permit from applicable regulatory agency.
   7. NYS Department of Environmental Conservation Waste Transporter Permit.

B. On-Site Submittals: Refer to Part 3.01.D for all submittals, documentation, and postings required to be maintained on-site during abatement activities.

C. Project Close-out Submittals: Within 30 days of completion of the asbestos abatement portion of the project, the Contractor shall submit 4 copies of the documents listed below. One set of the documents shall be forwarded to the Facility.
   1. OSHA compliance air monitoring records conducted during the Work.
   2. Daily project log, including the entry/exit log.
   3. A list of all Workers used in the performance of the Project, including name, NYS Dept. of Motor Vehicle Photo Identification Card number, and NYS DOL certification number.
   4. Disposal Site/Landfill Permit from applicable regulatory agency.
   5. Final project notifications and variances.
1.5 APPLICABLE STANDARDS AND REGULATIONS:

A. The Contractor shall comply with the following codes and standards, except where more stringent requirements are shown or specified:

B. Federal Regulations:
   1. 29 CFR 1910.1001, "Asbestos" (OSHA)
   2. 29 CFR 1910.1200, "Hazard Communication" (OSHA)
   3. 29 CFR 1910.134, "Respiratory Protection" (OSHA)
   4. 29 CFR 1910.145, "Specification for Accident Prevention Signs and Tags" (OSHA)
   5. 29 CFR 1926, "Construction Industry" (OSHA)
   6. 29 CFR 1926.1101, "Asbestos, Tremolite, Anthophyllite, and Actinolite" (OSHA)
   7. 29 CFR 1926.500 "Guardrails, Handrails and Covers" (OSHA)
   8. 40 CFR 61, Subpart A, "General Provisions" (EPA)
   9. 40 CFR 61, Subpart M, "National Emission Standard for Asbestos" (EPA)
  10. 49 CFR 171-172, Transportation Standards (DOT)

C. New York State Regulations:
   1. 12 NYCRR Part 56, "Asbestos", Industrial Code Rule 56 (DOL) ("ICR56")
   2. 6 NYCRR, Parts 360, 364, Disposal and Transportation (DEC)
   3. 10 NYCRR, Part 73, "Asbestos Safety Program Requirements" (DOH)

D. Standards and Guidance Documents:
   2. ANSI Z9.2-79, Fundamentals Governing the Design and Operation of Local Exhaust Systems
   3. EPA 560/585-024, Guidance for Controlling Asbestos Containing Materials in Buildings (Purple Book)
   4. EPA 530-SW-85-007, Asbestos Waste Management Guidance

1.6 NOTICES:

A. The Contractor shall provide notification of intent to commence asbestos abatement activities as indicated below.
   1. At least ten (10) Working days prior to beginning abatement activities, send written notification to:
      U.S. Environmental Protection Agency
      National Emissions Standards for Hazardous Air Pollutants (NESHAPS) Coordinator
      26 Federal Plaza
      New York, NY 10007.
   2. At least ten (10) days prior to beginning abatement activities send written notification to:
      New York State Department of Labor
      Division of Safety and Health, Asbestos Control Program.
      State Office Campus
      Building 12 - Room 454
      Albany, NY 12240

ASBESTOS ABATEMENT
B. The Contractor is required to send notifications to regulatory agencies via mail or package delivery service that will provide proof of delivery and receipt.

C. The Contractor shall post and/or provide Building Occupant Notification at least 10 days prior to beginning abatement activities as required by Industrial Code Rule, 12 NYCRR Part 56. The posting shall include the following information:
   1. The locations of the abatement Project.
   2. The amounts and types of asbestos containing materials being abated.
   3. The commencement and completion dates of the Project.
   4. The name, address, and asbestos license number of the Abatement Contractor.
   5. The name, address, and asbestos license number of the Asbestos Project Monitoring firm and laboratory.

1.7 PROJECT MONITORING AND AIR SAMPLING:

The Owner’s Representative shall be the initial point of contact for all Contract related work.

A. The Owner shall also engage the services of an Environmental Consultant (the Consultant) who shall serve as the Owner's NYSDOL licensed Project Monitoring Firm to oversee the performance of the asbestos abatement Project and provide direction as required throughout the entire abatement period.

B. The Contractor is required to ensure cooperation of its personnel with the Owner’s Representative and Environmental Consultant for the air sampling and Project monitoring functions described below. The Contractor shall comply with all direction given by the Owner’s Representative and Environmental Consultant during the course of the Project.

C. The Environmental Consultant shall provide the following administrative services:
   1. Review and approve or disapprove all submittals, shop drawings, schedules, and samples.
   2. Assure that all notifications to governmental agencies by the Contractor are submitted in a timely manner and are correct in content.
   3. Review and approve the Contractor's OSHA compliance testing laboratory.

D. The Environmental Consultant shall staff the Project with a trained and certified person(s) to act on the Owner's behalf at the job site. This individual(s) shall be designated as the Abatement Project Monitor (APM).
   1. The APM shall be on-site at all times the Contractor is on-site until the completion of the asbestos abatement portion of the project. The Contractor shall not be permitted to conduct any Work unless the APM is on-site.
   2. The APM shall have the authority to direct the actions of the Contractor verbally and in writing to ensure compliance with the Project documents and all regulations. The APM shall have the authority to Stop Work when gross Work practice deficiencies or unsafe practices are observed, or when ambient fiber concentrations outside the removal area exceed 0.01 f/cc or background level.
      i. Such Stop Work order shall be effective immediately and remain in effect until corrective measures have been taken and the situation has been corrected.
      ii. Standby time required to resolve the situation shall be at the Contractor's expense.
3. The APM shall provide the following services:
   i. Inspection of the Contractor's Work, practices, and procedures, including temporary protection requirements, for compliance with all regulations and Project specifications.
   ii. Provide abatement Project air sampling as required by applicable regulations (NYS, AHERA) and the Owner. Sampling will include background, pre-abatement, during abatement and clearance sampling.
   iii. Verify daily that all Workers used in the performance of the Project are certified by the appropriate regulatory agency.
   iv. Monitor the progress of the Contractor's Work, and report any deviations from the schedule to the Owner.
   v. Monitor, verify, and document all waste load-out operations.
   vi. Verify that the Contractor is performing personal air monitoring daily, and that results are being returned and posted at the site as required.
   vii. The APM shall maintain a log on site that documents all project related and Environmental Consultant and Contractor actions, activities, and occurrences.

4. The following minimum inspections shall be conducted by the APM. Additional inspections shall be conducted as required by Project conditions. Progression from one phase of Work to the next by the Contractor is only permitted with the written approval of the APM.
   i. Pre-Construction Inspection: The purpose of this inspection is to verify the existing conditions of the Work Areas and to document these conditions.
   ii. Pre-Commencement Inspection: The purpose of this inspection is to verify the integrity of each containment system prior to disturbance of any asbestos containing material. This inspection shall take place only after the Work Area is fully prepped for removal.
   iii. Work Inspections: The purpose of this inspection is to monitor the Work practices and procedures employed on the Project and to monitor the continued integrity of the containment system. Inspections within the regulated abatement work areas shall be conducted by the APM during all preparation, removal, and cleaning activities at least twice every work shift. Additional inspections shall be conducted as warranted.
   iv. Pre-Encapsulation Inspection: The purpose of this inspection is to ensure the complete removal of Asbestos Containing Material (ACM), from all surfaces in the Work Area prior to encapsulation.
   v. Visual Clearance Inspection: The purpose of this inspection is to verify the Contractor's certification that all materials have been removed from the Work Area and the absence of all visible accumulations of debris in the Work Area. This inspection shall be conducted after encapsulation and removal of all surface plastic in the area, except for critical barriers, but before final air clearance testing.
   vi. Post-Clearance Inspection: The purpose of this inspection is to ensure the complete removal of ACM, including debris, from the Work Area after satisfactory final clearance sampling and removal of all critical barriers and equipment from the Work Area.
   vii. Punch List Inspection: The purpose of this inspection is to verify the Contractor's certification that all Work has been completed as contracted and the existing condition of the area prior to its release to the Owner.
E. The Environmental Consultant shall provide abatement Project air sampling and analysis as required by applicable regulations (New York State and/or AHERA). Sampling will include background, pre-abatement, during-abatement, and clearance sampling.

   1. Unless otherwise required by applicable regulations, the Environmental Consultant shall have samples analyzed by Phase Contrast Microscopy (PCM). Results shall be available within 24 hours of completion of sampling.

   2. For large and small Projects, samples shall be collected as required by applicable regulations (New York State and/or AHERA).

   3. For tent removals, a minimum of at least one clearance sample shall be collected in each tent. Additional samples shall be collected in accordance with small or large Project requirements if cumulative Project quantities exceed those of a minor Project.

   4. If the air sampling during abatement reveals airborne fiber levels at or above 0.01 fibers/cc or the pre-abatement/environmental level (whichever is greater) outside the Work Area, then the Environmental Consultant shall issue an immediate Stop Work order. The Contractor shall then inspect the barriers for leakage and HEPA vacuum and/or wet clean the surface outside the Work Area. The Contractor shall bear the burden of any and all costs incurred by this delay.

   5. The Environmental Consultant shall submit copies of all final air clearance results to the NYS Department of Labor at the completion of the Project.

1.8 CONTRACTOR AIR SAMPLING:

   A. The Contractor shall be required to conduct personal air sampling in accordance with the requirements of OSHA 1926.1101.

   B. The Contractor shall conduct air sampling that is representative of both the 8-hour time weighted average and 30-minute short-term exposures to indicate compliance with the permissible exposure and excursion limits.

   C. The Contractor's laboratory analysis of air samples shall be conducted by an NYS DOH ELAP approved laboratory, subject to approval of the Environmental Consultant.

   D. Results of personnel air sample analyses shall be available, verbally, within twenty-four (24) hours of sampling and shall be posted upon receipt. Written laboratory reports shall be delivered and posted at the Work site within five (5) days. Failure to comply with these requirements may result in all work being stopped until compliance is achieved.

1.9 PROJECT SUPERVISOR:

   A. The Contractor shall designate a full-time Project Supervisor who shall meet the following qualifications:

      1. The Project Supervisor shall hold New York State certification as an Asbestos Supervisor.

      2. The Project Supervisor shall meet the requirements of a "Competent Person" as defined by OSHA 1926.1101 and shall have a minimum of one year experience as a supervisor.

      3. The Project Supervisor must be able to read and write English fluently, as well as communicate in the primary language of the Workers.
B. If the Project Supervisor is not on-site at any time whatsoever, all work associated with the asbestos abatement project shall be stopped. The Project Supervisor shall remain on-site until the asbestos abatement portion of the project is complete. The Project Supervisor cannot be removed from the Project without the written consent of the Owner and the Environmental Consultant. The Project Supervisor shall be removed from the Project if so requested by the Owner.

C. The Project Supervisor shall maintain the Project Log Book required by New York State Department of Labor and section 2.03 of the specifications and the Waste Disposal Log required by section 4.04 of the specifications.

D. The Project Supervisor shall be responsible for the performance of the Work and shall represent the Contractor in all respects at the Project site. The Supervisor shall be the primary point of contact for the Asbestos Project Monitor.

1.10 MEDICAL REQUIREMENTS:

A. Before exposure to airborne asbestos fibers, provide Workers with a comprehensive medical examination as required by 29 CFR 1910.1001 and 29 CFR 1926.1101.
   1. This examination is not required if adequate records show the employee has been examined as required by 29 CFR 1910.1001, and 29 CFR 1926.1101 within the past year.
   2. The same medical examination shall be given on an annual basis to employees engaged in an occupation involving asbestos fibers and within thirty (30) calendar days before or after the termination of employment in such occupations.

B. As required by 29 CFR 1910.1001, and 29 CFR 1926.1101 maintain complete and accurate records of employees' medical examinations for a period of thirty (30) years after termination of employment and make records of the required medical examinations available for inspection and copying to: The Assistant Secretary of Labor for Occupational Safety and Health, the Director of the National Institute for Occupational Safety and Health (NIOSH), authorized representatives of either of them, and each employee’s physician upon the request of the employee or former employee.


1.1 TRAINING:

A. As required by applicable regulations, prior to assignment to asbestos Work instruct each employee with regard to the hazards of asbestos, safety and health precautions, and the use and requirements of protective clothing and equipment.


1.12 RESPIRATORY PROTECTION:
A. Select respirators from those approved by the Mine Safety and Health Administration (MSHA), and the National Institute for Occupational Safety and Health (NIOSH), Department of Health and Human Services.

B. Where fiber levels permit, and in compliance with regulatory requirements, Half Face Air Purifying Respirators (APR) with HEPA Filters are the minimum allowable respiratory protection permitted to be utilized during gross removal operations.

C. Respirators shall be individually fit-tested to personnel under the direction of an Industrial Hygienist on a yearly basis. Fit-tested respirators shall be permanently marked to identify the individual fitted, and use shall be limited to that individual. Fit-test records shall be maintained on site for each employee.

D. No respirators shall be issued to personnel without such personnel participating in a respirator training program.

E. A storage area for respirators shall be provided by the Contractor in the clean room side of the personnel decontamination enclosure where they will be kept in a clean environment.

F. High Efficiency Particulate Air (HEPA) respirator filters shall be approved by NIOSH and shall conform to the OSHA requirements in 29 CFR 1910.134 and 29 CFR 1926.1101.

G. The Contractor shall provide and make available a sufficient quantity of respirator filters so that filter changes can be made as necessary during the work day. Filters will be removed and discarded as ACM waste during the decontamination process. Filters cannot be reused. Filters must be changed if breathing becomes difficult.

H. Filters used with negative pressure air purifying respirators shall not be used any longer than one eight (8) hour work day.

I. Any authorized visitor, Worker, or supervisor found in the Work Area not wearing the required respiratory protection shall be removed from the Project site and may not be permitted to return.

1.13 DELIVERY AND STORAGE:

A. Deliver all materials to the job site in original packages with containers bearing manufacturer's name and label.

B. Store all materials at the job site in a suitable and designated area.
   1. Store materials subject to deterioration or damage away from wet or damp surfaces and under cover.
   2. Protect materials from unintended contamination and theft.
   3. Storage areas shall be kept clean and organized.

C. Remove damaged or deteriorated materials from the job site. Materials contaminated with asbestos shall be disposed of as asbestos debris as herein specified.

1.14 TEMPORARY UTILITIES:
A. Shut down and lock out all electrical power to the asbestos Work Areas.

B. Provide temporary 120-240 volt, single phase, three wire, 100 amp electric service with Ground Fault Circuit Interrupters (GFCI) for all electric requirements within the asbestos Work Area.
   1. All power to the Work Area shall be brought in from outside the area through GFCI's at the source.
   2. Where available, obtain from Owner's existing system. Otherwise provide power from other sources (i.e. generator).
   3. Provide temporary wiring and "weatherproof" receptacles in sufficient quantity and location to serve all HEPA equipment and tools.
   4. Provide wiring and receptacles as required by the Environmental Consultant for air sampling equipment.

C. Provide temporary lighting with "weatherproof" fixtures for all Work Areas including decontamination chambers.
   1. The entire Work Area shall be kept illuminated at all times.
   2. Provide lighting as required by the Environmental Consultant for the purposes of performing required inspections.

D. All temporary devices and wiring used in the Work Area shall be capable of decontamination procedures including HEPA vacuuming and wet-wiping.

E. Provide temporary water source to meet all applicable project water requirements (i.e. decontamination units, wetting materials, etc.). Utilize domestic water service, if available, from Owner's existing system. Provide hot water heaters with sufficient capacity to meet Project demands.

PART 2 PRODUCTS

2.1 PROTECTIVE CLOTHING:

A. Provide personnel utilized during the Project with disposable protective whole body clothing, head coverings, gloves and foot coverings. Provide disposable plastic or rubber gloves to protect hands. Cloth gloves may be worn inside the plastic or rubber for comfort, but shall not be used alone. Make sleeves secure at the wrists and make foot coverings secure at the ankles by the use of tape, or provide disposable coverings with elastic wrists or tops.

B. Provide sufficient quantities of protective clothing to assure a minimum of four (4) complete disposable outfits per day for each individual performing abatement Work.

C. Eye protection and hard hats shall be provided and made available for all personnel entering any Work Area.

D. Authorized visitors shall be provided with suitable protective clothing, headgear, eye protection, and footwear whenever they enter the Work Area.
2.2 SIGNS AND LABELS:

A. Provide warning signs and barrier tapes at all approaches to asbestos Work Areas. Locate signs at such distance that personnel may read the sign and take the necessary protective steps required before entering the area.

1. Provide danger signs in vertical format conforming to 29 CFR 1926.1101, minimum 20" x 14" displaying the following legend.

   DANGER
   ASBESTOS
   MAY CAUSE CANCER
   CAUSES DAMAGE TO LUNGS
   AUTHORIZED PERSONNEL ONLY

2. Provide 3" wide yellow barrier tape printed with black lettered, "DANGER ASBESTOS REMOVAL". Locate barrier tape across all corridors, entrances and access routes to asbestos Work Area. Install tape 3' to 4' above finish floor elevation.

B. Provide asbestos danger labels affixed to all asbestos materials, scrap, waste, debris and other products contaminated with asbestos.

1. Provide asbestos danger labels of sufficient size to be clearly legible, displaying the following legend:

   DANGER
   CONTAINS ASBESTOS FIBERS
   MAY CAUSE CANCER
   CAUSES DAMAGE TO LUNGS
   DO NOT BREATHE DUST
   AVOID CREATING DUST

2. Provide the following asbestos labels, of sufficient size to be clearly legible, for display on waste containers (bags or drums) which will be used to transport asbestos contaminated material in accordance with United States Department of Transportation 49 CFR Parts 171 and 172:

   RQ HAZARDOUS
   SUBSTANCE
   SOLID, NOS
   ORM-E, NA 9188
   ASBESTOS

3. Generator identification information shall be affixed to each waste container indicating the following printed in indelible ink:

   Generator Name:
   Facility Name:
   Facility Address:
2.3 PROJECT LOG BOOK:

A. Provide a permanently bound Project log book. Log book shall contain on title page the Project name, name, address and phone number of Owner; name, address and phone number of Environmental Consultant; name, address and phone number of Abatement Contractor; emergency numbers including, but not limited to local Fire/Rescue department.

B. All entries into the log shall be made in non-washable, permanent ink and such pen shall be strung to or otherwise attached to the log to prevent removal from the log-in area. Under no circumstances shall pencil entries be permitted.

C. All persons entering and exiting the Work Area shall sign the log and include name, last 4 digits of social security number, and time.

D. The Project Supervisor shall document all Work performed daily and note all inspections required by NYS Industrial Code 12 NYCRR Part 56, i.e. testing and inspection of barriers and enclosures.

2.4 SCAFFOLDING AND LADDERS:

A. Provide all scaffolding and/or staging as necessary to accomplish the Work of this Contract. Scaffolding may be of suspension type or standing type such as metal tube and coupler, tubular welded frame, pole or outrigger type or cantilever type. The type, erection and use of all scaffolding and ladders shall comply with all applicable OSHA construction industry standards.

B. Provide scaffolding and ladders as required by the Environmental Consultant for the purposes of performing required inspections.

2.5 SURFACTANT (AMENDED WATER):

A. Wet all asbestos-containing materials prior to removal with surfactant mixed and applied in accordance with manufacturer's printed instructions.

B. Approved Manufacturer:
   1. International Protective Coatings Corp.: Serpiflex Shield
   2. American Coatings Corp.: EPA 55 Asbestos Removal Agent
   3. Certified Technologies: CerTane 2075 Penetrating Surfactant
   4. Alternate Approved by the Environmental Consultant

2.6 ENCAPSULANT:

A. Encapsulant shall be tinted or pigmented so that application when dry is readily discernible.

B. Approved Manufacturer:
   1. International Protective Coatings Corp.: Serpiflex Shield
   2. American Coatings Corp.: FNE High Temperature Sealant
   3. Certified Technologies: CerTane 1000 Post Removal Encapsulant
   4. Alternate Approved by the Environmental Consultant
2.7 DISPOSAL BAGS, DRUMS, AND CONTAINERS:

A. Provide 6 mil polyethylene disposal bags printed with asbestos caution labels. Bags shall also be imprinted with U.S. Department of Transportation required markings.

B. Provide 30 or 55 gallon capacity fiber or metal drums capable of being sealed air and water tight if asbestos waste has the potential to damage or puncture disposal bags. Affix asbestos caution labels on lids and at one-third points around drum circumference to assure ready identification.

C. Containers and bags must be labeled with the names of the waste generator and the location at which the waste was generated in accordance with 40 CFR Part 61 NESHAPs.

D. Labeled ACM waste containers or bags shall not be used for non-ACM waste or trash. Any material placed in labeled containers or bags, whether turned inside out or not shall be handled and disposed of as ACM waste.

2.8 HEPA VACUUM EQUIPMENT:

A. All dry vacuuming performed under this contract shall be performed with High Efficiency Particulate Absolute (HEPA) filter equipped industrial vacuums conforming to ANSI Z9.2-79.

B. Provide tools and specialized equipment including scraping nozzles with integral vacuum hoods connected to a HEPA vacuum with flexible hose.

C. Approved Manufacturers:
   1. Hako Minuteman
   2. Micro-Trap Inc.

2.9 POWER TOOLS:

A. Any power tools used to drill, cut into, or otherwise disturb asbestos material shall be equipped with HEPA filtered local exhaust ventilation.

2.10 POLYETHYLENE SHEETING:

A. All polyethylene (plastic) sheeting used on the Project (including but not limited to sheeting used for critical and isolation barriers, fixed objects, walls, floors, ceilings, waste container) shall be at least 6 mil fire retardant sheeting.

B. Decontamination enclosure systems shall utilize at least 6 mil opaque fire retardant plastic sheeting. At least 2 layers of 6 mil reinforced fire retardant plastic sheeting shall be used for the flooring.

PART 3 EXECUTION
3.1 GENERAL REQUIREMENTS:

A. Should the area beyond the Work Area(s) become contaminated with asbestos containing materials or elevated fiber levels, immediately stop Work and institute emergency procedures. Contaminated non-Work Areas shall be isolated and decontaminated in accordance with procedures established for asbestos removal. All costs incurred in decontaminating such non-Work Areas and the contents thereof shall be borne by the Contractor, at no additional cost to the Owner.

B. Medical approval, fit test reports, Worker Acknowledgments, and NYS DOL certificates shall be on site prior to admittance of any Contractor’s employees to the asbestos Work Area.

C. Perform all asbestos removal Work using wet removal procedures. Mix and apply surfactant in accordance with manufacturer's written instructions. Dry removal procedures are not permitted.

D. The following submittals, documentation, and postings shall be maintained on-site during abatement activities at a location approved by the Asbestos Project Monitor:
   1. Contractor license issued by New York State Department of Labor.
   2. Certification, Worker Training, Medical Surveillance, Acknowledgments:
      i. New York State Asbestos Handler certification cards for each person employed in the removal, handling, or disturbance of asbestos.
      ii. Evidence that Workers have received proper training required by the regulations and the medical examinations required by OSHA 29 CFR 1926.1101.
      iii. Documentation that Workers have been fit tested specifically for respirators used on the Project.
   3. Daily OSHA personal air monitoring results.
   4. NYS Department of Health ELAP certification for the laboratory that will be analyzing the OSHA personnel air samples.
   5. NYS Department of Environmental Conservation Waste Transporter Permit.
   6. Project documents (specifications and drawings.)
   7. Notifications and variances (site specific). Ensure that the most up-to-date notifications and variances are on-site.
   8. Applicable regulations.
   9. Material Safety Data Sheets of supplies/chemicals used on the Project.
   10. Approved Abatement Work Plan.
   11. List of emergency telephone numbers.
   12. Waste Disposal Log
   13. Project Log Book

E. The Work Area must be vacated by building occupants prior to decontamination enclosure construction and Work Area preparation.

F. All demolition necessary to access asbestos containing materials for removal must be conducted within negative pressure enclosures by licensed asbestos handlers. Demolition debris may be disposed of as construction and demolition debris provided the Asbestos Project Monitor determines that it is not contaminated with asbestos. If the demolition debris is determined to be contaminated, it must be disposed of as asbestos waste.
Roof Replacement and  
Selective Masonry Repairs  
Hutchison Chapel  
FA# 220014.00

3.2 PERSONAL DECONTAMINATION ENCLOSURE:
   A. At minimum, provide a hygiene facilities consistent with OSHA 1926.1101(j)(2).
      1. An equipment room or area that is adjacent to the regulated area for the decontamination of employees and their equipment which is contaminated with asbestos which shall consist of an area covered by an impermeable drop cloth on the floor or horizontal surface.
      2. The area must be of sufficient size as to accommodate cleaning of equipment and removing personal protective equipment without spreading contamination beyond the area as determined by visible accumulations.
      3. Work clothing must be cleaned with a HEPA vacuum before it is removed.
      4. All equipment and surfaces of containers filled with ACM must be cleaned prior to removing them from the equipment room or area.
      5. All personnel shall enter and exit the regulated area the equipment room or area.

3.3 WASTE DECONTAMINATION ENCLOSURE:
   A. Provide a waste decontamination enclosure consistent with ICR 56. The decontamination enclosure shall not be located within a work area. If the decontamination chamber is accessible to the public, it shall be fully framed and sheathed to prevent unauthorized entry.
   B. The waste decontamination enclosure system shall consist of a washroom/cleanup room with an airlock to the Work Area and another airlock doorway to the holding area. Each airlock shall be a minimum of three feet from door to door. The entrance to the holding area shall have a lockable door.
   C. The decontamination enclosure ceiling and walls shall be covered with two layers of opaque 6 mil polyethylene sheeting. Two layers of 6 mil reinforced polyethylene sheeting shall be used to cover the floor.
   D. Establish a triple layer of six mil polyethylene at the decontamination chamber doorways, weighted to insure a tight seal of the enclosure. Prior to establishing doorway seals move all required tools, scaffolding, and equipment into the Work Area.
   E. Where there is only one egress from the Work Area, the holding area of the waste decontamination enclosure system may branch off from the personnel decontamination enclosure equipment room, which then serves as the waste wash room.
   F. The waste wash room water shall be drained, collected, and filtered through a system with at least a 5.0 micron particle size collection capability containing a series of several filters with progressively smaller pore sizes to avoid rapid clogging of the system. The filtered waste water shall then be discharged in accordance with applicable codes and the contaminated filters disposed of as asbestos waste.
   G. In small asbestos Projects where only one egress from the Work Area exists, the shower room may be used as a waste washroom. In this instance, the clean room shall not be used for waste storage, but shall be used for waste transfer to carts, which shall immediately be removed from this enclosure.
3.4 WORK AREA ENTRY AND EXIT PROCEDURES:

A. Access to and from the asbestos Work Area is permitted only through the established equipment room or area.

B. Workers shall sign the entry/exit log upon every entry and exit.

C. Before entering the Work Area, Workers shall remove all street clothes, and don protective clothing, equipment, and respirators.

D. The following procedures shall be followed when exiting the Work Area:
   1. Work clothing must be cleaned with a HEPA vacuum before it is removed.
   2. All equipment and surfaces of containers filled with ACM must be cleaned prior to removing them from the equipment room or area.

3.5 WORK AREA PREPARATION:

A. The regulated abatement work area shall be vacated by occupants and non-asbestos certified personnel, prior to work area preparation and shall remain vacated until satisfactory clearance of the regulated area has been achieved or the asbestos project is complete.

B. Entry to the regulated abatement work area shall be restricted to the asbestos contractors involved with the asbestos project, employees of the asbestos contractors, authorized visitors, and other public safety personnel. Police and fire officials may enter the work site on an emergency basis.

C. Asbestos danger signs shall be posted at all approaches to the asbestos Work Area. Post all emergency exits as emergency exits only on the Work Area side, post with asbestos caution signs on the non-Work Area side. Provide all non-Work Area stairs and corridors accessible to the asbestos Work Area with warning tapes at the base of stairs and beginning of corridors. Warning tapes shall be in addition to caution signs.

D. All surfaces and objects within the Work Area shall be pre-cleaned using HEPA vacuuming and/or wet-wiping methods. Dry sweeping and any other methods that raise dust shall be prohibited. ACM shall not be disturbed during pre-cleaning.

E. Movable objects within the Work Area shall be HEPA vacuumed and/or wet-wiped and removed from the Work Area.

F. All non-movable equipment in the Work Area shall be completely covered with 2 layers of polyethylene sheeting, at least 6 mil in thickness, and secured in place with duct tape and/or spray adhesive.

G. Removal of exterior non-friable ACM without tents, shall require plasticizing or sealing of nearby windows within twenty-five (25) feet of the immediate work area, placement of dropcloths, and plasticizing of a man-lift or scaffolding.
1. Any operable windows or openings to the building at the work level or on the floor below within twenty-five (25) feet of the immediate work area shall be plasticized with two (2) layers of six (6) mil fire retardant polyethylene sheeting. The windows can be plasticized outdoors, or for reasons of safety, from the indoors. Window, door and louver units subject to complete removal must have their openings plasticized at the interior of the building. Windows that are fixed or non-operable and that will remain sealed airtight for the duration of abatement activities, do not require installation of critical barriers.

2. Under areas where non-friable materials are removed without tents, a dropcloth, made of six (6) mil fire retardant polyethylene sheeting, shall be placed on the ground below the work area to prevent spread of any ACM remnants. This dropcloth shall be a minimum of ten (10) feet wide with an additional ten (10) feet of width for every floor above a 1st floor level where removal work will take place, up to a maximum of thirty (30) feet of width measured perpendicular to the building/structure. In addition, if a straight scaffolding, man-lift, swing scaffolding or similar equipment is used for areas above the 1st floor, the lift/scaffolding unit shall be plasticized with two (2) layers of six (6) mil fire retardant polyethylene on the platform, with plastic sheeting extended vertically to waist-high (as so equipped) guardrail sides and back of the lift unit. While the platform/lift walking surfaces must be plasticized, the asbestos abatement contractor must provide proper traction surfaces or equipment to assure the safety and comfort of abatement workers while performing abatement activities on the lift/scaffold equipment. After non-friable ACM is removed from each work location, the platform and plasticized surfaces toward the building shall be wet wiped and/or HEPA vacuumed clean before reuse. The plasticizing on the lift or scaffolding shall be periodically inspected during use and repaired as needed.

3.7 REMOVAL OF ASBESTOS CONTAINING MATERIALS:

A. Asbestos-containing materials shall be removed in accordance with the Contract Documents and the approved Asbestos Work Plan.

B. Sufficiently wet asbestos materials with a low pressure, airless fine spray of surfactant to ensure full penetration prior to material removal. Re-wet material that does not display evidence of saturation.

C. One Worker shall continuously apply amended water while ACM is being removed.

D. Perform cutting, drilling, abrading, or any penetration or disturbance of asbestos containing material in a manner to minimize the dispersal of asbestos fibers into the air. Use equipment and methods specifically designed to limit generation of airborne asbestos particles. All power operated tools used shall be provided with HEPA equipped filtered local exhaust ventilation.

E. Upon removal of ACM from the substrate, the newly exposed surfaces shall be HEPA vacuumed and/or wet cleaned. Surfaces must be thoroughly cleaned using necessary methods and any required solvents to completely remove any adhesive, mastic, etc, unless stated otherwise in the site specific variance.

F. All removed material shall be placed into 6 mil plastic disposal bags or other suitable container upon detachment from the substrate or whenever there is enough accumulation to fill a single
bag or container. Maintain the surfaces of the Work Area free of accumulation of asbestos debris.

G. Dust-tight enclosed inclined chutes shall be used for materials lowered from distances greater than 10 ft.

H. Large components shall be wrapped in two layers of 6 mil polyethylene sheeting. Sharp components likely to tear disposal bags shall be placed in fiber drums or boxes and then wrapped with sheeting.

I. Power or pressure washers are not permitted for asbestos removal or clean-up procedures.

J. All open ends of pipe and duct insulation not scheduled for removal shall be encapsulated using lag cloth.

K. All construction and demolition debris determined by the Asbestos Project Monitor to be contaminated with asbestos shall be handled and disposed of as asbestos waste.

L. The use of metal shovels, metal dust pans, etc. are not permitted inside the work area.

3.8 EQUIPMENT AND WASTE CONTAINER DECONTAMINATION AND REMOVAL PROCEDURES:

A. External surfaces of contaminated containers and equipment shall be cleaned by wet cleaning and/or HEPA vacuuming in the Work Area and transported to the established hygiene facilities.

B. The cleaned containers of asbestos material and equipment are to be dried of any excessive pooled or beaded liquid, placed in uncontaminated plastic bags or sheeting, as the item's physical characteristics demand, and sealed airtight.

C. All waste containers shall be properly labelled in accordance with NYSDOL and USEPA requirements prior to transport to the waste container.

3.9 APPLICATION OF ENCAPSULANT:

A. After first cleaning, prior to first sheeting removal, and after Work Area has been rendered free of visible residues, a thin coat of encapsulant shall be applied to any surfaces in the Work Area which were not the subject of removal.

B. In no event shall encapsulant be applied to any surface that was the subject of removal prior to obtaining satisfactory air monitoring results.

C. Encapsulants shall be pigmented or tinted to provide an indication for completeness of coverage. The Asbestos Project Monitor shall determine adequacy of coverage.

3.10 TENT ENCLOSURES:
A. Tent enclosures may only be used in areas specifically permitted by NYS Department of Labor Code 12 NYCGRR Part 56 or a Project specific variance issued by the NYS Department of Labor.

B. The Contractor shall restrict access to the immediate area where tent removal procedures are taking place using barrier tape and/or construction barriers. Caution signs shall be posted.

C. Remote personnel and waste decontamination enclosures shall be constructed. Configuration shall be as required by Project size.

D. The Work Area shall be precleaned. All objects and equipment that will remain in the restricted area during abatement shall be sealed with two layers of six mil polyethylene and tape.

E. The tent shall be a single use barrier constructed with a rigid frame and at least two layers of six mil polyethylene unless one layer of six mil polyethylene is otherwise permitted by a site specific variance. All seams shall be sealed airtight using duct tape and/or spray adhesive.

F. The tent shall be constructed with at least one airlock for worker/waste egress.

G. During removals, a HEPA vacuum or small capacity negative pressure filtration unit shall be used to provide a negative air pressure inside the tent.

H. Workers shall wear two disposable suits for all phases of Work. Workers exiting the tent shall HEPA vacuum the outer suit, enter the airlock, remove the outer suit and then place it back into the Work Area. A clean second suit shall be donned before exiting the airlock and proceeding to the decontamination enclosure or another work area.

I. OSHA compliance air monitoring is required per section 1.09.

J. ACM removal shall follow procedures defined in section 3.07.

K. Waste material shall be placed in properly labeled 6 mil plastic bags or other appropriate containers. The outside of the bags or containers shall be wet wiped and/or HEPA vacuumed before being passed into the airlock for double-bagging. The bags or containers shall then be transported to the decontamination enclosure and then bagged for a third time and transported to the waste storage container. All transportation of waste bags and containers outside the Work Area shall be in watertight carts.

L. Following completion of gross abatement and after all accumulations of asbestos waste materials have been containerized, the following decontamination procedures shall be followed.
   1. All bagged asbestos waste and unnecessary equipment shall be decontaminated and removed from the Work Area.
   2. All surfaces in the Work Area shall be wet cleaned. A wet-purpose shop vacuum may be used to pick up excess liquid, and shall be decontaminated prior to removal from the Work Area.
   3. The Asbestos Project Monitor shall conduct a visual inspection of the Work Area for cleanliness and completion of abatement.
   4. The Contractor shall then apply a thin coat of encapsulant to all surfaces in the Work Area that were not the subject of removal. In no event shall encapsulant be applied to any
surface that was the subject of removal prior to obtaining satisfactory air monitoring results.
5. After the encapsulant has dried, aggressive final clearance air sampling shall then be conducted by the Environmental Consultant.
6. Upon receipt of satisfactory final clearance air sampling results, the tent shall be collapsed into itself, placed in suitable disposal bags, and transported to the waste decontamination enclosure. Isolation and critical barriers shall then be removed.

3.11 RESTORATION OF UTILITIES, FIRESTOPPING, AND FINISHES:

A. After final clearance, remove locks and restore electrical and HVAC systems. All temporary power shall be disconnected, power lockouts removed and power restored. All temporary plumbing shall be removed.

B. Finishes damaged by asbestos abatement activities including, but not limited to, plaster/paint damage due to duct tape and spray adhesives, and floor tile lifted due to wet or humid conditions, shall be restored prior to final payment.
   1. Finishes unable to be restored shall be replaced under this Contract.
   2. All foam and expandable foam products and materials used to seal Work Area openings shall be completely removed upon completion of abatement activities.

PART 4 DISPOSAL OF ASBESTOS WASTE

4.1 APPLICABLE REGULATIONS:

A. All asbestos waste shall be stored, transported and disposed of in accordance with the following regulations as a minimum:
   1. 12 NYCRR Part 56-10
   2. US EPA NESHAPS 40 CFR 61
   3. US EPA Asbestos Waste Management Guidance EPA/530-SW85

4.2 TRANSPORTATION AND DISPOSAL SITE:

A. The Contractor's Hauler and Disposal Site shall be approved by the Owner.

B. The Contractor shall give twenty-four (24) hour notification prior to removing any waste from the site. Waste shall be removed from the site only during normal working hours unless otherwise specified. No waste may be taken from the site unless the Contractor and Environmental Consultant are present and the Environmental Consultant authorizes the release of the waste as described herein.

C. The Contractor shall have the Hauler provide the estimated date and time of arrival at the Disposal Site.

D. Upon arrival at the Project Site, the Hauler must possess and present to the Environmental Consultant a valid New York State Department of Environmental Conservation Part 364 Asbestos Hauler's Permit. The Environmental Consultant may verify the authenticity of the hauler's permit with the proper authority.
E. The Hauler, with the Contractor and the Environmental Consultant, shall inspect all material in the transport container prior to taking possession and signing the Asbestos Waste Manifests.

F. Unless specifically approved by the Owner, the Contractor shall not permit any off-site transfers of the waste or allow the waste to be transported or combined with any other off-site asbestos material. The Hauler must travel directly to the disposal site as identified on the notifications with no unauthorized stops.

4.3 WASTE REMOVAL FROM SITE:

A. All generated waste that is impacted by asbestos including, but not limited to, windows impacted by ACM glazing, plastic sheeting, rags and disposable PPE, shall be documented, accounted for and disposed of as asbestos waste.

B. All waste generated as part of the asbestos project shall be removed from the site with ten (10) calendar days after successful achievement of final clearance for all regulated areas at the site.

C. All generated waste shall be legally disposed of at an approved landfill facility in compliance with the requirements of EPA NESHAP

4.3 WASTE STORAGE CONTAINERS:

A. All asbestos containing waste shall be containerized, transported and disposed of in accordance with NYSDOL, USEPA and NYSDEC requirements.

B. All waste containers used to transport RACM shall be fully enclosed and lockable (i.e. enclosed dumpster, trailer, etc.).

C. The Environmental Consultant shall verify that any vehicle transporting asbestos waste is listed on the New York State Department of Environmental Conservation Part 364 permit. Any vehicle not listed on the permit shall not be permitted to transport asbestos waste.

D. The container shall be plasticized and sealed with a minimum of one (1) layer of 6 mil polyethylene on the sides and two (2) layers of 6 mil polyethylene on the floor. Once on site, it shall be kept locked at all times, except during load out. The waste container shall not be used for storage of equipment or contractor supplies.

E. While on-site, the container shall be labeled with EPA Danger signage:

   DANGER
   CONTAINS ASBESTOS FIBERS
   AVOID CREATING DUST
   CANCER AND LUNG DISEASE HAZARD

F. The New York State Department of Environmental Conservation Asbestos Hauler's Permit number shall be stenciled on both sides and back of the container.
G. The container is not permitted to be loaded unless it is properly plasticized, has the appropriate danger signage affixed, and has the permit number appropriately stenciled on the container.

H. The Owner may initiate random checks at the Disposal Site to insure that the procedures outlined herein are complied with.

4.4 ASBESTOS WASTE SHIPMENT RECORDS:

A. Asbestos Waste Shipment Records shall be completed by the Contractor and verified by the Owner’s Representative that all the information and amounts are accurate and the proper signatures are in place.

B. The Waste Shipment Records shall have the appropriate signatures of the Owner’s Representative, the Contractor, and the Hauler representatives prior to any waste being removed from the site.

C. Copies of the completed Waste Shipment Records shall be retained by the Owner’s Representative and the Contractor and shall remain on site for inspection.

D. Upon arrival at the Disposal Site, the Waste Shipment Record shall be signed by the Disposal Facility operator to certify receipt of ACM covered by the manifest.

E. The Disposal Facility operator shall return the original Waste Shipment Record to the Owner.

F. The Contractor shall forward copies of each Waste Shipment Record to the Owner’s Representative within 14 days of the waste container being removed from the site. Failure to do so may result in payment being withheld from the Contractor.

G. The Contractor shall create and utilize a Waste Disposal Log to track the disposal of all project generated waste. This log shall be maintained by the Project Supervisor and shall be kept on site at all times.

H. Originals of all Waste Shipment Records and disposal logs shall be submitted by the Contractor to the Owner’s Representative with the final close-out documentation and upon request.

END OF SECTION  028213
Attachment to Specification Section 028213

Asbestos Containing Material Inspection
For

Episcopal Church Home
Chapel Roof Replacement and Selective Masonry Repairs
Buffalo, New York 14202
SECTION 028300 - LEAD MANAGEMENT

PART 1 - GENERAL

1.1 SCOPE:

A. The presence of lead based paint (LBP) has been confirmed on the gutters, downspouts, drip edges, gutter bases, galvanized metal gable ends and dormer moldings. Precautions shall be taken by all contractors to ensure that workers and building occupants are not exposed to lead in excess of the permissible exposure limit. The contractor shall be responsible for conducting all contract work in accordance with applicable federal, state and local requirements including 29 CFR 1926.62 (OSHA lead exposure in construction).

B. The following coatings has been determined to be Lead-Based Paint (LBP):
   1. Red paint on gutters, downspouts, drip edges, gutter bases, galvanized metal gable ends and dormer moldings

C. Contractor shall perform all work necessary to carry out the proper management and control of all flaking or chipping lead based paint and proper management of all LBP coated waste generated in accordance with all applicable laws, codes, rules and regulations and in accordance with the requirements set forth in this section. Provide all appropriate controls and protection for worker exposure to lead based paint in accordance with OSHA requirements.

1.2 REGULATORY REQUIREMENTS:

A. Applicable guidelines and standards include, but are not limited to, the following:
   1. New York State Department of Environmental Conservation
      6 NYCRR Subparts 371-376
   2. Code of Federal Regulations (CFR) Publications:
      29 CFR, Part 1926.62;
      40 CFR 61, Subpart A General Provisions (Hazardous Air Pollutants Listing)
      40 CFR 61.152 Standard for Waste Manufacturing, Demolition, Renovation, Spraying and Fabricating Operations
      40 CFR 241 Guidelines for the Land Disposal of Solid Wastes
      40 CFR 257 Criteria for Classification of Solid Waste
      40 CFR 261 Identification and Listing of Hazardous Wastes
      40 CFR 262 Standards Applicable to Generators of Hazardous Waste
3. American National Standards Institute (ANSI) Publications:
   - Z88.2-80 Practices for Respiratory Protection; Z87.1 Eye Protection
4. Steel Structure Painting Council (SSPC)

1.3 WORKER PROTECTION:

A. General
   1. Any surface coating and/or underlying substrate containing lead in any concentration that shall be disturbed shall be treated as a potential lead hazard to workers in accordance with 29 CFR 1926.62. This standard applies to all construction work in which lead in any concentration is present.

   2. The Contractor shall be responsible for maintaining a program in accordance with 29 CFR 1926.62 at minimum and shall be responsible for protecting and training his employees on worker safety, health hazards, etc. relating to lead. The following sections must be addressed by the Contractor in a lead health and safety program. This program shall be incorporated into the Contractor’s written Health and Safety plan. These sections are not intended to constitute an exhaustive summary of all relevant obligations. The Contractor should consult the following publications and/or competent environmental counsel.

   - OSHA - 3079 Respiratory Protection
   - OSHA - 3142 Lead in Construction

B. Exposure Assessment/Personal Air Monitoring
   1. Exposure assessment is the primary means of determining to what airborne level of lead workers are being exposed. The Contractor shall insure that workers are not exposed to lead at concentrations greater than the Permissible Exposure Limit (PEL) of 50 micrograms per cubic meter (μg/m³) over an eight-hour time weighted average (TWA). The Contractor must initially determine if any employee is exposed to lead at or above the PEL. Until the findings of this initial exposure assessment indicate that the airborne concentrations do not exceed the PEL, the Contractor must provide respirator protection that shall adequately prevent worker exposure to airborne lead above the PEL. At a minimum, respirators must have a protection factor of at least ten. The Contractor must make this initial exposure assessment by personal air sampling representative of a full shift, including at least one sample for each job classification in each work area, either for each shift or for the shift with the highest exposure level.
2. If available, use exposure assessment data obtained within the last 12 months from previous jobs conducted under similar work conditions, control methods, work practices, and environmental conditions to be used in this contract or other objective data to demonstrate that work activities in this contract shall not exceed the PEL, provided that the assessment entailed comparable lead concentrations in coating materials, work practices, engineering controls, and rates of work.

3. Until the exposure assessment is performed, the Contractor must provide to his workers the following: respiratory protection with a protection factor of at least ten, personal protective clothing, lead-free change areas, hand washing facilities, biological monitoring and training.

C. Medical Surveillance

Provide medical surveillance to workers until exposure monitoring reveals that workers are not exposed on any day of the job to airborne lead at or above the Action Level of 30 ug/m³. This consist of a blood test measuring the level of lead and zinc protoporphyrin by a licensed physician. Further testing and medical exams may be necessary depending on the results of initial blood tests and/or the initial exposure assessment as stated in CFR 1926.62.

D. Training

Before workers start a job in a leaded environment, they must receive training. This training must include a description of the OSHA lead standard, the sources of lead exposure, the uses and limitations of respirators, the purpose of getting a blood lead test, the purpose of the initial exposure assessment, their rights to the results of the blood tests and air monitoring and the methods of controlling the level of lead exposure to a minimum.

E. Written Program

Have a written lead health and safety program which is to be submitted to Owner’s Representative and imposed on all of his employees involved in operations that disturb or remove lead paint or lead dust or dirt for this contract. The program, at a minimum, shall address respirator protection that is in full compliance with all aspects of 29 CFR 1910.134, exposure assessment, signs to be posted in work areas, protective clothing, engineering and administrative controls, hygiene facilities and practices, decontamination, housekeeping, medical surveillance, training and other items to satisfy OSHA standards as required.

F. Respirator Protection

1. Have a respirator protection program in accordance with 29 CFR 1910.134. If respirators are necessary, the Contractor shall have his employees medically approved to wear respirators, establish and submit a written respirator program, select the proper respirator for the level of exposure to be encountered on the job, and have workers fit-tested to insure proper fit.

2. The minimum respiratory protection requirements for lead paint removal operations and lead-paint clean-up operations and for the disturbance of any other...
lead containing material for this contract shall be as per 29 CFR 1926.62 which includes job categories and functions where workers may be exposed to lead, including but not limited to, manual scraping, sanding, abrasive blasting, painting, clean-up operations and containment breakdown.

3. All workers are required to don an appropriate level of protection commensurate with the airborne concentrations of lead in which they are working. The level of protection shall be determined by the Contractor, based on objective air monitoring data.

G. Controlling Lead Exposure

Engineering and work practice controls are the primary means of maintaining exposures to lead below the PEL. Paint removal and surface preparation activities must keep dust level at a minimum. Torch cutting of surfaces with LBP shall require appropriate PPE and exposure controls. Power tools must be equipped with vacuum shrouds with high efficiency particulate air filters (HEPA). Eating and drinking must be prohibited in the work area. Hand washing facilities must be provided. All personal protective clothing shall be removed at the end of the day.

1.4 LEAD MANAGEMENT:

A. General

1. Ensure that work plans and work methods utilized for lead paint management conform to all applicable laws, codes, rules and regulations, including, without limitation, the federal statutes governing lead Exposure Reduction, 15 U.S.C.A. Section 2681 et. seq., and OSHA regulation 29 CFR, Part 1926.62.

B. Work Plans

1. The Contractor shall be required to prepare task specific Work Plans, as a component of the Contractor’s Project Work Plan, prior to starting Work detailing how he shall accomplish each task of work related to the disturbance of any lead containing paint surface or material. In each case the Contractor shall prepare the work plan with the needs, logistics and constraints of the individual job in mind, taking into account such factors as paint removal method, worker safety, proximity to the public, and protection of the environment including containment and air monitoring requirements. Torch cutting of LBP surfaces should be avoided and shall require exposure control measures including exposure monitoring and respiratory protection.

2. The Work Plans shall also include methods of minimizing and containing the generation of all dust, including dust generated while cleaning up construction and demolition debris. These methods may include such techniques as wet mopping and/or wiping, HEPA vacuuming or the use of a negative pressure ventilation system where lead dust is generated. Once the Work has been complete and debris has been properly removed from the Site, all surfaces shall be free and clear of visible dust. All work areas shall be cleaned on a daily basis at the end of each
shift.

3. At no time shall the Contractor be permitted to perform any Work which may impact upon lead containing material until the Work Plan has been approved.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

3.1 PROTECTION OF ADJACENT AREAS AND THE ENVIRONMENT:

A. General

1. Areas of deteriorated paint requiring abatement (removal) are present throughout the Chapel Roof and gutters. In the event lead containing material is to be disturbed during any phase of the work, take all necessary actions to ensure that all dust and debris is contained within the work area and that activities in no way results in the contamination with lead dust of any adjacent areas, building, or the environment.

B. Containment

1. In the event a containment structure is required, ensure that such containment prevents lead containing materials (LCM) from contaminating adjacent areas, building, or the environment in any fashion. This shall include any water runoff from wet removal methods. Where a containment structure is not required, the Contractor shall specify paint removal tools and methodologies which are fitted with HEPA filter vacuum shroud attachments or are otherwise designed to eliminate the possible release of LCM emissions into the air (i.e., chemical strippers).

C. Contamination

1. If it is determined by visual identification that adjacent areas, buildings, or the environment have been contaminated as a result of the Contractor’s work, the Contractor agrees to clean the affected premises at no charge and be responsible for all costs incurred by this clean-up activity.

3.2 DISPOSAL REQUIREMENTS:

A. General

1. Waste shall be disposed in accordance with Section 028100.

2. The Contractor shall perform sampling and analysis using Toxicity Characteristic Leaching Procedure (TCLP) required to assure the proper and legal handling of
Roof Replacement and
Selective Masonry Repairs
Hutchison Chapel
FA# 220014.00

LEAD MANAGEMENT
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the waste. Wastes to be characterized include all materials coated with LBP
including, but not limited to, concrete, brick, metal, and wood. All removed LBP
material/residue shall also be characterized for proper disposal. If any chemical
analysis or sampling is performed by or on behalf of the Contractor, its Transporter,
or its Treatment Storage and Disposal Facility (TSD), a copy of such analysis must
be provided to the Owner’s Representative at no additional cost. (Note: Painted
metal may be designated as recyclable and disposed of at a scrap metal facility for
reuse or resale.)

3. Ensure that the waste disposal Subcontractor warrants and represent possession of
all permits and/or licenses required under the Resource Conservation’s and
Recovery Act (RCRA) as well as any state or local permits or licenses required for
removal, repacking, transportation and disposal of hazardous waste.

4. All hazardous waste materials removed hereunder must be lawfully treated and
disposed by the waste disposal Subcontractor at an Environmental Protection
Agency (USEPA) permitted Treatment Storage and Disposal Facility.

5. All wastes, drums, and other items removed hereunder must be lawfully treated
and disposed of by the Contractor’s waste disposal Subcontractor within thirty (30)
days after the removal from the Site. Ensure that the waste disposal Subcontractor
provides completed shipping documents for all hazardous wastes removed, which
contain the information required under 40 CFR Part 262 Subpart B (hereinafter the
“Manifest Form”) and 6 NYCRR Part 372 as well as all Certificates of Disposal
which specify where each component of all wastes removed from the property is
ultimately treated or disposed. Such Certificates shall include references to the
Manifest Form for the shipment as well as address and USEPA identification
numbers for the generator facility.

6. The Contractor is responsible for performing all sampling and analysis
requirements specified by the receiving disposal facilities. The Owner has the right
to reject any proposed facility, in which case, the Contractor shall not use that
facility.

7. Should any problems arise regarding the TSD facility chosen to accept the waste
for treatment and disposal that would require the return of waste or should such
TSD facility have violated any environmental regulation which would result in
regulatory enforcement action, ensure that the waste disposal Subcontractor
immediately notifies the Contractor and Owner’s Representative in writing of such
situation, identifies an alternative TSD and obtains written approval from the
Owner’s Representative for disposal at such TSD.

8. Insure that the waste disposal Subcontractor provides completed shipping
documents, hereinafter referred to as “Bills of Lading” for all nonhazardous
“industrial” waste removed from the property. A Bill of Lading must accompany
each waste shipment and must include information regarding the quantity and type
of waste, the waste transporter name, and the date of removal from the property.
The Owner has the right to reject any proposed waste transporter, in which case,
the Contractor shall not use that transporter.

B. Transportation Requirements

1. Insure that the waste disposal Subcontractor providing waste transportation services possesses a valid Waste Hauler’s permit issued pursuant to the New York State Department of Environmental Conservation (NYSDEC) regulations, 6 NYCRR Part 364. In addition, if the waste is to be transported and disposed of out of New York State, permits for those states through which the waste shall be transported and for where it shall be disposed may be required. It is the Contractor’s responsibility to insure that the waste disposal Subcontractor correctly determines which permits are required and to provide such permits for review and approval of the Owner’s Representative.

2. Packaging and transporting of all wastes shall be in accordance with the applicable sections of the Department of Transportation (DOT) regulations.

3.3 QUALIFICATIONS:

A. The Contractor and/or Subcontractors involved in any activity which may impact upon lead paint or other lead-containing materials (i.e., lead paint sampling, lead abatement, and abatement design) shall have demonstrated two years of experience in lead hazard assessment and management, environmental and personal air monitoring, worker protection and training, and lead remediation specification writing.
PART 1 - GENERAL

1.1 SUMMARY
   A. Section includes historic treatment work consisting of repairing historic stone assemblies.
   B. Related Requirements:
      1. Section 013591 "Historic Treatment Procedures" for general historic treatment requirements.
      2. Section 024296 "Historic Removal and Dismantling" for historic removal and dismantling work.

1.2 DEFINITIONS
   A. Low-Pressure Spray:
      1. Pressure: 100 to 400psi.
      2. Flow Rate: 4 to 6gpm.
   B. Rebuilding (Setting) Mortar: Mortar used to set and anchor masonry in a structure, distinct from
      pointing mortar installed after masonry is set in place.

1.3 ACTION SUBMITTALS
   A. Samples: For each exposed product and for each color and texture specified.

1.4 INFORMATIONAL SUBMITTALS

1.5 QUALITY ASSURANCE

PART 2 - PRODUCTS

2.1 MASONRY MATERIALS
   A. Stone Matching Existing: Natural building stone of variety, color, texture, grain, veining, finish,
      size, and shape that match existing stone. The existing stone is of the Medina Sandstone type.
1. For existing stone that exhibits a range of colors, textures, grains, veining, finishes, sizes, or shapes, provide stone that proportionally matches that range rather than stone that matches an individual color, texture, grain, veining, finish, size, or shape within that range.

2.2 MORTAR MATERIALS

A. Portland Cement: ASTM C 150/C 150M, Type I or Type II; white gray, or both, where required for color matching of mortar.

   1. Provide cement containing not more than 0.60 percent total alkali when tested according to ASTM C 114.

B. Hydrated Lime: ASTM C 207, Type S.

C. Mortar Sand: ASTM C 144 unless otherwise indicated.

   1. Match size, texture, and gradation of existing mortar sand as closely as possible. Blend several sands if necessary to achieve suitable match.
   2. Colored Mortar: Natural sand or ground marble, granite, or other sound stone of color necessary to produce required mortar color.
   3. For exposed mortar, provide sand with rounded edges.


E. Water: ASTM C 270, potable.

2.3 MANUFACTURED REPAIR MATERIALS

A. Stone-to-Stone Adhesive: Two-part polyester or epoxy-resin stone adhesive with a 15- to 45-minute cure at 70 deg F, recommended in writing by adhesive manufacturer for type of stone repair indicated, and matching stone color.

2.4 ACCESSORY MATERIALS

A. Setting Buttons and Shims: Resilient plastic, nonstaining to stone, sized to suit joint thicknesses and bed depths of stone units, less the required depth of pointing materials unless removed before pointing.

2.5 MORTAR MIXES

A. Measurement and Mixing: Measure cementitious materials and sand in a dry condition by volume or equivalent weight. Do not measure by shovel; use known measure. Mix materials in a clean, mechanical batch mixer.
B. Colored Mortar: Produce mortar of color required by using specified ingredients. Do not alter specified proportions without Architect's approval.

1. Mortar Pigments: Where mortar pigments are indicated, do not add pigment exceeding 10 percent by weight of the cementitious or binder materials, except for carbon black, which is limited to 2 percent, unless otherwise demonstrated by a satisfactory history of performance.

C. Do not use admixtures in mortar unless otherwise indicated.

D. Mixes: Mix mortar materials in the following proportions:

1. Rebuilding (Setting) Mortar by ASTM C 1713 Composition: ASTM C 1713, with binder material limited to portland cement and lime and with a volume ratio of 1 part portland cement, 1 part lime, and 6 parts sand.
2. Colored Mortar: Add mortar pigments to produce exposed, setting (rebuilding) mortar of colors required.

PART 3 - EXECUTION

3.1 PROTECTION

A. Prevent mortar from staining face of surrounding stone and other surfaces.

3.2 STONE REPAIR, GENERAL

A. Have repair work performed only by qualified historic treatment specialist.

3.3 PARTIAL STONE REPLACEMENT

A. Remove defective portion of existing stone unit (backing stone). Carefully remove defective portion of stone by making vertical and horizontal saw cuts at face of backing stone and removing defective material to depth required for fitting partial replacement (dutchman).

1. Make edges of backing stone at cuts smooth and square to each other and to finished surface; essentially rectangular. Make back of removal area flat and parallel to stone face.
2. Do not overcut at corners and intersections. Hand trim to produce clean sharp corners with no rounding and no damage to existing work to remain.
3. If backing stone becomes further damaged, remove damaged area and enlarge partial replacement as required.

B. Cut and trim partial replacement to accurately fit area where material was removed from backing stone. Fabricate to size required to produce joints between partial replacement and backing stone of no more than 1/16 inch in width, and to produce joints between partial replacement and other stones that match existing joints between stones.
C. Apply stone-to-stone adhesive according to adhesive manufacturer's written instructions. Coat bonding surfaces of backing stone and partial replacement, completely filling all crevices and voids.

D. Apply partial replacement while adhesive is still tacky and hold securely in place until adhesive has cured. Use shims, clamps, wedges, or other devices as necessary to align face of partial replacement with face of backing stone.

3.4 FINAL CLEANING

A. After mortar has fully hardened, thoroughly clean exposed stone surfaces of excess mortar and foreign matter; use wood scrapers, stiff-nylon or -fiber brushes, and clean water applied by low-pressure spray.

1. Do not use metal scrapers or brushes.
2. Do not use acidic or alkaline cleaners.

END OF SECTION 040342
SECTION 040343 - HISTORIC STONE MASONRY REPOINTING

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes historic treatment work consisting of repointing stone masonry joints.

B. Related Requirements:

1. Section 013591 "Historic Treatment Procedures" for general historic treatment requirements.

1.2 UNIT PRICES

A. Work of this Section is affected by unit prices specified in Section 012200 "Unit Prices."

1.3 DEFINITIONS

A. Low-Pressure Spray:

1. Pressure: 100 to 400 psi
2. Flow Rate: 4 to 6 gpm.

1.4 PREINSTALLATION MEETINGS

1.5 ACTION SUBMITTALS

A. Product Data: For each type of product.

1.6 QUALITY ASSURANCE

A. Mockups: Prepare mockups of historic treatment on existing surfaces to demonstrate aesthetic effects and to set quality standards for materials and execution.

1. Repointing: Rake out joints in two separate areas, each approximately 36 inches high by 48 inches wide for repointing required and repoint one of the areas.
PART 2 - PRODUCTS

2.1 MORTAR MATERIALS

A. Portland Cement: ASTM C 150/C 150M, Type I or Type II; white or gray or both, where required for color matching of mortar.
   1. Provide cement containing not more than 0.60 percent total alkali when tested according to ASTM C 114.

B. Hydrated Lime: ASTM C 207, Type S.

C. Mortar Sand: ASTM C 144 unless otherwise indicated.
   1. Match size, texture, and gradation of existing mortar sand as closely as possible. Blend several sands if necessary to achieve suitable match.
   2. Color: Natural sand or ground marble, granite, or other sound stone of color necessary to produce required mortar color.
   3. Provide sand with rounded edges.


E. Water: ASTM C 270, potable.

2.2 MORTAR MIXES

A. Measurement and Mixing: Measure cementitious materials and sand in a dry condition by volume or equivalent weight. Do not measure by shovel; use known measure. Mix materials in a clean, mechanical batch mixer.
   1. Mixing Pointing Mortar: Thoroughly mix cementitious materials and sand together before adding any water. Then mix again, adding only enough water to produce a damp, unworkable mix that will retain its form when pressed into a ball. Maintain mortar in this dampened condition for 15 to 30 minutes. Add remaining water in small portions until mortar reaches desired consistency. Use mortar within one hour of final mixing; do not retemper or use partially hardened material.

B. Colored Mortar: Produce mortar of color required by using specified ingredients. Do not alter specified proportions without Architect's approval.
   1. Mortar Pigments: Where mortar pigments are indicated, do not add pigment exceeding 10 percent by weight of the cementitious or binder materials, except for carbon black, which is limited to 2 percent, unless otherwise demonstrated by a satisfactory history of performance. Where mortar pigments are indicated, do not exceed a pigment-to-cement ratio of 1:10 by weight.
C. Do not use admixtures in mortar unless otherwise indicated.

D. Mixes: Mix mortar materials in the following proportions:

1. Pointing Mortar by ASTM C 1713 Composition: ASTM C 1713, with binder material limited to portland cement and lime and with a volume ratio of 1 part portland cement, 1 part lime, and 6 parts sand. Add mortar pigments to produce mortar colors required.

PART 3 - EXECUTION

3.1 PROTECTION

A. Prevent mortar from staining face of surrounding stone and other surfaces.

3.2 STONE REPOINTING, GENERAL

A. Have repointing work performed only by qualified historic treatment specialist.

3.3 REPOINTING

A. Rake out and repoint joints to the following extent:

1. All joints in areas indicated.

B. Do not rake out and repoint joints where not required.

C. Rake out joints as follows, according to procedures demonstrated in approved mockup:

1. Remove mortar from joints to depth of 2 times the joint width and not less than 3/4 inch to expose sound, unweathered mortar. Do not remove unsound mortar more than 2 inches deep; consult Architect for direction.

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

3. Do not spall edges of stone units or widen joints. Replace or patch damaged stone units as directed by Architect.
   a. Cut out mortar by hand with chisel and resilient mallet. Do not use power-operated grinders without Architect's written approval based on approved quality-control program.
   b. Cut out center of mortar bed joints using angle grinders with diamond-impregnated metal blades. Remove remaining mortar in bed joints and mortar in head joints by hand with chisel and resilient mallet. Strictly adhere to approved quality-control program.
D. Notify Architect of unforeseen detrimental conditions, including voids in mortar joints, cracks, loose stone, rotted wood, rusted metal, and other deteriorated items.

E. Pointing with Mortar:

1. Rinse joint surfaces with water to remove dust and mortar particles. Time rinsing application so, at time of pointing, joint surfaces are damp but free of standing water. If rinse water dries, dampen joint surfaces before pointing.

2. Apply pointing mortar first to areas where existing mortar was removed to depths greater than surrounding areas. Apply in layers not greater than 3/8 inch until a uniform depth is formed. Fully compact each layer thoroughly and allow it to become thumbprint hard before applying next layer.

3. After deep areas have been filled to same depth as remaining joints, point joints by placing mortar in layers not greater than 3/8 inch. Fully compact each layer and allow it to become thumbprint hard before applying next layer. Where existing stone has worn or rounded edges, slightly recess finished mortar surface below face of stone to avoid widened joint faces. Take care not to spread mortar beyond joint edges onto exposed stone surfaces or to featheredge the mortar.

4. When mortar is thumbprint hard, tool joints to match original appearance of joints as demonstrated in approved mockup. Remove excess mortar from edge of joint by brushing.

5. Cure mortar by maintaining in thoroughly damp condition for at least 72 consecutive hours, including weekends and holidays.
   a. Acceptable curing methods include covering with wet burlap and plastic sheeting, periodic hand misting, and periodic mist spraying using system of pipes, mist heads, and timers.
   b. Adjust curing methods to ensure that pointing mortar is damp throughout its depth without eroding surface mortar.

6. Hairline cracking within the mortar or mortar separation at edge of a joint is unacceptable. Remove mortar and repoint.

F. Where repointing work precedes cleaning of existing stone, allow mortar to harden at least 30 days before beginning cleaning work.

END OF SECTION 040343
PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Replication and installation of historic decorative metal items and whole assemblies as indicated on drawings.

B. Related Requirements:
   1. Division 1 – Alternate Bid Work Requirements

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings:
   1. Include plans, elevations, and sections showing locations and extent of replication work, with enlarged details of replacement parts indicating materials, profiles, methods of attachment, accessory items, and finishes.

C. Samples: For each type of decorative metal item and component with applied finishes.

1.3 QUALITY ASSURANCE

A. Historic Treatment Specialist Qualifications: A qualified historic decorative metal fabrication and installation specialist. Repair specialist to be experienced in forge welding. Experience in torch or arc welding and installing and finishing new decorative metalwork is insufficient experience for historic decorative metal replication work.

1.4 MOCKUPS

A. Prepare mockups of historic decorative metal replication and installation processes on existing surfaces to demonstrate aesthetic effects, to set quality standards for materials and execution, and to set quality standards for fabrication and installation. Prepare mockups so they are inconspicuous.
   1. Cast-Metal Items: Submit patterns, models, or plaster castings made from existing decorative metal for each replacement casting required.
PART 2 - PRODUCTS

2.1 METAL MATERIALS

A. General: Provide decorative metal materials made of alloys, forms, and types that match existing metals and have the ability to receive finishes matching existing finishes unless otherwise indicated. Exposed-to-view surfaces exhibiting imperfections inconsistent with existing materials are unacceptable.

PART 3 - EXECUTION

3.1 HISTORIC DECORATIVE METAL REPLICATION, GENERAL

A. Execution of the Work: In replicating historic items, disturb remaining existing work as minimally as possible and as follows:

1. Sequence work to minimize time before protective coatings are applied.
2. Replace or reproduce historic items where indicated or scheduled.
3. Make installation of replicated items reversible whenever possible.

B. Replicate Decorative Metal Item: Where indicated, work to include but not limited to, Decorative Roof top FINIALS. Duplicate existing items with new materials matching existing materials and features.

1. Design heavily deteriorated or missing features of historic decorative metal with compatible materials, using surviving prototypes to create patterns or molds for duplicating.
2. Do not use substitute materials unless otherwise indicated.
3. Compatible substitute materials may be used.

END OF SECTION 050374
SECTION 050385 - HISTORIC TREATMENT OF DECORATIVE FORMED METAL

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes historic treatment of decorative formed metal as follows:
   1. Stabilizing and protecting metal.
   2. Minor repair, replacement and patching of metal components in place.

B. Related Requirements:
   1. Section 090391 "Historic Treatment of Plain Painting"

1.2 UNIT PRICES

A. Work of this Section is affected by unit prices specified in Section 012200 "Unit Prices."

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Samples: For each exposed product and for each color and texture specified.

1.4 QUALITY ASSURANCE

A. Mockups: Prepare mockups of historic treatment repair processes on existing surfaces to demonstrate aesthetic effects and to set quality standards for materials and execution and for fabrication and installation. Prepare mockups so they are inconspicuous.
   1. Dent Removal: Repair Eaves/Gable molding component(s) of each type by filling dents with sculpted metal-patching compound and flattening edges to align repaired components flush with adjacent work.
   2. Replacing Components: Replace minor missing or excessively damaged Eaves/Gable molding with new or repaired, salvaged components and align edges of replacement components flush with adjacent work per Unit Price No. 3, Section 012200.
PART 2 - PRODUCTS

2.1 PREFABRICATED METAL PRODUCTS

2.2 METAL MATERIALS

A. Provide metal materials made of the alloys, forms, and types that match existing metals and have the ability to receive finishes matching existing finishes unless otherwise indicated.

2.3 ACCESSORIES

A. Metal-Patching Compound: Two-part, epoxy- or polyester-resin, metal-patching compound; knife-grade formulation as recommended in writing by manufacturer for type of metal repair indicated, tooling time required for the detail of work, and site conditions. Compound shall be produced for filling metal that has deteriorated because of corrosion or deformation. Filler shall be capable of filling deep holes and spreading to feather edge.

2.4 PREPARATORY CLEANING MATERIALS

A. Water: Potable.

B. Hot Water: Water heated to a temperature of 140 to 160 deg F.

C. Abrasive Materials:

1. Abrasive Pads: Non-scratch, of the following type(s):
   a. Abrasive Pad with Sponge: Combination plastic abrasive pad, consisting of a sponge enclosed with a woven urethane, polypropylene, or other plastic mesh or fabric, without other abrasive components that can scratch metal.
   b. Abrasive Pad of Plant Fibers: Agave, loofah, or another tough plant fiber, without other abrasive components that can scratch metal.


3. Medium Abrasives for Copper-Alloys: Extra-fine bronze wool or plastic abrasive pads.

D. Wash Cloths: Lint-free, absorbent, durable cloth without abrasives that can scratch metal.

2.5 MISCELLANEOUS MATERIALS

A. Fasteners: Fasteners shall be of the same basic metal as fastened metal unless otherwise indicated. Use metals that are noncorrosive and compatible with each metal joined.

1. Match existing fasteners in material and in type of fastener unless otherwise indicated.

2. Finish exposed fasteners to match finish of metal fastened unless otherwise indicated.
2.6 METAL FABRICATION

A. Fabricate repairs of decorative formed metal items and components in sizes and profiles to match existing decorative formed metal unless otherwise indicated, with accurate curves, lines, and angles. Mill joints to a tight, hairline fit. Form assemblies and joints exposed to weather to resist water penetration and retention.

B. Stamped components shall have embossed designs that are sharp and clear and shall be trimmed to exact size so that installed edges will be concealed or exposed as indicated on Drawings.

C. Provide rebates, lugs, and brackets necessary to assemble components and to attach to existing work. Drill and tap for fasteners. Use concealed fasteners where possible; use exposed fasteners to match existing work.

D. Comply with AWS for recommended practices in welding. Provide welds behind finished surfaces without distorting or discoloring exposed side. Clean exposed welded joints of flux, and dress exposed and contact surfaces.

2.7 FERROUS METAL FINISHES

A. Repair Primer: Manufacturer's standard, rust-inhibiting, fast-curing, lead- and chromate-free universal primer, compatible with firmly adhered existing paint and applied finish. Comply with coating manufacturer's written instructions for cleaning, pretreatment, application, and minimum dry film thickness.

B. Finish Primer: Primer complying with applicable requirements in Section 090391 "Historic Treatment of Plain Painting" for finish painting of primed historic metal.

C. Baked-Enamel or Powder-Coat Finish: Manufacturer's standard baked-on finish consisting of prime coat and thermosetting topcoat. Comply with applicable requirements in Section 090391 "Historic Treatment of Plain Painting".

PART 3 - EXECUTION

3.1 HISTORIC DECORATIVE FORMED METAL REPAIR, GENERAL

A. Execution of the Work: In repairing historic items, disturb remaining existing work as minimally as possible and as follows:

1. Stabilize decorative formed metal to reestablish structural integrity and weather resistance while maintaining the existing form of each item.
2. Remove deteriorated coatings and corrosion per Section 090391.
3. Sequence work to minimize time before protective coatings are reapplied.
4. Repair items where stabilization is insufficient to stop progress of deterioration.
5. Repair items in place unless otherwise indicated and retain as much original material as possible.
6. Replace or reproduce historic items where indicated or scheduled.
7. Make historic treatment of materials reversible whenever possible.
8. Install temporary protective measures to stabilize decorative formed metal that shall be repaired later.

B. Mechanical Coating Removal: Use only the gentlest mechanical methods, such as scraping and wire brushing, that do not abrade metal substrate. Do not use abrasive methods, such as sanding, or power tools except as indicated as part of the historic treatment program and approved by Architect.

C. Repairing Decorative Formed Metal: Match existing materials and features, retaining as much original material as possible to complete the repair. For bidding purposes, repair quantity shall be 30 Linear feet of repair for methods described in this section.

D. Replacing Decorative Formed Metal Components: Where indicated, duplicate and replace items with new metal, matching existing metal on a unit price basis per Section 012200.
   1. Replace heavily deteriorated or missing parts or features of decorative formed metal with compatible materials, using surviving prototypes to create patterns or dies for duplicate replacements.

3.2 PREPARATORY CLEANING

A. Perform preparatory cleaning before performing repair work. Use only those methods indicated for each type of decorative formed metal and its location.
   1. Brushes: If using wire brushes, use brushes of same base metal composition as metal being treated. Use brushes that are resistant to chemicals being used.
   2. Uniformity: Perform each cleaning method in a manner that results in uniform coverage of all surfaces, including corners, contours, and interstices, and that produces an even effect without streaks or damaging surfaces.

3.3 DISMANTLING, REPAIR, AND INSTALLATION

A. Repair decorative formed metal in place insofar as practicable unless otherwise indicated. Where necessary, dismantle components from their substrate and repair and reinstall them.

B. Perform dismantling work as required in Section 024296 "Historic Removal and Dismantling."

C. Deformed Components: Flatten bent and deformed components, so that embossed pattern along full length of the component's edges will again nest tightly against adjacent work insofar as practicable.

D. Defects in Painted Metal Surfaces: Repair non-load-bearing defects in existing metal surfaces, including dents and gouges more than 1/4 inch deep or 1 inch across and all holes and tears by filling with metal-patching compound. Remove burrs. Prime iron and steel surfaces immediately after repair to prevent flash rusting.
E. Installation:

1. Locate and place decorative formed metal items level and plumb and in alignment with adjacent construction.
   a. Do not cut or abrade finishes that cannot be completely restored in the field. Return items with such finishes to the shop for required alterations, followed by complete refinishing, or provide new units as required.

2. Use concealed anchorages where possible. Provide brass or lead washers fitted to screws where needed to protect metal surfaces and to make a weathertight connection.

3. Form tight joints with exposed connections accurately fitted together. Provide reveals and openings for sealants and joint fillers as indicated.

4. Install concealed joint fillers, sealants, and flashings, as the Work progresses, to make exterior items weatherproof.

5. Corrosion Protection: Apply bituminous paint or other permanent separation materials on concealed surfaces where metals would otherwise be in direct contact with substrate materials that are incompatible or could result in corrosion or deterioration of either material or finish.

6. Touch Up: At completion of installation, touch up and restore damaged or defaced finish surfaces and fastener heads.

F. Sealant: See Section 079200 "Joint Sealants."

3.4 PRIMING AND PAINTING

A. Repair Primer: Apply immediately after completing a repair.

B. Finish Primer: Apply as soon after cleaning as possible.

C. Finish Painting: Apply as soon as possible after repair and installation according to applicable requirements in Section 090391 "Historic Treatment of Plain Painting."

END OF SECTION 050385
SECTION 061000 - ROUGH CARPENTRY

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Wood blocking and nailers.
   2. Plywood and OSB Roof Substrate Boards.

1.2 ACTION SUBMITTALS

A. Product Data:
   1. For each type of process and factory-fabricated product.
   2. For preservative-treated wood products.

1.3 INFORMATIONAL SUBMITTALS

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

A. Lumber: Comply with DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, comply with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Grade lumber by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.
   1. Factory mark each piece of lumber with grade stamp of grading agency.
   2. Dress lumber, S4S, unless otherwise indicated.

B. Maximum Moisture Content:
   1. Dimension Lumber: 19 percent unless otherwise indicated.

2.2 PRESERVATIVE TREATMENT

A. Preservative Treatment by Pressure Process: AWPA U1; Use Category UC2 for interior construction not in contact with ground, Use Category UC3b for exterior construction not in contact with ground, and Use Category UC4a for items in contact with ground.
1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium. Do not use inorganic boron (SBX) for sill plates.

   B. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Do not use material that is warped or that does not comply with requirements for untreated material.

   C. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.

2.3 MISCELLANEOUS LUMBER

   A. Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:

      1. Blocking.
      2. Nailers.

   B. Dimension Lumber Items: Construction or No. 2 grade lumber of any species.

   C. Concealed Boards: 19 percent maximum moisture content and any of the following species and grades:

      1. Mixed southern pine or southern pine; No. 2 grade; SPIB.
      2. Eastern softwoods; No. 2 Common grade; NeLMA.
      3. Northern species; No. 2 Common grade; NLGA.

2.4 ROOF SUBSTRATE BOARD

   A. Plywood Underlayment Panels: DOC PS 1, Exterior, A-C , in thickness indicated or, if not indicated, not less than 1/2 nominal thickness.

   B. Oriented-Strand-Board Sheathing: DOC PS 2, Exposure 1 sheathing, not less than 7/16” thickness.

2.5 FASTENERS

   A. General: Fasteners are to be of size and type indicated and comply with requirements specified in this article for material and manufacture. Provide nails or screws, in sufficient length, to penetrate not less than 1-1/2 inches into wood substrate.

      1. Where rough carpentry is exposed to weather, in ground contact, pressure-preservative treated, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A153/A153M .

   B. Power-Driven Fasteners: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC70.
2.6 MISCELLANEOUS MATERIALS

PART 3 - EXECUTION

3.1 INSTALLATION

A. Set work to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry accurately to other construction. Locate furring, nailers, blocking, grounds, and similar supports to comply with requirements for attaching other construction.

B. Securely attach rough carpentry work to substrate by anchoring and fastening as indicated, complying with the following:


3.2 WOOD SUBSTRATE BOARD INSTALLATION


B. Fastening Methods: Nail or staple panels to existing wood desk boards. Space panels 1/8 inch apart at edges and ends.

END OF SECTION 061000
SECTION 061516 - WOOD ROOF DECKING

PART 1 - GENERAL

1.1 SUMMARY
   A. Section includes solid-sawn wood roof decking

1.2 ACTION SUBMITTALS
   A. Product Data: For each type of product.

1.3 INFORMATIONAL SUBMITTALS

PART 2 - PRODUCTS

2.1 WOOD ROOF DECKING, GENERAL
   A. General: Comply with DOC PS 20 and with applicable grading rules of inspection agencies certified by ALSC's Board of Review.

2.2 SOLID-SAWN WOOD ROOF DECKING
   A. Standard for Solid-Sawn Wood Roof Decking: Comply with AITC 112.
   B. Hem-fir or hem-fir (North).
   C. Roof Decking Nominal Size: 1 x 8.
   D. Roof Decking Grade: Commercial Decking or Commercial Dex.
   E. Grade Stamps: Factory mark each item with grade stamp of grading agency. Apply grade stamp to surfaces that are not exposed to view.
   F. Moisture Content: Provide wood roof decking with 19 percent maximum moisture content at time of dressing.
   G. Face Surface: Smooth.
   H. Edge Pattern: Vee grooved.
PART 3 - EXECUTION

3.1 INSTALLATION

A. Install solid-sawn wood roof decking to comply with AITC 112.

1. Locate end joints for combination simple and two-span continuous lay-up and lay-up indicated on drawings.

3.2 PROTECTION

A. Provide water-resistive barrier over roof decking as the Work progresses to protect roof decking until roofing is applied.

END OF SECTION 061516
SECTION 073113 - ASPHALT SHINGLES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   2. Underlayment materials.

B. Metal flashing and trim as associated with roofing only.

C. Related Requirements:

1.2 DEFINITIONS

A. Roofing Terminology: See ASTM D1079 for definitions of terms related to roofing Work in this Section.

1.3 ACTION SUBMITTALS

A. Product Data: For the following:
   1. Asphalt shingles.
   2. Underlayment materials.
   3. Asphalt roofing cement.
   4. Elastomeric flashing sealant.

B. Samples: For each exposed product and for each color and blend specified, in sizes indicated.
   1. Asphalt Shingles: Full size.

C. Samples for Verification: For the following products, in sizes indicated:
   1. Asphalt Shingles: Full size.

1.4 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer.
1.5 QUALITY ASSURANCE
   A. Installer Qualifications: An authorized installer who is trained and approved by manufacturer.

1.6 DELIVERY, STORAGE, AND HANDLING
   A. Store roofing materials in a dry, well-ventilated location protected from weather, sunlight, and moisture in accordance with manufacturer's written instructions.
   B. Store underlayment rolls on end, on pallets or other raised surfaces. Do not double-stack rolls.
   C. Protect unused roofing materials from weather, sunlight, and moisture when left overnight or when roofing Work is not in progress.
   D. Handle, store, and place roofing materials in a manner to prevent damage to roof deck or structural supporting members.

1.7 FIELD CONDITIONS
   A. Environmental Limitations: Proceed with installation only when existing and forecasted weather conditions permit product installation and related Work to be performed in accordance with manufacturer's written instructions and warranty requirements.
      1. Install self-adhering, polymer-modified bitumen sheet underlayment within the range of ambient and substrate temperatures recommended in writing by manufacturer.

1.8 WARRANTY
   A. Materials Warranty: Manufacturer agrees to repair or replace asphalt shingles that fail within specified warranty period.
      1. Failures include, but are not limited to, the following:
         a. Manufacturing defects.
      2. Materials Warranty Period: 50 years from date of Substantial Completion, prorated, with first 2 years nonprorated.
         a. Wind-Speed Warranty Period: Asphalt shingles will resist blow-off or damage caused by wind speeds of up to 80 mph for five years from date of Substantial Completion.
         b. Algae-Resistance Warranty Period: Asphalt shingles will not discolor for 20 years from date of Substantial Completion.
         c. Workmanship Warranty Period: Two years from date of Substantial Completion.
   B. Roofing Installer's Warranty: On warranty form at end of this Section, signed by Installer, in which Installer agrees to repair or replace components of asphalt shingle roofing that fail in materials or workmanship within specified warranty period.
1. Warranty Period: Two years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 SOURCE LIMITATIONS

A. Obtain each type of product from single source from single manufacturer.

2.2 PERFORMANCE REQUIREMENTS

A. Exterior Fire-Test Exposure: Provide asphalt shingles and related roofing materials identical to those of assemblies tested for Class A fire resistance in accordance with ASTM E108 or UL 790 by Underwriters Laboratories or another testing and inspecting agency acceptable to authorities having jurisdiction. Identify products with appropriate markings of applicable testing agency.

B. Wind Resistance: Provide asphalt shingles that comply with requirements of ASTM D3161/D3161M, Class F, and with ASTM D7158/D7158M, Class H.

C. Energy Performance, ENERGY STAR: Provide asphalt shingles that are listed on the DOE's "ENERGY STAR Roof Product List" for steep-slope roof products.

D. Solar Reflectance Index (SRI): Three-year-aged SRI not less than 15 when calculated according to ASTM E 1980, based on testing identical products by a qualified testing agency.

2.3 GLASS-FIBER-REINFORCED ASPHALT SHINGLES


1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
   a. GAF.
   b. IKO Industries Inc.
   c. Owens Corning.

2. Butt Edge: Straight cut.
3. Strip Size: Manufacturer's standard.
5. Color and Blends: Basis of design: GAF Designer Shingles, Slateline, English Grey or approved equal.
2.4 UNDERLAYMENT MATERIALS

A. Glass-Reinforced Felt: ASTM D6757/D6757M, asphalt-saturated, glass-reinforced organic felt or inorganic fiber-based felt.
   1. **Manufacturers:** Subject to compliance with requirements, provide products by one of the following:
      a. GAF.
      b. Owens Corning.

   1. **Manufacturers:** Subject to compliance with requirements, provide products by one of the following:
      a. GAF.
      b. IKO Industries Inc.
      c. Owens Corning.
      d. Top Surface: Textured polymer film or Polyester.

2.5 ACCESSORIES

A. Asphalt Roofing Cement: ASTM D4586/D4586M Type II, asbestos free.

B. Roofing Nails: ASTM F1667, aluminum, stainless steel, copper, or hot-dip galvanized-steel wire shingle nails, minimum 0.120-inch- diameter, sharp-pointed, with a 3/8- to 7/16-inch- diameter flat head and of sufficient length to penetrate 3/4 inch into solid wood decking or extend at least 1/8 inch through sheathing less than 3/4 inch thick.
   1. Where nails are in contact with metal flashing, use nails made from same metal as flashing.

C. Underlayment Nails: Aluminum, stainless steel, or hot-dip galvanized-steel wire nails with low-profile metal or plastic caps, 1-inch- minimum diameter.
   1. Provide with minimum 0.0134-inch-thick metal cap, 0.010-inch-thick power-driven metal cap, or 0.035-inch-thick plastic cap; and with minimum 0.083-inch-thick ring shank or 0.091-inch-thick smooth shank of length to penetrate at least 3/4 inch into roof sheathing or to penetrate through roof sheathing less than 3/4 inch thick.

2.6 METAL FLASHING AND TRIM

A. Comply with requirements in Section 076200 "Sheet Metal Flashing and Trim."

B. Sheet Metal: Aluminum, pre-finished .

C. (.032 inches)
D. Fabricate sheet metal flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, metal, and other characteristics of the item unless otherwise specified in this Section or indicated on Drawings.

1. Apron Flashings: Fabricate with lower flange a minimum of 5 inches over and 4 inches beyond each side of downslope asphalt shingles and 6 inches up the vertical surface.
2. Step Flashings: Fabricate with a head lap of 2 inches and a minimum extension of 5 inches over the underlying asphalt shingle and up the vertical surface.
3. Cricket and Backer Flashings: Fabricate with concealed flange extending a minimum of 24 inches beneath upslope asphalt shingles and 6 inches beyond each side of chimney and 6 inches above the roof plane.
4. Open-Valley Flashings: Fabricate from metal sheet not less than 24 inches wide in lengths not exceeding 10 feet, with 1-inch-high, inverted-V profile water diverter at center of valley and equal flange widths of not less than 11 inches.
   a. Hem flange edges for fastening with metal cleats.
   b. Add stiffening ribs in flashings to promote drainage.
5. Vent-Pipe Flashings: ASTM B749, Type L51121, at least 1/16 inch thick. Provide lead sleeve sized to slip over and turn down into pipe, soldered to skirt at slope of roof, and extending at least 4 inches from pipe onto roof.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

1. Examine roof sheathing to verify that sheathing joints are supported by framing and blocking, or metal clips and that installation is within flatness tolerances.
2. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and completely anchored and that provisions have been made for flashings and penetrations through asphalt shingles.
3. Verify that vent stacks and other penetrations through roofing are installed and securely fastened.

B. Prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION OF UNDERLAYMENT MATERIALS

A. Comply with asphalt shingle and underlayment manufacturers' written installation instructions and with recommendations in NRCA's "The NRCA Roofing Manual: Steep-Slope Roof Systems" applicable to products and applications indicated unless more stringent requirements are specified in this Section or indicated on Drawings.
B. Self-Adhering, Polymer-Modified Bitumen Sheet: Install, wrinkle free, on roof deck.
   1. Comply with low-temperature installation restrictions of underlayment manufacturer.
   2. Install lapped in direction that sheds water.
      a. Lap sides not less than 4 inches.
      b. Lap ends not less than 6 inches, staggered 24 inches between succeeding courses.
      c. Roll laps with roller.
   3. Eaves: Extend from edges of eaves 72 inches beyond interior face of exterior wall.
   4. Rakes: Extend from edges of rakes 36 inches beyond interior face of exterior wall.
   5. Valleys: Extend from lowest to highest point 18 inches on each side of centerline.
   6. Hips: Extend 18 inches on each side.
   7. Ridges: Extend 36 inches on each side.
   8. Sidewalls: Extend 18 inches beyond sidewalls and return vertically against sidewalls not less than 4 inches .
   9. Dormers, Chimneys, Skylights, and Other Roof-Penetrating Elements: Extend 18 inches beyond penetrating elements and return vertically against penetrating elements not less than 4 inches .
   10. Cover underlayment within seven days.

3.3 INSTALLATION OF METAL FLASHING AND TRIM

A. Install metal flashings and trim to comply with requirements in Section 076200 "Sheet Metal Flashing and Trim."
   1. Install metal flashings in accordance with recommendations in ARMA's "Asphalt Roofing Residential Manual - Design and Application Methods" and NRCA's "NRCA Guidelines for Asphalt Shingle Roof Systems."
   2. Bed flanges of metal flashings using asphalt roofing cement or elastomeric flashing sealant.

B. Apron Flashings: Extend lower flange over and beyond each side of downslope asphalt shingles and up the vertical surface.

C. Step Flashings: Install with a head lap of 2 inches and extend over underlying shingle and up the vertical face.
   1. Install with lower edge of flashing just upslope of, and concealed by, butt of overlying shingle.
   2. Fasten to roof deck only.
   3. Secure top to existing stone masonry with surface mounted reglet receiver, fastened 12" on center and with continuous silicone sealant.

D. Cricket and Backer Flashings: Install against roof-penetrating elements extending concealed flange beneath upslope asphalt shingles and beyond each side.

E. Open-Valley Flashings: Install centered in valleys, lapping ends at least 12 inches in direction that sheds water. Fasten upper end of each length to roof deck beneath overlap.
1. Secure hemmed flange edges into metal cleats spaced 24 inches apart and fastened to roof deck.
   a. Place strips parallel to and over flanges so that they will be just concealed by installed shingles.
3. Provide a closure at the end of the inverted-V profile of the valley metal to minimize water and ice infiltration.

F. Pipe Flashings: Form flashing around pipe penetrations and asphalt shingles. Fasten and seal to asphalt shingles as recommended by manufacturer.

3.4 INSTALLATION OF ASPHALT SHINGLES

A. Install asphalt shingles in accordance with manufacturer's written instructions and recommendations in ARMA's "Asphalt Roofing Residential Manual - Design and Application Methods" and NRCA's "NRCA Guidelines for Asphalt Shingle Roof Systems."

B. Install starter strip along lowest roof edge, consisting of an asphalt shingle strip with tabs removed at least 7 inches wide with self-sealing strip face up at roof edge.
   1. Install starter strip along rake edge.

C. Install first and remaining courses of laminated asphalt shingles stair-stepping diagonally across roof deck with manufacturer's recommended offset pattern at succeeding courses, maintaining uniform exposure.

D. Fasten asphalt shingle strips with a minimum of six roofing nails, but not less than the number indicated in manufacturer's written instructions for roof slope and design wind speed indicated on Drawings and for warranty requirements specified in this Section.
   1. Locate fasteners in accordance with manufacturer's written instructions.
   2. When ambient temperature during installation is below 50 deg F, hand seal self-sealing asphalt shingles by applying asphalt roofing cement spots between course overlaps after nailing the upper course.

END OF SECTION 073113
SECTION 07591 - PREPARATION FOR RE-ROOFING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

   1. Roof tear-off.
   2. Temporary roofing/underlayment.

1.3 MATERIALS OWNERSHIP

A. Except for items or materials indicated to be reused, reinstalled, or otherwise indicated to remain Owner's property, demolished materials shall become Contractor's property and shall be removed from Project site.

1.4 DEFINITIONS

A. Roofing Terminology: Refer to ASTM D 1079 and glossary in NRCA's "The NRCA Roofing and Waterproofing Manual" for definition of terms related to roofing work in this Section.

B. Existing Roofing System: Slate roofing, underlayment, flashings and other related components indicated on the drawings.

C. Roof Tear-Off: Removal of existing roofing system from deck.

D. Remove: Detach items from existing construction and legally dispose of them off-site unless indicated to be removed and reinstalled.

E. Existing to Remain: Existing items of construction that are not indicated to be removed.

1.5 SUBMITTALS

A. Product Data: For each type of product indicated in specification sections.
B. Temporary Roofing: Include Product Data and description of temporary roofing system. If temporary roof will remain in place, submit surface preparation requirements needed to receive permanent roof, and submit a letter from roofing membrane manufacturer stating acceptance of the temporary membrane and that its inclusion will not adversely affect the roofing system's resistance to fire and wind.

C. Photographs or Videotape: Show existing conditions of adjoining construction and site improvements, including exterior and interior finish surfaces, that might be misconstrued as having been damaged by reroofing operations. Submit before Work begins.

D. Landfill Records: Indicate receipt and acceptance of hazardous wastes, such as asbestos-containing material, by a landfill facility licensed to accept hazardous wastes.

E. Qualification Data: For Installer including certificate that Installer is licensed to perform asbestos abatement.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: Installer of new shingle roofing system, licensed to perform asbestos abatement in the State or jurisdiction where Project is located.

B. Regulatory Requirements: Comply with governing EPA notification regulations before beginning existing roofing removal. Comply with hauling and disposal regulations of authorities having jurisdiction.

C. Reroofing Conference: Conduct conference at Project site.

1. Meet with Owner; Architect; roofing system manufacturer's representative; roofing Installer including project manager, superintendent, and foreman.
2. Review methods and procedures related to roofing system tear-off and replacement including, but not limited to, the following:

   a. Reroofing preparation, including shingle roofing system manufacturer's written instructions.
   b. Temporary protection requirements for existing roofing system that is to remain during and after installation.
   c. Construction schedule and availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
   d. Existing deck patching/removal procedures and Owner notifications.
   e. Condition and acceptance of existing roof deck for reuse.
   f. Structural loading limitations of deck during reroofing.
   g. Special roofing details, drainage, penetrations and condition of other construction that will affect reroofing.
   h. Asbestos removal and discovery of asbestos-containing materials.
   i. Governing regulations and requirements for insurance and certificates if applicable.
   j. Existing conditions that may require notification of Architect before proceeding.
1.7 PROJECT CONDITIONS

A. Protect building to be reroofed, walkways, exterior plantings, and landscaping from damage or soiling from reroofing operations.

B. Limit construction loads on roof for safe, uniform distribution loading.

C. Weather Limitations: Proceed with reroofing preparation only when existing and forecasted weather conditions permit Work to proceed without water entering existing roofing system or building.

D. Hazardous Materials: Present in building to be reroofed. A report on the presence of hazardous materials is on file for review and use. Examine report to become aware of locations where hazardous materials are present.

1. Hazardous material remediation is specified elsewhere in the Contract Documents.
2. Do not disturb hazardous materials or items suspected of containing hazardous materials except according to procedures specified elsewhere in the Contract Documents.
3. Coordinate with hazardous material remediation subcontractor to prevent water from entering existing roofing system or building.

PART 2 - PRODUCTS

2.1 INFILL MATERIALS

A. Use infill materials matching existing deck unless otherwise indicated.

1. Infill materials are specified in Division 6, Wood Deck Boards.

2.2 TEMPORARY ROOFING MATERIALS

A. Shingle underlayment material as per Section 073113

2.3 AUXILIARY REROOFING MATERIALS

A. General: Auxiliary reroofing preparation materials recommended by roofing system manufacturer for intended use and compatible with components of new shingle roofing system.

B. Metal Flashing Sheet: Metal flashing sheet is specified in Division 7 Section "Sheet Metal Flashing and Trim."
PART 3 - EXECUTION

3.1 PREPARATION

A. During removal operations, have sufficient and suitable materials on-site to facilitate rapid installation of temporary protection in the event of unexpected rain.

3.2 ROOF TEAR-OFF

A. Roof Tear-Off: Remove existing roofing system and other roofing system components down to the deck.

1. Remove slate shingles and underlayment
2. All flashing and components as indicated on the drawings.

3.3 DECK PREPARATION

A. Inspect deck after removal of existing roofing system.

B. If broken or loose fasteners that secure deck panels to one another or to structure are observed or if deck appears or feels inadequately attached, take measures to secure existing deck boards.

C. If deck surface is not suitable for receiving new roofing or if structural integrity of deck is suspect, immediately notify Architect. Do not proceed with installation until directed by Architect.

D. Provide additional deck securement materials as indicated on Drawings.

3.4 EXISTING FLASHINGS

A. Remove existing flashings around chimneys, penetrations, valleys, hips, ridges, gutters and as indicated on drawings.

1. Clean substrates of contaminants such as asphalt, sheet materials, dirt, and debris.

B. Do not damage metal flashings or moldings that are to remain as indicated on drawings. Replace metal flashings damaged during removal with flashings of same metal, weight or thickness, and finish.

3.5 DISPOSAL

A. Collect demolished materials and place in containers. Promptly dispose of demolished materials. Do not allow demolished materials to accumulate on-site.
1. Storage or sale of demolished items or materials on-site is not permitted.

B. Transport and legally dispose of demolished materials off Owner's property.

END OF SECTION 07591
SECTION 076200 - SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   
B. Related Requirements:
   1. Section 061000 "Rough Carpentry" for wood nailers, curbs, and blocking.
   2. Section 073113Asphalt Shingles " " for installation of sheet metal flashing and trim integral with roofing.
   3. Section 077100 "Roof Specialties" for manufactured roof-edge drainage systems.

1.2 COORDINATION

A. Coordinate sheet metal flashing and trim layout and seams with sizes and locations of penetrations to be flashed, and joints and seams in adjacent materials.
   
B. Coordinate sheet metal flashing and trim installation with adjoining roofing and wall materials, joints, and seams to provide leakproof, secure, and noncorrosive installation.

1.3 ACTION SUBMITTALS

A. Product Data: For each of the following
   1. Underlayment materials.
   2. Sheet metal materials
   3. Elastomeric sealant.
   
B. Shop Drawings: For sheet metal flashing and trim.
   1. Detail fabrication and installation layouts, expansion-joint locations, and keyed details. Distinguish between shop- and field-assembled Work.
   2. Include identification of material, thickness, weight, and finish for each item and location in Project.
   3. Include details for forming, including profiles, shapes, seams, and dimensions.
   4. Include details for joining, supporting, and securing, including layout and spacing of fasteners, cleats, clips, and other attachments. Include pattern of seams.
   5. Include details of termination points and assemblies.
   6. Include details of roof-penetration flashing.
7. Include details of edge conditions, including eaves, ridges, valleys, rakes, crickets, flashings, and counter-flashings.

C. Samples: For each exposed product and for each color and texture specified, 12 inches long by actual width.

1.4 INFORMATIONAL SUBMITTALS

A. Qualification Data: For fabricator.

1.5 QUALITY ASSURANCE

A. Mockups: Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for fabrication and installation.
   1. Build mockup of typical roof eave, including fascia incorporating section 077100, hanging 1/2 round, high back gutter, incorporated into work, including supporting construction cleats, seams, attachments, underlayment, and accessories.
   2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Owner specifically approves such deviations.

B. Do not store sheet metal flashing and trim materials in contact with other materials that might cause staining, denting, or other surface damage.
   1. Store sheet metal flashing and trim materials away from uncured concrete and masonry.
   2. Protect stored sheet metal flashing and trim from contact with water.

C. Protect strippable protective covering on sheet metal flashing and trim from exposure to sunlight and high humidity, except to extent necessary for period of sheet metal flashing and trim installation.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Sheet metal flashing and trim assemblies, including cleats, anchors, and fasteners, are to withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Completed sheet metal flashing and trim are not to rattle, leak, or loosen, and are to remain watertight.

B. Sheet Metal Standard for Flashing and Trim: Comply with SMACNA's "Architectural Sheet Metal Manual" requirements for dimensions and profiles shown unless more stringent requirements are indicated.
C. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes to prevent buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

2.2 SHEET METALS

A. Protect mechanical and other finishes on exposed surfaces from damage by applying strippable, temporary protective film before shipping.

B. Aluminum Sheet: ASTM B209, alloy as standard with manufacturer for finish required, with temper as required to suit forming operations and performance required; with smooth, flat surface.

1. Exposed Coil-Coated Finish:
   a. Two-Coat Fluoropolymer: AAMA 2605. Fluoropolymer finish containing not less than 70 percent polyvinylidene fluoride (PVDF) resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.

2. Color: As selected by Architect from manufacturer's full range Match existing reddish color.

2.3 MISCELLANEOUS MATERIALS

A. Provide materials and types of fasteners, protective coatings, sealants, and other miscellaneous items as required for complete sheet metal flashing and trim installation and as recommended by manufacturer of primary sheet metal or manufactured item unless otherwise indicated.

B. Fasteners: Wood screws, annular threaded nails, self-tapping screws, self-locking rivets and bolts, and other suitable fasteners designed to withstand design loads and recommended by manufacturer of primary sheet metal or manufactured item.

1. General: Blind fasteners or self-drilling screws, gasketed, with hex-washer head.
   a. Exposed Fasteners: Heads matching color of sheet metal using plastic caps or factory-applied coating. Provide metal-backed EPDM or PVC sealing washers under heads of exposed fasteners bearing on weather side of metal.
   b. Blind Fasteners: High-strength aluminum or stainless steel rivets suitable for metal being fastened.

C. Sealant Tape: Pressure-sensitive, 100 percent solids, polyisobutylene compound sealant tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape 1/2 inch wide and 1/8 inch thick.

D. Elastomeric Sealant: ASTM C920, elastomeric silicone polymer sealant; of type, grade, class, and use classifications required to seal joints and tops of sheet metal flashing and trim and remain watertight.
E. Epoxy Seam Sealer: Two-part, noncorrosive, aluminum seam-cementing compound, recommended by aluminum manufacturer for exterior nonmoving joints, including riveted joints.

F. Bituminous Coating: Cold-applied asphalt emulsion in accordance with ASTM D1187/D1187M.


2.4 FABRICATION, GENERAL

A. Custom fabricate sheet metal flashing and trim to comply with details indicated and recommendations in cited sheet metal standard that apply to design, dimensions, geometry, metal thickness, and other characteristics of item required.

1. Fabricate sheet metal flashing and trim in shop to greatest extent possible.
2. Fabricate sheet metal flashing and trim in thickness or weight needed to comply with performance requirements, but not less than that specified for each application and metal.
3. Verify shapes and dimensions of surfaces to be covered and obtain field measurements for accurate fit before shop fabrication.
4. Form sheet metal flashing and trim to fit substrates without excessive oil-canning, buckling, and tool marks; true to line, levels, and slopes; and with exposed edges folded back to form hems.
5. Conceal fasteners and expansion provisions where possible.

B. Fabrication Tolerances:

1. Fabricate sheet metal flashing and trim that is capable of installation to a tolerance of 1/4 inch in 20 feet on slope and location lines indicated on Drawings and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.
2. Fabricate sheet metal flashing and trim that is capable of installation to tolerances specified.

C. Expansion Provisions: Form metal for thermal expansion of exposed flashing and trim.

1. Form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with butyl sealant concealed within joints.
2. Use lapped expansion joints only where indicated on Drawings.

D. Sealant Joints: Where movable, nonexpansion-type joints are required, form metal in accordance with cited sheet metal standard to provide for proper installation of elastomeric sealant.

E. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal.

F. Fabricate cleats and attachment devices of sizes as recommended by cited sheet metal standard and by FM Global Property Loss Prevention Data Sheet 1-49 for application, but not less than thickness of metal being secured.

G. Seams:
Roof Replacement and Selective Masonry Repairs Hutchison Chapel FA# 220014.00

SECTION 076200 - SHEET METAL FLASHING AND TRIM

1. Seams for Aluminum: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with epoxy seam sealer.

H. Do not use graphite pencils to mark metal surfaces.

2.5 STEEP-SLOPE ROOF SHEET METAL FABRICATIONS

A. Aluminum: .032 inches thick.

1. Drip Edges and fascia: Fabricate from the following materials:
   a. Aluminum: 0.032 inch thick.

2. Profiled Bullnose Ridge, and Hip Flashing: Fabricate to match existing profiles as indicated on drawings from the following materials:
   a. Aluminum: 0.032 inch thick.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with installer present, for compliance with requirements for installation tolerances, substrate, and other conditions affecting performance of the Work.

1. Verify compliance with requirements for installation tolerances of substrates.
2. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION, GENERAL

A. Install sheet metal flashing and trim to comply with details indicated and recommendations of cited sheet metal standard that apply to installation characteristics required unless otherwise indicated on Drawings.

1. Install fasteners, solder, protective coatings, separators, sealants, and other miscellaneous items as required to complete sheet metal flashing and trim system.
2. Install sheet metal flashing and trim true to line, levels, and slopes. Provide uniform, neat seams with minimum exposure of sealant.
3. Anchor sheet metal flashing and trim and other components of the Work securely in place, with provisions for thermal and structural movement.
4. Install sheet metal flashing and trim to fit substrates and to result in watertight performance.
5. Install continuous cleats with fasteners spaced not more than 12 inches o.c.
6. Space individual cleats not more than 12 inches apart. Attach each cleat with at least two fasteners. Bend tabs over fasteners.

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7. Install exposed sheet metal flashing and trim with limited oil-canning, and free of buckling and tool marks.
8. Do not field cut sheet metal flashing and trim by torch.
9. Do not use graphite pencils to mark metal surfaces.

B. Metal Protection: Where dissimilar metals contact each other, or where metal contacts pressure-treated wood or other corrosive substrates, protect against galvanic action or corrosion by painting contact surfaces with bituminous coating or by other permanent separation as recommended by sheet metal manufacturer or cited sheet metal standard.

1. Coat concealed side of uncoated-aluminum sheet metal flashing and trim with bituminous coating where flashing and trim contact wood, ferrous metal, or cementitious construction.
2. Underlayment: Where installing sheet metal flashing and trim directly on cementitious or wood substrates, install underlayment and cover with slip sheet.

C. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim.

1. Space movement joints at maximum of 10 feet with no joints within 24 inches of corner or intersection.
2. Form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with sealant concealed within joints.
3. Use lapped expansion joints only where indicated on Drawings.

D. Fasteners: Use fastener sizes that penetrate wood blocking or sheathing not less than 1-1/4 inches for nails and not less than 3/4 inch for wood screw substrate not less than recommended by fastener manufacturer to achieve maximum pull-out resistance.

E. 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.

F. Seal joints as required for watertight construction.

1. Use sealant-filled joints unless otherwise indicated.
   a. Embed hooked flanges of joint members not less than 1 inch into sealant.
   b. Form joints to completely conceal sealant.
   c. When ambient temperature at time of installation is between 40 and 70 deg F, set joint members for 50 percent movement each way.
   d. Adjust setting proportionately for installation at higher ambient temperatures.
      1) Do not install sealant-type joints at temperatures below 40 deg F.
2. Prepare joints and apply sealants to comply with requirements in Section 079200 "Joint Sealants."

G. Rivets: Rivet joints in uncoated aluminum where necessary for strength.
3.3 INSTALLATION OF ROOF FLASHINGS

A. Install sheet metal flashing and trim to comply with performance requirements, sheet metal manufacturer's written installation instructions, and cited sheet metal standard.

1. Provide concealed fasteners where possible, and set units true to line, levels, and slopes.
2. Install work with laps, joints, and seams that are permanently watertight and weather resistant.

B. Roof Edge Flashing:

1. Install roof edge flashings in accordance with ANSI/SPRI/FM 4435/ES-1.
2. Anchor to resist uplift and outward forces in accordance with recommendations in cited sheet metal standard unless otherwise indicated. Interlock bottom edge of roof edge flashing with continuous cleat anchored to substrate at staggered 3-inch centers.
3. Anchor to resist uplift and outward forces in accordance with recommendations in FM Global Property Loss Prevention Data Sheet 1-49 for FM Approvals' listing for required windstorm classification.

3.4 INSTALLATION TOLERANCES

A. Installation Tolerances: Shim and align sheet metal flashing and trim within installed tolerance of 1/4 inch in 20 feet on slope and location lines indicated on Drawings and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.

3.5 CLEANING

A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.

B. Clean and neutralize flux materials. Clean off excess solder.

C. Clean off excess sealants.

3.6 PROTECTION

A. Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed unless otherwise indicated in manufacturer's written installation instructions.

B. On completion of sheet metal flashing and trim installation, remove unused materials and clean finished surfaces as recommended in writing by sheet metal flashing and trim manufacturer.

C. Maintain sheet metal flashing and trim in clean condition during construction.

D. Replace sheet metal flashing and trim that have been damaged or that have deteriorated beyond successful repair by finish touchup or similar minor repair procedures, as determined by Architect.
SECTION 077100 - ROOF SPECIALTIES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Roof-edge drainage systems.

B. Related Requirements:
   1. Section 061000 "Rough Carpentry" for wood nailers, curbs, and blocking.
   2. Section 076200 "Sheet Metal Flashing and Trim" for custom- and site-fabricated sheet metal flashing and trim.
   3. Section 079200 "Joint Sealants" for field-applied sealants between roof specialties and adjacent materials.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings
   1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.

1.3 MOCKUPS

A. Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for fabrication and installation.
   1. Build mockup of typical roof edge, including fascia, gutter and downspout, per section 076200, approximately 5 feet long, including supporting construction, seams, attachments, and accessories, incorporated into work at area as directed in field.
   2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Do not store roof specialties in contact with other materials that might cause staining, denting, or other surface damage. Store roof specialties away from uncured concrete and masonry.
B. Protect strippable protective covering on roof specialties from exposure to sunlight and high humidity, except to extent necessary for the period of roof-specialty installation.

1.5 FIELD CONDITIONS

A. Field Measurements: Verify profiles and tolerances of roof-specialty substrates by field measurements before fabrication and indicate measurements on Shop Drawings.

B. Coordination: Coordinate roof specialties with flashing, trim, and construction of parapets, roof deck, roof and wall panels, and other adjoining work to provide a leakproof, secure, and noncorrosive installation.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. General Performance: Roof specialties to withstand exposure to weather and resist thermally induced movement without failure, rattling, leaking, or fastener disengagement due to defective manufacture, fabrication, installation, or other defects in construction.

B. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes to prevent buckling, opening of joints, hole elongation, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Provide clips that resist rotation and avoid shear stress as a result of thermal movements. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

2.2 ROOF-EDGE DRAINAGE SYSTEMS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Basis of Design: CopperCraft by Euramax.
2. Berger; division of OmniMax International, Inc.

B. Gutters: Manufactured in uniform section lengths not exceeding 12 feet, with matching corner units, ends, outlet tubes, and other accessories. Elevate back edge at least 4 inches above front edge. Furnish flat-stock gutter straps, gutter brackets, expansion joints, and expansion-joint covers fabricated from same metal as gutters.

1. Aluminum Sheet: 0.032 inch thick.
4. Gutter Supports: Straps with finish matching the gutters.
C. Downspouts: Corrugated round complete with machine-crimped elbows, manufactured from the following exposed metal. Furnish with metal hangers, from same material as downspouts, and anchors.
   1. Formed Aluminum: 0.032 inch thick.

D. Aluminum Finish: Two-coat fluoropolymer.
   1. Color: As selected by Architect from manufacturer's full range.

2.3 MATERIALS

A. Aluminum Sheet: ASTM B209, alloy as standard with manufacturer for finish required, with temper to suit forming operations and performance required.

2.4 MISCELLANEOUS MATERIALS

A. Fasteners: Manufacturer's recommended fasteners, suitable for application and designed to meet performance requirements. Furnish the following unless otherwise indicated:
   1. Exposed Penetrating Fasteners: Gasketed screws with hex washer heads matching color of sheet metal.
   2. Fasteners for Aluminum: Aluminum or Series 300 stainless steel.

B. Elastomeric Sealant: ASTM C920, elastomeric silicone polymer sealant of type, grade, class, and use classifications required by roofing-specialty manufacturer for each application.

2.5 FINISHES

A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

B. Protect mechanical and painted finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

C. Appearance of Finished Work: Noticeable variations in same piece are unacceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

D. Aluminum Finishes:
   1. High-Performance Organic Finish: Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
      a. Two-Coat Fluoropolymer: AAMA 2604 2605. Fluoropolymer finish containing not less than 70 percent polyvinylidene fluoride (PVDF) resin by weight in color coat.
Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.

b. Concealed Surface Finish: Apply pretreatment and manufacturer's standard acrylic or polyester backer finish consisting of prime coat and wash coat with a minimum total dry film thickness of 0.5 mil.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, to verify actual locations, dimensions, and other conditions affecting performance of the Work.

B. Examine walls, roof edges, and parapets for suitable conditions for roof specialties.

C. Verify that substrate is sound, dry, smooth, clean, sloped for drainage where applicable, and securely anchored.

D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION, GENERAL

A. Install roof specialties according to manufacturer's written instructions. Anchor roof specialties securely in place, with provisions for thermal and structural movement. Use fasteners, solder, protective coatings, separators, underlayments, sealants, and other miscellaneous items as required to complete roof-specialty systems.

1. Install roof specialties sloped to indicated elevations; with limited oil-canning and without warping, jogs in alignment, buckling, or tool marks.

2. Provide uniform, neat seams with minimum exposure of solder and sealant.

3. Install roof specialties to fit substrates and to result in weathertight performance. Verify shapes and dimensions of surfaces to be covered before manufacture.

4. Torch cutting of roof specialties is not permitted.

5. Do not use graphite pencils to mark metal surfaces.

B. Metal Protection: Protect metals against galvanic action by separating dissimilar metals from contact with each other or with corrosive substrates by painting contact surfaces with bituminous coating or by other permanent separation as recommended by manufacturer.

1. Coat concealed side of uncoated aluminum and roof specialties with bituminous coating where in contact with wood, ferrous metal, or cementitious construction.

2. Bed flanges in thick coat of asphalt roofing cement where required by manufacturers of roof specialties for waterproof performance.

1. Space movement joints at a maximum of 12 feet with no joints within 18 inches of corners or intersections unless otherwise indicated on Drawings.
2. When ambient temperature at time of installation is between 40 and 70 deg F, set joint members for 50 percent movement each way. Adjust setting proportionately for installation at higher ambient temperatures.

D. Fastener Sizes: Use fasteners of sizes that penetrate wood blocking or sheathing not less than 1-1/4 inches for nails and not less than 3/4 inch for wood screws substrate not less than recommended by fastener manufacturer to achieve maximum pull-out resistance.

E. Seal concealed joints with butyl sealant as required by roofing-specialty manufacturer.

F. Seal joints as required for weathertight construction. Place sealant to be completely concealed in joint. Do not install sealants at temperatures below 40 deg F.

3.3 INSTALLATION OF ROOF-EDGE DRAINAGE SYSTEMS

A. Install components to produce a complete roof-edge drainage system according to manufacturer's written instructions. Coordinate installation of roof perimeter flashing with installation of roof-edge drainage system.

3.4 CLEANING AND PROTECTION

A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.

B. Clean and neutralize flux materials. Clean off excess solder and sealants.

C. Remove temporary protective coverings and strippable films as roof specialties are installed. On completion of installation, clean finished surfaces, including removing unused fasteners, metal filings, pop rivet stems, and pieces of flashing. Maintain roof specialties in a clean condition during construction.

D. Replace roof specialties that have been damaged or that cannot be successfully repaired by finish touchup or similar minor repair procedures.

END OF SECTION 077100
SECTION 079200 - JOINT SEALANTS

PART 1 - GENERAL

1.1 SUMMARY
A. Section Includes:
   1. Silicone joint sealants.

1.2 ACTION SUBMITTALS
A. Product data.

1.3 QUALITY ASSURANCE
A. Installer Qualifications: Authorized representative who is trained and approved by manufacturer.

1.4 WARRANTY
A. Special Manufacturer's Warranty: Manufacturer agrees to furnish joint sealants to repair or replace those joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
   1. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 JOINT SEALANTS, GENERAL
A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer, based on testing and field experience.

B. Colors of Exposed Joint Sealants: As selected by Architect from manufacturer's full range.

2.2 SILICONE JOINT SEALANTS
A. Silicone, Type S, Grade NS, Class 50, NT: Single-component, nonsag, nontraffic-use, neutral-curing silicone joint sealant; ASTM C920, Type S, Grade NS, Class 50, Use NT.
1. **Manufacturers:** Subject to compliance with requirements, provide products by one of the following:
   a. Basis of design: DOWSIL 756 SMS Building Sealant.
   b. Sika Corporation - Building Components.

### 2.3 JOINT-SEALANT BACKING

A. **Sealant Backing Material, General:** Nonstaining; compatible with joint substrates, sealants, primers, and other joint fillers; and approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.

B. **Cylindrical Sealant Backings:** ASTM C1330, Type C (closed-cell material with a surface skin), and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.

C. **Bond-Breaker Tape:** Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint. Provide self-adhesive tape where applicable.

### 2.4 MISCELLANEOUS MATERIALS

A. **Primer:** Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.

B. **Cleaners for Nonporous Surfaces:** Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.

C. **Masking Tape:** Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

### PART 3 - EXECUTION

#### 3.1 PREPARATION

A. **Surface Cleaning of Joints:** Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:

1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
2. Clean porous joint substrate surfaces by brushing, grinding, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air. Porous joint substrates include the following:
   a. Masonry.
3. Clean nonporous joint substrate surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants. Nonporous joint substrates include the following:
   a. Metal.

B. Joint Priming: Prime joint substrates where recommended by joint-sealant manufacturer or as indicated by preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.

C. Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.2 INSTALLATION OF JOINT SEALANTS

A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.

B. Sealant Installation Standard: Comply with recommendations in ASTM C1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.

C. Install sealant backings of type indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
   1. Do not leave gaps between ends of sealant backings.
   2. Do not stretch, twist, puncture, or tear sealant backings.
   3. Remove absorbent sealant backings that have become wet before sealant application, and replace them with dry materials.

D. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.

E. Install sealants using proven techniques that comply with the following and at the same time backings are installed:
   1. Place sealants so they directly contact and fully wet joint substrates.
   2. Completely fill recesses in each joint configuration.
   3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.
F. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified in subparagraphs below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.

1. Remove excess sealant from surfaces adjacent to joints.
2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
3. Provide concave joint profile in accordance with Figure 8A in ASTM C1193 unless otherwise indicated.

G. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

H. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out, remove, and repair damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

END OF SECTION 079200
PART 1 - GENERAL

1.1 SUMMARY

A. Section includes historic treatment of plain painting as follows:

1. Removing existing paint.
2. Plain painting of historic surfaces.

B. Related Requirements:

1. 050374 HISTORIC DECORATIVE METAL REPLICATION
2. 050385 HISTORIC TREATMENT OF DECORATIVE FORMED METALS
3. Requirements for lead paint removal and hazardous materials handling

1.2 DEFINITIONS

A. Gloss Level 1: Not more than 5 units at 60 degrees and 10 units at 85 degrees, according to ASTM D 523.

B. Gloss Level 2: Not more than 10 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.

C. Gloss Level 3: 10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.

D. Gloss Level 4: 20 to 35 units at 60 degrees and not less than 35 units at 85 degrees, according to ASTM D 523.

E. Gloss Level 5: 35 to 70 units at 60 degrees, according to ASTM D 523.

F. Gloss Level 6: 70 to 85 units at 60 degrees, according to ASTM D 523.

G. Gloss Level 7: More than 85 units at 60 degrees, according to ASTM D 523.

H. Modern Paint Materials: Paint materials not designed to match historic paint formulations but that may be required to match historic paint colors.

I. Plain Painting: For historic treatment, this means painting that requires attention to historic treatment requirements, but no special, decorative or artistic painting skill.
1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Samples: For each type of paint system and each color and gloss.
   1. For each painted color being matched to a standardized color-coding system, include the color chips from the color-coding-system company with Samples.
   2. Label each Sample for location and application.

C. Product List: Printout of current MPI's "MPI Approved Products List" for each MPI-product category specified in paint systems, with the proposed product highlighted.

1.4 INFORMATIONAL SUBMITTALS

1.5 QUALITY ASSURANCE

A. Mockups: Prepare mockups of historic treatment processes for each type of coating system and substrate indicated and each color and finish required to demonstrate aesthetic effects and to set quality standards for materials and execution. Duplicate appearance of approved Sample submittals.
   2. Coating mockups to represent surfaces and conditions for application of each type of coating system.

PART 2 - PRODUCTS

2.1 PREPARATORY CLEANING MATERIALS

A. Water: Potable.

B. Hot Water: Water heated to a temperature of 140 to 160 deg F.

C. Detergent Solution: Solution prepared by mixing 2 cups of tetrasodium pyrophosphate (TSPP), 1/2 cup of laundry detergent that contains no ammonia, 5 quarts of 5 percent sodium hypochlorite bleach, and 15 quarts of warm water for every 5 gal. of solution required.

D. Rust Remover: Manufacturer's standard phosphoric acid-based gel formulation, also called "naval jelly," for removing corrosion from iron and steel.

2.2 PAINT, GENERAL

A. Material Compatibility:
1. Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
2. For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.

B. Colors: As selected by Architect from full range of industry colors.

2.3 MODERN PAINT MATERIALS, GENERAL

A. MPI Standards: Provide products that comply with MPI standards indicated and that are listed in its "MPI Approved Products List."

B. Transition Coat: Paint manufacturer's recommended coating for use where a residual existing coating is incompatible with the paint system.

2.4 MODERN PAINT MATERIALS

A. Metal Primers:
   1. Primer, Metal, Surface Tolerant: MPI #23.
   2. Primer, Alkyd, Anti-Corrosive for Metal: MPI #79.

B. Water-Based Paints:
   1. Latex, Exterior Semigloss (Gloss Level 3): MPI #11.

PART 3 - EXECUTION

3.1 HISTORIC TREATMENT OF PAINTING, GENERAL

A. Execution of the Work: In treating historic items, disturb them as minimally as possible and as follows:
   1. Remove failed coatings and corrosion and repaint.
   2. Verify that substrate surface conditions are suitable for painting.
   3. Allow other trades to repair items in place and retain as much original material as possible before repainting.
   4. Install temporary protective measures to protect historic painted surfaces that shall be treated later.

B. Heat Processes: Do not use torches, heat guns, or heat plates.
3.2 EXAMINATION

A. Examine substrates and conditions, with historic treatment specialist present, for compliance with requirements for maximum moisture content and other conditions affecting performance of painting work. Comply with paint manufacturer's written instructions for inspection.

3.3 PREPARATORY CLEANING

A. General: Use only the gentlest, appropriate method necessary to clean surfaces in preparation for painting. Clean all surfaces, corners, contours, and interstices.

B. Detergent Cleaning: Wash surfaces by hand using clean rags, sponges, and bristle brushes. Scrub surface with detergent solution and bristle brush until soil is thoroughly dislodged and can be removed by rinsing. Use small brushes to remove soil from joints and crevices. Dip brush in solution often to ensure that adequate fresh detergent is used and that surface remains wet. Rinse with water applied by clean rags or sponges.

C. Mechanical Rust Removal:

1. Remove rust with approved abrasives for ferrous-metal cleaning. Clean to bright metal.
2. Wipe off residue with mineral spirits and either steel wool or soft rags.
3. Dry immediately with clean, soft cloths. Follow direction of grain in metal.
4. Prime immediately to prevent rust. Do not touch cleaned metal surface until primed.

3.4 PAINT APPLICATION, GENERAL

A. Prepare surfaces to be painted according to the Surface-Preparation Schedule and with manufacturer's written instructions for each substrate condition.

B. Apply a transition coat over incompatible existing coatings.

C. Metal Substrate: Stripe paint corners, crevices, bolts, welds, and sharp edges before applying full coat. Apply two coats to surfaces that are inaccessible after completion of the Work. Tint stripe coat different than the main coating and apply with brush.

D. Blending Plain Painted Surfaces: When painting new substrates patched into existing surfaces or touching up missing or damaged finishes, apply coating system specified for the specific substrate. Apply final finish coat over entire surface from edge to edge and corner to corner.

3.5 CLEANING AND PROTECTION

A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.
B. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.

C. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.6 SURFACE-PREPARATION SCHEDULE

A. General: Before painting, prepare surfaces for painting according to applicable requirements specified in this schedule.

1. Examine surfaces to evaluate each surface condition according to paragraphs below.
2. Where existing degree of soiling prevents examination, preclean surface and allow it to dry before making an evaluation.

B. Surface Preparation for MPI DSD 2 Degree of Surface Degradation:

1. Surface Condition: Paint film loose, flaking, or peeling.
2. Paint Removal: Remove loose, flaking, or peeling paint film by hand-tools.
3. Preparation for Painting: Wash surface by detergent cleaning; use solvent cleaning where needed. Use other cleaning methods for small areas of bare substrate if required. Sand surfaces to smooth remaining paint film edges. Prepare bare cleaned surface to be painted according to paint manufacturer's written instructions for substrate construction materials.

3.7 EXTERIOR HISTORIC PAINTING SCHEDULE

A. Ferrous Metal Substrates: Eaves/Gable Moldings and Finials:

1. Alkyd System: MPI REX 5.1D system over a transition coat.
   a. Prime Coat: For MPI DSD 1 degree of surface degradation, touch up with topcoat.
   b. Prime Coat: For MPI DSD 2 degree of surface degradation, spot prime with Primer, Metal, Surface Tolerant, MPI #23.
   d. Topcoat: Alkyd, exterior, semigloss (Gloss Level 3), MPI #11.
SECTION 32 31 16 WELDED WIRE FENCES AND GATES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions.

1.2 SUMMARY

A. This Section includes the following:

1. Fencing System complete with all hardware, posts, gates, and accessories necessary for a complete and aesthetically balanced installation.
2. Concrete foundation for posts.

1.3 REFERENCES

A. American Society for Testing and Materials:

1. ASTM A53 Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless
3. ASTM A1064 Standard Specification for Steel Welded Wire Reinforcement, Plain, for Concrete
4. ASTM A500 Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes
5. ASTM A501 Standard Specification for Hot-Formed Welded and Seamless Carbon Steel Structural Tubing
6. ASTM A641 Standard Specification for Zinc- (Galvanized) Coated Carbon Steel Wire
7. ASTM B117 Standard Practice for Operating Salt Spray (Fog) Apparatus
9. ASTM C33 Standard Specification for Concrete Aggregates
12. ASTM D1654 Standard Test Method for Evaluation of Painted or Coated Specimens Subjected to Corrosive Environments
15. ASTM D3359 Standard Test Methods for Measuring Adhesion by Tape Test
17. ASTM F2408 Standard Specification for Ornamental Fences Employing Galvanized Steel Tubular Pickets
B. American Concrete Institute:

1. ACI 301 Specifications for Structural Concrete

1.4 SYSTEM DESCRIPTION

A. The Manufacturer shall supply a Fencing System complete with all hardware, posts and accessories necessary for a complete and aesthetically balanced installation.

B. Design Requirements: Fencing system, foundation and installation shall be engineered to withstand [90] mph wind load. (Where applicable, wind load rating to be based on IBC 2003 or local code if more stringent.)

1.5 SUBMITTALS

A. Product Data: For each product indicated, include manufacturer’s product literature, shop drawings, and product performance data indicating compliance with this specification.

B. Samples: Submit color selections and samples for finishes on fence and accessories if requested by the specifier.

1.6 QUALITY ASSURANCE

A. The contractor shall provide laborers and supervisors who are thoroughly familiar with the type of construction involved and the materials and techniques specified. Review and follow manufacturer’s installation instructions.

B. Provide fence system and gates, as a complete unit produced by a single manufacturer, including necessary erection accessories, fittings and fastenings.

C. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with a minimum of 10 years documented experience.

1.7 DELIVERY, HANDLING AND STORAGE

A. Deliver fence materials, gates, posts, and accessories to project site, completely pre-finished. Upon receipt at the job site, all materials shall be checked to ensure that no damages occurred during shipping. Materials shall be handled and stored properly to protect against damage and theft.

B. Handle fence components to protect finish coating from any scuffs, abrasion or other damage during unloading and installation. Excessive damage to factory applied coatings will be cause for rejection.

PART 2 - PRODUCTS

2.1 MANUFACTURER

A. Basis of Design: Betafence, Ennis, TX 75119, fax: 972-878-4703, 888-650-4766, or equal product.

2.2 MATERIAL

A. Fencing System: Subject to the performance and design requirement specified herein, fence and gates shall be manufactured from the following materials:
1. Wire Mesh Panels: Panels shall be 8.20’ wide x 4’, 5’, 6’ or 8’ high.
   a. Panels shall be welded by resistance as per ASTM A1064 using 6 gauge (.185”) Galvanized coated steel wire.
   b. The wire shall have a tensile strength of at least 70,000 lbs. / in², and 2100 lbs. break strength.
   c. Horizontal and Vertical wires shall be welded to form a 2” x 6” rectangle.
   d. Panels shall have the number of folds per the table below depending on the respective height of the panel.

<table>
<thead>
<tr>
<th>Panel Height</th>
<th>4’</th>
<th>5’</th>
<th>6’</th>
<th>8’</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reinforcement Ribs</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>4</td>
</tr>
</tbody>
</table>

f. Exterior surface shall have a 2 to 4 mil polyester coating applied after fabrication as described in section 2.3.

g. The vertical wires of the mesh shall extend 1” from the last or first horizontal wire thereby creating a spiked top or bottom, depending on its position when installed.

2. Square Tubular Posts:
   a. Steel Posts to provide minimum yield strength of 33,000 psi (227MPa).
   b. Material greater than 8 ga and larger than 4 inches O.D. shall be formed per ASTM A53, ASTM A500 Grade B, or ASTM A501, with a minimum yield of 39,000 psi and shall be hot dipped galvanized in accordance with ASTM A123.

3. Fittings and Fasteners:
   a. Post caps shall be of press on type steel caps zinc plated to ASTM B633, Service class II or malleable steel caps galvanized to ASTM A123, finished to match fence finish and color.
   b. Post brackets shall be galvanized or stainless steel with stainless, galvanized or zinc plated fasteners or Nylon face mount bracket. All brackets shall be finished to match fence finish and color.

2.3. POWDER COATED FACTORY FINISH

A. Coating Material: Posts, post caps, rails, pales, brackets and security mesh shall be finished with a factory applied polyester powder coating. Powder coated finish shall meet or exceed the following performance criteria. Color shall be Black.

B. Applicable Requirements to Validate the Coating Process:

1. Adhesion Resistance: ASTM D3359, Measuring Adhesion by Tape Test, Method B.
   a. Minimum Performance Requirement: Coating retention of not less than 95%.
2. Film Thickness: ASTM G12, 2.0 min.
3. Gloss 60 angle: ASTM D-523-89. 50-60
4. Accelerated Weathering: ASTM G-23, 1000 hours (70% gloss retention, AE: <2.0).
5. Thickness: Provide film thickness of 2-4 mils as measured by manufacturer’s standard powder coat measurement and inspection procedures.
6. Pretreatment: The fence sheeting and framework shall be prepared using a 7 stage Zinc Phosphate wash line. The pre-treatment cleaning system will remove foreign material
and to properly prepare the surface to achieve the coating system requirements specified above.

7. Curing: Heat cure in accordance with powder manufacturer’s prescribed cure schedule to properly crosslink and bond finish to metal substrate.

   a. Corrosion Resistance:
      1) Procedure: Preparation of Test Specimens- Perform a single scribe the length of the specimen, within one inches of any edge and deep enough to expose the base metal. Expose the specimen for 1,000 hours per ASTM B117-07 using a 5% salt solution and 95°F operational temperature. After exposure, remove specimens and wipe dry. Immediately apply tape (Permacel 99 or equal) over scribed are by pressing down firmly against the coating. Sharply pull the tape off at a right angle to the surface being tested.

2.4 CONCRETE FOOTINGS
   *This section shall be superseded by requirements of anti-ram barrier system if used in conjunction with this installation*

   A. General: Comply with ACI 301 for cast-in-place concrete; materials consisting of Portland cement complying with ASTM C150, aggregates complying with ASTM C33, and potable water.

   B. Concrete Mixes: Normal-weight concrete air entrained with not less than 3000-psi (20.7-MPa) compressive strength (28 days), 3-inch (75-mm) slump, and 1-inch (25-mm) maximum size aggregate.

   C. Footings: Footings shall be minimum 3,000 psi after twenty-eight (28) days concrete. Footing sizes shall be determined by Engineer.

PART 3 - EXECUTION

3.1 PREPARATION

   A. Verify areas to receive fencing.

   B. Coordinate fence installation with work of other sections listed in these specifications.

   C. Examine conditions under which fencing and gates are to be installed. Notify Contractor of unsatisfactory conditions. Do not proceed with work until conditions are satisfactory to the installer.

3.2 INSTALLATION

   A. Install fence and gates in accordance with manufacturer’s instructions and approved installation drawings. Install fencing to withstand wind load as specified.

   B. Handle fence components to protect finish coating from any scuffs, abrasion or other damage during installation. Excessive damage to factory applied coatings will be cause for rejection.

   C. Space posts at dimensions indicated in the installation drawings. Attach fence rails to posts using stainless steel or galvanized steel, panel hanger brackets or nylon face mount bracket supplied by manufacturer. Field welding of panels to posts is unacceptable as it will cause significant damage to the galvanizing and powder coat protective finishes.
D. Concrete Footings: Place concrete around posts and vibrate or tamp for consolidation. Verify that posts are set plumb, aligned, and at correct height and spacing, and stabilized in position during placement and finishing operations until concrete is sufficiently cured. Protect portion of posts above ground from concrete splatter.

E. Avoid unnecessary cutting, drilling and welding of pre-finished fence components. If necessary to cut drill, weld or otherwise modify product due to field conditions, repair factory finish in accordance with item below.

F. Touch-up any necessary areas by lightly sanding; apply a zinc-rich cold galvanizing primer followed by a high quality acrylic lacquer paint to match finish. (Touch-up paint available from manufacturer) Note: field applied touch-up cannot match the performance of factory applied finishes and should be limited in use.

3.3 CLEANING

A. Fence contractor shall remove packing materials and unused product and level uneven areas due to excavations created by fence installations.

END OF SECTION 32 31 16
EMPIRE STATE DEVELOPMENT
EPISCOPAL CHURCH HOME CHAPEL - ROOF REPLACEMENT & SELECTIVE MASONRY REPAIRS

Busti Ave at Rhode Island Street
Buffalo, New York 14213

DATE 05-23-22
PROJECT STATUS PRELIMINARY NOT - FOR CONSTRUCTION

SITE MAP
SCALE: N.T.S.

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Seal:

Checked By:

Drawn By:

Date: Project Manager: Consultants:

AS NOTED

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Seal:

Checked By:

Drawn By:

Date: Project Manager: Consultants:

AS NOTED

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Seal:

Checked By:

Drawn By:

Date: Project Manager: Consultants:

AS NOTED
REPLACE DAMAGED MESH FENCE PANELS (5)

REPLACE DAMAGED FENCE POSTS (5)

REPLACE DAMAGED FENCE POST (1)

REPLACE DAMAGED MESH FENCE PANELS (2)

REPLACE DAMAGED MESH FENCE PANEL AT BASE OF POST

REPLACE DAMAGED MESH FENCE PANEL AT TOP OF POST

DEMOLITION GENERAL NOTES

A. THESE GENERAL DEMOLITION NOTES SHALL BE USED IN CONJUNCTION WITH THE
WRITTEN SPECIFICATION FOR (SELECTIVE) DEMOLITION.

B. VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS IN THE FIELD PRIOR TO THE
START OF DEMOLITION/CONSTRUCTION EFFORTS. NOTIFY THE ARCHITECT OF ANY
DISCREPANCIES IN COMPARISON TO THE DOCUMENTS PRIOR TO BEGINNING THE
WORK.

C. PROTECT ALL EXISTING UNAFFECTED AREAS DURING CONSTRUCTION.

D. COORDINATED ALL DEMOLITION ITEMS WITH HAZARDOUS MATERIALS PLANS &
SPECIFICATIONS FOR ASBESTOS CONTAINING MATERIALS, LEAD PAINT & OTHER
MATERIALS FOR ABATEMENT, PROTECTION, COLLECTION & DISPOSAL.

E. ALL EXISTING SURFACES WHICH HAVE BEEN DISTURBED OR DAMAGED DURING
DEMOLITION WHICH WERE NOT MEANT TO BE AFFECTED ARE TO BE REPAIRED,
PATCHED, REPLACED TO MATCH EXISTING CONDITIONS PRIOR TO THE WORK.

F. DISPOSE OF DEMOLITION REFUSE AND DEBRIS DAILY AND ANYTHING THAT CANNOT
BE REMOVED FROM THE SITE IS TO BE STORED IN A SECURE AREA. BROOM CLEAN
SITE DAILY.

G. SALVAGE MATERIALS AS INDICATED. TAKE CARE NOT TO DAMAGE ANY SALVAGED
MATERIALS OR ITEMS DURING REMOVAL. PLACE SALVAGE MATERIALS IN A STORAGE
LOCATION AS DIRECTED BY THE OWNER.

REMOVE HALF ROUND GUTTER & ASSOCIATED FLASHING.
EXISTING BOTTOM MOLDING SHALL REMAIN IN PLACE.
EXISTING GABLE MOLDING SHALL REMAIN IN PLACE.
REMOVE FINIAL & ASSOCIATED FLASHINGS.
REMOVE SLATE SHINGLES.
REMOVE ALL UNDERLYING SUBSTRATE & STRUCTURE FOR SPIRE.
REMOVE CROWN MOLDING.
REMOVE ALL WOOD LOUVERS & SUPPORTING STRUCTURE.
REMOVE SLATE & SUPPORTING BASE & FLASHING.

CAREFULLY REMOVE ALL COMPONENTS IN SEQUENCE AND RETURN TO OWNER
ROOF DETAIL - EXISTING EAVE AND GUTTER REMOVALS

EXISTING GABLE MOLDING PROFILE (SHOWN FOR RESTORATION / RE-FINISHING PURPOSE INFORMATION)

EXISTING HIP & RIDGE CAP PROFILE (SHOWN FOR REPLACEMENT / RE-FINISHING PURPOSE INFORMATION)

DEMOELITION - ROOF PLAN

REPLACE EXIST. COPPER GUTTER & DOWNSPOUT IN THEIR ENTIRETY.

REMOVE AND DISPOSE OF GALVANIZED METAL BULLNOSE RIDGE AND HIP CAPS IN THEIR ENTIRETY.

REMOVE AND DISPOSE OF SLATE ROOFING SHINGLES IN THEIR ENTIRETY DOWN TO THE DECK.

RECEIVE NEW WORK. EXAMINE ROOF SUBSTRATE FOR WATER DAMAGE, ROTTEN, DAMAGE, &總COMPARE TO APPEARANCE OF GUTTER MATERIAL.

PATCHED, REPLACED TO MATCH EXISTING CONDITIONS PRIOR TO THE WORK.

NO EXISTING MASONRY METAL STEPPED FLASHING TO REMOVE FROM THE SITE IS TO BE STORED IN A SECURED AREA. BROOM CLEAN & CLEAR/wp MATERIAL AS NEEDED. PLACE SALVAGE MATERIALS IN A STORAGE LOCATION AS DIRECTED BY THE OWNER.

CHIMNEY. CAREFULLY REMOVE ROOFING MATERIALS ADJACENT TO FLASHING.

SEE A100 PHOTOS AND NOTES. (ALTERNATIVE 1).

THEIR ENTIRETY.

REMOVE AND DISPOSE OF GUTTERS AND DOWNSPOUTS IN THEIR ENTIRETY.

REMOVE & REINSTALL TRANSLUCENT PANELS AT GABLE DORMERS TO PERFORM SELECTIVE DEMOLITION.

REMOVE AND DISPOSE OF GALVANIZED METAL BULLNOSE RIDGE AND HIP CAPS IN THEIR ENTIRETY.

REMOVE AND DISPOSE OF SLATE ROOFING SHINGLES IN THEIR ENTIRETY DOWN TO THE DECK.

RECEIVE NEW WORK. EXAMINE ROOF SUBSTRATE FOR WATER DAMAGE, ROTTEN, DAMAGE, &總COMPARE TO APPEARANCE OF GUTTER MATERIAL.

PATCHED, REPLACED TO MATCH EXISTING CONDITIONS PRIOR TO THE WORK.

NO EXISTING MASONRY METAL STEPPED FLASHING TO REMOVE FROM THE SITE IS TO BE STORED IN A SECURED AREA. BROOM CLEAN & CLEAR/wp MATERIAL AS NEEDED. PLACE SALVAGE MATERIALS IN A STORAGE LOCATION AS DIRECTED BY THE OWNER.

CHIMNEY. CAREFULLY REMOVE ROOFING MATERIALS ADJACENT TO FLASHING.

SEE A100 PHOTOS AND NOTES. (ALTERNATIVE 1).

THEIR ENTIRETY.

REMOVE AND DISPOSE OF GUTTERS AND DOWNSPOUTS IN THEIR ENTIRETY.

REMOVE & REINSTALL TRANSLUCENT PANELS AT GABLE DORMERS TO PERFORM SELECTIVE DEMOLITION.

REMOVE AND DISPOSE OF GALVANIZED METAL BULLNOSE RIDGE AND HIP CAPS IN THEIR ENTIRETY.
DEMOLOITION - SOUTH ELEVATION

DEMOLOITION - EAST ELEVATION

DEMOLOITION - NORTH ELEVATION

DEMOLOITION - WEST ELEVATION

SELECTIVE DEMOLITION KEY NOTES

PRELIMINARY NOTE - FOR CONSTRUCTION

PRELIMINARY

EPISCOPAL CHURCH HOME

CHAPEL - ROOF REPLACEMENT &
SELECTIVE MASONRY REPAIRS

CONSTRUCTION

PRELIMINARY

220014.00

AD200
FINIAL TYPE 1 - RESTORATION/REFINISHING WORK (BASE BID)

FINIAL TYPE 2 - FOR REPLICA (ALT. 1) & RESTORATION / REFINISHING WORK (BASE BID)

FINIAL TYPE 3 - FOR REPLICA (ALT. 1) & RESTORATION / REFINISHING WORK (BASE BID)
ASBESTOS ABATEMENT NOTES:

ALL WORK TO BE PERFORMED CONFORMING TO FEDERAL, STATE AND LOCAL RULES, REGULATIONS, ORDINANCES AND REQUIREMENTS.

GENERAL NOTES:

1. ANY REMOVAL OF ASBESTOS CONTAINING MATERIALS SHALL BE CONDUCTED BY A PROFESSIONAL ASBESTOS REMOVAL CONTRACTOR DETERMINED BY THE CONTRACTOR.

2. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL RULES, REGULATIONS, ORDINANCES AND REQUIREMENTS. THE CONTRACTOR WILL BE RESPONSIBLE FOR ENSURING THAT ALL WORK IS COMPLETED IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT.

3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ASBESTOS WORK PERFORMED ON THE JOB. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK RELATED TO THE REMOVAL AND DISPOSAL OF ASBESTOS WASTE.

4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK RELATED TO THE INSTALLATION OF FIBERGLASS INSULATION.

5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK RELATED TO THE INSTALLATION OF FIBERGLASS INSULATION.

6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK RELATED TO THE INSTALLATION OF FIBERGLASS INSULATION.

7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK RELATED TO THE INSTALLATION OF FIBERGLASS INSULATION.

LEAD AWARENESS NOTES:

1. GENERAL: ALL WORK RELATED TO THE REMOVAL OF LEAD BASED PAINT MUST BE PERFORMED BY A CERTIFIED LEAD REMOVER.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK RELATED TO THE INSTALLATION OF LEAD BASED PAINT.

3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK RELATED TO THE INSTALLATION OF LEAD BASED PAINT.

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10. ALL WORK RELATED TO THE REMOVAL OF LEAD BASED PAINT MUST BE PERFORMED BY A CERTIFIED LEAD REMOVER.

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14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK RELATED TO THE INSTALLATION OF LEAD BASED PAINT.

15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK RELATED TO THE INSTALLATION OF LEAD BASED PAINT.

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17. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK RELATED TO THE INSTALLATION OF LEAD BASED PAINT.

18. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK RELATED TO THE INSTALLATION OF LEAD BASED PAINT.

19. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK RELATED TO THE INSTALLATION OF LEAD BASED PAINT.

20. ALL WORK RELATED TO THE REMOVAL OF LEAD BASED PAINT MUST BE PERFORMED BY A CERTIFIED LEAD REMOVER.