



**Architecture  
Planning  
Interior Design**

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# EXTERIOR RENOVATIONS- PHASE 2

Pi Beta Phi  
330 Triphammer Road, Ithaca NY 14850

## PROJECT MANUAL

**HOLT Project #:**  
**2021038-Ph2**

**Date:**  
**November 03, 2023**

**HOLT Architects, P.C.**  
**Architects, Planners, and Interior Designers**  
619 W. State Street, Ithaca, New York 14850 | Tel: 607.273.7600  
132 E. Jefferson Street, Syracuse New York 13202 | Tel: 315.459.7131

**Arctic Enterprises, Inc.**  
Environmental Surveyors and Engineers  
222 Teall Avenue, Suite 100A, Syracuse, New York 13210 | Tel: 315.476.1757



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HOLT Project No. 2021038

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## DOCUMENT 001116 - INVITATION TO BID

### PART 1 - GENERAL

#### 1.1 PROJECT INFORMATION

- A. Notice to Bidders: **Qualified** bidders are invited to submit bids for Project as described in this Document according to the Instructions to Bidders.
- B. Project Identification: **Pi Beta Phi Exterior Improvements – Phase 2 #21038-Ph2.**
  - 1. Project Location: **Pi Beta Phi (330 Triphammer Road | Ithaca, New York 14850).**
- C. Owner: **House Corporation, New York Delta of Pi Beta Phi**
  - 1. Owner's Representative:
    - a. **Susan Hills Murphy, Treasurer. House Corporation, New York Delta of Pi Beta Phi; T: 607-227-6270.**
    - b. **Katie Destiny Compton, House Director; House Corporation, New York Delta of Pi Beta Phi; T: 202-445-5551**
- D. Architect: HOLT Architects, P.C., 619 West State St. Ithaca, NY 14850 Tel. 607-273-7600.
  - 1. Architect's Representative: **Catherine Blakemore, Associate; T: 607-273-7600; C: 315-651-2726; E: crb@holt.com**
- E. Project Description: The Work of the Project is defined by the Contract Documents and consists of the following, asbestos abatement at first floor windows, selective demolition, masonry restoration, rough carpentry, finish carpentry, roof drainage (gutters and downspouts) replacement, exterior stucco/plaster replacement and repairs, wood soffit and eave repairs, soffit vent restoration, window replacement (basement and first floors), interior and exterior painting, exterior light fixture replacement and other Work indicated in the Contract Documents.
- F. Construction Contract: Bids will be received for the following Work:
  - 1. General Contract (all trades).

#### 1.2 INTERPRETATIONS OR CORRECTIONS OF BIDDING DOCUMENTS

- A. Bidders' Requests for Interpretation (RFIs) are to be submitted by posting to the HOLT Cloud at [www.holt.com](http://www.holt.com) and clicking on the HOLT Cloud link at the upper right corner of the screen. No other forms of request will be considered.
- B. Requests for Interpretation must reach the Architect at least seven days prior to the date for receipt of bids.



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1.3 BID SUBMITTAL AND OPENING

- A. Sealed bids will be received until the bid time and date at the location indicated below or in PDF format via email to Cate Blakemore, HOLT Architects, [crb@holt.com](mailto:crb@holt.com) .
  - 1. Bid Date: **Wednesday, December 6, 2023.**
  - 2. Bid Time: **2:00 p.m., local time.**
  - 3. Location: HOLT Architects, P.C., 619 West State Street, Ithaca, NY 14850.
- B. Bids will be thereafter privately opened.
- C. Original copies of bids that are submitted in electronic format via email shall be delivered to the Architect no less than 48 hours after the bid due date and time indicated in this Section.

1.4 PREBID CONFERENCE

- A. A pre-bid conference for all bidders will be held at **330 Triphammer Road**, the Project Site, on **Monday, November 13, 2023 at 11:00 a.m.** local time. Prospective bidders are requested to attend.

1.5 DOCUMENTS

- A. Procurement and Contracting Documents: Bidding Documents will be available on **November 6, 2023** via email from the Architect.
- B. Online Procurement and Contracting Documents: Bidding Documents will be available on October 23, 2022 at Dataflow, LLC; telephone (607) 272-8589; located at 306 South Meadow Street, Ithaca, NY 14850 (the Printer). Bidders will be able to access the project online at the Printer's Web site: <http://www.godataflow.com>.
  - 1. Click "order plans" > "HOLT Architects Projects" > "Register Now" (free) to obtain valid username and password. The system will email you a username, password, and link back to the portal.
  - 2. Then click **Project #2021038-Ph2** where the bid set, addenda, and current bidder log may be viewed.
- C. Bidders MUST register as a plan holder through the Printer and may acquire the bidding and contract documents as noted below:
  - 1. At the actual cost of printing, interested firms may request and receive a printed copy of the complete set. An electronic download will also be provided. Firms providing an email address will receive notification of addenda for download at no additional cost.
  - 2. All fee payments are to be made payable to "Dataflow."

1.6 TIME OF COMPLETION

- A. Bidders shall begin the Work on receipt of the Notice to Proceed and shall complete the Work within the Contract Time.

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- B. Critical Path (long-lead time) Item: The window order needs to be placed by January 12, 2024 at the latest to accommodate the current 20-week lead time and site delivery around mid-June 2024.

1.7 BIDDER'S QUALIFICATIONS

- A. Bidders must be properly licensed under the laws governing their respective trades and be able to obtain insurance and bonds required for the Work.

**END OF DOCUMENT 001116**

**DOCUMENT 004113 - BID FORM - STIPULATED SUM (SINGLE-PRIME CONTRACT)**

**PART 1 - GENERAL**

**1.1 BID INFORMATION**

- A. Bidder: \_\_\_\_\_.
- B. Project Name: **EXTERIOR RENOVATIONS – PHASE 2.**
- C. Project Location: 330 Triphammer Road, Ithaca NY 14850.
- D. Owner: **House Corporation, New York Delta of Pi Beta Phi.**
- E. Architect: **Catherine Blakemore; HOLT Architects, P.C., 619 West State Street, Ithaca, NY 14850; T: 607-273-7600; E: crb@holt.com.**
- F. Architect Project Number: 2021038.

**1.2 CERTIFICATIONS AND BASE BID**

- A. Base Bid, Single-Prime (All Trades) Contract: The undersigned Bidder, having carefully examined the Procurement and Contracting Requirements, Conditions of the Contract, Drawings, Specifications, and all subsequent Addenda, as prepared by HOLT Architects, P.C. and Architect's consultants, having visited the site, and being familiar with all conditions and requirements of the Work, hereby agrees to furnish all material, labor, equipment and services, including all scheduled allowances, necessary to complete the construction of the above-named project, according to the requirements of the Procurement and Contracting Documents, for the stipulated sum of:
  - 1. \_\_\_\_\_ Dollars (\$\_\_\_\_\_).
  - 2. The above amount may be modified by amounts indicated by the Bidder on the attached Document 004322 "Unit Prices Form" and Document 004323 "Alternates Form."

**1.3 SUBCONTRACTORS AND SUPPLIERS**

- A. The following companies shall execute subcontracts for the portions of the Work indicated:
  - 1. Gutters & Downspout Work: \_\_\_\_\_
  - 2. Window Work: \_\_\_\_\_
  - 3. Stucco / Plaster Work: \_\_\_\_\_
  - 4. Painting: \_\_\_\_\_
  - 5. Electrical Work: \_\_\_\_\_

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**1.4 TIME OF COMPLETION**

- A. The undersigned Bidder proposes and agrees hereby to commence the Work of the Contract Documents on a date specified in a written Notice to Proceed to be issued by Architect and shall fully complete the Work within 365 calendar days.

**1.5 SCHEDULE OF VALUES**

- A. To facilitate the evaluation of Bids, the undersigned has included in each part of his Bid the following values for the trades and/or subdivisions of the work as listed below. Values for work included under Alternate Proposals are excluded. Values relative to General Contractor's costs for General Conditions are excluded.

<u>Section</u>	<u>Trades and/or Subdivision</u>	<u>Values Included in Base Bid</u>	
		<u>Labor</u>	<u>Material</u>
<u>Division 1</u>	<u>General Requirements</u>		
<u>Division 2</u>	<u>Existing Conditions</u>		
<u>Division 4</u>	<u>Masonry</u>		
<u>Division 6</u>	<u>Wood and Plastics</u>		
<u>Division 7</u>	<u>Thermal and Moisture Protection</u>		
<u>Division 8</u>	<u>Openings</u>		
<u>Division 9</u>	<u>Finishes</u>		
<u>Division 26</u>	<u>Electrical</u>		
<u>Division 32</u>	<u>Exterior Improvements</u>		
Total Combined Bid		\$	
Allowance 01 – Masonry Restoration		\$	7,500.00
Allowance 02 – Field Order Allowance		\$	15,000.00
<b>Total Bid</b>		<b>\$</b>	

**1.6 ACKNOWLEDGEMENT OF ADDENDA**

- A. The undersigned Bidder acknowledges receipt of and use of the following Addenda in the preparation of this Bid:
1. Addendum No. 1, dated \_\_\_\_\_.
  2. Addendum No. 2, dated \_\_\_\_\_.

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**1.7 BID SUPPLEMENTS**

- A. The following supplements are a part of this Bid Form and are attached hereto.
1. Bid Form Supplement - Alternates.
  2. Bid Form Supplement - Unit Prices.

**1.8 CONTRACTOR'S LICENSE**

- A. The undersigned further states that it is a duly licensed contractor, for the type of work proposed, in **State of New York**, and that all fees, permits, etc., pursuant to submitting this proposal have been paid in full.

**1.9 SUBMISSION OF BID**

- A. Respectfully submitted this \_\_\_\_\_ day of \_\_\_\_\_, 2022.
- B. Submitted By: \_\_\_\_\_ (Name of bidding entity).
- C. Authorized Signature: \_\_\_\_\_ (Handwritten signature).
- D. Signed By: \_\_\_\_\_ (Type or print name).
- E. Title: \_\_\_\_\_ (Owner/Partner/President/Vice President).
- F. Witness By: \_\_\_\_\_ (Handwritten signature).
- G. Attest: \_\_\_\_\_ (Handwritten signature).
- H. By: \_\_\_\_\_ (Type or print name).
- I. Title: \_\_\_\_\_ (Corporate Secretary or Assistant Secretary).
- J. Street Address: \_\_\_\_\_.
- K. City, State, Zip: \_\_\_\_\_.
- L. Phone: \_\_\_\_\_.
- M. License No.: \_\_\_\_\_.
- N. Federal ID No.: \_\_\_\_\_ (Affix Corporate Seal Here).

**END OF DOCUMENT 004113**

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**DOCUMENT 004321 - ALLOWANCE FORM**

**PART 1 - GENERAL**

**1.1 BID INFORMATION**

- A. Bidder: \_\_\_\_\_.
- B. Project Name: **EXTERIOR RENOVATIONS – PHASE 2.**
- C. Project Location: **330 Triphammer Road, Ithaca NY 14850.**
- D. Owner: **House Corporation, New York Delta of Pi Beta Phi.**
- E. Architect: **Catherine Blakemore; HOLT Architects, P.C., 619 West State Street, Ithaca, NY 14850; T: 607-273-7600; C: 315-651-2726; E: crb@holt.com.**
- F. Architect Project Number: **2021038.**

**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 \_\_\_\_\_, 2023.
- B. Submitted By: \_\_\_\_\_ (Insert name of bidding entity).
- C. Authorized Signature: \_\_\_\_\_ (Handwritten signature).
- D. Signed By: \_\_\_\_\_ (Type or print name).
- E. Title: \_\_\_\_\_ (Owner/Partner/President/Vice President).

**END OF DOCUMENT 004321**

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**DOCUMENT 004322 - UNIT PRICES FORM**

**PART 1 - GENERAL**

**1.1 BID INFORMATION**

- A. Bidder: \_\_\_\_\_.
- B. Project Name: **EXTERIOR RENOVATIONS – PHASE 2.**
- C. Project Location: **330 Triphammer Road, Ithaca NY 14850.**
- D. Owner: **House Corporation, New York Delta of Pi Beta Phi.**
- E. Architect: **Catherine Blakemore; HOLT Architects, P.C., 619 West State Street, Ithaca, NY 14850; T: 607-273-7600; C: 315-651-2726; E: [crb@holt.com](mailto:crb@holt.com).**
- F. Architect Project Number: 2021038.

**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: Cost per square foot for brick repointing to a minimum depth of 1-inch.**
  - 1. \_\_\_\_\_ Dollars (\$ \_\_\_\_\_) per unit.

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1.4 SUBMISSION OF BID SUPPLEMENT

- A. Respectfully submitted this \_\_\_\_ day of \_\_\_\_\_, 2023.
- B. Submitted By: \_\_\_\_\_ (Insert name of bidding entity).
- C. Authorized Signature: \_\_\_\_\_ (Handwritten signature).
- D. Signed By: \_\_\_\_\_ (Type or print name).
- E. Title: \_\_\_\_\_ (Owner/Partner/President/Vice President).

**END OF DOCUMENT 004322**



**DOCUMENT 004323 - ALTERNATES FORM**

**PART 1 -**

**1.1 BID INFORMATION**

- A. Bidder: \_\_\_\_\_.
- B. Project Name: **EXTERIOR RENOVATIONS.**
- C. Project Location: 330 Triphammer Road.
- D. Owner: Pi Beta Phi.
- E. Architect: HOLT Architects, P.C., 619 West State Street, Ithaca, NY 14850. (607)273-7600.
- F. Architect Project Number: 2021038.

**1.2 BID FORM SUPPLEMENT**

- A. This form is required to be attached to the Bid Form.

**1.3 DESCRIPTION**

- A. The undersigned Bidder proposes the amount below be added to or deducted from the Base Bid if particular alternates are accepted by Owner. Amounts listed for each alternate include costs of related coordination, modification, or adjustment.
- B. If the alternate does not affect the Contract Sum, the Bidder shall indicate "NO CHANGE."
- C. If the alternate does not affect the Work of this Contract, the Bidder shall indicate "NOT APPLICABLE."
- D. The Bidder shall be responsible for determining from the Contract Documents the affects of each alternate on the Contract Time and the Contract Sum.
- E. Owner reserves the right to accept or reject any alternate, in any order, and to award or amend the Contract accordingly within 60 days of the Notice of Award unless otherwise indicated in the Contract Documents.
- F. Acceptance or non-acceptance of any alternates by the Owner shall have no affect on the Contract Time unless the "Schedule of Alternates" Article below provides a formatted space for the adjustment of the Contract Time.

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1.4 SCHEDULE OF ALTERNATES

A. **Add Alternate No. 01: Third Floor West Dormer Exterior Stucco & Flashing Modifications:**

1. ADD \_\_\_ DEDUCT \_\_\_ NO CHANGE \_\_\_ NOT APPLICABLE \_\_\_.
2. \_\_\_\_\_ Dollars (\$\_\_\_\_\_).
3. ADD \_\_\_ DEDUCT \_\_\_ calendar days to adjust the Contract Time for this alternate.

B.

C. **Add Alternate No. 2: Patinating Existing Copper Flashing at 3<sup>rd</sup> Floor Dormers**

1. ADD \_\_\_ DEDUCT \_\_\_ NO CHANGE \_\_\_ NOT APPLICABLE \_\_\_.
2. \_\_\_\_\_ Dollars (\$\_\_\_\_\_).
3. ADD \_\_\_ DEDUCT \_\_\_ calendar days to adjust the Contract Time for this alternate.

1.5 SUBMISSION OF BID SUPPLEMENT

- A. Respectfully submitted this \_\_\_ day of \_\_\_\_\_, 2022.
- B. Submitted By: \_\_\_\_\_ (Insert name of bidding entity).
- C. Authorized Signature: \_\_\_\_\_ (Handwritten signature).
- D. Signed By: \_\_\_\_\_ (Type or print name).
- E. Title: \_\_\_\_\_ (Owner/Partner/President/Vice President).

**END OF DOCUMENT 004323**

# AIA® Document A201™ – 2017

## General Conditions of the Contract for Construction

### for the following PROJECT:

*(Name and location or address)*

HOLT Template

Insert project location here.

### THE OWNER:

*(Name, legal status and address)*

### THE ARCHITECT:

*(Name, legal status and address)*

HOLT Architects, Professional Corporation  
619 West State Street  
Suite A  
Ithaca, NY 14850

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### ADDITIONS AND DELETIONS:

The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

For guidance in modifying this document to include supplementary conditions, see AIA Document A503™, Guide for Supplementary Conditions.

Init.

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## 15 CLAIMS AND DISPUTES

Init.

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## **ARTICLE 1 GENERAL PROVISIONS**

### **§ 1.1 Basic Definitions**

#### **§ 1.1.1 The Contract Documents**

The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of the Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement, and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive, or (4) a written order for a minor change in the Work issued by the Architect. Unless specifically enumerated in the Agreement, the Contract Documents do not include the advertisement or invitation to bid, Instructions to Bidders, sample forms, other information furnished by the Owner in anticipation of receiving bids or proposals, the Contractor's bid or proposal, or portions of Addenda relating to bidding or proposal requirements.

#### **§ 1.1.2 The Contract**

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Architect or the Architect's consultants, (2) between the Owner and a Subcontractor or a Sub-subcontractor, (3) between the Owner and the Architect or the Architect's consultants, or (4) between any persons or entities other than the Owner and the Contractor. The Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Architect's duties.

#### **§ 1.1.3 The Work**

The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment, and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

#### **§ 1.1.4 The Project**

The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner and by Separate Contractors.

#### **§ 1.1.5 The Drawings**

The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules, and diagrams.

#### **§ 1.1.6 The Specifications**

The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.

#### **§ 1.1.7 Instruments of Service**

Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect's consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

#### **§ 1.1.8 Initial Decision Maker**

The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2. The Initial Decision Maker shall not show partiality to the Owner or Contractor and shall not be liable for results of interpretations or decisions rendered in good faith.

### **§ 1.2 Correlation and Intent of the Contract Documents**

**§ 1.2.1** The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent



consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

**§ 1.2.1.1** The invalidity of any provision of the Contract Documents shall not invalidate the Contract or its remaining provisions. If it is determined that any provision of the Contract Documents violates any law, or is otherwise invalid or unenforceable, then that provision shall be revised to the extent necessary to make that provision legal and enforceable. In such case the Contract Documents shall be construed, to the fullest extent permitted by law, to give effect to the parties' intentions and purposes in executing the Contract.

**§ 1.2.2** Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

**§ 1.2.3** Unless otherwise stated in the Contract Documents, words that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

### **§ 1.3 Capitalization**

Terms capitalized in these General Conditions include those that are (1) specifically defined, (2) the titles of numbered articles, or (3) the titles of other documents published by the American Institute of Architects.

### **§ 1.4 Interpretation**

In the interest of brevity the Contract Documents frequently omit modifying words such as "all" and "any" and articles such as "the" and "an," but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

### **§ 1.5 Ownership and Use of Drawings, Specifications, and Other Instruments of Service**

**§ 1.5.1** The Architect and the Architect's consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and retain all common law, statutory, and other reserved rights in their Instruments of Service, including copyrights. The Contractor, Subcontractors, Sub-subcontractors, and suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with the Project is not to be construed as publication in derogation of the Architect's or Architect's consultants' reserved rights.

**§ 1.5.2** The Contractor, Subcontractors, Sub-subcontractors, and suppliers are authorized to use and reproduce the Instruments of Service provided to them, subject to any protocols established pursuant to Sections 1.7 and 1.8, solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and suppliers may not use the Instruments of Service on other projects or for additions to the Project outside the scope of the Work without the specific written consent of the Owner, Architect, and the Architect's consultants.

### **§ 1.6 Notice**

**§ 1.6.1** Except as otherwise provided in Section 1.6.2, where the Contract Documents require one party to notify or give notice to the other party, such notice shall be provided in writing to the designated representative of the party to whom the notice is addressed and shall be deemed to have been duly served if delivered in person, by mail, by courier, or by electronic transmission if a method for electronic transmission is set forth in the Agreement.

**§ 1.6.2** Notice of Claims as provided in Section 15.1.3 shall be provided in writing and shall be deemed to have been duly served only if delivered to the designated representative of the party to whom the notice is addressed by certified or registered mail, or by courier providing proof of delivery.

### **§ 1.7 Digital Data Use and Transmission**

The parties shall agree upon protocols governing the transmission and use of Instruments of Service or any other information or documentation in digital form. The parties will use AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, to establish the protocols for the development, use, transmission, and exchange of digital data.



### **§ 1.8 Building Information Models Use and Reliance**

Any use of, or reliance on, all or a portion of a building information model without agreement to protocols governing the use of, and reliance on, the information contained in the model and without having those protocols set forth in AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, and the requisite AIA Document G202™–2013, Project Building Information Modeling Protocol Form, shall be at the using or relying party's sole risk and without liability to the other party and its contractors or consultants, the authors of, or contributors to, the building information model, and each of their agents and employees.

## **ARTICLE 2 OWNER**

### **§ 2.1 General**

**§ 2.1.1** The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Owner shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization. Except as otherwise provided in Section 4.2.1, the Architect does not have such authority. The term "Owner" means the Owner or the Owner's authorized representative.

**§ 2.1.2** The Owner shall furnish to the Contractor, within fifteen days after receipt of a written request, information necessary and relevant for the Contractor to evaluate, give notice of, or enforce mechanic's lien rights. Such information shall include a correct statement of the record legal title to the property on which the Project is located, usually referred to as the site, and the Owner's interest therein.

### **§ 2.2 Evidence of the Owner's Financial Arrangements**

**§ 2.2.1** Prior to commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract. The Contractor shall have no obligation to commence the Work until the Owner provides such evidence. If commencement of the Work is delayed under this Section 2.2.1, the Contract Time shall be extended appropriately.

**§ 2.2.2** Following commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract only if (1) the Owner fails to make payments to the Contractor as the Contract Documents require; (2) the Contractor identifies in writing a reasonable concern regarding the Owner's ability to make payment when due; or (3) a change in the Work materially changes the Contract Sum. If the Owner fails to provide such evidence, as required, within fourteen days of the Contractor's request, the Contractor may immediately stop the Work and, in that event, shall notify the Owner that the Work has stopped. However, if the request is made because a change in the Work materially changes the Contract Sum under (3) above, the Contractor may immediately stop only that portion of the Work affected by the change until reasonable evidence is provided. If the Work is stopped under this Section 2.2.2, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided in the Contract Documents.

**§ 2.2.3** After the Owner furnishes evidence of financial arrangements under this Section 2.2, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

**§ 2.2.4** Where the Owner has designated information furnished under this Section 2.2 as "confidential," the Contractor shall keep the information confidential and shall not disclose it to any other person. However, the Contractor may disclose "confidential" information, after seven (7) days' notice to the Owner, where disclosure is required by law, including a subpoena or other form of compulsory legal process issued by a court or governmental entity, or by court or arbitrator(s) order. The Contractor may also disclose "confidential" information to its employees, consultants, sureties, Subcontractors and their employees, Sub-subcontractors, and others who need to know the content of such information solely and exclusively for the Project and who agree to maintain the confidentiality of such information.

### **§ 2.3 Information and Services Required of the Owner**

**§ 2.3.1** Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure and pay for necessary approvals, easements,



assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

**§ 2.3.2** The Owner shall retain an architect lawfully licensed to practice architecture, or an entity lawfully practicing architecture, in the jurisdiction where the Project is located. That person or entity is identified as the Architect in the Agreement and is referred to throughout the Contract Documents as if singular in number.

**§ 2.3.3** If the employment of the Architect terminates, the Owner shall employ a successor to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Architect.

**§ 2.3.4** The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

**§ 2.3.5** The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such information or services.

**§ 2.3.6** Unless otherwise provided in the Contract Documents, the Owner shall furnish to the Contractor one copy of the Contract Documents for purposes of making reproductions pursuant to Section 1.5.2.

#### **§ 2.4 Owner's Right to Stop the Work**

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or repeatedly fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Section 6.1.3.

#### **§ 2.5 Owner's Right to Carry Out the Work**

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such default or neglect. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect and the Architect may, pursuant to Section 9.5.1, withhold or nullify a Certificate for Payment in whole or in part, to the extent reasonably necessary to reimburse the Owner for the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect, or failure. If current and future payments are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner. If the Contractor disagrees with the actions of the Owner or the Architect, or the amounts claimed as costs to the Owner, the Contractor may file a Claim pursuant to Article 15.

### **ARTICLE 3 CONTRACTOR**

#### **§ 3.1 General**

**§ 3.1.1** The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Contractor shall be lawfully licensed, if required in the jurisdiction where the Project is located. The Contractor shall designate in writing a representative who shall have express authority to bind the Contractor with respect to all matters under this Contract. The term "Contractor" means the Contractor or the Contractor's authorized representative.

**§ 3.1.2** The Contractor shall perform the Work in accordance with the Contract Documents.

**§ 3.1.3** The Contractor shall not be relieved of its obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Architect in the Architect's administration of the Contract, or by tests, inspections or approvals required or performed by persons or entities other than the Contractor.



### **§ 3.2 Review of Contract Documents and Field Conditions by Contractor**

**§ 3.2.1** Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed, and correlated personal observations with requirements of the Contract Documents.

**§ 3.2.2** Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.3.4, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.

**§ 3.2.3** The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Architect any nonconformity discovered by or made known to the Contractor as a request for information in such form as the Architect may require.

**§ 3.2.4** If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall submit Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner, subject to Section 15.1.7, as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities.

### **§ 3.3 Supervision and Construction Procedures**

**§ 3.3.1** The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences, and procedures, and for coordinating all portions of the Work under the Contract. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences, or procedures, the Contractor shall evaluate the jobsite safety thereof and shall be solely responsible for the jobsite safety of such means, methods, techniques, sequences, or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely notice to the Owner and Architect, and shall propose alternative means, methods, techniques, sequences, or procedures. The Architect shall evaluate the proposed alternative solely for conformance with the design intent for the completed construction. Unless the Architect objects to the Contractor's proposed alternative, the Contractor shall perform the Work using its alternative means, methods, techniques, sequences, or procedures.

**§ 3.3.2** The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors.

**§ 3.3.3** The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work.

### **§ 3.4 Labor and Materials**

**§ 3.4.1** Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

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**§ 3.4.2** Except in the case of minor changes in the Work approved by the Architect in accordance with Section 3.12.8 or ordered by the Architect in accordance with Section 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect and in accordance with a Change Order or Construction Change Directive.

**§ 3.4.3** The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them.

### **§ 3.5 Warranty**

**§ 3.5.1** The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

**§ 3.5.2** All material, equipment, or other special warranties required by the Contract Documents shall be issued in the name of the Owner, or shall be transferable to the Owner, and shall commence in accordance with Section 9.8.4.

### **§ 3.6 Taxes**

The Contractor shall pay sales, consumer, use and similar taxes for the Work provided by the Contractor that are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

### **§ 3.7 Permits, Fees, Notices and Compliance with Laws**

**§ 3.7.1** Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit as well as for other permits, fees, licenses, and inspections by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded.

**§ 3.7.2** The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work.

**§ 3.7.3** If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

### **§ 3.7.4 Concealed or Unknown Conditions**

If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner and the Architect before conditions are disturbed and in no event later than 14 days after first observance of the conditions. The Architect will promptly investigate such conditions and, if the Architect determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend that an equitable adjustment be made in the Contract Sum or Contract Time, or both. If the Architect determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner and Contractor, stating the reasons. If either party disputes the Architect's determination or recommendation, that party may submit a Claim as provided in Article 15.



§ 3.7.5 If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner and Architect. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.

### § 3.8 Allowances

§ 3.8.1 The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities to whom the Contractor has reasonable objection.

§ 3.8.2 Unless otherwise provided in the Contract Documents,

- .1 allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
- .2 Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit, and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances; and
- .3 whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.

§ 3.8.3 Materials and equipment under an allowance shall be selected by the Owner with reasonable promptness.

### § 3.9 Superintendent

§ 3.9.1 The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the name and qualifications of a proposed superintendent. Within 14 days of receipt of the information, the Architect may notify the Contractor, stating whether the Owner or the Architect (1) has reasonable objection to the proposed superintendent or (2) requires additional time for review. Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.

§ 3.9.3 The Contractor shall not employ a proposed superintendent to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not change the superintendent without the Owner's consent, which shall not unreasonably be withheld or delayed.

### § 3.10 Contractor's Construction and Submittal Schedules

§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall contain detail appropriate for the Project, including (1) the date of commencement of the Work, interim schedule milestone dates, and the date of Substantial Completion; (2) an apportionment of the Work by construction activity; and (3) the time required for completion of each portion of the Work. The schedule shall provide for the orderly progression of the Work to completion and shall not exceed time limits current under the Contract Documents. The schedule shall be revised at appropriate intervals as required by the conditions of the Work and Project.

§ 3.10.2 The Contractor, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, shall submit a submittal schedule for the Architect's approval. The Architect's approval shall not be unreasonably delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Architect reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, or fails to provide submittals in accordance with the approved submittal schedule, the



Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

**§ 3.10.3** The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner and Architect.

**§ 3.11 Documents and Samples at the Site**

The Contractor shall make available, at the Project site, the Contract Documents, including Change Orders, Construction Change Directives, and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and the approved Shop Drawings, Product Data, Samples, and similar required submittals. These shall be in electronic form or paper copy, available to the Architect and Owner, and delivered to the Architect for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

**§ 3.12 Shop Drawings, Product Data and Samples**

**§ 3.12.1** Shop Drawings are drawings, diagrams, schedules, and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier, or distributor to illustrate some portion of the Work.

**§ 3.12.2** Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams, and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

**§ 3.12.3** Samples are physical examples that illustrate materials, equipment, or workmanship, and establish standards by which the Work will be judged.

**§ 3.12.4** Shop Drawings, Product Data, Samples, and similar submittals are not Contract Documents. Their purpose is to demonstrate how the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review by the Architect is subject to the limitations of Section 4.2.7. Informational submittals upon which the Architect is not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Architect without action.

**§ 3.12.5** The Contractor shall review for compliance with the Contract Documents, approve, and submit to the Architect, Shop Drawings, Product Data, Samples, and similar submittals required by the Contract Documents, in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of Separate Contractors.

**§ 3.12.6** By submitting Shop Drawings, Product Data, Samples, and similar submittals, the Contractor represents to the Owner and Architect that the Contractor has (1) reviewed and approved them, (2) determined and verified materials, field measurements and field construction criteria related thereto, or will do so, and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

**§ 3.12.7** The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples, or similar submittals, until the respective submittal has been approved by the Architect.

**§ 3.12.8** The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from the requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples, or similar submittals, unless the Contractor has specifically notified the Architect of such deviation at the time of submittal and (1) the Architect has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples, or similar submittals, by the Architect's approval thereof.



**§ 3.12.9** The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples, or similar submittals, to revisions other than those requested by the Architect on previous submittals. In the absence of such notice, the Architect's approval of a resubmission shall not apply to such revisions.

**§ 3.12.10** The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences, and procedures. The Contractor shall not be required to provide professional services in violation of applicable law.

**§ 3.12.10.1** If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall be entitled to rely upon the adequacy and accuracy of the performance and design criteria provided in the Contract Documents. The Contractor shall cause such services or certifications to be provided by an appropriately licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings, and other submittals prepared by such professional. Shop Drawings, and other submittals related to the Work, designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled to rely upon the adequacy and accuracy of the services, certifications, and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor the performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review and approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents.

**§ 3.12.10.2** If the Contract Documents require the Contractor's design professional to certify that the Work has been performed in accordance with the design criteria, the Contractor shall furnish such certifications to the Architect at the time and in the form specified by the Architect.

### **§ 3.13 Use of Site**

The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, lawful orders of public authorities, and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

### **§ 3.14 Cutting and Patching**

**§ 3.14.1** The Contractor shall be responsible for cutting, fitting, or patching required to complete the Work or to make its parts fit together properly. All areas requiring cutting, fitting, or patching shall be restored to the condition existing prior to the cutting, fitting, or patching, unless otherwise required by the Contract Documents.

**§ 3.14.2** The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or Separate Contractors by cutting, patching, or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter construction by the Owner or a Separate Contractor except with written consent of the Owner and of the Separate Contractor. Consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold, from the Owner or a Separate Contractor, its consent to cutting or otherwise altering the Work.

### **§ 3.15 Cleaning Up**

**§ 3.15.1** The Contractor shall keep the premises and surrounding area free from accumulation of waste materials and rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery, and surplus materials from and about the Project.

**§ 3.15.2** If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and the Owner shall be entitled to reimbursement from the Contractor.



### **§ 3.16 Access to Work**

The Contractor shall provide the Owner and Architect with access to the Work in preparation and progress wherever located.

### **§ 3.17 Royalties, Patents and Copyrights**

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and Architect harmless from loss on account thereof, but shall not be responsible for defense or loss when a particular design, process, or product of a particular manufacturer or manufacturers is required by the Contract Documents, or where the copyright violations are contained in Drawings, Specifications, or other documents prepared by the Owner or Architect. However, if an infringement of a copyright or patent is discovered by, or made known to, the Contractor, the Contractor shall be responsible for the loss unless the information is promptly furnished to the Architect.

### **§ 3.18 Indemnification**

**§ 3.18.1** To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss, or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity that would otherwise exist as to a party or person described in this Section 3.18.

**§ 3.18.2** In claims against any person or entity indemnified under this Section 3.18 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, the indemnification obligation under Section 3.18.1 shall not be limited by a limitation on amount or type of damages, compensation, or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts, or other employee benefit acts.

## **ARTICLE 4 ARCHITECT**

### **§ 4.1 General**

**§ 4.1.1** The Architect is the person or entity retained by the Owner pursuant to Section 2.3.2 and identified as such in the Agreement.

**§ 4.1.2** Duties, responsibilities, and limitations of authority of the Architect as set forth in the Contract Documents shall not be restricted, modified, or extended without written consent of the Owner, Contractor, and Architect. Consent shall not be unreasonably withheld.

### **§ 4.2 Administration of the Contract**

**§ 4.2.1** The Architect will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during construction until the date the Architect issues the final Certificate for Payment. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

**§ 4.2.2** The Architect will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect will not have control over, charge of, or responsibility for the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents.

**§ 4.2.3** On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and promptly report to the Owner (1) known deviations from the

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Contract Documents, (2) known deviations from the most recent construction schedule submitted by the Contractor, and (3) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of, and will not be responsible for acts or omissions of, the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

#### **§ 4.2.4 Communications**

The Owner and Contractor shall include the Architect in all communications that relate to or affect the Architect's services or professional responsibilities. The Owner shall promptly notify the Architect of the substance of any direct communications between the Owner and the Contractor otherwise relating to the Project. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and suppliers shall be through the Contractor. Communications by and with Separate Contractors shall be through the Owner. The Contract Documents may specify other communication protocols.

**§ 4.2.5** Based on the Architect's evaluations of the Contractor's Applications for Payment, the Architect will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

**§ 4.2.6** The Architect has authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the Work in accordance with Sections 13.4.2 and 13.4.3, whether or not the Work is fabricated, installed or completed. However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Subcontractors, suppliers, their agents or employees, or other persons or entities performing portions of the Work.

**§ 4.2.7** The Architect will review and approve, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data, and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5, and 3.12. The Architect's review shall not constitute approval of safety precautions or of any construction means, methods, techniques, sequences, or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

**§ 4.2.8** The Architect will prepare Change Orders and Construction Change Directives, and may order minor changes in the Work as provided in Section 7.4. The Architect will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

**§ 4.2.9** The Architect will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion pursuant to Section 9.8; receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10; and issue a final Certificate for Payment pursuant to Section 9.10.

**§ 4.2.10** If the Owner and Architect agree, the Architect will provide one or more Project representatives to assist in carrying out the Architect's responsibilities at the site. The Owner shall notify the Contractor of any change in the duties, responsibilities and limitations of authority of the Project representatives.

**§ 4.2.11** The Architect will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness.

**§ 4.2.12** Interpretations and decisions of the Architect will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. When making such interpretations



and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either, and will not be liable for results of interpretations or decisions rendered in good faith.

**§ 4.2.13** The Architect's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

**§ 4.2.14** The Architect will review and respond to requests for information about the Contract Documents. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

## **ARTICLE 5 SUBCONTRACTORS**

### **§ 5.1 Definitions**

**§ 5.1.1** A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include a Separate Contractor or the subcontractors of a Separate Contractor.

**§ 5.1.2** A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

### **§ 5.2 Award of Subcontracts and Other Contracts for Portions of the Work**

**§ 5.2.1** Unless otherwise stated in the Contract Documents, the Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the persons or entities proposed for each principal portion of the Work, including those who are to furnish materials or equipment fabricated to a special design. Within 14 days of receipt of the information, the Architect may notify the Contractor whether the Owner or the Architect (1) has reasonable objection to any such proposed person or entity or (2) requires additional time for review. Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.

**§ 5.2.2** The Contractor shall not contract with a proposed person or entity to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

**§ 5.2.3** If the Owner or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Architect has no reasonable objection. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.

**§ 5.2.4** The Contractor shall not substitute a Subcontractor, person, or entity for one previously selected if the Owner or Architect makes reasonable objection to such substitution.

### **§ 5.3 Subcontractual Relations**

By appropriate written agreement, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work that the Contractor, by these Contract Documents, assumes toward the Owner and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies, and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor,

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prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

#### **§ 5.4 Contingent Assignment of Subcontracts**

**§ 5.4.1** Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner, provided that

- .1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor; and
- .2 assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract.

**§ 5.4.2** Upon such assignment, if the Work has been suspended for more than 30 days, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension.

**§ 5.4.3** Upon assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor contractor or other entity. If the Owner assigns the subcontract to a successor contractor or other entity, the Owner shall nevertheless remain legally responsible for all of the successor contractor's obligations under the subcontract.

### **ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS**

#### **§ 6.1 Owner's Right to Perform Construction and to Award Separate Contracts**

**§ 6.1.1** The term "Separate Contractor(s)" shall mean other contractors retained by the Owner under separate agreements. The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and with Separate Contractors retained under Conditions of the Contract substantially similar to those of this Contract, including those provisions of the Conditions of the Contract related to insurance and waiver of subrogation.

**§ 6.1.2** When separate contracts are awarded for different portions of the Project or other construction or operations on the site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.

**§ 6.1.3** The Owner shall provide for coordination of the activities of the Owner's own forces and of each Separate Contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with any Separate Contractors and the Owner in reviewing their construction schedules. The Contractor shall make any revisions to its construction schedule deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the Contractor, Separate Contractors, and the Owner until subsequently revised.

**§ 6.1.4** Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces or with Separate Contractors, the Owner or its Separate Contractors shall have the same obligations and rights that the Contractor has under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6, and Articles 10, 11, and 12.

#### **§ 6.2 Mutual Responsibility**

**§ 6.2.1** The Contractor shall afford the Owner and Separate Contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

**§ 6.2.2** If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a Separate Contractor, the Contractor shall, prior to proceeding with that portion of the Work,

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promptly notify the Architect of apparent discrepancies or defects in the construction or operations by the Owner or Separate Contractor that would render it unsuitable for proper execution and results of the Contractor's Work. Failure of the Contractor to notify the Architect of apparent discrepancies or defects prior to proceeding with the Work shall constitute an acknowledgment that the Owner's or Separate Contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work. The Contractor shall not be responsible for discrepancies or defects in the construction or operations by the Owner or Separate Contractor that are not apparent.

**§ 6.2.3** The Contractor shall reimburse the Owner for costs the Owner incurs that are payable to a Separate Contractor because of the Contractor's delays, improperly timed activities or defective construction. The Owner shall be responsible to the Contractor for costs the Contractor incurs because of a Separate Contractor's delays, improperly timed activities, damage to the Work or defective construction.

**§ 6.2.4** The Contractor shall promptly remedy damage that the Contractor wrongfully causes to completed or partially completed construction or to property of the Owner or Separate Contractor as provided in Section 10.2.5.

**§ 6.2.5** The Owner and each Separate Contractor shall have the same responsibilities for cutting and patching as are described for the Contractor in Section 3.14.

### **§ 6.3 Owner's Right to Clean Up**

If a dispute arises among the Contractor, Separate Contractors, and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Architect will allocate the cost among those responsible.

## **ARTICLE 7 CHANGES IN THE WORK**

### **§ 7.1 General**

**§ 7.1.1** Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.

**§ 7.1.2** A Change Order shall be based upon agreement among the Owner, Contractor, and Architect. A Construction Change Directive requires agreement by the Owner and Architect and may or may not be agreed to by the Contractor. An order for a minor change in the Work may be issued by the Architect alone.

**§ 7.1.3** Changes in the Work shall be performed under applicable provisions of the Contract Documents. The Contractor shall proceed promptly with changes in the Work, unless otherwise provided in the Change Order, Construction Change Directive, or order for a minor change in the Work.

### **§ 7.2 Change Orders**

**§ 7.2.1** A Change Order is a written instrument prepared by the Architect and signed by the Owner, Contractor, and Architect stating their agreement upon all of the following:

- .1 The change in the Work;
- .2 The amount of the adjustment, if any, in the Contract Sum; and
- .3 The extent of the adjustment, if any, in the Contract Time.

### **§ 7.3 Construction Change Directives**

**§ 7.3.1** A Construction Change Directive is a written order prepared by the Architect and signed by the Owner and Architect, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions, or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

**§ 7.3.2** A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

**§ 7.3.3** If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

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- .1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
- .2 Unit prices stated in the Contract Documents or subsequently agreed upon;
- .3 Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
- .4 As provided in Section 7.3.4.

**§ 7.3.4** If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall determine the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit as set forth in the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.4 shall be limited to the following:

- .1 Costs of labor, including applicable payroll taxes, fringe benefits required by agreement or custom, workers' compensation insurance, and other employee costs approved by the Architect;
- .2 Costs of materials, supplies, and equipment, including cost of transportation, whether incorporated or consumed;
- .3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;
- .4 Costs of premiums for all bonds and insurance, permit fees, and sales, use, or similar taxes, directly related to the change; and
- .5 Costs of supervision and field office personnel directly attributable to the change.

**§ 7.3.5** If the Contractor disagrees with the adjustment in the Contract Time, the Contractor may make a Claim in accordance with applicable provisions of Article 15.

**§ 7.3.6** Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Architect of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.

**§ 7.3.7** A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

**§ 7.3.8** The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Architect. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

**§ 7.3.9** Pending final determination of the total cost of a Construction Change Directive to the Owner, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Architect determines, in the Architect's professional judgment, to be reasonably justified. The Architect's interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15.

**§ 7.3.10** When the Owner and Contractor agree with a determination made by the Architect concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and the Architect will prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

#### **§ 7.4 Minor Changes in the Work**

The Architect may order minor changes in the Work that are consistent with the intent of the Contract Documents and do not involve an adjustment in the Contract Sum or an extension of the Contract Time. The Architect's order for minor changes shall be in writing. If the Contractor believes that the proposed minor change in the Work will



affect the Contract Sum or Contract Time, the Contractor shall notify the Architect and shall not proceed to implement the change in the Work. If the Contractor performs the Work set forth in the Architect's order for a minor change without prior notice to the Architect that such change will affect the Contract Sum or Contract Time, the Contractor waives any adjustment to the Contract Sum or extension of the Contract Time.

## **ARTICLE 8 TIME**

### **§ 8.1 Definitions**

**§ 8.1.1** Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

**§ 8.1.2** The date of commencement of the Work is the date established in the Agreement.

**§ 8.1.3** The date of Substantial Completion is the date certified by the Architect in accordance with Section 9.8.

**§ 8.1.4** The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

### **§ 8.2 Progress and Completion**

**§ 8.2.1** Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement, the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

**§ 8.2.2** The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, commence the Work prior to the effective date of insurance required to be furnished by the Contractor and Owner.

**§ 8.2.3** The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

### **§ 8.3 Delays and Extensions of Time**

**§ 8.3.1** If the Contractor is delayed at any time in the commencement or progress of the Work by (1) an act or neglect of the Owner or Architect, of an employee of either, or of a Separate Contractor; (2) by changes ordered in the Work; (3) by labor disputes, fire, unusual delay in deliveries, unavoidable casualties, adverse weather conditions documented in accordance with Section 15.1.6.2, or other causes beyond the Contractor's control; (4) by delay authorized by the Owner pending mediation and binding dispute resolution; or (5) by other causes that the Contractor asserts, and the Architect determines, justify delay, then the Contract Time shall be extended for such reasonable time as the Architect may determine.

**§ 8.3.2** Claims relating to time shall be made in accordance with applicable provisions of Article 15.

**§ 8.3.3** This Section 8.3 does not preclude recovery of damages for delay by either party under other provisions of the Contract Documents.

## **ARTICLE 9 PAYMENTS AND COMPLETION**

### **§ 9.1 Contract Sum**

**§ 9.1.1** The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

**§ 9.1.2** If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed so that application of such unit prices to the actual quantities causes substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

### **§ 9.2 Schedule of Values**

Where the Contract is based on a stipulated sum or Guaranteed Maximum Price, the Contractor shall submit a schedule of values to the Architect before the first Application for Payment, allocating the entire Contract Sum to the various portions of the Work. The schedule of values shall be prepared in the form, and supported by the data to substantiate its accuracy, required by the Architect. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment. Any changes to the schedule of values shall be submitted to the Architect and supported by such data to substantiate its accuracy as the Architect may require, and



unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's subsequent Applications for Payment.

### **§ 9.3 Applications for Payment**

**§ 9.3.1** At least ten days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment prepared in accordance with the schedule of values, if required under Section 9.2, for completed portions of the Work. The application shall be notarized, if required, and supported by all data substantiating the Contractor's right to payment that the Owner or Architect require, such as copies of requisitions, and releases and waivers of liens from Subcontractors and suppliers, and shall reflect retainage if provided for in the Contract Documents.

**§ 9.3.1.1** As provided in Section 7.3.9, such applications may include requests for payment on account of changes in the Work that have been properly authorized by Construction Change Directives, or by interim determinations of the Architect, but not yet included in Change Orders.

**§ 9.3.1.2** Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or supplier, unless such Work has been performed by others whom the Contractor intends to pay.

**§ 9.3.2** Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage, and transportation to the site, for such materials and equipment stored off the site.

**§ 9.3.3** The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information, and belief, be free and clear of liens, claims, security interests, or encumbrances, in favor of the Contractor, Subcontractors, suppliers, or other persons or entities that provided labor, materials, and equipment relating to the Work.

### **§ 9.4 Certificates for Payment**

**§ 9.4.1** The Architect will, within seven days after receipt of the Contractor's Application for Payment, either (1) issue to the Owner a Certificate for Payment in the full amount of the Application for Payment, with a copy to the Contractor; or (2) issue to the Owner a Certificate for Payment for such amount as the Architect determines is properly due, and notify the Contractor and Owner of the Architect's reasons for withholding certification in part as provided in Section 9.5.1; or (3) withhold certification of the entire Application for Payment, and notify the Contractor and Owner of the Architect's reason for withholding certification in whole as provided in Section 9.5.1.

**§ 9.4.2** The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluation of the Work and the data in the Application for Payment, that, to the best of the Architect's knowledge, information, and belief, the Work has progressed to the point indicated, the quality of the Work is in accordance with the Contract Documents, and that the Contractor is entitled to payment in the amount certified. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion, and to specific qualifications expressed by the Architect. However, the issuance of a Certificate for Payment will not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work; (2) reviewed construction means, methods, techniques, sequences, or procedures; (3) reviewed copies of requisitions received from Subcontractors and suppliers and other data requested by the Owner to substantiate the Contractor's right to payment; or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.



## § 9.5 Decisions to Withhold Certification

§ 9.5.1 The Architect may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Section 9.4.2 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Section 9.4.1. If the Contractor and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 3.3.2, because of

- .1 defective Work not remedied;
- .2 third party claims filed or reasonable evidence indicating probable filing of such claims, unless security acceptable to the Owner is provided by the Contractor;
- .3 failure of the Contractor to make payments properly to Subcontractors or suppliers for labor, materials or equipment;
- .4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- .5 damage to the Owner or a Separate Contractor;
- .6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or
- .7 repeated failure to carry out the Work in accordance with the Contract Documents.

§ 9.5.2 When either party disputes the Architect's decision regarding a Certificate for Payment under Section 9.5.1, in whole or in part, that party may submit a Claim in accordance with Article 15.

§ 9.5.3 When the reasons for withholding certification are removed, certification will be made for amounts previously withheld.

§ 9.5.4 If the Architect withholds certification for payment under Section 9.5.1.3, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or supplier to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Contractor shall reflect such payment on its next Application for Payment.

## § 9.6 Progress Payments

§ 9.6.1 After the Architect has issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents, and shall so notify the Architect.

§ 9.6.2 The Contractor shall pay each Subcontractor, no later than seven days after receipt of payment from the Owner, the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner.

§ 9.6.3 The Architect will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Architect and Owner on account of portions of the Work done by such Subcontractor.

§ 9.6.4 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven days, the Owner shall have the right to contact Subcontractors and suppliers to ascertain whether they have been properly paid. Neither the Owner nor Architect shall have an obligation to pay, or to see to the payment of money to, a Subcontractor or supplier, except as may otherwise be required by law.

§ 9.6.5 The Contractor's payments to suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.



**§ 9.6.6** A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

**§ 9.6.7** Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor for Work properly performed by Subcontractors or provided by suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, create any fiduciary liability or tort liability on the part of the Contractor for breach of trust, or entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

**§ 9.6.8** Provided the Owner has fulfilled its payment obligations under the Contract Documents, the Contractor shall defend and indemnify the Owner from all loss, liability, damage or expense, including reasonable attorney's fees and litigation expenses, arising out of any lien claim or other claim for payment by any Subcontractor or supplier of any tier. Upon receipt of notice of a lien claim or other claim for payment, the Owner shall notify the Contractor. If approved by the applicable court, when required, the Contractor may substitute a surety bond for the property against which the lien or other claim for payment has been asserted.

### **§ 9.7 Failure of Payment**

If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven days after the date established in the Contract Documents, the amount certified by the Architect or awarded by binding dispute resolution, then the Contractor may, upon seven additional days' notice to the Owner and Architect, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided for in the Contract Documents.

### **§ 9.8 Substantial Completion**

**§ 9.8.1** Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use.

**§ 9.8.2** When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Architect a comprehensive list of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

**§ 9.8.3** Upon receipt of the Contractor's list, the Architect will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion.

**§ 9.8.4** When the Work or designated portion thereof is substantially complete, the Architect will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion; establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance; and fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

**§ 9.8.5** The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in the Certificate. Upon such acceptance, and consent of surety if any, the Owner shall make payment of retainage applying to the Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.



### **§ 9.9 Partial Occupancy or Use**

**§ 9.9.1** The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer and authorized by public authorities having jurisdiction over the Project. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Architect as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect.

**§ 9.9.2** Immediately prior to such partial occupancy or use, the Owner, Contractor, and Architect shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

**§ 9.9.3** Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

### **§ 9.10 Final Completion and Final Payment**

**§ 9.10.1** Upon receipt of the Contractor's notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection. When the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's on-site visits and inspections, the Work has been completed in accordance with the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

**§ 9.10.2** Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect, (3) a written statement that the Contractor knows of no reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment, (5) documentation of any special warranties, such as manufacturers' warranties or specific Subcontractor warranties, and (6) if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts and releases and waivers of liens, claims, security interests, or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien, claim, security interest, or encumbrance. If a lien, claim, security interest, or encumbrance remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging the lien, claim, security interest, or encumbrance, including all costs and reasonable attorneys' fees.

**§ 9.10.3** If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Architect so confirms, the Owner shall, upon application by the Contractor and certification by the Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed, corrected, and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of the surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.



- § 9.10.4 The making of final payment shall constitute a waiver of Claims by the Owner except those arising from
- .1 liens, Claims, security interests, or encumbrances arising out of the Contract and unsettled;
  - .2 failure of the Work to comply with the requirements of the Contract Documents;
  - .3 terms of special warranties required by the Contract Documents; or
  - .4 audits performed by the Owner, if permitted by the Contract Documents, after final payment.

§ 9.10.5 Acceptance of final payment by the Contractor, a Subcontractor, or a supplier, shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

## ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

### § 10.1 Safety Precautions and Programs

The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Contract.

### § 10.2 Safety of Persons and Property

§ 10.2.1 The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury, or loss to

- .1 employees on the Work and other persons who may be affected thereby;
- .2 the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody, or control of the Contractor, a Subcontractor, or a Sub-subcontractor; and
- .3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction.

§ 10.2.2 The Contractor shall comply with, and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities, bearing on safety of persons or property or their protection from damage, injury, or loss.

§ 10.2.3 The Contractor shall implement, erect, and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards; promulgating safety regulations; and notifying the owners and users of adjacent sites and utilities of the safeguards.

§ 10.2.4 When use or storage of explosives or other hazardous materials or equipment, or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel.

§ 10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2 and 10.2.1.3. The Contractor may make a Claim for the cost to remedy the damage or loss to the extent such damage or loss is attributable to acts or omissions of the Owner or Architect or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.

§ 10.2.6 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner and Architect.

§ 10.2.7 The Contractor shall not permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition.



#### **§ 10.2.8 Injury or Damage to Person or Property**

If either party suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, notice of the injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

#### **§ 10.3 Hazardous Materials and Substances**

**§ 10.3.1** The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials or substances. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and notify the Owner and Architect of the condition.

**§ 10.3.2** Upon receipt of the Contractor's notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of the material or substance or who are to perform the task of removal or safe containment of the material or substance. The Contractor and the Architect will promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. If either the Contractor or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor and the Architect have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable additional costs of shutdown, delay, and start-up.

**§ 10.3.3** To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work in the affected area if in fact the material or substance presents the risk of bodily injury or death as described in Section 10.3.1 and has not been rendered harmless, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), except to the extent that such damage, loss, or expense is due to the fault or negligence of the party seeking indemnity.

**§ 10.3.4** The Owner shall not be responsible under this Section 10.3 for hazardous materials or substances the Contractor brings to the site unless such materials or substances are required by the Contract Documents. The Owner shall be responsible for hazardous materials or substances required by the Contract Documents, except to the extent of the Contractor's fault or negligence in the use and handling of such materials or substances.

**§ 10.3.5** The Contractor shall reimburse the Owner for the cost and expense the Owner incurs (1) for remediation of hazardous materials or substances the Contractor brings to the site and negligently handles, or (2) where the Contractor fails to perform its obligations under Section 10.3.1, except to the extent that the cost and expense are due to the Owner's fault or negligence.

**§ 10.3.6** If, without negligence on the part of the Contractor, the Contractor is held liable by a government agency for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the Owner shall reimburse the Contractor for all cost and expense thereby incurred.

#### **§ 10.4 Emergencies**

In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury, or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7.



## ARTICLE 11 INSURANCE AND BONDS

### § 11.1 Contractor's Insurance and Bonds

§ 11.1.1 The Contractor shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Contractor shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Owner, Architect, and Architect's consultants shall be named as additional insureds under the Contractor's commercial general liability policy or as otherwise described in the Contract Documents.

§ 11.1.2 The Contractor shall provide surety bonds of the types, for such penal sums, and subject to such terms and conditions as required by the Contract Documents. The Contractor shall purchase and maintain the required bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

§ 11.1.3 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

§ 11.1.4 **Notice of Cancellation or Expiration of Contractor's Required Insurance.** Within three (3) business days of the date the Contractor becomes aware of an impending or actual cancellation or expiration of any insurance required by the Contract Documents, the Contractor shall provide notice to the Owner of such impending or actual cancellation or expiration. Upon receipt of notice from the Contractor, the Owner shall, unless the lapse in coverage arises from an act or omission of the Owner, have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by the Contractor. The furnishing of notice by the Contractor shall not relieve the Contractor of any contractual obligation to provide any required coverage.

### § 11.2 Owner's Insurance

§ 11.2.1 The Owner shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Owner shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located.

§ 11.2.2 **Failure to Purchase Required Property Insurance.** If the Owner fails to purchase and maintain the required property insurance, with all of the coverages and in the amounts described in the Agreement or elsewhere in the Contract Documents, the Owner shall inform the Contractor in writing prior to commencement of the Work. Upon receipt of notice from the Owner, the Contractor may delay commencement of the Work and may obtain insurance that will protect the interests of the Contractor, Subcontractors, and Sub-Subcontractors in the Work. When the failure to provide coverage has been cured or resolved, the Contract Sum and Contract Time shall be equitably adjusted. In the event the Owner fails to procure coverage, the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent the loss to the Owner would have been covered by the insurance to have been procured by the Owner. The cost of the insurance shall be charged to the Owner by a Change Order. If the Owner does not provide written notice, and the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain the required insurance, the Owner shall reimburse the Contractor for all reasonable costs and damages attributable thereto.

§ 11.2.3 **Notice of Cancellation or Expiration of Owner's Required Property Insurance.** Within three (3) business days of the date the Owner becomes aware of an impending or actual cancellation or expiration of any property insurance required by the Contract Documents, the Owner shall provide notice to the Contractor of such impending or actual cancellation or expiration. Unless the lapse in coverage arises from an act or omission of the Contractor: (1) the Contractor, upon receipt of notice from the Owner, shall have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by either the Owner or the Contractor; (2) the Contract Time and Contract Sum shall be equitably adjusted; and (3) the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent any loss to the Owner would have been covered by the insurance had it not expired or been cancelled. If the Contractor purchases replacement coverage, the cost of the insurance shall be charged to the Owner by an appropriate Change Order. The furnishing of notice by the Owner shall not relieve the Owner of any contractual obligation to provide required insurance.



### **§ 11.3 Waivers of Subrogation**

**§ 11.3.1** The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents, and employees, each of the other; (2) the Architect and Architect's consultants; and (3) Separate Contractors, if any, and any of their subcontractors, sub-subcontractors, agents, and employees, for damages caused by fire, or other causes of loss, to the extent those losses are covered by property insurance required by the Agreement or other property insurance applicable to the Project, except such rights as they have to proceeds of such insurance. The Owner or Contractor, as appropriate, shall require similar written waivers in favor of the individuals and entities identified above from the Architect, Architect's consultants, Separate Contractors, subcontractors, and sub-subcontractors. The policies of insurance purchased and maintained by each person or entity agreeing to waive claims pursuant to this section 11.3.1 shall not prohibit this waiver of subrogation. This waiver of subrogation shall be effective as to a person or entity (1) even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, (2) even though that person or entity did not pay the insurance premium directly or indirectly, or (3) whether or not the person or entity had an insurable interest in the damaged property.

**§ 11.3.2** If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, to the extent permissible by such policies, the Owner waives all rights in accordance with the terms of Section 11.3.1 for damages caused by fire or other causes of loss covered by this separate property insurance.

### **§ 11.4 Loss of Use, Business Interruption, and Delay in Completion Insurance**

The Owner, at the Owner's option, may purchase and maintain insurance that will protect the Owner against loss of use of the Owner's property, or the inability to conduct normal operations, due to fire or other causes of loss. The Owner waives all rights of action against the Contractor and Architect for loss of use of the Owner's property, due to fire or other hazards however caused.

### **§ 11.5 Adjustment and Settlement of Insured Loss**

**§ 11.5.1** A loss insured under the property insurance required by the Agreement shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.5.2. The Owner shall pay the Architect and Contractor their just shares of insurance proceeds received by the Owner, and by appropriate agreements the Architect and Contractor shall make payments to their consultants and Subcontractors in similar manner.

**§ 11.5.2** Prior to settlement of an insured loss, the Owner shall notify the Contractor of the terms of the proposed settlement as well as the proposed allocation of the insurance proceeds. The Contractor shall have 14 days from receipt of notice to object to the proposed settlement or allocation of the proceeds. If the Contractor does not object, the Owner shall settle the loss and the Contractor shall be bound by the settlement and allocation. Upon receipt, the Owner shall deposit the insurance proceeds in a separate account and make the appropriate distributions. Thereafter, if no other agreement is made or the Owner does not terminate the Contract for convenience, the Owner and Contractor shall execute a Change Order for reconstruction of the damaged or destroyed Work in the amount allocated for that purpose. If the Contractor timely objects to either the terms of the proposed settlement or the allocation of the proceeds, the Owner may proceed to settle the insured loss, and any dispute between the Owner and Contractor arising out of the settlement or allocation of the proceeds shall be resolved pursuant to Article 15. Pending resolution of any dispute, the Owner may issue a Construction Change Directive for the reconstruction of the damaged or destroyed Work.

## **ARTICLE 12 UNCOVERING AND CORRECTION OF WORK**

### **§ 12.1 Uncovering of Work**

**§ 12.1.1** If a portion of the Work is covered contrary to the Architect's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Architect, be uncovered for the Architect's examination and be replaced at the Contractor's expense without change in the Contract Time.

**§ 12.1.2** If a portion of the Work has been covered that the Architect has not specifically requested to examine prior to its being covered, the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, the Contractor shall be entitled to an equitable adjustment to

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the Contract Sum and Contract Time as may be appropriate. If such Work is not in accordance with the Contract Documents, the costs of uncovering the Work, and the cost of correction, shall be at the Contractor's expense.

## **§ 12.2 Correction of Work**

### **§ 12.2.1 Before Substantial Completion**

The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, discovered before Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Architect's services and expenses made necessary thereby, shall be at the Contractor's expense.

### **§ 12.2.2 After Substantial Completion**

**§ 12.2.2.1** In addition to the Contractor's obligations under Section 3.5, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9.1, or by terms of any applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of notice from the Owner to do so, unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.5.

**§ 12.2.2.2** The one-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

**§ 12.2.2.3** The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Section 12.2.

**§ 12.2.3** The Contractor shall remove from the site portions of the Work that are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

**§ 12.2.4** The Contractor shall bear the cost of correcting destroyed or damaged construction of the Owner or Separate Contractors, whether completed or partially completed, caused by the Contractor's correction or removal of Work that is not in accordance with the requirements of the Contract Documents.

**§ 12.2.5** Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the one-year period for correction of Work as described in Section 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

## **§ 12.3 Acceptance of Nonconforming Work**

If the Owner prefers to accept Work that is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

## **ARTICLE 13 MISCELLANEOUS PROVISIONS**

### **§ 13.1 Governing Law**

The Contract shall be governed by the law of the place where the Project is located, excluding that jurisdiction's choice of law rules. If the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4.



### **§ 13.2 Successors and Assigns**

**§ 13.2.1** The Owner and Contractor respectively bind themselves, their partners, successors, assigns, and legal representatives to covenants, agreements, and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

**§ 13.2.2** The Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project, if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate the assignment.

### **§ 13.3 Rights and Remedies**

**§ 13.3.1** Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights, and remedies otherwise imposed or available by law.

**§ 13.3.2** No action or failure to act by the Owner, Architect, or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach thereunder, except as may be specifically agreed upon in writing.

### **§ 13.4 Tests and Inspections**

**§ 13.4.1** Tests, inspections, and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules, and regulations or lawful orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections, and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections, and approvals. The Contractor shall give the Architect timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures. The Owner shall bear costs of tests, inspections, or approvals that do not become requirements until after bids are received or negotiations concluded. The Owner shall directly arrange and pay for tests, inspections, or approvals where building codes or applicable laws or regulations so require.

**§ 13.4.2** If the Architect, Owner, or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection, or approval not included under Section 13.4.1, the Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection, or approval, by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of when and where tests and inspections are to be made so that the Architect may be present for such procedures. Such costs, except as provided in Section 13.4.3, shall be at the Owner's expense.

**§ 13.4.3** If procedures for testing, inspection, or approval under Sections 13.4.1 and 13.4.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure, including those of repeated procedures and compensation for the Architect's services and expenses, shall be at the Contractor's expense.

**§ 13.4.4** Required certificates of testing, inspection, or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Architect.

**§ 13.4.5** If the Architect is to observe tests, inspections, or approvals required by the Contract Documents, the Architect will do so promptly and, where practicable, at the normal place of testing.

**§ 13.4.6** Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

### **§ 13.5 Interest**

Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at the rate the parties agree upon in writing or, in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.



## ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

### § 14.1 Termination by the Contractor

§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of 30 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, for any of the following reasons:

- .1 Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;
- .2 An act of government, such as a declaration of national emergency, that requires all Work to be stopped;
- .3 Because the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents; or
- .4 The Owner has failed to furnish to the Contractor reasonable evidence as required by Section 2.2.

§ 14.1.2 The Contractor may terminate the Contract if, through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, repeated suspensions, delays, or interruptions of the entire Work by the Owner as described in Section 14.3, constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, or 120 days in any 365-day period, whichever is less.

§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed, as well as reasonable overhead and profit on Work not executed, and costs incurred by reason of such termination.

§ 14.1.4 If the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, or their agents or employees or any other persons or entities performing portions of the Work because the Owner has repeatedly failed to fulfill the Owner's obligations under the Contract Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven additional days' notice to the Owner and the Architect, terminate the Contract and recover from the Owner as provided in Section 14.1.3.

### § 14.2 Termination by the Owner for Cause

§ 14.2.1 The Owner may terminate the Contract if the Contractor

- .1 repeatedly refuses or fails to supply enough properly skilled workers or proper materials;
- .2 fails to make payment to Subcontractors or suppliers in accordance with the respective agreements between the Contractor and the Subcontractors or suppliers;
- .3 repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or
- .4 otherwise is guilty of substantial breach of a provision of the Contract Documents.

§ 14.2.2 When any of the reasons described in Section 14.2.1 exist, and upon certification by the Architect that sufficient cause exists to justify such action, the Owner may, without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

- .1 Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
- .2 Accept assignment of subcontracts pursuant to Section 5.4; and
- .3 Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

§ 14.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance,

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the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Initial Decision Maker, upon application, and this obligation for payment shall survive termination of the Contract.

#### **§ 14.3 Suspension by the Owner for Convenience**

**§ 14.3.1** The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work, in whole or in part for such period of time as the Owner may determine.

**§ 14.3.2** The Contract Sum and Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay, or interruption under Section 14.3.1. Adjustment of the Contract Sum shall include profit. No adjustment shall be made to the extent

- .1 that performance is, was, or would have been, so suspended, delayed, or interrupted, by another cause for which the Contractor is responsible; or
- .2 that an equitable adjustment is made or denied under another provision of the Contract.

#### **§ 14.4 Termination by the Owner for Convenience**

**§ 14.4.1** The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.

**§ 14.4.2** Upon receipt of notice from the Owner of such termination for the Owner's convenience, the Contractor shall

- .1 cease operations as directed by the Owner in the notice;
- .2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and
- .3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

**§ 14.4.3** In case of such termination for the Owner's convenience, the Owner shall pay the Contractor for Work properly executed; costs incurred by reason of the termination, including costs attributable to termination of Subcontracts; and the termination fee, if any, set forth in the Agreement.

### **ARTICLE 15 CLAIMS AND DISPUTES**

#### **§ 15.1 Claims**

##### **§ 15.1.1 Definition**

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, a change in the Contract Time, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim. This Section 15.1.1 does not require the Owner to file a Claim in order to impose liquidated damages in accordance with the Contract Documents.

##### **§ 15.1.2 Time Limits on Claims**

The Owner and Contractor shall commence all Claims and causes of action against the other and arising out of or related to the Contract, whether in contract, tort, breach of warranty or otherwise, in accordance with the requirements of the binding dispute resolution method selected in the Agreement and within the period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all Claims and causes of action not commenced in accordance with this Section 15.1.2.

##### **§ 15.1.3 Notice of Claims**

**§ 15.1.3.1** Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered prior to expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party and to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker. Claims by either party under this Section 15.1.3.1 shall be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.



§ 15.1.3.2 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party. In such event, no decision by the Initial Decision Maker is required.

#### § 15.1.4 Continuing Contract Performance

§ 15.1.4.1 Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents.

§ 15.1.4.2 The Contract Sum and Contract Time shall be adjusted in accordance with the Initial Decision Maker's decision, subject to the right of either party to proceed in accordance with this Article 15. The Architect will issue Certificates for Payment in accordance with the decision of the Initial Decision Maker.

#### § 15.1.5 Claims for Additional Cost

If the Contractor wishes to make a Claim for an increase in the Contract Sum, notice as provided in Section 15.1.3 shall be given before proceeding to execute the portion of the Work that is the subject of the Claim. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

#### § 15.1.6 Claims for Additional Time

§ 15.1.6.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, notice as provided in Section 15.1.3 shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay, only one Claim is necessary.

§ 15.1.6.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated, and had an adverse effect on the scheduled construction.

#### § 15.1.7 Waiver of Claims for Consequential Damages

The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes

- .1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and
- .2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit, except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Section 15.1.7 shall be deemed to preclude assessment of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

#### § 15.2 Initial Decision

§ 15.2.1 Claims, excluding those where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2 or arising under Sections 10.3, 10.4, and 11.5, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim. If an initial decision has not been rendered within 30 days after the Claim has been referred to the Initial Decision Maker, the party asserting the Claim may demand mediation and binding dispute resolution without a decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

§ 15.2.2 The Initial Decision Maker will review Claims and within ten days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the



Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

**§ 15.2.3** In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision. The Initial Decision Maker may request the Owner to authorize retention of such persons at the Owner's expense.

**§ 15.2.4** If the Initial Decision Maker requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of the request, and shall either (1) provide a response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished, or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.

**§ 15.2.5** The Initial Decision Maker will render an initial decision approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties and the Architect, if the Architect is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties but subject to mediation and, if the parties fail to resolve their dispute through mediation, to binding dispute resolution.

**§ 15.2.6** Either party may file for mediation of an initial decision at any time, subject to the terms of Section 15.2.6.1.

**§ 15.2.6.1** Either party may, within 30 days from the date of receipt of an initial decision, demand in writing that the other party file for mediation. If such a demand is made and the party receiving the demand fails to file for mediation within 30 days after receipt thereof, then both parties waive their rights to mediate or pursue binding dispute resolution proceedings with respect to the initial decision.

**§ 15.2.7** In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

**§ 15.2.8** If a Claim relates to or is the subject of a mechanic's lien, the party asserting such Claim may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.

### **§ 15.3 Mediation**

**§ 15.3.1** Claims, disputes, or other matters in controversy arising out of or related to the Contract, except those waived as provided for in Sections 9.10.4, 9.10.5, and 15.1.7, shall be subject to mediation as a condition precedent to binding dispute resolution.

**§ 15.3.2** The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedures in effect on the date of the Agreement. A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order. If an arbitration is stayed pursuant to this Section 15.3.2, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.

**§ 15.3.3** Either party may, within 30 days from the date that mediation has been concluded without resolution of the dispute or 60 days after mediation has been demanded without resolution of the dispute, demand in writing that the other party file for binding dispute resolution. If such a demand is made and the party receiving the demand fails to file for binding dispute resolution within 60 days after receipt thereof, then both parties waive their rights to binding dispute resolution proceedings with respect to the initial decision.



§ 15.3.4 The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

#### § 15.4 Arbitration

§ 15.4.1 If the parties have selected arbitration as the method for binding dispute resolution in the Agreement, any Claim subject to, but not resolved by, mediation shall be subject to arbitration which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules in effect on the date of the Agreement. The Arbitration shall be conducted in the place where the Project is located, unless another location is mutually agreed upon. A demand for arbitration shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the arbitration. The party filing a notice of demand for arbitration must assert in the demand all Claims then known to that party on which arbitration is permitted to be demanded.

§ 15.4.1.1 A demand for arbitration shall be made no earlier than concurrently with the filing of a request for mediation, but in no event shall it be made after the date when the institution of legal or equitable proceedings based on the Claim would be barred by the applicable statute of limitations. For statute of limitations purposes, receipt of a written demand for arbitration by the person or entity administering the arbitration shall constitute the institution of legal or equitable proceedings based on the Claim.

§ 15.4.2 The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.

§ 15.4.3 The foregoing agreement to arbitrate and other agreements to arbitrate with an additional person or entity duly consented to by parties to the Agreement, shall be specifically enforceable under applicable law in any court having jurisdiction thereof.

#### § 15.4.4 Consolidation or Joinder

§ 15.4.4.1 Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party may consolidate an arbitration conducted under this Agreement with any other arbitration to which it is a party provided that (1) the arbitration agreement governing the other arbitration permits consolidation, (2) the arbitrations to be consolidated substantially involve common questions of law or fact, and (3) the arbitrations employ materially similar procedural rules and methods for selecting arbitrator(s).

§ 15.4.4.2 Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party may include by joinder persons or entities substantially involved in a common question of law or fact whose presence is required if complete relief is to be accorded in arbitration, provided that the party sought to be joined consents in writing to such joinder. Consent to arbitration involving an additional person or entity shall not constitute consent to arbitration of any claim, dispute or other matter in question not described in the written consent.

§ 15.4.4.3 The Owner and Contractor grant to any person or entity made a party to an arbitration conducted under this Section 15.4, whether by joinder or consolidation, the same rights of joinder and consolidation as those of the Owner and Contractor under this Agreement.



## **SECTION 011000 - SUMMARY**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### **1.2 SUMMARY**

- A. Section Includes:
  - 1. Project information.
  - 2. Work covered by Contract Documents.
  - 3. Project Schedule.
  - 4. Permits, Fees and Regulatory Requirements.
  - 5. Access to site.
  - 6. Work restrictions.
  - 7. Specification and Drawing conventions.
- B. Related Requirements:
  - 1. Section 015000 "Temporary Facilities and Controls" for limitations and procedures governing temporary use of Owner's facilities.

#### **1.3 PROJECT INFORMATION**

- A. Project Identification: **Exterior Improvements; HOLT Project #2021038.**
  - 1. Project Location: **330 Triphammer Road, Ithaca NY 14850.**
- B. Owner: **House Corporation, New York Delta of Pi Beta Phi.**
  - 1. Owner's Representative: **Susan Hills Murphy, Treasurer. House Corporation, New York Delta of Pi Beta Phi; T: 607-227-6270.**
  - 2. Owner's Representative: **Katie Destiny Compton, House Director; House Corporation, New York Delta of Pi Beta Phi; T: 202-445-5551.**
- C. Architect: **HOLT Architects, PC, 619 West State Street, Suite A, Ithaca, NY 14850**
  - 1. Architect's Representative: **Catherine Blakemore, Associate; T: 607-273-7600; C: 315-651-2726; E: crb@holt.com.**
- D. Web-Based Project Software: Project software administered by Architect will be used for purposes of managing communication and documents during the construction stage.

#### 1.4 WORK COVERED BY CONTRACT DOCUMENTS

1. The Work of the Project is defined by the Contract Documents and consists of the following, asbestos abatement at first floor windows, selective demolition, masonry restoration, rough carpentry, finish carpentry, roof drainage (gutters and downspouts) replacement, exterior stucco/plaster replacement and repairs, wood soffit and eave repairs, soffit vent restoration, window replacement (basement and first floors), interior and exterior painting, exterior light fixture replacement and other Work indicated in the Contract Documents.

##### B. Type of Contract:

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

#### 1.5 PROJECT SCHEDULE

##### A. Construction Start Date: May 21, 2024 **with the noted limitations:**

##### 1. **May 21, 2024 through June 9, 2024:**

- a. **No work on the 1<sup>st</sup> floor until Reunion Weekend (June 8-9, 2024) has concluded.**
- b. **No work on the east and north elevations until Reunion Weekend (June 8-9, 2024) has concluded.**
- c. **Equipment and materials shall be ordered in advance to accommodate any extended lead times and ensure the construction completion date. The General contractor is responsible for any material storage necessary to accommodate the project schedule.**

##### B. Construction Completion Date: August 2, 2024.

#### 1.6 PERMITS, FEES AND REGULATORY REQUIREMENTS

- A. The General Contractor shall secure and pay for the building permits as well as for other permits, fees, licenses and inspections by government agencies necessary for proper execution and completion of the work.

#### 1.7 ACCESS TO SITE

- A. General: 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. Use of Site: Limit use of Project site to Work in areas indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.



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1. Driveways, Walkways and Entrances: Keep driveways and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or for storage of materials.
  - a. Schedule deliveries to minimize use of driveways and entrances by construction operations.
  - b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.
- 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.

## 1.8 WORK RESTRICTIONS

- A. Work Restrictions, General: Comply with restrictions on construction operations.
  1. Comply with limitations on use of public streets and with other requirements of authorities having jurisdiction.
- B. On-Site Work Hours: Limit work in the existing building to normal business working hours of **7:00 a.m. to 5:00 p.m., Monday through Friday**, unless otherwise indicated.
  1. Weekend Hours: Obtain owner's advance written permission.
  2. Early Morning Hours: Obtain owner's advance written permission.
  3. Hours for Utility Shutdowns: Obtain owner's advance written permission.
  4. Hours for Core Drilling, Jackhammering, Grinding Concrete: Obtain owner's advance written permission.
- C. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after providing temporary utility services according to requirements indicated:
  1. Notify Owner not less than two days in advance of proposed utility interruptions.
  2. Obtain Owner's written permission before proceeding with utility interruptions.
- D. Noise, Vibration, and Odors: Coordinate operations that may result in high levels of noise and vibration, odors, or other disruption to Owner occupancy with Owner.
  1. Notify Owner not less than two days in advance of proposed disruptive operations.
  2. Obtain Owner's written permission before proceeding with disruptive operations.
- E. Nonsmoking Building: Smoking is not permitted within the building or within 25 feet of entrances, operable windows, or outdoor-air intakes.

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- F. Restricted Substances: Use of tobacco products and other controlled substances on Project site is not permitted.
- G. OSHA Certification: Contractor's employees must comply with the following minimum requirements and present valid certifications upon request:
  - 1. Superintendents: OSHA 30.
  - 2. Laborers: OSHA 10.

## 1.9 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. Specification requirements are to be performed by Contractor unless specifically stated otherwise.
- B. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.
- C. Drawing Coordination: Requirements for materials and products identified on Drawings are described in detail in the Specifications. One or more of the following are used on Drawings to identify materials and products:
  - 1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.
  - 2. Abbreviations: Materials and products are identified by abbreviations published as part of the U.S. National CAD Standard and scheduled on Drawings.
  - 3. Keynoting: Materials and products are identified by reference keynotes referencing Specification Section numbers found in this Project Manual.

## **PART 2 - PRODUCTS (Not Used)**

## **PART 3 - EXECUTION (Not Used)**

## **END OF SECTION**



## **SECTION 012100 - ALLOWANCES**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### **1.2 SUMMARY**

- A. Section includes administrative and procedural requirements governing allowances.
- B. Types of allowances include the following:
  - 1. Lump-sum allowances.
- C. Related Requirements:
  - 1. Section 012200 "Unit Prices" for procedures for using unit prices, including adjustment of quantity allowances when applicable.
  - 2. Section 014000 "Quality Requirements" for procedures governing the use of allowances for field testing by an independent testing agency.

#### **1.3 DEFINITIONS**

- A. Allowance is a quantity of work or dollar amount established in lieu of additional requirements, used to defer selection of actual materials and equipment to a later date when direction will be provided to Contractor. If necessary, additional requirements will be issued by Change Order.

#### **1.4 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.

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1.5 ACTION SUBMITTALS

- A. Submit proposals for purchase of products or systems included in allowances in the form specified for Change Orders.

1.6 INFORMATIONAL SUBMITTALS

- A. Submit invoices or delivery slips to show actual quantities of materials delivered to the site for use in fulfillment of each allowance.
- B. Submit time sheets and other documentation to show labor time and cost for installation of allowance items that include installation as part of the allowance.
- C. Coordinate and process submittals for allowance items in same manner as for other portions of the Work.

1.7 LUMP-SUM 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.
- C. Unused Materials: Return unused materials purchased under an allowance to manufacturer or supplier for credit to Owner, after installation has been completed and accepted.
  - 1. If requested by Architect, retain and prepare unused material for storage by Owner. Deliver unused material to Owner's storage space as directed.

1.8 ADJUSTMENT OF ALLOWANCES

- A. Allowance Adjustment: To adjust allowance amounts, prepare a Change Order proposal based on the difference between purchase amount and the allowance, multiplied by final measurement of work-in-place where applicable. If applicable, include reasonable allowances for cutting losses, tolerances, mixing wastes, normal product imperfections, and similar margins.
  - 1. Include installation costs in purchase amount only where indicated as part of the allowance.
  - 2. If requested, prepare explanation and documentation to substantiate distribution of overhead costs and other markups.



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- B. Submit claims for increased costs because of a change in scope or nature of the allowance described in the Contract Documents, whether for the purchase order amount or Contractor's handling, labor, installation, overhead, and profit.
  - 1. Do not include Contractor's or subcontractor's indirect expense in the Change Order cost amount unless it is clearly shown that the nature or extent of Work has changed from what could have been foreseen from information in the Contract Documents.
  - 2. No change to Contractor's indirect expense is permitted for selection of higher- or lower-priced materials or systems of the same scope and nature as originally indicated.

## **PART 2 - PRODUCTS (Not Used)**

## **PART 3 - EXECUTION**

### **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:** Lump-Sum Allowance: Include the sum of \$7,500 for the masonry restoration repointing and repairs.
  - 1. This allowance includes material costs, receiving, handling, installation, and Contractor overhead and profit.
- B. **Allowance No. 2:** Lump-Sum Allowance: Include the sum of \$15,000 for field order allowances.
  - 1. This allowance includes material costs, receiving, handling, installation, and Contractor overhead and profit.

## **END OF SECTION**

## **SECTION 012200 - UNIT PRICES**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### **1.2 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.
  - 2. Section 014000 "Quality Requirements" for field testing by an independent testing agency.

#### **1.3 DEFINITIONS**

- A. Unit price is an amount incorporated into the Agreement, applicable during the duration of the Work as 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.

#### **1.4 PROCEDURES**

- A. Unit prices include all necessary material, plus cost for delivery, installation, insurance, applicable taxes, overhead, and profit.
- B. Measurement and Payment: See individual Specification Sections for work that requires establishment of unit prices. Methods of measurement and payment for unit prices are specified in those Sections.
- C. Owner reserves the right to reject Contractor's measurement of work-in-place that involves use of established unit prices and to have this work measured, at Owner's expense, by an independent surveyor acceptable to Contractor.
- D. 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 – Brick Masonry Repointing**

1. Description: Repointing of existing brick masonry joints to a minimum depth of 1-inch.
2. Unit of Measurement: Provide a cost per square foot of masonry area, including materials and labor.
3. Quantity Allowance: Coordinate unit price with allowance adjustment requirements in Section 012100 "Allowances."

**END OF SECTION**

## **SECTION 012300 - ALTERNATES**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### **1.2 SUMMARY**

- A. Section includes administrative and procedural requirements for alternates.

#### **1.3 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.

#### **1.4 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 ALTERNATE 01

**A. Add Alternate No. 01: Third Floor West Dormer Exterior Stucco & Flashing Modifications**

1. Base Bid: No work.
2. Alternate: Provide complete costs to modify the 3<sup>rd</sup> Floor west dormer exterior stucco finish and copper flashing A002.

3.2 ALTERNATE 02

**A. Add Alternate No. 02: Patinating Existing Copper Flashing at 3<sup>rd</sup> Floor Dormers**

1. Base Bid: No work.
2. Alternate: Patinate existing 3<sup>rd</sup> floor dormer copper flashing to match existing roofing color, 4 dormers total, 3 sides each.

**END OF SECTION**

## **SECTION 012900 - PAYMENT PROCEDURES**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### **1.2 SUMMARY**

- A. Section includes administrative and procedural requirements necessary to prepare and process Applications for Payment.
- B. Related Requirements:
  - 1. Section 012100 "Allowances" for procedural requirements governing the handling and processing of allowances.
  - 2. Section 012200 "Unit Prices" for administrative requirements governing the use of unit prices.

#### **1.3 DEFINITIONS**

- A. Schedule of Values: A statement furnished by Contractor allocating portions of the Contract Sum to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

#### **1.4 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.
- B. Format and Content: Use Project Manual table of contents as a guide to establish line items for the schedule of values. Provide at least one line item for each Specification Section.
  - 1. Identification: Include the following Project identification on the schedule of values:
    - a. Project name and location.
    - b. Name of Architect.
    - c. Architect's Project number.
    - d. Contractor's name and address.
    - e. Date of submittal.



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2. Arrange schedule of values consistent with format of AIA Document G703.
3. Arrange the schedule of values in tabular form, with separate columns to indicate the following for each item listed:
  - a. Related Specification Section or Division.
  - b. Description of the Work.
  - c. Name of subcontractor.
  - d. Change Orders (numbers) that affect value.
  - e. Dollar value of the following, as a percentage of the Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent. Round dollar amounts to whole dollars, with total equal to Contract Sum.
    - 1) Labor.
    - 2) Materials.
    - 3) Equipment.
4. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Provide multiple line items for principal subcontract amounts in excess of five percent of the Contract Sum.
5. Provide a separate line item in the schedule of values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.
  - a. Differentiate between items stored on-site and items stored off-site.
6. Allowances: Provide a separate line item in the schedule of values for each allowance. Show line-item value of unit-cost allowances, as a product of the unit cost, multiplied by measured quantity. Use information indicated in the Contract Documents to determine quantities.
7. Overhead Costs: Show cost of temporary facilities and other major cost items that are not direct cost of actual work-in-place as separate line items.
8. Closeout Costs. Include separate line items under Contractor and principal subcontracts for Project closeout requirements in an amount totaling five percent of the Contract Sum and subcontract amount.
9. Schedule of Values Revisions: Revise the schedule of values when Change Orders result in a change in the Contract Sum. Include at least one separate line item for each Change Order.

## 1.5 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: Submit Application for Payment to Architect by the last day of the month. The period covered by each Application for Payment is one month, ending on the last day of the month.
  1. Submit draft "pencil" copy of Application for Payment seven days prior to due date for review by Architect.
- C. Application for Payment Forms: Use AIA Document G702 and AIA Document G703 as form for Applications for Payment.

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- 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 issued before last day of construction period covered by application.
  4. Indicate separate amounts for work being carried out under Owner-requested project acceleration.
- E. Stored Materials: Include in Application for Payment amounts applied for materials or equipment purchased or fabricated and stored, but not yet installed. Differentiate between items stored on-site and items stored off-site.
1. Provide certificate of insurance, evidence of transfer of title to Owner, and consent of surety to payment for stored materials.
  2. Provide supporting documentation that verifies amount requested, such as paid invoices. Match amount requested with amounts indicated on documentation; do not include overhead and profit on stored materials.
  3. Provide summary documentation for stored materials indicating the following:
    - a. Value of materials previously stored and remaining stored as of date of previous Applications for Payment.
    - b. Value of previously stored materials put in place after date of previous Application for Payment and on or before date of current Application for Payment.
    - c. Value of materials stored since date of previous Application for Payment and remaining stored as of date of current Application for Payment.
- F. Transmittal: Submit 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.
- G. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's lien from entities lawfully entitled to file a mechanic's lien arising out of the Contract and related to the Work covered by the payment, subcontractors, sub-subcontractors, and suppliers for construction period covered by the previous application.
1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
  2. When an application shows completion of an item, submit conditional final or full waivers.
  3. Owner reserves the right to designate which entities involved in the Work must submit waivers.
  4. Submit final Application for Payment with or preceded by conditional final waivers from every entity involved with performance of the Work covered by the application who is lawfully entitled to a lien.
  5. Waiver Forms: Submit executed waivers of lien on forms acceptable to Owner.



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- H. 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. Submittal schedule (preliminary if not final).
  6. Certificates of insurance and insurance policies.
  7. Performance and payment bonds.
  8. Data needed to acquire Owner's insurance.
- I. 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.
  2. This application shall reflect Certificate(s) of Substantial Completion issued previously for Owner occupancy of designated portions of the Work.
- J. 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. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
  3. Updated final statement, accounting for final changes to the Contract Sum.
  4. AIA Document G706.
  5. AIA Document G706A.
  6. AIA Document G707.
  7. Evidence that claims have been settled.
  8. Final meter readings for utilities, a measured record of stored fuel, and similar data as of date of Substantial Completion or when Owner took possession of and assumed responsibility for corresponding elements of the Work.

**PART 2 - PRODUCTS (Not Used)**

**PART 3 - EXECUTION (Not Used)**

**END OF SECTION**

## **SECTION 013300 - SUBMITTAL PROCEDURES**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### **1.2 SUMMARY**

- A. Section Includes:
  - 1. Submittal schedule requirements.
  - 2. Administrative and procedural requirements for submittals.
- B. Related Requirements:
  - 1. Section 012900 "Payment Procedures" for submitting Applications for Payment and the schedule of values.
  - 2. Section 014000 "Quality Requirements" for submitting test and inspection reports, and schedule of tests and inspections.
  - 3. Section 017839 "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.

#### **1.3 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."

#### **1.4 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. Coordinate submittal schedule with list of subcontracts, the schedule of values, and Contractor's construction schedule.



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2. Initial Submittal: Submit concurrently with startup construction schedule. Include submittals required during the first 15 days of construction. List those submittals required to maintain orderly progress of the Work and those required early because of long lead time for manufacture or fabrication.
3. Final Submittal: Submit concurrently with the first complete submittal of Contractor's construction schedule.
  - a. Submit revised submittal schedule to reflect changes in current status and timing for submittals.
4. Format: Arrange the following information in a tabular format:
  - a. Scheduled date for first submittal.
  - b. Specification Section number and title.
  - c. Submittal Category: Action; informational.
  - d. Name of subcontractor.
  - e. Description of the Work covered.
  - f. Scheduled date for Architect's final release or approval.
  - g. Scheduled date of fabrication.
  - h. Scheduled dates for installation.
  - i. Activity or event number.

## 1.5 SUBMITTAL FORMATS

A. Submittal Information: Include the following information in each submittal:

1. Project name.
2. Date.
3. Name of Architect.
4. Name of Contractor.
5. Name of firm or entity that prepared submittal.
6. Names of subcontractor, manufacturer, and supplier.
7. Unique submittal number, including revision identifier. Include Specification Section number with sequential alphanumeric identifier; and alphanumeric suffix for resubmittals.
8. Name file with submittal number or other unique identifier, as follows:
  - a. **Spec Section-Sequential Number-Revision Number-Description\_Submittal Type.**
    - 1) For Example: 033000-01-R0-Concrete Mix Design\_QD, indicating the first submittal for spec section 033000, original submittal; 033000-01-R1 indicating a revision of the previous example, description of content, and that it includes qualification data.
9. Category and type of submittal: ex./ PD "Product Data", SD "Shop Drawings", SAM "Samples."
10. Submittal purpose and description.
11. Number and title of Specification Section, with paragraph number and generic name for each of multiple items.
12. Drawing number and detail references, as appropriate.
13. Indication of full or partial submittal.
14. Location(s) where product is to be installed, as appropriate.

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15. Other necessary identification.
16. Remarks.
17. Signature of transmitter.

- 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. PDF Submittals: Prepare submittals as PDF package, incorporating complete information into each PDF file. Name PDF file with submittal number.
- E. Submittals for Web-Based Project Software: Prepare submittals as PDF files, or other format indicated by Project software website.

## 1.6 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.
    - a. Architect will return annotated file. Annotate and retain one copy of file as a digital Project Record Document file.
  2. Web-Based Project Software: Prepare submittals in PDF form, and upload to web-based Project software website. Enter required data in web-based software site to fully identify submittal.
- 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.
  4. Coordinate transmittal of submittals for related parts of the Work specified in different Sections so processing will not be delayed because of need to review submittals concurrently for coordination.
    - a. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.



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- 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.
  - 2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
  - 3. Resubmittal Review: Allow 15 days for review of each resubmittal.
- D. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
  - 1. Note date and content of previous submittal.
  - 2. Note date and content of revision in label or title block and clearly indicate extent of revision.
  - 3. Resubmit submittals until they are marked with approval notation from Architect's action stamp.
- 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.

## 1.7 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. Manufacturer's product specifications.
    - c. Standard color charts.
    - d. Statement of compliance with specified referenced standards.
    - e. Testing by recognized testing agency.
    - f. Application of testing agency labels and seals.
    - g. Notation of coordination requirements.
    - h. Availability and delivery time information.
  - 4. For equipment, include the following in addition to the above, as applicable:
    - a. Wiring diagrams that show factory-installed wiring.
    - b. Printed performance curves.
    - c. Operational range diagrams.

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- d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.
- 5. 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.
  - 1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
    - a. Identification of products.
    - b. Schedules.
    - c. Compliance with specified standards.
    - d. Notation of coordination requirements.
    - e. Notation of dimensions established by field measurement.
    - f. Relationship and attachment to adjoining construction clearly indicated.
    - g. Seal and signature of professional engineer if specified.
- 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. Web-Based Project Software: Prepare submittals in PDF form, and upload to web-based Project software website. Enter required data in web-based software site to fully identify submittal.
  - 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 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.



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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.
  - a. Number of Samples: Submit two sets of Samples. Architect will retain one Sample sets; remainder will be returned. Mark up and retain one returned Sample set as a project record Sample.
    - 1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
    - 2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.
- D. Product Schedule: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:
  1. Type of product. Include unique identifier for each product indicated in the Contract Documents or assigned by Contractor if none is indicated.
  2. Manufacturer and product name, and model number if applicable.
  3. Number and name of room or space.
  4. Location within room or space.
- E. 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.
- F. Design Data: Prepare and submit written and graphic information indicating compliance with indicated performance and design criteria in individual Specification Sections. Include list of assumptions and summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Number each page of submittal.
- G. Certificates:
  1. Certificates and Certifications Submittals: Submit a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity. Provide a notarized signature where indicated.
  2. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
  3. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.

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4. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
5. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
6. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure Qualification Record on AWS forms. Include names of firms and personnel certified.

H. Test and Research Reports:

1. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
2. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.
3. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
4. Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.
5. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
6. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:
  - a. Name of evaluation organization.
  - b. Date of evaluation.
  - c. Time period when report is in effect.
  - d. Product and manufacturers' names.
  - e. Description of product.
  - f. Test procedures and results.
  - g. Limitations of use.

1.8 DELEGATED-DESIGN SERVICES

- A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
1. If criteria indicated are insufficient to perform services or certification required, submit a written request for additional information to Architect.



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- B. Delegated-Design Services Certification: In addition to Shop Drawings, Product Data, and other required submittals, submit digitally signed PDF file paper copies of certificate, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.
  - 1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

#### 1.9 CONTRACTOR'S REVIEW

- A. Action Submittals and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.
- B. Contractor's Approval: Indicate Contractor's approval for each submittal with a uniform approval stamp. Include name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.
  - 1. Architect will not review submittals received from Contractor that do not have Contractor's review and approval.

#### 1.10 ARCHITECT'S REVIEW

- A. Action Submittals: Architect will review each submittal, indicate corrections or revisions required, and return it.
  - 1. PDF Submittals: Architect will indicate, via markup on each submittal, the appropriate action.
  - 2. Submittals by Web-Based Project Software: Architect will indicate, on Project software website, the appropriate action.
    - a. Actions taken by indication on Architect's Project software website have the following meanings:
      - 1) No Exceptions: Returned for unrestricted use.
      - 2) Note Markings: Returned for restricted use, as noted.
      - 3) Resubmit: Returned for revision and resubmittal; use not permitted.
      - 4) Rejected: Returned without action, as explained on cover sheet; use not permitted.
- 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.

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- D. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.
- E. Architect will return without review 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**



## **SECTION 014000 - QUALITY REQUIREMENTS**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### **1.2 SUMMARY**

- A. Section includes administrative and procedural requirements for quality assurance and quality control.
- B. Testing and inspection services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
  - 1. Specific quality-assurance and quality-control requirements for individual work results are specified in their respective Specification Sections. Requirements in individual Sections may also cover production of standard products.
  - 2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and quality-control procedures that facilitate compliance with the Contract Document requirements.
  - 3. Requirements for Contractor to provide quality-assurance and quality-control services required by Architect, Owner, or authorities having jurisdiction are not limited by provisions of this Section.
  - 4. Specific test and inspection requirements are not specified in this Section.

#### **1.3 DEFINITIONS**

- A. Experienced: When used with an entity or individual, "experienced" unless otherwise further described means having successfully completed a minimum of five previous projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.
- B. Field Quality-Control Tests: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
- C. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, assembly, and similar operations.
  - 1. Use of trade-specific terminology in referring to a trade or entity does not require that certain construction activities be performed by accredited or unionized individuals, or that requirements specified apply exclusively to specific trade(s).

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- D. Mockups: Full-size physical assemblies that are constructed on-site either as freestanding temporary built elements or as part of permanent construction. Mockups are constructed to verify selections made under Sample submittals; to demonstrate aesthetic effects and qualities of materials and execution; to review coordination, testing, or operation; to show interface between dissimilar materials; and to demonstrate compliance with specified installation tolerances. Mockups are not Samples. Unless otherwise indicated, approved mockups establish the standard by which the Work will be judged.
  - 1. Integrated Exterior Mockups: Mockups of the exterior envelope constructed on-site as freestanding temporary built elements or as part of permanent construction, consisting of multiple products, assemblies, and subassemblies.
- E. Preconstruction Testing: Tests and inspections performed specifically for Project before products and materials are incorporated into the Work, to verify performance or compliance with specified criteria.
- F. Product Tests: Tests and inspections that are performed by a nationally recognized testing laboratory (NRTL) according to 29 CFR 1910.7, by a testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program (NVLAP), or by a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with specified requirements.
- G. Source Quality-Control Tests: Tests and inspections that are performed at the source; for example, plant, mill, factory, or shop.
- H. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.
- I. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.
- J. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Contractor's quality-control services do not include contract administration activities performed by Architect.

#### 1.4 DELEGATED-DESIGN SERVICES

- A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
  - 1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect.



## 1.5 CONFLICTING REQUIREMENTS

- A. Conflicting Standards and Other Requirements: If compliance with two or more standards or requirements are specified and the standards or requirements establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer conflicting requirements that are different, but apparently equal, to Architect for direction before proceeding.
- B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect for a decision before proceeding.

## 1.6 ACTION SUBMITTALS

- A. Shop Drawings:
  - 1. Include plans, sections, and elevations, indicating materials and size of mockup construction.
  - 2. Indicate manufacturer and model number of individual components.
  - 3. Provide axonometric drawings for conditions difficult to illustrate in two dimensions.
- B. Delegated-Design Services Submittal: In addition to Shop Drawings, Product Data, and other required submittals, submit a statement signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional, indicating that the products and systems are in compliance with performance and design criteria indicated. Include list of codes, loads, and other factors used in performing these services.

## 1.7 INFORMATIONAL SUBMITTALS

- A. Schedule of Tests and Inspections: Prepare in tabular form and include the following:
  - 1. Specification Section number and title.
  - 2. Entity responsible for performing tests and inspections.
  - 3. Description of test and inspection.
  - 4. Identification of applicable standards.
  - 5. Identification of test and inspection methods.
  - 6. Number of tests and inspections required.
  - 7. Time schedule or time span for tests and inspections.
  - 8. Requirements for obtaining samples.
  - 9. Unique characteristics of each quality-control service.
- B. Reports: Prepare and submit certified written reports and documents as specified.

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- C. Permits, Licenses, and Certificates: For Owner's record, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents established for compliance with standards and regulations bearing on performance of the Work.

## 1.8 REPORTS AND DOCUMENTS

- A. Test and Inspection Reports: Prepare and submit certified written reports specified in other Sections. Include the following:
1. Date of issue.
  2. Project title and number.
  3. Name, address, telephone number, and email address of testing agency.
  4. Dates and locations of samples and tests or inspections.
  5. Names of individuals making tests and inspections.
  6. Description of the Work and test and inspection method.
  7. Identification of product and Specification Section.
  8. Complete test or inspection data.
  9. Test and inspection results and an interpretation of test results.
  10. Record of temperature and weather conditions at time of sample taking and testing and inspection.
  11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
  12. Name and signature of laboratory inspector.
  13. Recommendations on retesting and reinspecting.
- B. Manufacturer's Technical Representative's Field Reports: Prepare written information documenting manufacturer's technical representative's tests and inspections specified in other Sections. Include the following:
1. Name, address, telephone number, and email address of technical representative making report.
  2. Statement on condition of substrates and their acceptability for installation of product.
  3. Statement that products at Project site comply with requirements.
  4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
  5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
  6. Statement whether conditions, products, and installation will affect warranty.
  7. Other required items indicated in individual Specification Sections.
- C. Factory-Authorized Service Representative's Reports: Prepare written information documenting manufacturer's factory-authorized service representative's tests and inspections specified in other Sections. Include the following:
1. Name, address, telephone number, and email address of factory-authorized service representative making report.
  2. Statement that equipment complies with requirements.
  3. Results of operational and other tests and a statement of whether observed performance complies with requirements.
  4. Statement whether conditions, products, and installation will affect warranty.



5. Other required items indicated in individual Specification Sections.

## 1.9 QUALITY ASSURANCE

- A. General: Qualifications paragraphs in this article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.
- B. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units. As applicable, procure products from manufacturers able to meet qualification requirements, warranty requirements, and technical or factory-authorized service representative requirements.
- C. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- D. Installer Qualifications: A firm or individual experienced in installing, erecting, applying, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.
- E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar in material, design, and extent to those indicated for this Project.
- F. Specialists: Certain Specification Sections require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.
  - 1. Requirements of authorities having jurisdiction shall supersede requirements for specialists.
- G. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspection indicated, as documented according to ASTM E329; and with additional qualifications specified in individual Sections; and, where required by authorities having jurisdiction, that is acceptable to authorities.
- H. Manufacturer's Technical Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- I. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

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- J. Mockups: Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:
1. Build mockups of size indicated.
  2. Build mockups in location indicated or, if not indicated, as directed by Architect.
  3. Notify Architect seven days in advance of dates and times when mockups will be constructed.
  4. Employ supervisory personnel who will oversee mockup construction. Employ workers that will be employed to perform same tasks during the construction at Project.
  5. Demonstrate the proposed range of aesthetic effects and workmanship.
  6. Obtain Architect's approval of mockups before starting corresponding work, fabrication, or construction.
    - a. Allow seven days for initial review and each re-review of each mockup.
  7. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
  8. Demolish and remove mockups when directed unless otherwise indicated.
- K. Integrated Exterior Mockups: Construct integrated exterior mockup according to approved Shop Drawings. Coordinate installation of exterior envelope materials and products for which mockups are required in individual Specification Sections, along with supporting materials. Comply with requirements in "Mockups" Paragraph.

1.10 QUALITY CONTROL

- A. Contractor Responsibilities: Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Perform additional quality-control activities, whether specified or not, to verify and document that the Work complies with requirements.
1. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.
  2. Engage a qualified testing agency to perform quality-control services.
    - a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.
  3. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspection will be performed.
  4. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
  5. Testing and inspection requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
  6. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
- B. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.

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- C. Testing Agency Responsibilities: Cooperate with Architect and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
1. Notify Architect and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
  2. Determine the locations from which test samples will be taken and in which in-situ tests are conducted.
  3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
  4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
  5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
  6. Do not perform duties of Contractor.
- D. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Section 013300 "Submittal Procedures."
- E. Manufacturer's Technical Services: Where indicated, engage a manufacturer's technical representative to observe and inspect the Work. Manufacturer's technical representative's services include participation in preinstallation conferences, examination of substrates and conditions, verification of materials, observation of Installer activities, inspection of completed portions of the Work, and submittal of written reports.
- F. Associated Contractor Services: Cooperate with agencies and representatives performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
1. Access to the Work.
  2. Incidental labor and facilities necessary to facilitate tests and inspections.
  3. Adequate quantities of representative samples of materials that require testing and inspection. Assist agency in obtaining samples.
  4. Facilities for storage and field curing of test samples.
  5. Preliminary design mix proposed for use for material mixes that require control by testing agency.
  6. Security and protection for samples and for testing and inspection equipment at Project site.
- G. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and quality-control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspection.
1. Schedule times for tests, inspections, obtaining samples, and similar activities.
- H. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality-control services required by the Contract Documents. Coordinate and submit concurrently with Contractor's Construction Schedule. Update as the Work progresses.



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1. Distribution: Distribute schedule to Owner, Architect, testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.

**PART 2 - PRODUCTS (Not Used)**

**PART 3 - EXECUTION**

**3.1 REPAIR AND PROTECTION**

- A. General: On completion of testing, inspection, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
  1. Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible. Comply with the Contract Document requirements for cutting and patching in Section 017300 "Execution."
- B. Protect construction exposed by or for quality-control service activities.
- C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

**END OF SECTION**

## **SECTION 014200 - REFERENCES**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### **1.2 DEFINITIONS**

- A. General: Basic Contract definitions are included in the Conditions of the Contract.
- B. "Approved": When used to convey Architect's action on Contractor's submittals, applications, and requests, "approved" is limited to Architect's duties and responsibilities as stated in the Conditions of the Contract.
- C. "Directed": A command or instruction by Architect. Other terms including "requested," "authorized," "selected," "required," and "permitted" have the same meaning as "directed."
- D. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."
- E. "Regulations": Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.
- F. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.
- G. "Install": Unload, temporarily store, unpack, assemble, erect, place, anchor, apply, work to dimension, finish, cure, protect, clean, and similar operations at Project site.
- H. "Provide": Furnish and install, complete and ready for the intended use.
- I. "Project Site": Space available for performing construction activities. The extent of Project site is shown on Drawings and may or may not be identical with the description of the land on which Project is to be built.

#### **1.3 INDUSTRY STANDARDS**

- A. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.

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- B. Publication Dates: Comply with standards in effect as of date of the Contract Documents unless otherwise indicated.
- C. Copies of Standards: Each entity engaged in construction on Project should be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.
  - 1. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source.

#### 1.4 ABBREVIATIONS AND ACRONYMS

- A. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. This information is subject to change and is believed to be accurate as of the date of the Contract Documents.
  - 1. AABC - Associated Air Balance Council; [www.aabc.com](http://www.aabc.com).
  - 2. AAMA - American Architectural Manufacturers Association; [www.aamanet.org](http://www.aamanet.org).
  - 3. AAPFCO - Association of American Plant Food Control Officials; [www.aapfco.org](http://www.aapfco.org).
  - 4. AASHTO - American Association of State Highway and Transportation Officials; [www.transportation.org](http://www.transportation.org).
  - 5. AATCC - American Association of Textile Chemists and Colorists; [www.aatcc.org](http://www.aatcc.org).
  - 6. ABMA - American Bearing Manufacturers Association; [www.americanbearings.org](http://www.americanbearings.org).
  - 7. ABMA - American Boiler Manufacturers Association; [www.abma.com](http://www.abma.com).
  - 8. ACI - American Concrete Institute; (Formerly: ACI International); [www.concrete.org](http://www.concrete.org)
  - 9. ACPA - American Concrete Pipe Association; [www.concrete-pipe.org](http://www.concrete-pipe.org).
  - 10. AEIC - Association of Edison Illuminating Companies, Inc. (The); [www.aeic.org](http://www.aeic.org).
  - 11. AF&PA - American Forest & Paper Association; [www.afandpa.org](http://www.afandpa.org).
  - 12. AGA - American Gas Association; [www.aga.org](http://www.aga.org).
  - 13. AHAM - Association of Home Appliance Manufacturers; [www.aham.org](http://www.aham.org).
  - 14. AHRI - Air-Conditioning, Heating, and Refrigeration Institute (The); [www.ahrinet.org](http://www.ahrinet.org).
  - 15. AI - Asphalt Institute; [www.asphaltinstitute.org](http://www.asphaltinstitute.org).
  - 16. AIA - American Institute of Architects (The); [www.aia.org](http://www.aia.org).
  - 17. AISC - American Institute of Steel Construction; [www.aisc.org](http://www.aisc.org).
  - 18. AISI - American Iron and Steel Institute; [www.steel.org](http://www.steel.org).
  - 19. AITC - American Institute of Timber Construction; [www.aitc-glulam.org](http://www.aitc-glulam.org).
  - 20. AMCA - Air Movement and Control Association International, Inc.; [www.amca.org](http://www.amca.org).
  - 21. ANSI - American National Standards Institute; [www.ansi.org](http://www.ansi.org).
  - 22. AOSA - Association of Official Seed Analysts, Inc.; [www.aosaseed.com](http://www.aosaseed.com).
  - 23. APA - APA - The Engineered Wood Association; [www.apawood.org](http://www.apawood.org).
  - 24. APA - Architectural Precast Association; [www.archprecast.org](http://www.archprecast.org).
  - 25. API - American Petroleum Institute; [www.api.org](http://www.api.org).
  - 26. ARI - Air-Conditioning & Refrigeration Institute; (See AHRI).
  - 27. ARI - American Refrigeration Institute; (See AHRI).
  - 28. ARMA - Asphalt Roofing Manufacturers Association; [www.asphaltroofing.org](http://www.asphaltroofing.org).
  - 29. ASCE - American Society of Civil Engineers; [www.asce.org](http://www.asce.org).
  - 30. ASCE/SEI - American Society of Civil Engineers/Structural Engineering Institute; (See ASCE).



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31. ASHRAE - American Society of Heating, Refrigerating and Air-Conditioning Engineers; [www.ashrae.org](http://www.ashrae.org).
32. ASME - ASME International; (American Society of Mechanical Engineers); [www.asme.org](http://www.asme.org).
33. ASSE - American Society of Safety Engineers (The); [www.asse.org](http://www.asse.org).
34. ASSE - American Society of Sanitary Engineering; [www.asse-plumbing.org](http://www.asse-plumbing.org).
35. ASTM - ASTM International; [www.astm.org](http://www.astm.org).
36. ATIS - Alliance for Telecommunications Industry Solutions; [www.atis.org](http://www.atis.org).
37. AWEA - American Wind Energy Association; [www.awea.org](http://www.awea.org).
38. AWI - Architectural Woodwork Institute; [www.awinet.org](http://www.awinet.org).
39. AWMAC - Architectural Woodwork Manufacturers Association of Canada; [www.awmac.com](http://www.awmac.com).
40. AWWPA - American Wood Protection Association; [www.awpa.com](http://www.awpa.com).
41. AWS - American Welding Society; [www.aws.org](http://www.aws.org).
42. AWWA - American Water Works Association; [www.awwa.org](http://www.awwa.org).
43. BHMA - Builders Hardware Manufacturers Association; [www.buildershardware.com](http://www.buildershardware.com).
44. BIA - Brick Industry Association (The); [www.gobrick.com](http://www.gobrick.com).
45. BICSI - BICSI, Inc.; [www.bicsi.org](http://www.bicsi.org).
46. BIFMA - BIFMA International; (Business and Institutional Furniture Manufacturer's Association); [www.bifma.org](http://www.bifma.org).
47. BISSC - Baking Industry Sanitation Standards Committee; [www.bissc.org](http://www.bissc.org).
48. BWF - Badminton World Federation; (Formerly: International Badminton Federation); [www.bissc.org](http://www.bissc.org).
49. CDA - Copper Development Association; [www.copper.org](http://www.copper.org).
50. CE - Conformance Européenne; <http://ec.europa.eu/growth/single-market/ce-marking/>
51. CEA - Canadian Electricity Association; [www.electricity.ca](http://www.electricity.ca).
52. CEA - Consumer Electronics Association; [www.ce.org](http://www.ce.org).
53. CFFA - Chemical Fabrics and Film Association, Inc.; [www.chemicalfabricsandfilm.com](http://www.chemicalfabricsandfilm.com).
54. CFSEI - Cold-Formed Steel Engineers Institute; [www.cfsei.org](http://www.cfsei.org).
55. CGA - Compressed Gas Association; [www.cganet.com](http://www.cganet.com).
56. CIMA - Cellulose Insulation Manufacturers Association; [www.cellulose.org](http://www.cellulose.org).
57. CISCA - Ceilings & Interior Systems Construction Association; [www.cisca.org](http://www.cisca.org).
58. CISPI - Cast Iron Soil Pipe Institute; [www.cispi.org](http://www.cispi.org).
59. CLFMI - Chain Link Fence Manufacturers Institute; [www.chainlinkinfo.org](http://www.chainlinkinfo.org).
60. CPA - Composite Panel Association; [www.pbmdf.com](http://www.pbmdf.com).
61. CRI - Carpet and Rug Institute (The); [www.carpet-rug.org](http://www.carpet-rug.org).
62. CRRC - Cool Roof Rating Council; [www.coolroofs.org](http://www.coolroofs.org).
63. CRSI - Concrete Reinforcing Steel Institute; [www.crsi.org](http://www.crsi.org).
64. CSA - Canadian Standards Association; [www.csa.ca](http://www.csa.ca).
65. CSA - CSA International; (Formerly: IAS - International Approval Services); [www.csa-international.org](http://www.csa-international.org).
66. CSI - Construction Specifications Institute (The); [www.csinet.org](http://www.csinet.org).
67. CSSB - Cedar Shake & Shingle Bureau; [www.cedarbureau.org](http://www.cedarbureau.org).
68. CTI - Cooling Technology Institute; (Formerly: Cooling Tower Institute); [www.cti.org](http://www.cti.org).
69. CWC - Composite Wood Council; (See CPA).
70. DASMA - Door and Access Systems Manufacturers Association; [www.dasma.com](http://www.dasma.com).
71. DHI - Door and Hardware Institute; [www.dhi.org](http://www.dhi.org).
72. ECA - Electronic Components Association; (See ECIA).
73. ECAMA - Electronic Components Assemblies & Materials Association; (See ECIA).
74. ECIA - Electronic Components Industry Association; [www.eciaonline.org](http://www.eciaonline.org).

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75. EIA - Electronic Industries Alliance; (See TIA).
76. EIMA - EIFS Industry Members Association; [www.eima.com](http://www.eima.com).
77. EJMA - Expansion Joint Manufacturers Association, Inc.; [www.ejma.org](http://www.ejma.org).
78. ESD - ESD Association; (Electrostatic Discharge Association); [www.esda.org](http://www.esda.org).
79. ESTA - Entertainment Services and Technology Association; (See PLASA).
80. ETL - Intertek (See Intertek); [www.intertek.com](http://www.intertek.com).
81. EVO - Efficiency Valuation Organization; [www.evo-world.org](http://www.evo-world.org).
82. FCI - Fluid Controls Institute; [www.fluidcontrolsinstitute.org](http://www.fluidcontrolsinstitute.org).
83. FIBA - Federation Internationale de Basketball; (The International Basketball Federation); [www.fiba.com](http://www.fiba.com).
84. FIVB - Federation Internationale de Volleyball; (The International Volleyball Federation); [www.fivb.org](http://www.fivb.org).
85. FM Approvals - FM Approvals LLC; [www.fmglobal.com](http://www.fmglobal.com).
86. FM Global - FM Global; (Formerly: FMG - FM Global); [www.fmglobal.com](http://www.fmglobal.com).
87. FRSA - Florida Roofing, Sheet Metal & Air Conditioning Contractors Association, Inc.; [www.floridarooft.com](http://www.floridarooft.com).
88. FSA - Fluid Sealing Association; [www.fluidsealing.com](http://www.fluidsealing.com).
89. FSC - Forest Stewardship Council U.S.; [www.fscus.org](http://www.fscus.org).
90. GA - Gypsum Association; [www.gypsum.org](http://www.gypsum.org).
91. GANA - Glass Association of North America; [www.glasswebsite.com](http://www.glasswebsite.com).
92. GS - Green Seal; [www.greenseal.org](http://www.greenseal.org).
93. HI - Hydraulic Institute; [www.pumps.org](http://www.pumps.org).
94. HI/GAMA - Hydronics Institute/Gas Appliance Manufacturers Association; (See AHRI).
95. HMMA - Hollow Metal Manufacturers Association; (See NAAMM).
96. HPVA - Hardwood Plywood & Veneer Association; [www.hpva.org](http://www.hpva.org).
97. HPW - H. P. White Laboratory, Inc.; [www.hpwhite.com](http://www.hpwhite.com).
98. IAPSC - International Association of Professional Security Consultants; [www.iapsc.org](http://www.iapsc.org).
99. IAS - International Accreditation Service; [www.iasonline.org](http://www.iasonline.org).
100. IAS - International Approval Services; (See CSA).
101. ICBO - International Conference of Building Officials; (See ICC).
102. ICC - International Code Council; [www.iccsafe.org](http://www.iccsafe.org).
103. ICEA - Insulated Cable Engineers Association, Inc.; [www.icea.net](http://www.icea.net).
104. ICPA - International Cast Polymer Alliance; [www.icpa-hq.org](http://www.icpa-hq.org).
105. ICRI - International Concrete Repair Institute, Inc.; [www.icri.org](http://www.icri.org).
106. IEC - International Electrotechnical Commission; [www.iec.ch](http://www.iec.ch).
107. IEEE - Institute of Electrical and Electronics Engineers, Inc. (The); [www.ieee.org](http://www.ieee.org).
108. IES - Illuminating Engineering Society; (Formerly: Illuminating Engineering Society of North America); [www.ies.org](http://www.ies.org).
109. IESNA - Illuminating Engineering Society of North America; (See IES).
110. IEST - Institute of Environmental Sciences and Technology; [www.iest.org](http://www.iest.org).
111. IGMA - Insulating Glass Manufacturers Alliance; [www.igmaonline.org](http://www.igmaonline.org).
112. IGSHPA - International Ground Source Heat Pump Association;  
[www.igshpa.okstate.edu](http://www.igshpa.okstate.edu).
113. ILI - Indiana Limestone Institute of America, Inc.; [www.iliai.com](http://www.iliai.com).
114. Intertek - Intertek Group; (Formerly: ETL SEMCO; Intertek Testing Service NA);  
[www.intertek.com](http://www.intertek.com).
115. ISA - International Society of Automation (The); (Formerly: Instrumentation, Systems,  
and Automation Society); [www.isa.org](http://www.isa.org).
116. ISAS - Instrumentation, Systems, and Automation Society (The); (See ISA).

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117. ISFA - International Surface Fabricators Association; (Formerly: International Solid Surface Fabricators Association); [www.isfanow.org](http://www.isfanow.org).
118. ISO - International Organization for Standardization; [www.iso.org](http://www.iso.org).
119. ISSFA - International Solid Surface Fabricators Association; (See ISFA).
120. ITU - International Telecommunication Union; [www.itu.int/home](http://www.itu.int/home).
121. KCMA - Kitchen Cabinet Manufacturers Association; [www.kcma.org](http://www.kcma.org).
122. LMA - Laminating Materials Association; (See CPA).
123. LPI - Lightning Protection Institute; [www.lightning.org](http://www.lightning.org).
124. MBMA - Metal Building Manufacturers Association; [www.mbma.com](http://www.mbma.com).
125. MCA - Metal Construction Association; [www.metalconstruction.org](http://www.metalconstruction.org).
126. MFMA - Maple Flooring Manufacturers Association, Inc.; [www.maplefloor.org](http://www.maplefloor.org).
127. MFMA - Metal Framing Manufacturers Association, Inc.; [www.metalframingmfg.org](http://www.metalframingmfg.org).
128. MHIA - Material Handling Industry of America; [www.mhia.org](http://www.mhia.org).
129. MIA - Marble Institute of America; [www.marble-institute.com](http://www.marble-institute.com).
130. MMPA - Moulding & Millwork Producers Association; [www.wmmpa.com](http://www.wmmpa.com).
131. MPI - Master Painters Institute; [www.paintinfo.com](http://www.paintinfo.com).
132. MSS - Manufacturers Standardization Society of The Valve and Fittings Industry Inc.; [www.mss-hq.org](http://www.mss-hq.org).
133. NAAMM - National Association of Architectural Metal Manufacturers; [www.naamm.org](http://www.naamm.org).
134. NACE - NACE International; (National Association of Corrosion Engineers International); [www.nace.org](http://www.nace.org).
135. NADCA - National Air Duct Cleaners Association; [www.nadca.com](http://www.nadca.com).
136. NAIMA - North American Insulation Manufacturers Association; [www.naima.org](http://www.naima.org).
137. NBGQA - National Building Granite Quarries Association, Inc.; [www.nbgqa.com](http://www.nbgqa.com).
138. NBI - New Buildings Institute; [www.newbuildings.org](http://www.newbuildings.org).
139. NCAA - National Collegiate Athletic Association (The); [www.ncaa.org](http://www.ncaa.org).
140. NCMA - National Concrete Masonry Association; [www.ncma.org](http://www.ncma.org).
141. NEBB - National Environmental Balancing Bureau; [www.nebb.org](http://www.nebb.org).
142. NECA - National Electrical Contractors Association; [www.necanet.org](http://www.necanet.org).
143. NeLMA - Northeastern Lumber Manufacturers Association; [www.nelma.org](http://www.nelma.org).
144. NEMA - National Electrical Manufacturers Association; [www.nema.org](http://www.nema.org).
145. NETA - InterNational Electrical Testing Association; [www.netaworld.org](http://www.netaworld.org).
146. NFHS - National Federation of State High School Associations; [www.nfhs.org](http://www.nfhs.org).
147. NFPA - National Fire Protection Association; [www.nfpa.org](http://www.nfpa.org).
148. NFPA - NFPA International; (See NFPA).
149. NFRC - National Fenestration Rating Council; [www.nfrc.org](http://www.nfrc.org).
150. NHLA - National Hardwood Lumber Association; [www.nhla.com](http://www.nhla.com).
151. NLGA - National Lumber Grades Authority; [www.nlga.org](http://www.nlga.org).
152. NOFMA - National Oak Flooring Manufacturers Association; (See NWFA).
153. NOMMA - National Ornamental & Miscellaneous Metals Association; [www.nomma.org](http://www.nomma.org).
154. NRCA - National Roofing Contractors Association; [www.nrca.net](http://www.nrca.net).
155. NRMCA - National Ready Mixed Concrete Association; [www.nrmca.org](http://www.nrmca.org).
156. NSF - NSF International; [www.nsf.org](http://www.nsf.org).
157. NSPE - National Society of Professional Engineers; [www.nspe.org](http://www.nspe.org).
158. NSSGA - National Stone, Sand & Gravel Association; [www.nssga.org](http://www.nssga.org).
159. NTMA - National Terrazzo & Mosaic Association, Inc. (The); [www.ntma.com](http://www.ntma.com).
160. NWFA - National Wood Flooring Association; [www.nwfa.org](http://www.nwfa.org).
161. PCI - Precast/Prestressed Concrete Institute; [www.pci.org](http://www.pci.org).
162. PDI - Plumbing & Drainage Institute; [www.pdionline.org](http://www.pdionline.org).



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163. PLASA - PLASA; (Formerly: ESTA - Entertainment Services and Technology Association); <http://www.plasa.org>.
164. RCSC - Research Council on Structural Connections; [www.boltcouncil.org](http://www.boltcouncil.org).
165. RFCI - Resilient Floor Covering Institute; [www.rfci.com](http://www.rfci.com).
166. RIS - Redwood Inspection Service; [www.redwoodinspection.com](http://www.redwoodinspection.com).
167. SAE - SAE International; [www.sae.org](http://www.sae.org).
168. SCTE - Society of Cable Telecommunications Engineers; [www.scte.org](http://www.scte.org).
169. SDI - Steel Deck Institute; [www.sdi.org](http://www.sdi.org).
170. SDI - Steel Door Institute; [www.steeldoor.org](http://www.steeldoor.org).
171. SEFA - Scientific Equipment and Furniture Association (The); [www.sefalabs.com](http://www.sefalabs.com).
172. SEI/ASCE - Structural Engineering Institute/American Society of Civil Engineers; (See ASCE).
173. SIA - Security Industry Association; [www.siaonline.org](http://www.siaonline.org).
174. SJI - Steel Joist Institute; [www.steeljoist.org](http://www.steeljoist.org).
175. SMA - Screen Manufacturers Association; [www.smainfo.org](http://www.smainfo.org).
176. SMACNA - Sheet Metal and Air Conditioning Contractors' National Association; [www.smacna.org](http://www.smacna.org).
177. SMPTE - Society of Motion Picture and Television Engineers; [www.smpte.org](http://www.smpte.org).
178. SPFA - Spray Polyurethane Foam Alliance; [www.sprayfoam.org](http://www.sprayfoam.org).
179. SPIB - Southern Pine Inspection Bureau; [www.spib.org](http://www.spib.org).
180. SPRI - Single Ply Roofing Industry; [www.spri.org](http://www.spri.org).
181. SRCC - Solar Rating & Certification Corporation; [www.solar-rating.org](http://www.solar-rating.org).
182. SSINA - Specialty Steel Industry of North America; [www.ssina.com](http://www.ssina.com).
183. SSPC - SSPC: The Society for Protective Coatings; [www.sspc.org](http://www.sspc.org).
184. STI - Steel Tank Institute; [www.steeltank.com](http://www.steeltank.com).
185. SWI - Steel Window Institute; [www.steelwindows.com](http://www.steelwindows.com).
186. SWPA - Submersible Wastewater Pump Association; [www.swpa.org](http://www.swpa.org).
187. TCA - Tilt-Up Concrete Association; [www.tilt-up.org](http://www.tilt-up.org).
188. TCNA - Tile Council of North America, Inc.; [www.tileusa.com](http://www.tileusa.com).
189. TEMA - Tubular Exchanger Manufacturers Association, Inc.; [www.tema.org](http://www.tema.org).
190. TIA - Telecommunications Industry Association (The); (Formerly: TIA/EIA - Telecommunications Industry Association/Electronic Industries Alliance); [www.tiaonline.org](http://www.tiaonline.org).
191. TIA/EIA - Telecommunications Industry Association/Electronic Industries Alliance; (See TIA).
192. TMS - The Masonry Society; [www.masonrysociety.org](http://www.masonrysociety.org).
193. TPI - Truss Plate Institute; [www.tpinst.org](http://www.tpinst.org).
194. TPI - Turfgrass Producers International; [www.turfgrasssod.org](http://www.turfgrasssod.org).
195. TRI - Tile Roofing Institute; [www.tilerroofing.org](http://www.tilerroofing.org).
196. UL - Underwriters Laboratories Inc.; <http://www.ul.com>.
197. UNI - Uni-Bell PVC Pipe Association; [www.uni-bell.org](http://www.uni-bell.org).
198. USAV - USA Volleyball; [www.usavolleyball.org](http://www.usavolleyball.org).
199. USGBC - U.S. Green Building Council; [www.usgbc.org](http://www.usgbc.org).
200. USITT - United States Institute for Theatre Technology, Inc.; [www.usitt.org](http://www.usitt.org).
201. WASTEC - Waste Equipment Technology Association; [www.wastec.org](http://www.wastec.org).
202. WCLIB - West Coast Lumber Inspection Bureau; [www.wclib.org](http://www.wclib.org).
203. WCMA - Window Covering Manufacturers Association; [www.wcmanet.org](http://www.wcmanet.org).
204. WDMA - Window & Door Manufacturers Association; [www.wdma.com](http://www.wdma.com).
205. WI - Woodwork Institute; [www.wicnet.org](http://www.wicnet.org).
206. WSRCA - Western States Roofing Contractors Association; [www.wsrca.com](http://www.wsrca.com).

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207. WWPA - Western Wood Products Association; [www.wwpa.org](http://www.wwpa.org).

B. Code Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. This information is believed to be accurate as of the date of the Contract Documents.

1. DIN - Deutsches Institut für Normung e.V.; [www.din.de](http://www.din.de).
2. IAPMO - International Association of Plumbing and Mechanical Officials; [www.iapmo.org](http://www.iapmo.org).
3. ICC - International Code Council; [www.iccsafe.org](http://www.iccsafe.org).
4. ICC-ES - ICC Evaluation Service, LLC; [www.icc-es.org](http://www.icc-es.org).

C. Federal Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Information is subject to change and is up to date as of the date of the Contract Documents.

1. COE - Army Corps of Engineers; [www.usace.army.mil](http://www.usace.army.mil).
2. CPSC - Consumer Product Safety Commission; [www.cpsc.gov](http://www.cpsc.gov).
3. DOC - Department of Commerce; National Institute of Standards and Technology; [www.nist.gov](http://www.nist.gov).
4. DOD - Department of Defense; [www.quicksearch.dla.mil](http://www.quicksearch.dla.mil).
5. DOE - Department of Energy; [www.energy.gov](http://www.energy.gov).
6. EPA - Environmental Protection Agency; [www.epa.gov](http://www.epa.gov).
7. FAA - Federal Aviation Administration; [www.faa.gov](http://www.faa.gov).
8. FG - Federal Government Publications; [www.gpo.gov/fdsys](http://www.gpo.gov/fdsys).
9. GSA - General Services Administration; [www.gsa.gov](http://www.gsa.gov).
10. HUD - Department of Housing and Urban Development; [www.hud.gov](http://www.hud.gov).
11. LBL - Lawrence Berkeley National Laboratory; Environmental Energy Technologies Division; [www.eetd.lbl.gov](http://www.eetd.lbl.gov).
12. OSHA - Occupational Safety & Health Administration; [www.osha.gov](http://www.osha.gov).
13. SD - Department of State; [www.state.gov](http://www.state.gov).
14. TRB - Transportation Research Board; National Cooperative Highway Research Program; The National Academies; [www.trb.org](http://www.trb.org).
15. USDA - Department of Agriculture; Agriculture Research Service; U.S. Salinity Laboratory; [www.ars.usda.gov](http://www.ars.usda.gov).
16. USDA - Department of Agriculture; Rural Utilities Service; [www.usda.gov](http://www.usda.gov).
17. USDOJ - Department of Justice; Office of Justice Programs; National Institute of Justice; [www.ojp.usdoj.gov](http://www.ojp.usdoj.gov).
18. USP - U.S. Pharmacopeial Convention; [www.usp.org](http://www.usp.org).
19. USPS - United States Postal Service; [www.usps.com](http://www.usps.com).

D. Standards and Regulations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the standards and regulations in the following list. This information is subject to change and is believed to be accurate as of the date of the Contract Documents.

1. CFR - Code of Federal Regulations; Available from Government Printing Office; [www.gpo.gov/fdsys](http://www.gpo.gov/fdsys).
2. DOD - Department of Defense; Military Specifications and Standards; Available from DLA Document Services; [www.quicksearch.dla.mil](http://www.quicksearch.dla.mil).
3. DSCC - Defense Supply Center Columbus; (See FS).

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4. FED-STD - Federal Standard; (See FS).
  5. FS - Federal Specification; Available from DLA Document Services;  
[www.quicksearch.dla.mil](http://www.quicksearch.dla.mil).
    - a. Available from Defense Standardization Program; [www.dsp.dla.mil](http://www.dsp.dla.mil).
    - b. Available from General Services Administration; [www.gsa.gov](http://www.gsa.gov).
    - c. Available from National Institute of Building Sciences/Whole Building Design Guide; [www.wbdg.org/cdb](http://www.wbdg.org/cdb).
  6. MILSPEC - Military Specification and Standards; (See DOD).
  7. USAB - United States Access Board; [www.access-board.gov](http://www.access-board.gov).
  8. USATBCB - U.S. Architectural & Transportation Barriers Compliance Board; (See USAB).
- E. State Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. This information is subject to change and is believed to be accurate as of the date of the Contract Documents.
1. CBHF; State of California; Department of Consumer Affairs; Bureau of Electronic and Appliance Repair, Home Furnishings and Thermal Insulation; [www.bearhfti.ca.gov](http://www.bearhfti.ca.gov).
  2. CCR; California Code of Regulations; Office of Administrative Law; California Title 24 Energy Code; [www.calregs.com](http://www.calregs.com).
  3. CDHS; California Department of Health Services; (See CDPH).
  4. CDPH; California Department of Public Health; Indoor Air Quality Program; [www.cal-iaq.org](http://www.cal-iaq.org).
  5. CPUC; California Public Utilities Commission; [www.cpuc.ca.gov](http://www.cpuc.ca.gov).
  6. SCAQMD; South Coast Air Quality Management District; [www.aqmd.gov](http://www.aqmd.gov).
  7. TFS; Texas A&M Forest Service; Sustainable Forestry and Economic Development; [www.txforests-service.tamu.edu](http://www.txforests-service.tamu.edu).

**PART 2 - PRODUCTS (Not Used)**

**PART 3 - EXECUTION (Not Used)**

**END OF SECTION**



## **SECTION 015000 - TEMPORARY FACILITIES AND CONTROLS**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### **1.2 SUMMARY**

- A. Section includes requirements for temporary utilities, support facilities, and security and protection facilities.
- B. Related Requirements:
  - 1. Section 011000 "Summary" for work restrictions and limitations on utility interruptions.

#### **1.3 USE CHARGES**

- A. Water from Existing System: Water from Owner's existing water system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.
- B. Electric Power Service from Existing System: Electric power from Owner's existing system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.

#### **1.4 INFORMATIONAL SUBMITTALS**

- A. Site Utilization Plan: Show temporary facilities, temporary utility lines and connections, staging areas, construction site entrances, vehicle circulation, and parking areas for construction personnel.
- B. Implementation and Termination Schedule: Within 15 days of date established for commencement of the Work, submit schedule indicating implementation and termination dates of each temporary utility.
- C. Project Identification and Temporary Signs: Show fabrication and installation details, including plans, elevations, details, layouts, typestyles, graphic elements, and message content.
- D. Site Safety Plan: Show compliance with requirements of NFPA 101 Life Safety Code and requirements of all applicable jurisdictions.

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- E. COVID-19 Health Safety Plan: Show compliance with requirements of the New York State Governor's Office, Associated General Contractors of New York State and the Building Trades Employers Association website for consultants and contractors working on the Project.
- F. Fire-Safety Program: Show compliance with requirements of NFPA 241 and authorities having jurisdiction. Indicate Contractor personnel responsible for management of fire-prevention program.
- G. Moisture- and Mold-Protection Plan: Describe procedures and controls for protecting materials and construction from water absorption and damage and mold.
- H. Dust- and HVAC-Control Plan: Submit coordination drawing and narrative that indicates the dust- and HVAC-control measures proposed for use, proposed locations, and proposed time frame for their operation. Include the following:
  - 1. Locations of dust-control partitions at each phase of work.
  - 2. HVAC system isolation schematic drawing.
  - 3. Location of proposed air-filtration system discharge.
  - 4. Waste-handling procedures.
  - 5. Other dust-control measures.

## 1.5 QUALITY ASSURANCE

- A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.
- B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.
- C. Accessible Temporary Egress: Comply with applicable provisions in the United States Access Board's ADA-ABA Accessibility Guidelines and ICC/ANSI A117.1.

## 1.6 PROJECT CONDITIONS

- A. Temporary Use of Permanent Facilities: Engage Installer of each permanent service to assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. Portable Chain-Link Fencing: Minimum 2-inch, 0.148-inch-thick, galvanized-steel, chain-link fabric fencing; minimum 6 feet high with galvanized-steel pipe posts; minimum 2-3/8-inch- OD line posts and 2-7/8-inch- OD corner and pull posts, with 1-5/8-inch-OD top and bottom rails. Provide galvanized-steel bases for supporting posts.

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- B. Fencing Windscreen Privacy Screen: Polyester fabric scrim with grommets for attachment to chain link fence, sized to height of fence, in color selected by Architect from manufacturer's standard colors.
- C. Wood Enclosure Fence: Plywood, 6 feet 8 feet high, framed with four 2-by-4-inch rails, with preservative-treated wood posts spaced not more than 8 feet apart.
- D. Polyethylene Sheet: Reinforced, fire-resistive sheet, 10-mil minimum thickness, with flame-spread rating of 15 or less per ASTM E 84 and passing NFPA 701 Test Method 2.

## 2.2 TEMPORARY FACILITIES

- A. Field Offices, General: Owner will provide conditioned interior space for field offices for duration of Project.
- B. Common-Use Field Office: Of sufficient size to accommodate needs of Owner, Architect, and construction personnel office activities and to accommodate Project meetings specified in other Division 01 Sections. Keep office clean and orderly. Furnish and equip offices as follows:
  - 1. Furniture required for Project-site documents including file cabinets, plan tables, plan racks, and bookcases.
  - 2. Conference room of sufficient size to accommodate meetings of 10 individuals. Provide electrical power service and 120-V ac duplex receptacles, with no fewer than one receptacle on each wall. Furnish room with conference table, chairs, and 4-foot-square tack and marker boards.
  - 3. Drinking water and private toilet.
  - 4. Heating and cooling equipment necessary to maintain a uniform indoor temperature of 68 to 72 deg F.
  - 5. Lighting fixtures capable of maintaining average illumination of 20 fc at desk height.
- C. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment for construction operations.
  - 1. Store combustible materials apart from building.

## 2.3 EQUIPMENT

- A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.
- B. HVAC Equipment: Unless Owner authorizes use of permanent HVAC system, provide vented, self-contained, liquid-propane-gas or fuel-oil heaters with individual space thermostatic control.
  - 1. Use of gasoline-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.
  - 2. Heating Units: Listed and labeled for type of fuel being consumed, by a qualified testing agency acceptable to authorities having jurisdiction, and marked for intended location and application.



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- C. Air-Filtration Units: Primary and secondary HEPA-filter-equipped portable units with four-stage filtration. Provide single switch for emergency shutoff. Configure to run continuously.

### **PART 3 - EXECUTION**

#### **3.1 TEMPORARY FACILITIES, GENERAL**

- A. Conservation: Coordinate construction and use of temporary facilities with consideration given to conservation of energy, water, and materials. Coordinate use of temporary utilities to minimize waste.
  - 1. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. See other Sections for disposition of salvaged materials that are designated as Owner's property.

#### **3.2 INSTALLATION, GENERAL**

- A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.
  - 1. Locate facilities to limit site disturbance as specified in Section 011000 "Summary."
- B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

#### **3.3 TEMPORARY UTILITY INSTALLATION**

- A. General: Install temporary service or connect to existing service.
- B. Sewers and Drainage: Provide temporary utilities to remove effluent lawfully.
- C. Water Service: Connect to Owner's existing water service facilities. Clean and maintain water service facilities in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.
- D. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking water for use of construction personnel. Comply with requirements of authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.
  - 1. Toilets: Use of Owner's existing toilet facilities will be permitted, as long as facilities are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.

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- E. Temporary Heating and Cooling: Provide temporary heating and cooling required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of low temperatures or high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed.
  - 1. Provide temporary dehumidification systems when required to reduce ambient and substrate moisture levels to level required to allow installation or application of finishes and their proper curing or drying.
- F. Isolation of Work Areas in Occupied Facilities: Prevent dust, fumes, and odors from entering occupied areas.
  - 1. Prior to commencing work, isolate the HVAC system in area where work is to be performed.
    - a. Disconnect supply and return ductwork in work area from HVAC systems servicing occupied areas.
    - b. Maintain negative air pressure within work area using HEPA-equipped air-filtration units, starting with commencement of temporary partition construction, and continuing until removal of temporary partitions is complete.
  - 2. Maintain dust partitions during the Work. Use vacuum collection attachments on dust-producing equipment. Isolate limited work within occupied areas using portable dust-containment devices.
  - 3. Perform daily construction cleanup and final cleanup using approved, HEPA-filter-equipped vacuum equipment.
- G. Electric Power Service: Connect to Owner's existing electric power service. Maintain equipment in a condition acceptable to Owner.
- H. Electric Power Service: Provide electric power service and distribution system of sufficient size, capacity, and power characteristics required for construction operations.
  - 1. Connect temporary service to Owner's existing power source, as directed by Owner.

### 3.4 SUPPORT FACILITIES INSTALLATION

- A. General: Comply with the following:
  - 1. Provide construction for temporary offices, shops, and sheds located within construction area or within 30 feet of building lines that is noncombustible according to ASTM E 136. Comply with NFPA 241.
  - 2. Maintain support facilities until Architect schedules Substantial Completion inspection. Remove before Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.
- B. Parking: Use designated areas of Owner's existing parking areas for construction personnel.
- C. Project Signs: Provide Project signs as indicated. Unauthorized signs are not permitted.
  - 1. Identification Signs: Provide Project identification signs as indicated on Drawings.

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2. Temporary Signs: Provide other signs as indicated and as required to inform public and individuals seeking entrance to Project.
    - a. Provide temporary, directional signs for construction personnel and visitors.
  3. Maintain and touch up signs so they are legible at all times.
- D. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction. Comply with progress cleaning requirements in Section 017300 "Execution."
- E. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.
  1. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.
- F. Existing Stair Usage: Use of Owner's existing stairs will be permitted, provided stairs are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore stairs to condition existing before initial use.
  1. Provide protective coverings, barriers, devices, signs, or other procedures to protect stairs and to maintain means of egress. If stairs become damaged, restore damaged areas so no evidence remains of correction work.

### 3.5 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Protection of Existing Facilities: Protect existing vegetation, equipment, structures, utilities, and other improvements at Project site and on adjacent properties, except those indicated to be removed or altered. Repair damage to existing facilities.
  1. Where access to adjacent properties is required in order to affect protection of existing facilities, obtain written permission from adjacent property owner to access property for that purpose.
- B. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.
  1. Comply with work restrictions specified in Section 011000 "Summary."
- C. Pest Control: Engage pest-control service to recommend practices to minimize attraction and harboring of rodents, roaches, and other pests and to perform extermination and control procedures at regular intervals so Project will be free of pests and their residues at Substantial Completion. Perform control operations lawfully, using materials approved by authorities having jurisdiction.
- D. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.
- E. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior.



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1. Where heating or cooling is needed and permanent enclosure is incomplete, insulate temporary enclosures.
- F. Temporary Partitions: Provide floor-to-ceiling dustproof partitions to limit dust and dirt migration and to separate areas occupied by Owner from fumes and noise.
1. Construct dustproof partitions with gypsum wallboard with joints taped on occupied side, and fire-retardant-treated plywood on construction operations side.
  2. Where fire-resistance-rated temporary partitions are indicated or are required by authorities having jurisdiction, construct partitions according to the rated assemblies.
  3. Insulate partitions to control noise transmission to occupied areas.
  4. Seal joints and perimeter. Equip partitions with gasketed dustproof doors and security locks where openings are required.
  5. Protect air-handling equipment.
  6. Provide walk-off mats at each entrance through temporary partition.

### 3.6 MOISTURE AND MOLD CONTROL

- A. Contractor's Moisture-Protection Plan: Describe delivery, handling, storage, installation, and protection provisions for materials subject to water absorption or water damage.
1. Indicate procedures for discarding water-damaged materials, protocols for mitigating water intrusion into completed Work, and replacing water-damaged Work.
  2. Indicate methods to be used to avoid trapping water in finished work.
- B. Exposed Construction Period: Before installation of weather barriers, when materials are subject to wetting and exposure and to airborne mold spores, protect as follows:
1. Protect porous materials from water damage.
  2. Protect stored and installed material from flowing or standing water.
  3. Keep porous and organic materials from coming into prolonged contact with concrete.
  4. Remove standing water from decks.
  5. Keep deck openings covered or dammed.
- C. Partially Enclosed Construction Period: After installation of weather barriers but before full enclosure and conditioning of building, when installed materials are still subject to infiltration of moisture and ambient mold spores, protect as follows:
1. Do not load or install drywall or other porous materials or components, or items with high organic content, into partially enclosed building.
  2. Keep interior spaces reasonably clean and protected from water damage.
  3. Periodically collect and remove waste containing cellulose or other organic matter.
  4. Discard or replace water-damaged material.
  5. Do not install material that is wet.
  6. Discard and replace stored or installed material that begins to grow mold.
  7. Perform work in a sequence that allows wet materials adequate time to dry before enclosing the material in gypsum board or other interior finishes.
- D. Controlled Construction Period: After completing and sealing of the building enclosure but prior to the full operation of permanent HVAC systems, maintain as follows:
1. Control moisture and humidity inside building by maintaining effective dry-in conditions.

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2. Use temporary or permanent HVAC system to control humidity within ranges specified for installed and stored materials.
3. Comply with manufacturer's written instructions for temperature, relative humidity, and exposure to water limits.
  - a. Hygroscopic materials that may support mold growth, including wood and gypsum-based products, that become wet during the course of construction and remain wet for 48 hours are considered defective and require replacing.
  - b. Measure moisture content of materials that have been exposed to moisture during construction operations or after installation. Record readings beginning at time of exposure and continuing daily for 48 hours. Identify materials containing moisture levels higher than allowed. Report findings in writing to Architect.
  - c. Remove and replace materials that cannot be completely restored to their manufactured moisture level within 48 hours.

**3.7 OPERATION, TERMINATION, AND REMOVAL**

- A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.
- B. Maintenance: Maintain facilities in good operating condition until removal.
  1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.

**END OF SECTION**

## **SECTION 016000 - PRODUCT REQUIREMENTS**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### **1.2 SUMMARY**

- A. Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and comparable products.
- B. Related Requirements:
  - 1. Section 012100 "Allowances" for products selected under an allowance.
  - 2. Section 014200 "References" for applicable industry standards for products specified.

#### **1.3 DEFINITIONS**

- A. Products: Items obtained for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
  - 1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature that is current as of date of the Contract Documents.
  - 2. New Products: Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.
  - 3. Comparable Product: Product that is demonstrated and approved by Architect through submittal process to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.
- B. Basis-of-Design Product Specification: A specification in which a single manufacturer's product is named and accompanied by the words "basis-of-design product," including make or model number or other designation. In addition to the basis-of-design product description, product attributes and characteristics may be listed to establish the significant qualities related to type, function, in-service performance and physical properties, weight, dimension, durability, visual characteristics, and other special features and requirements for purposes of evaluating comparable products of additional manufacturers named in the specification.



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- C. Subject to Compliance with Requirements: Where the phrase "Subject to compliance with requirements" introduces a product selection procedure in an individual Specification Section, provide products qualified under the specified product procedure. In the event that a named product or product by a named manufacturer does not meet the other requirements of the specifications, select another named product or product from another named manufacturer that does meet the requirements of the specifications. Submit a comparable product request, if applicable.

#### 1.4 ACTION SUBMITTALS

- A. Comparable Product Request Submittal: Submit request for consideration of each comparable product. Identify basis-of-design product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
1. Include data to indicate compliance with the requirements specified in "Comparable Products" Article.
  2. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within seven days of receipt of a comparable product request. Architect will notify Contractor of approval or rejection of proposed comparable product request within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.
    - a. Form of Architect's Approval of Submittal: As specified in Section 013300 "Submittal Procedures."
    - b. Use product specified if Architect does not issue a decision on use of a comparable product request within time allocated.
- B. Basis-of-Design Product Specification Submittal: Comply with requirements in Section 013300 "Submittal Procedures." Show compliance with requirements.

#### 1.5 QUALITY ASSURANCE

- A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, select product compatible with products previously selected, even if previously selected products were also options.
1. Each contractor is responsible for providing products and construction methods compatible with products and construction methods of other contractors.
  2. If a dispute arises between contractors over concurrently selectable but incompatible products, Architect will determine which products shall be used.
- B. Identification of Products: Except for required labels and operating data, do not attach or imprint manufacturer or product names or trademarks on exposed surfaces of products or equipment that will be exposed to view in occupied spaces or on the exterior.
1. Labels: Locate required product labels and stamps on a concealed surface, or, where required for observation following installation, on a visually accessible surface that is not conspicuous.

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2. Equipment Nameplates: Provide a permanent nameplate on each item of service-connected or power-operated equipment. Locate on a visually accessible but inconspicuous surface. Include information essential for operation, including the following:
  - a. Name of product and manufacturer.
  - b. Model and serial number.
  - c. Capacity.
  - d. Speed.
  - e. Ratings.
3. See individual identification sections in Divisions 21, 22, 23, and 26 for additional identification requirements.

## 1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. Comply with manufacturer's written instructions.
- B. Delivery and Handling:
  1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
  2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
  3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
  4. Inspect products on delivery to determine compliance with the Contract Documents and to determine that products are undamaged and properly protected.
- C. Storage:
  1. Store products to allow for inspection and measurement of quantity or counting of units.
  2. Store materials in a manner that will not endanger Project structure.
  3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
  4. Protect foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
  5. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
  6. Protect stored products from damage and liquids from freezing.
  7. Provide a secure location and enclosure at Project site for storage of materials and equipment by Owner's construction forces. Coordinate location with Owner.

## 1.7 PRODUCT WARRANTIES

- A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.
  - 1. Manufacturer's Warranty: Written warranty furnished by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
  - 2. Special Warranty: Written warranty required by the Contract Documents to provide specific rights for Owner.
- B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution.
  - 1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
  - 2. Specified Form: When specified forms are included with the Specifications, prepare a written document using indicated form properly executed.
  - 3. See other Sections for specific content requirements and particular requirements for submitting special warranties.
- C. Submittal Time: Comply with requirements in Section 017700 "Closeout Procedures."

## PART 2 - PRODUCTS

### 2.1 PRODUCT SELECTION PROCEDURES

- A. General Product Requirements: Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, are new at time of installation.
  - 1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
  - 2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
  - 3. Owner reserves the right to limit selection to products with warranties meeting requirements of the Contract Documents.
  - 4. Where products are accompanied by the term "as selected," Architect will make selection.
  - 5. Descriptive, performance, and reference standard requirements in the Specifications establish salient characteristics of products.
  - 6. Or Equal: For products specified by name and accompanied by the term "or equal," or "or approved equal," or "or approved," comply with requirements in "Comparable Products" Article to obtain approval for use of an unnamed product.
    - a. Submit additional documentation required by Architect in order to establish equivalency of proposed products. Evaluation of "or equal" product status is by the Architect, whose determination is final.
- B. Product Selection Procedures:



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1. Sole Product: Where Specifications name a single manufacturer and product, provide the named product that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
  - a. Sole product may be indicated by the phrase: "Subject to compliance with requirements, provide the following: ..."
2. Sole Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
  - a. Sole manufacturer/source may be indicated by the phrase: "Subject to compliance with requirements, provide products by the following: ..."
3. Limited List of Products: Where Specifications include a list of names of both manufacturers and products, provide one of the products listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered unless otherwise indicated.
  - a. Limited list of products may be indicated by the phrase: "Subject to compliance with requirements, provide one of the following: ..."
4. Non-Limited List of Products: Where Specifications include a list of names of both available manufacturers and products, provide one of the products listed, or an unnamed product, which complies with requirements.
  - a. Non-limited list of products is indicated by the phrase: "Subject to compliance with requirements, available products that may be incorporated in the Work include, but are not limited to, the following: ..."
5. Limited List of Manufacturers: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered unless otherwise indicated.
  - a. Limited list of manufacturers is indicated by the phrase: "Subject to compliance with requirements, provide products by one of the following: ..."
6. Non-Limited List of Manufacturers: Where Specifications include a list of available manufacturers, provide a product by one of the manufacturers listed, or a product by an unnamed manufacturer, which complies with requirements.
  - a. Non-limited list of manufacturers is indicated by the phrase: "Subject to compliance with requirements, available manufacturers whose products may be incorporated in the Work include, but are not limited to, the following: ..."
7. Basis-of-Design Product: Where Specifications name a product, or refer to a product indicated on Drawings, and include a list of manufacturers, provide the specified or indicated product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product by one of the other named manufacturers.
  - a. For approval of products by unnamed manufacturers, comply with requirements in Section 012500 "Substitution Procedures" for substitutions for convenience.

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- C. Visual Matching Specification: Where Specifications require "match Architect's sample," provide a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches.
  - 1. If no product available within specified category matches and complies with other specified requirements, comply with requirements in Section 012500 "Substitution Procedures" for proposal of product.
- D. Visual Selection Specification: Where Specifications include the phrase "as selected by Architect from manufacturer's full range" or similar phrase, select a product that complies with requirements. Architect will select color, gloss, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

## 2.2 COMPARABLE PRODUCTS

- A. Conditions for Consideration of Comparable Products: Architect will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Architect may return requests without action, except to record noncompliance with these requirements:
  - 1. Evidence that proposed product does not require revisions to the Contract Documents, is consistent with the Contract Documents, will produce the indicated results, and is compatible with other portions of the Work. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant product qualities include attributes such as type, function, in-service performance and physical properties, weight, dimension, durability, visual characteristics, and other specific features and requirements.
  - 2. Evidence that proposed product provides specified warranty.
  - 3. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.
  - 4. Samples, if requested.
- B. Submittal Requirements: Approval by the Architect of Contractor's request for use of comparable product is not intended to satisfy other submittal requirements. Comply with specified submittal requirements.

## PART 3 - EXECUTION (Not Used)

## END OF SECTION

## **SECTION 017300 - EXECUTION**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### **1.2 SUMMARY**

- A. Section includes general administrative and procedural requirements governing execution of the Work including, but not limited to, the following:
  - 1. Construction layout.
  - 2. Installation of the Work.
  - 3. Cutting and patching.
  - 4. Progress cleaning.
  - 5. Starting and adjusting.
  - 6. Protection of installed construction.
- B. Related Requirements:
  - 1. Section 011000 "Summary" for limits on use of Project site.
  - 2. Section 013300 "Submittal Procedures" for submitting surveys.
  - 3. Section 024119 "Selective Demolition" for demolition and removal of selected portions of the building.

#### **1.3 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.

#### **1.4 PREINSTALLATION MEETINGS**

- A. Cutting and Patching Conference: Conduct conference at Project site.
  - 1. Prior to commencing work requiring cutting and patching, review extent of cutting and patching anticipated and examine procedures for ensuring satisfactory result from cutting and patching work. Require representatives of each entity directly concerned with cutting and patching to attend, including the following:
    - a. Contractor's superintendent.
    - b. Trade supervisor responsible for cutting operations.



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- c. Trade supervisor(s) responsible for patching of each type of substrate.
  - d. Mechanical, electrical, and utilities subcontractors' supervisors, to the extent each trade is affecting by cutting and patching operations.
2. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

## 1.5 QUALITY ASSURANCE

- A. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.
- 1. Structural Elements: When cutting and patching structural elements, notify Architect of locations and details of cutting and await directions from Architect before proceeding. Shore, brace, and support structural elements during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection.
  - 2. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety. Operational elements include the following:
    - a. Primary operational systems and equipment.
    - b. Fire separation assemblies.
    - c. Air or smoke barriers.
    - d. Fire-suppression systems.
    - e. Plumbing piping systems.
    - f. Mechanical systems piping and ducts.
    - g. Control systems.
    - h. Communication systems.
    - i. Fire-detection and -alarm systems.
    - j. Conveying systems.
    - k. Electrical wiring systems.
    - l. Operating systems of special construction.
  - 3. Other Construction Elements: Do not cut and patch other construction elements or components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety. Other construction elements include but are not limited to the following:
    - a. Water, moisture, or vapor barriers.
    - b. Membranes and flashings.
    - c. Exterior curtain-wall construction.
    - d. Sprayed fire-resistive material.
    - e. Equipment supports.
    - f. Piping, ductwork, vessels, and equipment.
    - g. Noise- and vibration-control elements and systems.

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4. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.
- B. Manufacturer's Installation Instructions: Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of products and equipment.

## **PART 2 - PRODUCTS**

### **2.1 MATERIALS**

- A. General: 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.

## **PART 3 - EXECUTION**

### **3.1 EXAMINATION**

- A. Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities, mechanical and electrical systems, and other construction affecting the Work.
- B. 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.
- C. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:
1. Description of the Work.
  2. List of detrimental conditions, including substrates.
  3. List of unacceptable installation tolerances.
  4. Recommended corrections.

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

### 3.2 PREPARATION

- A. Existing Utility Information: Furnish information to local utility that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.
- B. 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.
- C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents caused by differing field conditions outside the control of Contractor, submit a request for information to Architect.

### 3.3 CONSTRUCTION LAYOUT

- A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Architect promptly.

### 3.4 INSTALLATION

- A. General: 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.
  - 3. Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated.
- 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 the best possible results. 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.



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- E. Sequence the Work and allow adequate clearances to accommodate movement of construction items on site and placement in permanent locations.
- F. Tools and Equipment: Where possible, select tools or equipment that minimize production of excessive noise levels.
- G. 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.
- H. 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.
  - 1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
  - 2. Allow for building movement, including thermal expansion and contraction.
  - 3. 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.
- I. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.
- J. Repair or remove and replace damaged, defective, or nonconforming Work.

### 3.5 CUTTING AND PATCHING

- A. Cutting and Patching, 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. Adjacent Occupied Areas: Where interference with use of adjoining areas or interruption of free passage to adjoining areas is unavoidable, coordinate cutting and patching according to requirements in Section 011000 "Summary."

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- F. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to prevent interruption to occupied areas.
- G. 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. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
  4. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
  5. Proceed with patching after construction operations requiring cutting are complete.
- H. 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. 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. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will minimize evidence of patching and refinishing.
    - a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
    - b. Restore damaged pipe covering to its original condition.
  3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
    - a. Where patching occurs in a painted surface, prepare substrate and apply primer and intermediate paint coats appropriate for substrate over the patch, and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.
  4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
  5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition and ensures thermal and moisture integrity of building enclosure.
- I. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

### 3.6 PROGRESS CLEANING

- A. General: Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.
  - 1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
  - 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.
- 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 in Finished Areas: 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.



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**3.7 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.

**END OF SECTION**

## **SECTION 017419 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### **1.2 SUMMARY**

- A. Section includes administrative and procedural requirements for the following:
  - 1. Recycling nonhazardous demolition and construction waste.
  - 2. Disposing of nonhazardous demolition and construction waste.
- B. Related Requirements:
  - 1. Section 024119 "Selective Demolition" for disposition of nonhazardous waste resulting from partial demolition of buildings, structures, and site improvements.

#### **1.3 DEFINITIONS**

- A. Construction Waste: Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.
- B. Demolition Waste: Building and site improvement materials resulting from demolition or selective demolition operations.
- C. Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.
- 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.

#### 1.4 PERFORMANCE REQUIREMENTS

- A. General: Achieve end-of-Project rates for salvage/recycling of 50 percent by weight of total non-hazardous solid waste generated by the Work. Practice efficient waste management in the use of materials in the course of the Work. Use all reasonable means to divert construction and demolition waste from landfills and incinerators. Facilitate recycling and salvage of materials, including the following:

1. Demolition Waste:

- a. Brick.
- b. Concrete masonry units.
- c. Wood studs.
- d. Plywood and oriented strand board.
- e. Wood paneling.
- f. Wood trim.
- g. Structural and miscellaneous steel.
- h. Roofing.
- i. Insulation.
- j. Windows.
- k. Glazing.
- l. Gypsum board.

2. Construction Waste:

- a. Masonry and CMU.
- b. Lumber.
- c. Wood sheet materials.
- d. Wood trim.
- e. Metals.
- f. Roofing.
- g. Insulation.
- h. Gypsum board.
- i. Packaging: Regardless of salvage/recycle goal indicated in "General" Paragraph above, salvage or recycle 100 percent of the following uncontaminated packaging materials:
  - 1) Paper.
  - 2) Cardboard.
  - 3) Boxes.
  - 4) Plastic sheet and film.
  - 5) Polystyrene packaging.
  - 6) Wood crates.
  - 7) Plastic pails.

#### 1.5 ACTION SUBMITTALS

- A. Waste Management Plan: Submit plan within 7 days of date established for the Notice to Proceed.



## 1.6 INFORMATIONAL SUBMITTALS

- A. Waste Reduction Progress Reports: Concurrent with each Application for Payment, submit report. Include the following information:
  - 1. Material category.
  - 2. Generation point of waste.
  - 3. Total quantity of waste in tons.
  - 4. Quantity of waste salvaged, both estimated and actual in tons.
  - 5. Quantity of waste recycled, both estimated and actual in tons.
  - 6. Total quantity of waste recovered (salvaged plus recycled) in tons.
  - 7. Total quantity of waste recovered (salvaged plus recycled) as a percentage of total waste.
- B. Recycling and Processing Facility Records: Indicate receipt and acceptance of recyclable waste by recycling and processing facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.
- C. Landfill and Incinerator Disposal Records: Indicate receipt and acceptance of waste by landfills and incinerator facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.

## 1.7 QUALITY ASSURANCE

- A. Regulatory Requirements: Comply with hauling and disposal regulations of authorities having jurisdiction.

## **PART 2 - PRODUCTS (Not Used)**

## **PART 3 - EXECUTION**

### 3.1 SALVAGING DEMOLITION WASTE

- A. Salvaged Items for Reuse in the Work: Salvage items for reuse and handle as follows:
  - 1. Clean salvaged items.
  - 2. Pack or crate items after cleaning. Identify contents of containers with label indicating elements, date of removal, quantity, and location where removed.
  - 3. Store items in a secure area until installation.
  - 4. Protect items from damage during transport and storage.
  - 5. Install salvaged items to comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make items functional for use indicated.

### 3.2 RECYCLING DEMOLITION AND CONSTRUCTION WASTE, GENERAL

- A. General: Recycle paper and beverage containers used by on-site workers.

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- B. Preparation of Waste: Prepare and maintain recyclable waste materials according to recycling or reuse facility requirements. Maintain materials free of dirt, adhesives, solvents, petroleum contamination, and other substances deleterious to the recycling process.
- C. Procedures: Separate recyclable waste from other waste materials, trash, and debris. Separate recyclable waste by type at Project site to the maximum extent practical according to approved construction waste management plan.
  - 1. Provide appropriately marked containers or bins for controlling recyclable waste until removed from Project site. Include list of acceptable and unacceptable materials at each container and bin.
    - a. Inspect containers and bins for contamination and remove contaminated materials if found.
  - 2. Stockpile processed materials on-site without intermixing with other materials. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
  - 3. Stockpile materials away from construction area. Do not store within drip line of remaining trees.
  - 4. Store components off the ground and protect from the weather.
  - 5. Remove recyclable waste from Owner's property and transport to recycling receiver or processor.

### 3.3 RECYCLING DEMOLITION WASTE

- A. Masonry: Remove metal reinforcement, anchors, and ties from masonry and sort with other metals.
  - 1. Pulverize masonry to maximum 1-1/2-inch size.
  - 2. Clean and stack undamaged, whole masonry units on wood pallets.
- B. Wood Materials: Sort and stack members according to size, type, and length. Separate lumber, engineered wood products, panel products, and treated wood materials.
- C. Metals: Separate metals by type.
  - 1. Structural Steel: Stack members according to size, type of member, and length.
  - 2. Remove and dispose of bolts, nuts, washers, and other rough hardware.
- D. Gypsum Board: Stack large clean pieces on wood pallets or in container and store in a dry location. Remove edge trim and sort with other metals. Remove and dispose of fasteners.

### 3.4 RECYCLING CONSTRUCTION WASTE

- A. Packaging:
  - 1. Cardboard and Boxes: Break down packaging into flat sheets. Bundle and store in a dry location.
  - 2. Polystyrene Packaging: Separate and bag materials.
  - 3. Pallets: As much as possible, require deliveries using pallets to remove pallets from Project site. For pallets that remain on-site, break down pallets into component wood pieces and comply with requirements for recycling wood.

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4. Crates: Break down crates into component wood pieces and comply with requirements for recycling wood.

B. Wood Materials:

1. Clean Cut-Offs of Lumber: Grind or chip into small pieces.
2. Clean Sawdust: Bag sawdust that does not contain painted or treated wood.

C. Gypsum Board: Stack large clean pieces on wood pallets or in container and store in a dry location.

### 3.5 DISPOSAL OF WASTE

A. General: Except for items or materials to be salvaged, recycled, or otherwise reused, 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. Burning: Do not burn waste materials.

C. Disposal: Remove waste materials from Owner's property and legally dispose of them.

### END OF SECTION

## **SECTION 017839 - PROJECT RECORD DOCUMENTS**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### **1.2 SUMMARY**

- A. Section includes administrative and procedural requirements for project record documents, including the following:
  - 1. Record Drawings.
  - 2. Record Specifications.
  - 3. Record Product Data.
  - 4. Miscellaneous record submittals.

#### **1.3 CLOSEOUT SUBMITTALS**

- A. Record Drawings: Comply with the following:
  - 1. Number of Copies: Submit copies of record Drawings as follows:
    - a. Initial Submittal:
      - 1) Submit one copy of marked-up record prints.
      - 2) Architect will indicate whether general scope of changes, additional information recorded, and quality of drafting are acceptable.
    - b. Final Submittal:
      - 1) Submit final (corrected) paper-copy of marked-up record prints and the final PDF digital files produced from the scanned, corrected record prints.
- B. Record Specifications: Submit one marked-up paper copy and annotated PDF electronic files of Project's Specifications, including addenda and contract modifications.
- C. Record Product Data: Submit annotated PDF electronic files and directories of each approved submittal.
  - 1. Where record Product Data are required as part of operation and maintenance manuals, submit duplicate marked-up Product Data as a component of manual.

#### **1.4 RECORD DRAWINGS**

- A. Record Prints: Maintain one set of marked-up paper copies of the Contract Drawings and Shop Drawings, incorporating new and revised drawings as modifications are issued.



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1. Preparation: Mark record prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up record prints.
    - a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
    - b. Accurately record information in an acceptable drawing technique.
    - c. Record data as soon as possible after obtaining it.
    - d. Record and check the markup before enclosing concealed installations.
    - e. Cross-reference record prints to corresponding photographic documentation.
  2. Content: Types of items requiring marking include, but are not limited to, the following:
    - a. Dimensional changes to Drawings.
    - b. Revisions to details shown on Drawings.
    - c. Depths of foundations.
    - d. Locations and depths of underground utilities.
    - e. Revisions to routing of piping and conduits.
    - f. Revisions to electrical circuitry.
    - g. Actual equipment locations.
    - h. Duct size and routing.
    - i. Locations of concealed internal utilities.
    - j. Changes made by Change Order.
    - k. Changes made following Architect's written orders.
    - l. Details not on the original Contract Drawings.
    - m. Field records for variable and concealed conditions.
    - n. Record information on the Work that is shown only schematically.
  3. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.
  4. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
  5. Mark important additional information that was either shown schematically or omitted from original Drawings.
  6. Note alternate numbers, Change Order numbers, and similar identification, where applicable.
- B. Record Digital Data Files: Immediately before inspection for Certificate of Substantial Completion, review marked-up record prints with Architect. When authorized, prepare a full set of corrected digital data files of the Contract Drawings, as follows:
1. Format: Annotated PDF electronic file with comment function enabled.
  2. Incorporate changes and additional information previously marked on record prints. Delete, redraw, and add details and notations where applicable.
  3. Refer instances of uncertainty to Architect for resolution.
  4. Architect will furnish Contractor with one set of digital data files of the Contract Drawings for use in recording information.
    - a. See Section 013100 "Project Management and Coordination" for requirements related to use of Architect's digital data files.

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- b. Architect will provide data file layer information. Record markups in separate layers.
- C. Format: Identify and date each record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.
  - 1. Record Prints: Organize record prints into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
  - 2. Format: Annotated PDF electronic file with comment function enabled.
  - 3. Record Digital Data Files: Organize digital data information into separate electronic files that correspond to each sheet of the Contract Drawings. Name each file with the sheet identification. Include identification in each digital data file.
  - 4. Identification: As follows:
    - a. Project name.
    - b. Date.
    - c. Designation "PROJECT RECORD DRAWINGS."
    - d. Name of Architect.
    - e. Name of Contractor.

## 1.5 RECORD SPECIFICATIONS

- A. Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.
  - 1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
  - 2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
  - 3. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
  - 4. Note related Change Orders, record Product Data, and record Drawings where applicable.
- B. Format: Submit record Specifications as annotated PDF electronic file or scanned PDF electronic file(s) of marked-up paper copy of Specifications.

## 1.6 RECORD PRODUCT DATA

- A. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.
  - 1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
  - 2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
  - 3. Note related Change Orders, record Specifications, and record Drawings where applicable.
- B. Format: Submit record Product Data as annotated PDF electronic file or scanned PDF electronic file(s) of marked-up paper copy of Product Data.

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1. Include record Product Data directory organized by Specification Section number and title, electronically linked to each item of record Product Data.

#### 1.7 MISCELLANEOUS RECORD SUBMITTALS

- A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.
- B. Format: Submit miscellaneous record submittals as PDF electronic file, as paper copy, or as scanned PDF electronic file(s) of marked-up miscellaneous record submittals.
  1. Include miscellaneous record submittals directory organized by Specification Section number and title, electronically linked to each item of miscellaneous record submittals.

#### 1.8 MAINTENANCE OF RECORD DOCUMENTS

- A. Maintenance of Record Documents: Store record documents in the field office apart from the Contract Documents used for construction. Do not use project record documents for construction purposes. Maintain record documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to project record documents for Architect's reference during normal working hours.

### **PART 2 - PRODUCTS**

### **PART 3 - EXECUTION**

### **END OF SECTION**

## **SECTION 024119 - SELECTIVE DEMOLITION**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### **1.2 SUMMARY**

- A. Section Includes:
  - 1. Demolition and removal of selected portions of building or structure.
- B. Related Requirements:
  - 1. Section 011000 "Summary" for restrictions on the use of the premises, Owner-occupancy requirements, and phasing requirements.
  - 2. Section 017300 "Execution" for cutting and patching procedures.

#### **1.3 DEFINITIONS**

- A. Remove: Detach items from existing construction and legally dispose of them off-site unless indicated to be removed and salvaged or removed and reinstalled.
- B. Remove and Salvage: Carefully detach from existing construction, in a manner to prevent damage, and deliver to Owner ready for reuse.
- C. Remove and Reinstall: Detach items from existing construction, prepare for reuse, and reinstall where indicated.
- D. Existing to Remain: Existing items of construction that are not to be permanently removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

#### **1.4 MATERIALS OWNERSHIP**

- A. Unless otherwise indicated, demolition waste becomes property of Contractor.

#### **1.5 PREINSTALLATION MEETINGS**

- A. Predemolition Conference: Conduct conference at Project site.
  - 1. Inspect and discuss condition of construction to be selectively demolished.



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2. Review structural load limitations of existing structure.
3. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.
4. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.
5. Review areas where existing construction is to remain and requires protection.

#### 1.6 INFORMATIONAL SUBMITTALS

- A. Proposed Protection Measures: Submit report, including drawings, that indicates the measures proposed for protecting individuals and property, for environmental protection, for dust control, and for noise control. Indicate proposed locations and construction of barriers.
- B. Schedule of Selective Demolition Activities: Indicate the following:
  1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure Owner's and other tenants' on-site operations are uninterrupted.
  2. Interruption of utility services. Indicate how long utility services will be interrupted.
  3. Coordination for shutoff, capping, and continuation of utility services.
  4. Use of elevator and stairs.
  5. Coordination of Owner's continuing occupancy of portions of existing building.
- C. Predemolition Photographs or Video: Submit before Work begins.
- D. Warranties: Documentation indicated that existing warranties are still in effect after completion of selective demolition.

#### 1.7 CLOSEOUT SUBMITTALS

- A. Inventory: Submit a list of items that have been removed and salvaged.

#### 1.8 FIELD CONDITIONS

- A. Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.
- B. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
- C. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.
- D. Hazardous Materials: Hazardous materials are present in buildings and structures to be selectively demolished. 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.

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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 under procedures specified elsewhere in the Contract Documents.
- E. Storage or sale of removed items or materials on-site is not permitted.
- F. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
1. Maintain fire-protection facilities in service during selective demolition operations.

## **PART 2 - PRODUCTS**

### **2.1 PERFORMANCE REQUIREMENTS**

- A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- B. Standards: Comply with ANSI/ASSE A10.6 and NFPA 241.

## **PART 3 - EXECUTION**

### **3.1 EXAMINATION**

- A. Verify that utilities have been disconnected and capped before starting selective demolition operations.
- B. Review record documents of existing construction provided by Owner. Owner does not guarantee that existing conditions are same as those indicated in record documents.
- C. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.
- D. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Architect.
- E. Survey of Existing Conditions: Record existing conditions by use of preconstruction photographs or videotapes.
1. Inventory and record the condition of items to be removed and salvaged. Provide photographs or video of conditions that might be misconstrued as damage caused by salvage operations.
  2. Before selective demolition or removal of existing building elements that will be reproduced or duplicated in final Work, make permanent record of measurements, materials, and construction details required to make exact reproduction.

### 3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

- A. Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect them against damage.
  - 1. Comply with requirements for existing services/systems interruptions specified in Section 011000 "Summary."
- B. Existing Services/Systems to Be Removed, Relocated, or Abandoned: Locate, identify, disconnect, and seal or cap off indicated utility services and mechanical/electrical systems serving areas to be selectively demolished.
  - 1. Arrange to shut off indicated utilities with utility companies.
  - 2. If services/systems are required to be removed, relocated, or abandoned, provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.
  - 3. Disconnect, demolish, and remove fire-suppression systems, plumbing, and HVAC systems, equipment, and components indicated to be removed.

### 3.3 PREPARATION

- A. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
  - 1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.
  - 2. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.
  - 3. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.
  - 4. Cover and protect furniture, furnishings, and equipment that have not been removed.
  - 5. Comply with requirements for temporary enclosures, dust control, heating, and cooling specified in Section 015000 "Temporary Facilities and Controls."
- B. Temporary Shoring: Provide and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.
  - 1. Strengthen or add new supports when required during progress of selective demolition.

### 3.4 SELECTIVE DEMOLITION, GENERAL

- A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:

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1. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.
2. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.
3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
4. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain fire watch and portable fire-suppression devices during flame-cutting operations.
5. Maintain adequate ventilation when using cutting torches.
6. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
7. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
8. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
9. Dispose of demolished items and materials promptly. Comply with requirements in Section 017419 "Construction Waste Management and Disposal."

B. Removed and Salvaged Items:

1. Clean salvaged items.
2. Pack or crate items after cleaning. Identify contents of containers.
3. Store items in a secure area until delivery to Owner.
4. Transport items to Owner's storage area designated by Owner.
5. Protect items from damage during transport and storage.

C. Removed and Reinstalled Items:

1. Clean and repair items to functional condition adequate for intended reuse.
2. Pack or crate items after cleaning and repairing. Identify contents of containers.
3. Protect items from damage during transport and storage.
4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.

D. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Architect, items may be removed to a suitable, protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete.

### 3.5 SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS

A. Masonry: Demolish in small sections. Cut masonry at junctures with construction to remain, using power-driven saw, then remove masonry between saw cuts.



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- B. Resilient Floor Coverings: Remove floor coverings and adhesive according to recommendations in RFCI's "Recommended Work Practices for the Removal of Resilient Floor Coverings." Do not use methods requiring solvent-based adhesive strippers.

### 3.6 DISPOSAL OF DEMOLISHED MATERIALS

- A. General: Except for items or materials indicated to be recycled, reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, remove demolished materials from Project site and legally dispose of them in an EPA-approved landfill.
  - 1. Do not allow demolished materials to accumulate on-site.
  - 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
  - 3. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
  - 4. Comply with requirements specified in Section 017419 "Construction Waste Management and Disposal."
- B. Burning: Do not burn demolished materials.
- C. Disposal: Transport demolished materials off Owner's property and legally dispose of them.

### 3.7 CLEANING

- A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

## END OF SECTION

## **SECTION 028213 – ASBESTOS ABATEMENT**

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### APPENDICES

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## SECTION 028213 – ASBESTOS ABATEMENT

### PART 1 – GENERAL

#### 1.1 RELATED DOCUMENTS

- A. All provisions, terms, and conditions of the Contract including all specifications, drawings, addenda, and other contract documents.

#### 1.2 DEFINITIONS

- A. Many key words appear throughout the design documents and New York State Department of Labor (NYSDOL) Industrial Code Rule 56 (NYCRR PART 56).

#### 1.3 PRE-BID CONFERENCE

- A. A pre-bid conference and walk-through will be conducted at the project site. The Contractor shall address any questions about the work during the pre-bid conference.

#### 1.4 SCOPE OF WORK

- A. The following table summarizes the asbestos abatement scope of work:

Location/Quantity	Scope of Work
<b>ACM WINDOW CAULK @ EXTERIOR (FRAME/OPENING)</b>	<b><u>AA-1:</u></b> Abate approximately 836 linear feet (LF)/26 Square Feet (SF) of window caulk (located between frame and opening) as noted on attached sketch. The contractor is responsible for removal of the entire component under abatement conditions. Caulk shall be removed from the substrate in its entirety without damaging the substrate. The Contractor is responsible for installation of weather-tight security barriers upon satisfactory third-party asbestos project monitor visual inspection. The contractor acknowledges that weather/security barriers may remain in place until the new window unit is installed. This work will be conducted according to the project schedule and may require multiple mobilizations. The ACM caulk does not contain polychlorinated biphenyls (PCBs) above 50 PPM.

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1.5 GENERAL CONDITIONS

- The Contractor acknowledges that other portions of the building will remain active and occupied (in areas not scheduled for work) for the duration of the abatement project. Due to the location and nature of the project, the Contractor shall be responsible to controlling any leakage from the RWA to avoid damage to the spaces below. Any damages resulting from leakage shall be the Contractor's responsibility.
- The Contractor acknowledges that due to the nature of the area, limited staging areas exist and access to site requires advance notification with all parties.
- The Contractor acknowledges that the quantities of ACM are approximate and shall be field-verified. Variations of  $\pm 20\%$  in the quantities indicated shall be acknowledged by the Contractor and shall be reflected in their price.
- The Contractor's pricing shall include costs for all labor, materials, equipment, asbestos project notifications and fees, building permits and fees, insurance, bonding (if required), waste transportation and disposal, overhead and profit, and all other costs necessary to complete the work as specified.
- The Contractor shall submit any questions about the work of this project during the pre-bid phase in writing to the designated Owner's representative. By submitting a proposal, the Contractor acknowledges that he/she has reviewed, understands and can execute the scope of work described within.
- By accepting the contract for this work, the Contractor agrees that all work shall be conducted in accordance with all applicable state and federal regulations including NYCRR PART 56 and any NYSDOL-approved asbestos project variance.
- All work shall be performed in accordance with the project design specifications and all applicable federal, state, and local regulations. When conflicts occur between the project design documents and federal, state, and/or local regulations, the most stringent requirement shall apply. The Contractor shall comply with the following, except where more stringent requirements are shown or specified:
  - Federal Regulations:
    - OSHA 29 CFR Part 1910.1001 - Asbestos
    - OSHA 29 CFR Part 1910.1200 - Hazard Communication
    - OSHA 29 CFR Part 1910.134 - Respiratory Protection
    - OSHA 29 CFR Part 1910.145 - Specification for Accident Prevention Signs and Tags
    - OSHA 29 CFR Part 1926 - Construction Industry
    - OSHA 29 CFR Part 1926.1101 - Asbestos, Tremolite, Anthophyllite, and Actinolite
    - OSHA 29 CFR Part 1926.500 - Guardrails, Handrails, and Covers
    - USEPA 40 CFR Part 61, Subpart A - General Provisions
    - USEPA 40 CFR Part 61, Subpart M - Asbestos NESHAP
    - USEPA 40 CFR Part 763, Subpart E, Asbestos Hazard Emergency Response Act (AHERA)



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- New York State Regulations:
  - NYSDOL 12 NYCRR Part 56 - “Asbestos” as amended 3/21/2007
  - NYSDEC 6 NYCRR Parts 360 and 364 - Waste Disposal & Transportation
  - NYSDOH 10 NYCRR Part 73 - Asbestos Safety Program Requirements
- All Local Regulations
- Standards and Guidance Documents:
  - American National Standard Institute (ANSI) Z88.2-80, Practices for Respiratory Protection
  - ANSI Z9.2-79, Fundamentals Governing the Design and Operation of Local Exhaust Systems
  - USEPA 560/585-024, Guidance for Controlling Asbestos-Containing Materials in Buildings (Purple Book)
  - USEPA 530-SW-85-007, Asbestos Waste Management Guidance
- All applicable federal, state, and local building and fire codes.
- The Contractor accepts that multiple means of clearance criteria will be utilized for final clearance criteria based on the applicable regulatory requirements. At a minimum Project Monitor Visual inspections and Clearance Air Sampling will be utilized to determine satisfactory completion of the asbestos abatement work of this project. If ACM debris falls within the building, then air sampling will be required in accordance with NYCRR PART 56 and NYSDOL SSV.

#### 1.6 OWNER RESPONSIBILITIES

- The Owner shall be responsible for:
  - Moving items out of areas affected by the work.
  - Providing electric and water sources, (but no equipment to access) at the project site.
  - Providing identification of existing utilities, de-energizing existing systems
  - Hiring an independent, third-party asbestos project monitoring/air sampling firm.

#### 1.7 CONTRACTOR RESPONSIBILITIES

- The Contractor shall be responsible for:
  - Performing the asbestos abatement work in accordance with all applicable federal, state, and local regulations including, but not limited to, all New York State, United States Environmental Protection Agency (USEPA), and Occupational Safety and Health Administration (OSHA) codes, rules, regulations, and standards. Where conflicts occur between federal, state, and local regulations, the most stringent shall apply. As such, the Contractor shall include all necessary costs in their price to complete the work in a legal and safe manner.
  - Providing supervisors and workers who are competent, trained, and medically fit to conduct the asbestos abatement work as well as all materials and equipment necessary to

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satisfactorily complete the work.

- Collection and analysis of personal air samples of his employees as required by the applicable OSHA standards. The third-party asbestos project monitoring/air sampling firm shall not be responsible for the collection, shipping/delivery, or analysis of the Contractor's personal air samples on this project.
- Completing the project as specified by the design documents. The Contractor accepts that the asbestos abatement work is not complete until satisfactory final visual inspections are conducted, and clearance air testing results are deemed to be acceptable, as applicable.
- Packaging, transporting, and disposing of all asbestos waste generated by the work in accordance with all applicable federal, state, and local regulations.
- Ensuring regulated work area security during the project, so that unauthorized personnel do not enter regulated work areas.
- Providing emergency plans and emergency telephone numbers to on-site abatement personnel. The emergency plans and telephone numbers shall always be kept on site during the project.
- Obeying the Owner's policies and procedures pertaining to work on-site.
- Ensuring that no employee of his company speaks to the media without written permission from the Owner.
- Complying with the contractual requirements set forth by the Owner.
- Posting a notice at all building entrances notifying all persons of the Contractor's intent to conduct asbestos abatement work 10 days prior to starting the work following approval of the content by the Owner & Owner's Representative.
- Notifying the NYSDOL and USEPA about the asbestos abatement work and paying the applicable fees.
- Contractor shall follow the direction of the Owner/Owner's Representative pertaining to schedule, health/safety issues, and other site activities. The Contractor shall be responsible for the legal means and methods of performing the work in accordance with the contract.
- The Contractor shall not interrupt power to any other area of the building because of his/her activities. Under no circumstances shall equipment be utilized that may impact/overload existing power. The Contractor shall coordinate all equipment usage with the Owner to avoid damage.

#### 1.8 PERSONAL PROTECTIVE EQUIPMENT

- The Contractor shall be responsible for providing his personnel with adequate personal protective equipment to perform the work on this project as per the applicable federal and state regulations.
- The Contractor will be responsible for collecting OSHA personal asbestos samples for their workers on this project. Representative samples shall be taken daily, and sample results shall be posted at the personal decontamination unit within 48 hours of collection. The Contractor is responsible for providing their employees with adequate respiratory protection based upon the sample results received.
- Street clothing is not permitted inside regulated work areas during abatement activities.
- The Contractor is responsible for providing the Project Designer, the Project Monitor, and state and federal inspectors with personal protective equipment (PPE). This may include some or all

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the following: protective clothing, respirators, high efficiency particulate air (HEPA) cartridges, hard hats, gloves, eye protection, and rubber disposable boots.

1.9 SUBMITTALS

- Qualification Submittals - The Owner/Owner's Representative may undertake investigations as necessary to select the most qualified Contractor for this project. The following information shall be submitted electronically to the Owner prior to contract award:
  - Contractor's Asbestos Handling License issued by the NYSDOL.
  - A notarized statement, signed by an officer of the company, containing the following information:
    - Any federal, state, or local regulatory agency citations, violations, notices, orders to comply, or penalties recorded against the Asbestos Contractor in the last three years.
    - Any claims or legal proceedings in which the Contractor has been involved in the past three years.
    - Any Occupational Safety and Health Administration (OSHA) fines and/or citations, and a list of OSHA recordable accidents per year for the last three years.
    - Any asbestos related projects where a contract has been terminated, including project name, client, dates, and reasons for termination.
  - A minimum of five (5) project references for projects similar in nature to this project that have been self-performed and completed in the past three (3) years including the project name and location, scope of work, client, and contact person's name, telephone number, and e-mail address.
- Pre-Abatement Submittals - The Contractor shall submit the following information electronically (in PDF format) to the Owner at least 10 days prior to starting the work:
  - Contractor's Asbestos Handling License issued by the NYSDOL.
  - NYSDOL Asbestos Project Notification.
  - USEPA Notification of Demolition & Renovation.
  - Asbestos Project Notice to be posted at the building prior to the start of the work as required by NYCRR PART 56-3.6.
  - New York State Department of Environmental Conservation (NYSDEC) Waste Transporter Permit.
  - NYSDEC landfill permit where asbestos waste from the site will be disposed.
  - Project schedule showing phases of work for each regulated work area including, but not limited to, mobilization, work area preparation, **abatement/removal drawings**, cleanings, work area dismantlement, and demobilization.
  - NYSDOL-approved asbestos project variance to be used on the project, if applicable.
  - Wastewater discharge plan. Submit a written statement describing how wastewater from this project will be collected and disposed of. If a permit is required by state, county, or local municipality; the permit must be submitted as part of the **Abatement Submittals**
  - Safety Data Sheets (SDS) for all chemicals, solvents, products, and materials utilized.
  - Manufacturer's specifications/certifications for all materials and equipment utilized on the

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- project.
- Written notifications to local fire, rescue, and emergency agencies informing them of the nature and schedule of the work at the site.
  - Emergency Egress Routes shall be posted at centralized locations on each floor of the building.
  - List of contact persons and emergency phone numbers for Contractor personnel to be posted at the project site.
  - Asbestos abatement personnel/worker documentation, including valid:
    - NYSDOL Asbestos Handling Certificates.
    - NYSDOH 2832 Asbestos Training Certificates.
    - Medical examinations/evaluations.
    - Respirator fit test certifications.
    - OSHA 10-Hour Construction Safety Training certificates, if applicable.
  - The Contractor shall not proceed with any work until the pre-abatement submittals have been received in full and approved by the Owner & Owner's representative(s). The Owner bears no responsibility for schedule delays associated with incomplete submissions.
  - Abatement Submittals - The Contractor shall submit the following information electronically (in PDF format) to the Owner during the project:
    - OSHA personal air sampling data. Neither the Owner nor the Consultant is responsible for the interpretation of these results. The intent is only to show that the Contractor is collecting these samples as required by OSHA.
    - A daily list of the personnel on-site accompanied by their NYSDOL Asbestos Handling Certificate number.
    - Wastewater discharge permit; if required by state, county, or local municipality.
  - Post-Abatement/Closeout Submittals - Before final payment is made, the Contractor shall submit the following information electronically to the Owner within 30 days after completion of the project:
    - Copies of all waste disposal manifests, disposal logs, and weight tickets. All original waste disposal records shall be submitted directly to the Owner/Owner's Representative by the Contractor.
    - Copy of supervisor's daily project log as required by NYCRR PART 56-7.3 documenting all pertinent events that occur throughout the project and including the following:
      - Elevated air sampling results shall be noted along with the time of the work cessation, results of barrier and negative air system inspection, and a summary of any necessary repairs and the required cleaning(s).
      - Manometer readings to be documented twice per work shift, if applicable.
      - Daily (including days without work shifts) inspection results of negative-air ventilation system and any necessary repairs, if applicable.
      - Daily (including days without work shifts) inspections of HVAC system positive pressurization and any necessary repairs, if applicable.
      - Daily (including days without work shifts) inspection results of barriers and any



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necessary repairs, if applicable. Inspections shall be twice per work shift on days with scheduled work.

- Daily testing of barriers and enclosures as per NYCRR PART 56-8.2(f) and any necessary repairs, if applicable.
  - Daily cleaning of enclosures to be documented at the end of each work shift, if applicable.
  - Results of each visual inspection and time of each intermediate completion, if applicable.
  - Results of visual inspection by Supervisor and Project Monitor for each asbestos abatement work area prior to clearance air sampling.
- 
- Entry/exit logs for each asbestos abatement work area.
  - Final NYSDOL and USEPA project notifications, and any asbestos project variances, if applicable.
  - Any other submittal requested by Arctic Enterprises or the Owner/Owner's Representative.
  - The Owner/Owner's Representative shall ensure that the Contractor has met all the contractual obligations to close out this project. Failure to provide all the requested project closeout documentation may result in the delay of payment by the Owner to the Contractor. The Contractor shall not be entitled to any additional compensation or finance charges caused by their failure to submit the requested closeout information in a timely manner.

## PART 2 – PRODUCTS

### 2.1 MATERIALS & EQUIPMENT

A. The Contractor shall be responsible for:

1. Providing all materials and equipment necessary to complete the work.
2. Providing safe and reliable materials and equipment.
3. Providing personal protective equipment for all abatement personnel.
4. Providing HEPA-filtered air filtration devices and HEPA vacuums.
5. Providing continuous negative air pressure within regulated work areas for the duration of the project, as applicable.
6. Utilizing barrier tape and danger signs to keep unauthorized personnel away from the work area. Danger signs shall contain the following language:

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

7. Utilizing airless sprayers to limit airborne dust in regulated work areas.
8. Utilizing flame-retardant 6-mil polyethylene sheeting for the construction of abatement work areas, decontamination units, and the lining of waste containers.
9. Utilizing 6-mil polyethylene bags for the containerization of all asbestos wastes.
10. Utilizing duct tape or approved equivalent to seal polyethylene sheeting and waste disposal

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- bags.
- 11. Utilizing electrical equipment and power cords in compliance with all applicable OSHA standards.
- 12. Utilizing Ground Fault Interrupters (GFIs) or Ground Fault Circuit Interrupters (GFCIs) on all power sources.
- B. Any miscellaneous products not covered in this specification must have written approval from the Owner/Owner's Representative or ARCTIC ENTERPRISES, prior to use on-site.
- C. Any miscellaneous products used at the site must be accompanied by manufacturer's product information and a (material) safety data sheet (SDS). This information must be submitted to the Owner/Owner's Representative prior to the products arriving on site. The Contractor may not proceed until the products have been approved for use by the Owner/Owner's Representative or Arctic Enterprises.

### PART 3 – EXECUTION

#### 3.1 UTILITIES

- A. All water and electrical service connections/installations shall be installed in accordance with all applicable federal, state, and local codes, rules, and regulations.
- B. The Contractor shall coordinate with the Owner be responsible for the maintenance of all electrical cords and water hoses and keeping them in a secure location to prevent unnecessary tripping and/or slipping hazards.
- C. The Contractor shall temporarily shut down/de-energize, isolate/seal, modify, and/or alter existing mechanical/HVAC, electrical, plumbing, and any other related systems, services, and utilities at the site as required by the applicable regulations prior to the start of the asbestos abatement work. All such work shall be carefully coordinated with the Owner/Owner's Representative.
- D. Existing mechanical/HVAC, electrical, plumbing, and all other building systems, services, and utilities within regulated work areas that are to remain in operation shall be adequately protected by the Contractor during the work.
- E. The Contractor's activities shall not interrupt power supply to other areas of the building. Use of any equipment for abatement activities must be coordinated with the Owner to avoid any damage to existing systems.

#### 3.2 DECONTAMINATION FACILITIES

- A. All personal and waste decontamination facilities shall be constructed, installed, or otherwise provided by the Contractor to meet the requirements of NYCRR PART 56 and shall be deemed adequate by the Project Monitor prior to the commencement of any asbestos abatement preparation work.

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- B. The personal decontamination unit shall be equipped with one shower per six (6) full-shift abatement workers.
- C. Decontamination units shall be cleaned/sanitized at the beginning, during, and end of each work shift. Accumulations of dirt/debris in decontamination units shall not be permitted.

### 3.3 PRE-CLEANING

- A. The Abatement Contractor shall request a visual inspection by the Project Monitor to ensure that all locations scheduled to receive critical barriers are clean and free of debris prior to the installation of critical barriers.

### 3.4 CRITICAL & ISOLATION BARRIERS

- A. The Contractor shall install critical barriers and isolation barriers in accordance with NYCRR PART 56.
- B. Temporary hard-wall barriers to complete containments/enclosures and establish regulated work areas shall be constructed using the following framing, sheathing, sealing, and plasticizing criteria:
  - 1. Isolation barrier partitions shall be constructed of wood or metal framing in all openings greater than 32 square feet except, where any one dimension is one foot or less, framing is not required. Existing walls or framing may be used to support isolation barrier partition framing and sheathing.
  - 2. Plywood or oriented strand board (OSB) sheathing of at least  $\frac{3}{8}$ -inch thickness shall be fastened to the regulated work area side of the barrier partition.
  - 3. Edges of the isolation barrier partition at the floor, ceiling, walls, and fixtures and seams within the partition sheathing shall be sealed to form an airtight seal.
  - 4. The regulated work area side of isolation barrier partitions shall be covered with two (2) layers of 6-mil fire-retardant plastic sheeting with staggered joints and sealed airtight.
- C. Smoke testing shall be conducted by the Contractor prior to the start of abatement activities and at least once a day thereafter until satisfactory clearance air sampling results have been obtained to ensure the effectiveness of all critical barriers, isolation barriers, personal and waste decontamination system enclosures, and regulated work area enclosures. Negative air pressure ventilation units shall be in operation during this testing. Testing of barriers and enclosures is not required on days when there are no Phase IIB or cleaning activities scheduled. Test results, observations and any modifications shall be documented in the daily project log by the asbestos abatement supervisor.
- D. The Contractor shall inspect all barriers at least twice daily - before the start of and following the completion of each day's abatement activities. Inspections are also required on days when there is no Phase II work or support activities scheduled. Inspections and observations shall be documented in the daily project log by the asbestos abatement supervisor.

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3.5 ASBESTOS HANDLING & CLEANING

- A. The Contractor shall conduct all asbestos abatement activities in accordance with NYCRR PART 56 or an approved asbestos project variance.
- B. All asbestos materials shall be removed using wet methods. Dry removal, sweeping, wire brushing, use of pressurized water/pressurized air, or other inappropriate techniques will not be permitted.
- C. Airless sprayers shall be utilized to control airborne asbestos fiber concentrations.
- D. The Contractor is responsible for taking appropriate measures to reduce nuisance noise from migrating to other areas of site.
- E. Regulated Asbestos-Containing Material (RACM) Waste shall be immediately bagged and be transported to the waste decontamination enclosure. Waste bags shall then be cleaned in the waste decontamination enclosure, double-bagged, labeled, and transported to the waste dumpster, trailer, etc.
- F. Waste bag transfer shall take place inside a cart that has been lined with two (2) layers of 6-mil polyethylene. This cart shall be covered by polyethylene during any waste transfer activities and be labeled with appropriate asbestos signage.
- G. Waste generated as part of this project that will be disposed of as "Construction & Demolition" Debris shall be handled in accordance with all applicable requirements. All waste exiting the RWA is subject to Project Monitor visual inspection regarding cleanliness, regardless of its intended method of waste shipment (RACM or C & D Debris).
- H. The Contractor shall be responsible for providing the Project Monitor / Air Sampling Technician with access to the regulated work area in accordance with all applicable safety regulations including ladders, lifts, etc. The Contractor shall also provide the Project Monitor / Air Sampling Technician with access to the decontamination unit and hot water on as requested.

3.6 WASTE DISPOSAL

- A. The Contractor shall ensure that all asbestos waste/debris is sufficiently wet prior to being bagged/containerized for disposal.
- B. Bags, drums, or other acceptable packages/containers used for Regulated asbestos waste shall be labeled with appropriate asbestos waste generator tags/labels.
- C. Two 6-mil polyethylene bags or two (2) layers of 6-mil plastic sheeting shall be utilized for the disposal of all asbestos waste.
- D. A daily count of asbestos waste bags, drums, containers, etc. shall be recorded by the asbestos abatement supervisor. This count shall be provided to the Project Monitor each day.
- E. All asbestos waste generated by the work shall be sent to a properly permitted landfill or disposal



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facility as either Regulated Asbestos Waste or Construction Demolition Debris. Appropriate Waste manifests shall accompany all asbestos-containing material waste that is removed from the site. Original waste manifests shall be submitted directly to the Owner/Owner's Representative.

- F. Vehicles used for the transport of all asbestos waste shall bear all appropriate permit tags, markings, and placards.

### 3.7 INSPECTIONS

- A. The Contractor shall not interfere, impede, or delay any inspections by the Owner/Owner's Representative, Project Designer, Project Monitor, or any federal, state, or local inspectors.
- B. The Contractor shall request inspections from the Project Monitor at the following intervals, as applicable to the project:
  - 1. Upon completion of the decontamination system enclosure(s).
  - 2. Upon completion of the preparation of the work area.
  - 3. Upon completion of the abatement process.
  - 4. Upon completion of teardown/dismantling activities.
- C. The asbestos abatement supervisor shall be responsible for adequately documenting inspections in the daily project log.

### 3.8 ASBESTOS PROJECT MONITORING/AIR SAMPLING

- A. The Contractor shall not include any costs in their price for project monitoring or air sampling. The Contractor will not be responsible for the selection or payment of the Project Monitoring/Air Sampling firm.
- B. The Project Monitor/Air Sampling Technician will be responsible for the following:
  - 1. Conducting air sampling during the asbestos abatement phase of the project (as applicable).
  - 2. Conducting a visual inspection for completeness of abatement and completeness of cleanup as per the provisions of the current ASTM Standard E1368 - "Standard Practice for Visual Inspection of Asbestos Abatement Projects." An entry shall be made into the daily project log by both the asbestos abatement supervisor and the individual performing the inspection, detailing the findings of the visual inspection. The full name and NYSDOL asbestos handling certificate number of the certified individual performing the inspection shall also be documented in the supervisor's daily project log.
- C. Project Monitor Qualifications
  - 1. The Project Monitor shall have valid certification and associated documentation. The Contractor understands that a Project Monitor has been retained by the Owner to oversee the asbestos abatement project and that the Owner has authorized the Project Monitor to stop the Contractor's work if the Contractor is not following the contract documents, design

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documents, applicable codes, rules, and regulations, and/or a NYSDOL-approved asbestos project variance. Work shall only be permitted to commence if allowed by the Owner/Owner's Representative and the Project Designer after corrective actions have been made. The Contractor acknowledges that it is their responsibility to follow all applicable rules and regulations pertaining to asbestos abatement and failure to do so may result in lost time and/or dismissal from site at no cost to the Owner, Project Designer, or Project Monitor. The Contractor shall not be compensated for any lost time, labor, materials, etc., due to inappropriate action.

END OF SECTION 028213



## **APPENDIX A**

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### **Definitions**





## SUBPART 56-2

### DEFINITIONS

**56-2.1 Terms.** As used in or in connection with this Part, the following terms mean:

- (a) **Abatement.** Any portion of an asbestos project that includes procedures to control fiber release from asbestos containing material. This includes removal, encapsulation, enclosure, repair, or handling of asbestos material that may result in the release of asbestos fiber.
- (b) **Accepted Methods/Methodologies.** Procedures, regulations, or standards, which are published by recognized standards organizations (e.g. NIOSH, ASTM, ANSI), or are included within federal, state or local governmental regulations (e.g. OSHA, USEPA).
- (c) **Active Project.** A project becomes active when construction of the personal decontamination unit is required to be commenced, or when ACM, PACM or asbestos material is disturbed, whichever comes first, and is considered active until completion of Phase IID, unless, in response to a written request, permission is granted by the Department of Labor Engineering Services Unit to suspend the work on the project for a specified time period.
- (d) **Additional Contractual Work.** Additional asbestos abatement work not originally included within the NYS DOL asbestos project notification.
- (e) **Adequately Wet.** Sufficiently mix or penetrate a material with amended water to prevent the release of visible emissions. If visible emissions are observed coming from asbestos-containing material, then the material has not been adequately wetted.
- (f) **Aggressive Air Sampling.** An accepted method of sampling in which mechanical equipment is used before and during the sampling period to stir up settled dust/asbestos fibers.
- (g) **Agricultural Building/Structure.** A building/structure which is or was used exclusively for agricultural or horticultural activity. This definition does not include converted structures or buildings currently used for residential purposes or the processing or retail merchandising of agricultural or horticultural commodities.
- (h) **Airlock.** A system for permitting entrance and exit, while restricting air movement, between a contaminated area and an uncontaminated area.
- (i) **Air Sampling.** The process of measuring the fiber content of a known volume of air collected during a specific period of time, using accepted methodologies.

- (j) **Ambient Air Sampling.** A method of sampling by which an air sample is collected outside the regulated abatement work area, and is collected without the use of aggressive air sampling techniques.
- (k) **Amended Water.** Water to which a surfactant has been added.
- (l) **Approved Asbestos Safety Training Program.** A program, approved by the New York State Commissioner of Health, providing training in the various disciplines that may be involved in an asbestos project.
- (m) **Asbestos.** Any naturally occurring hydrated mineral silicate separable into commercially usable fibers, including chrysotile (serpentine), amosite (cummingtonite-grunerite), crocidolite (riebeckite), tremolite, anthophyllite and actinolite.
- (n) **Asbestos Abatement Contractor.** An asbestos contractor who performs abatement during an asbestos project or employs persons performing such abatement.
- (o) **Asbestos Abatement Contractor Daily Project Log.** A bound daily narrative journal maintained by the asbestos abatement contractor, which contains a synopsis of all pertinent events that occur throughout Phase II of the asbestos project.
- (p) **Asbestos Containing Material (ACM).** Any material containing greater than one percent (1%) of asbestos, also known as **Asbestos Material**.
- (q) **Asbestos Contractor.** The State, any political subdivision of the State, a public authority or any other governmental agency or instrumentality thereof, self-employed person, company, unincorporated association, firm, partnership or corporation and any owner or operator thereof, which engages in any portion of an asbestos project, or employs persons engaged in any portion of an asbestos project.
  - (1) **Exception:** Property owners or prime contractors who hire asbestos contractors, but do not, themselves, direct or control the work.
- (r) **Asbestos Control Bureau.** Asbestos Control Bureau, Division of Safety and Health, New York State Department of Labor.
- (s) **Asbestos Handler (Worker).** Any person who performs the duties described in Section 56.3.2(d)(1) of this Part.
- (t) **Asbestos Handling Certificate.** A certificate issued by the Commissioner in any of the categories set forth in Section 56-3.2(d) of this Part.
- (u) **Asbestos Handling License.** A license issued by the Commissioner pursuant to Section 56-3.1 of this Part.

- (v) **Asbestos Material.** Any material containing greater than one percent (1%) of asbestos, also known as **Asbestos Containing Material (ACM)**.
- (w) **Asbestos Project.** Work that involves the removal, encapsulation, enclosure, repair or disturbance of friable or non-friable asbestos, or any handling of asbestos material that may result in the release of asbestos fibers. For the purpose of compliance with this Part, an asbestos project shall include any disturbance of asbestos fibers, and the planning, asbestos survey (as per Subpart 56-5.1), design, background air sampling, inspection, air sampling and oversight of abatement work, cleanup, and the handling of all asbestos material subject to abatement, as well as the supervising of such activities. Installation of friable ACM shall also be considered an asbestos project. An asbestos project starts with Phase I when the planning, asbestos survey, and design work begins or is required to begin. The project shall not be considered completed until Phase II D is complete. (See Table 1 Below).

**Table 1**

**ASBESTOS PROJECT PHASES OF WORK**

<b><u>Phase I</u></b> (Prior to Asbestos Abatement Contractor Mobilization) Pre-Abatement		<b><u>Phase II</u></b> <div> <div>←</div> <div>Start-----Abatement-----End →</div> </div>			
<b>A</b>	<b>B</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
Asbestos Survey, Planning & Design	Background Air Sampling	Regulated Abatement Work Area(s) Preparation & Enclosure Construction	Asbestos Handling including, Gross Removal or Abatement, Initial Cleans and Waste Removal	Final Cleaning & Clearance Air Samples	Final Waste Removal From Site
<div> <div>←</div> <div>Start-----Asbestos Project -----End →</div> </div>					

- (1) Where any work is subcontracted, only that part of the work involving asbestos shall be deemed to be an asbestos project.
- (2) Asbestos projects include Large asbestos projects, Small asbestos projects, Minor asbestos projects, incidental disturbance asbestos projects and emergency projects as defined elsewhere in this Part. For purposes of licensing, certification, notification, air sampling and asbestos survey requirements, asbestos projects shall include in-plant operations.



- (i) Large asbestos project. An asbestos project involving the removal, disturbance, enclosure, encapsulation, repair or handling of 160 square feet or more of ACM, PACM or asbestos material or 260 linear feet or more of ACM, PACM or asbestos material.
- (ii) Small asbestos project. An asbestos project involving the removal, encapsulation, enclosure, repair, disturbance or any handling of more than 10 and less than 160 square feet of ACM, PACM or asbestos material or more than 25 and less than 260 linear feet of ACM, PACM or asbestos material.
- (iii) Minor asbestos project. An asbestos project involving the removal, disturbance, repair, encapsulation, enclosure or handling of 10 square feet or less of ACM, PACM or asbestos material, or 25 linear feet or less of ACM, PACM or asbestos material.
- (x) **Asbestos Project Air Sampling Technician.** An individual who performs the duties described in Section 56-3.2(d)(3) of this Part.
- (y) **Asbestos Survey.** A thorough inspection for and identification of all PACM, suspect ACM, or asbestos material throughout the building/structure or portion thereof to be demolished, renovated, remodeled, or repaired. (See Subpart 56-5)
- (z) **Asbestos Waste.** ACM, PACM, asbestos material or asbestos contaminated objects requiring disposal pursuant to applicable laws or regulations. This includes RACM as well as Category I and II Non-Friable ACM.
- (aa) **Authorized Visitor.** Any party on an asbestos project, who has to enter the asbestos project restricted area or regulated abatement work area for emergency purposes or regulatory compliance inspections. Examples include the building/structure owner, his or her agent or representative, utility company representatives, the Commissioner or his or her agents, and personnel of any regulatory agency having jurisdiction over the project. Visitors shall comply with all applicable requirements of OSHA 29 CFR 1926.
- (ab) **Background Air Sampling.** A method used to determine airborne fiber concentrations in the area where abatement work is to be conducted, prior to starting Phase II A of the asbestos project.
- (ac) **Barriers.** Critical Barriers and Isolation Barriers.
- (ad) **Building/Structure.** A structure wholly or partially enclosed within exterior walls and a roof, intended to afford shelter to persons, animals or property; or a structure used as a conveyance for utilities, vehicular traffic or pedestrians (e.g. bridge, tunnel, manhole, subsurface conduits).

- (ae) **Building/Structure Owner.** The State, any political subdivision of the State, a public authority or any other governmental agency or instrumentality thereof, person, company, unincorporated association, firm, partnership or corporation in whom legal title to the premises is vested unless the premises are held in land trust, in which instance building/structure owner means the person in whom beneficial title is vested.
- (af) **Building/Structure Owner's Authorized Representative.** A licensed asbestos contractor firm contractually responsible for execution of any building owner's responsibility, as required by this Part, during any phase of an asbestos project at the building owner's building/structure.
- (ag) **Bulk Sampling.** Accepted methods for collecting samples of suspect materials for appropriate analyses by NYS ELAP approved laboratories, to determine asbestos content.
- (ah) **Category I Non-Friable ACM.** NESHAP classification - Asbestos-containing packings, gaskets, resilient floor covering, and asphalt roofing products, containing more than one percent (1%) asbestos, that when dry, can not be crumbled, pulverized, or reduced to powder by hand pressure.
- (ai) **Category II Non-Friable ACM.** NESHAP classification - Any material, excluding Category I Non-Friable ACM, containing more than one percent (1%) asbestos, that when dry, can not be crumbled, pulverized, or reduced to powder by hand pressure.
- (aj) **Class I Asbestos Work.** OSHA term meaning activities involving the abatement of Thermal Systems Insulation (TSI), and surfacing ACM and PACM.
- (ak) **Class II Asbestos Work.** OSHA term meaning activities involving the abatement of ACM which is not TSI or surfacing material. This includes, but is not limited to, the removal of asbestos-containing wallboard, floor tile and sheeting, roofing and siding shingles, and construction mastics.
- (al) **Class III Asbestos Work.** OSHA term meaning Repair and Maintenance operations, where no more than a minor quantity of ACM, including TSI and surfacing ACM and PACM, is likely to be disturbed.
- (am) **Class IV Asbestos Work.** OSHA term meaning Maintenance and Custodial Activities during which employees contact but do not disturb ACM or PACM and activities to clean up non-ACM dust, waste and debris resulting from Class I, II and III activities.
- (an) **Clean Room.** An uncontaminated area or room, which is a part of the personal decontamination enclosure, with provisions for storage and changing of persons' street clothes and protective equipment.
- (ao) **Cleanup.** The utilization of HEPA-vacuuuming or wet cleaning or both to control and eliminate accumulations of asbestos material and asbestos waste material.

- (ap) **Clearance Air Sampling.** An accepted method of air sampling used upon completion of final cleaning, during Phase IIC of an asbestos project. This method consists of using aggressive air sampling techniques to dislodge and stir up remaining asbestos fibers, then air samples are collected for appropriate analysis to determine representative airborne fiber concentrations.
- (aq) **Commissioner.** The Commissioner of the New York State Department of Labor.
- (ar) **Containment.** The negative-pressurized enclosure within the restricted area, which establishes the regulated abatement work area and surrounds the location where the asbestos abatement is actually taking place.
- (as) **Critical Barrier.** Barriers that seal off all openings to or within the defined regulated abatement work area, including but not limited to operable windows and skylights, doorways, ducts, grills, diffusers and any other penetrations to surfaces adjacent to or within the regulated abatement work area.
- (at) **Curtained Doorway.** An assembly which consists of at least three (3) overlapping sheets of 6-mil fire retardant plastic over an existing or temporarily framed doorway, used to separate the chambers within the decontamination system enclosures and to inhibit airflow if the negative air ventilation system shuts down.
- (au) **Decontamination System Enclosure.** A series of connected rooms, usually attached to the regulated abatement work area, for the decontamination of persons, materials and equipment.
- (av) **Demolition.** The wrecking or removal of any load-supporting structural member of a building or structure.
- (aw) **Department.** The New York State Department of Labor.
- (ax) **Disturbance.** Any activities that disrupt the matrix of ACM or PACM, or generate debris, visible emissions or airborne asbestos fibers from ACM or PACM. This includes moving of friable asbestos containing material from one place to another.
- (ay) **Emergency.** An unexpected, unanticipated or unforeseen occurrence, including but not limited to, a steam, chemical, gas or water line rupture, a boiler failure, a building/structure collapse, or act of nature which may pose:
- (1) an imminent danger to the health and safety of the public; or
  - (2) an asbestos-related risk to the health and safety of the public from release of asbestos fibers.
- (az) **Emergency Asbestos Project.** An asbestos project which is necessary to respond to an emergency.

- (ba) **Encapsulant (Sealant) or Encapsulating Agent.** A liquid material, which can be applied to asbestos material and which prevents the release of asbestos fibers from the material either by creating a membrane over the surface (bridging encapsulant) or by penetrating into the material and binding its components together and to the substrate (penetrating encapsulant). See **Sealant**.
- (bb) **Encapsulation.** Abatement consisting of the coating or spraying of asbestos material with an encapsulant (sealant) or encapsulating agent.
- (bc) **Enclosure.** Abatement consisting of the construction of airtight walls, ceilings and floors between the asbestos material and the building/structure environment, or around surfaces coated with asbestos material, or any other appropriate procedure as determined by the Department, which prevents the release of asbestos fibers.
- (bd) **EPA.** The United States Environmental Protection Agency.
- (be) **Equipment Room.** A contained area or room which is part of the personal decontamination system enclosure with provisions for the storage of contaminated clothing and equipment.
- (bf) **Fiber (Asbestos Fiber).** Generally, a slender or elongated structure, which results from the break up of ACM, PACM or asbestos material. However, the definition of an asbestos fiber is also dependent upon the approved accepted method of air sampling and analysis utilized for the specific phase of the asbestos project.
- (bg) **Fixed Object.** Equipment, furniture or other item that is affixed, as a whole, to a floor, ceiling, wall or other building structure or system.
- (bh) **Friable.** Any material that when dry, can be crumbled, pulverized, or reduced to powder by hand pressure, or is capable of being released into the air by hand pressure.
- (bi) **Glovebag.** A manufactured impervious bag-like enclosure constructed of at least six (6) mil transparent plastic, seamless at the bottom, with inward-projecting long sleeve glove(s), which may also contain an inward-projecting water-wand sleeve, an internal tool pouch, and an attached, labeled receptacle or portion for asbestos waste. The glovebag is constructed and installed to surround the object or area to be decontaminated and contain all asbestos fibers released during the abatement process.
- (bj) **Glovebag Technique.** A method for removing asbestos material from heating, ventilating, and air conditioning (HVAC) ducts, piping runs, valves, joints and elbows, and other non-planar surfaces, by use of a glovebag.
- (bk) **Glue.** A material used as an adhesive, such as the material used to hold tiles to a surface. See **Mastic**.



- (bl) **HEPA-Filter.** A high efficiency particulate air filter capable of trapping and retaining 99.97 percent of all mono-dispersed particles of 0.3 microns in diameter or larger.
- (bm) **HEPA-Vacuum Equipment.** Vacuuming equipment designed for abatement, with a high efficiency particulate air filtration system.
- (bn) **Holding Area.** A chamber in the waste decontamination enclosure utilized for temporary storage of containerized ACM waste, prior to transfer to waste transport vehicle.
- (bo) **Incidental Disturbance.** The unintentional disturbance of, ACM, PACM, or asbestos material.
- (bp) **Incidental Disturbance Asbestos Project.** The cleanup, repair or encapsulation of less than 10 square feet or less than 25 linear feet of incidentally disturbed ACM, PACM or asbestos material.
- (bq) **Inspector.** Any person who performs the duties described at Section 56- 3.2(d)(4) of this Part.
- (br) **Intact.** Asbestos material that has not crumbled, been pulverized, or otherwise been damaged or disturbed, and the material's matrix has not noticeably deteriorated.
- (bs) **Intermediate Portions of a Project.** The discrete abatement segments that will take place where non-continuous interim notifications are required, as per Section 56-3.4(b)(4)(v), for large asbestos projects
- (bt) **Isolation Barriers.** Installed temporary hardwall barriers that complete the containment enclosure and establish the regulated abatement work area.
- (bu) **Lockdown Encapsulant.** A thinned out bridging encapsulant used for lockdown purposes to assist with cleanup as per this Part.
- (bv) **Management Planner.** Any person who performs the duties described at Section 56-3.2 (d) (9) of this Part.
- (bw) **Mastic.** A pasty material used as an adhesive.
- (bx) **Mounted Object.** Equipment, furniture, or other item that is attached, in whole or in part, to a floor, ceiling, wall or other building structure or system or to a fixed object.
- (by) **Movable Object.** Equipment, furniture or other item that is not attached or affixed, in whole or in part, to a floor, ceiling, wall or other building structure or system or to a fixed object.

- (bz) **Multi-employer Work Sites.** Any demolition, renovation, remodeling or repair project work site, which includes work covered by this part, where more than one employer is reasonably expected to be on-site during the project.
- (ca) **Multiple Abatement.** The abatement of more than one type of ACM within the same containment.
- (cb) **Negative Air Pressure Equipment.** A local exhaust system, capable of maintaining air pressure within a containment at a lower pressure than the air pressure outside of such containment, and which provides for HEPA filtration of all air exhausted from the containment.
- (cc) **NESHAP.** National Emission Standards for Hazardous Air Pollutants (40 CFR Part 61).
- (cd) **NIOSH.** The National Institute for Occupational Safety and Health.
- (ce) **Non-Asbestos Material.** Any material documented to contain one percent (1%) or less of asbestos.
- (cf) **Non-Friable.** Any material that when dry, can not be crumbled, pulverized, or reduced to powder by hand pressure, and is not capable of being released into the air by hand pressure.
- (cg) **Non-Friable Organically Bound (NOB) Asbestos Material.** Non-friable asbestos materials embedded in flexible-to-rigid asphalt or vinyl matrices, including but not limited to flooring materials, adhesives, mastics, asphalt shingles, roofing materials and caulks.
- (ch) **Occupied Area.** Any frequented portion of the work site where abatement is not taking place.
- (ci) **Operations and Maintenance Worker.** Any person who performs the duties described at Section 56-3.2 (d) (5) of this Part.
- (cj) **OSHA.** The Occupational Safety and Health Administration.
- (ck) **Outside Air.** The air immediately outside the building or structure in which an asbestos project is performed.
- (cl) **Person.** Any natural person.
- (cm) **Personal Air Sampling.** Air sampling located in a worker's breathing zone.
- (cn) **Personal Decontamination System Enclosure.** An area designated for controlled passage of all persons to and from the regulated abatement work area.

- (co) **Personal Protective Equipment (PPE).** Disposable work suits or coveralls, head covering, eye protection, footwear, gloves and appropriate NIOSH- approved respirators with appropriate NIOSH-approved filters.
- (cp) **Plasticize.** To cover floors, walls, ceilings or other surfaces with 6-mil fire- retardant plastic sheeting.
- (cq) **Presumed Asbestos Containing Material (PACM).** All Thermal System Insulations and Surfacing Materials found in buildings constructed no later than 1980. PACM is considered to be ACM unless proven otherwise by appropriate bulk sampling and laboratory analyses.
- (cr) **Project Air Sampling.** Area air sampling conducted in accordance with Subpart 56-4 of this Part during the course of the asbestos project.
- (cs) **Project Designer.** Any person who performs the duties described at Section 56-3.2(d)(7) of this Part.
- (ct) **Project Monitor.** Any person who performs the duties described at Section 56-3.2(d)(8).
- (cu) **Public.** Any natural person except:
- (1) A person engaged in an asbestos project;
  - (2) An authorized visitor;
  - (3) Police, fire, or other public safety personnel.
- (cv) **Receptor.** Any opening, which could admit asbestos fibers into a structure if not properly protected. Examples include but are not limited to operable windows, doors, vents, air intakes or exhausts of any mechanical device within a building or structure.
- (cw) **Regulated Abatement Work Area.** The portion of the restricted area where abatement work actually occurs. For tent work areas, the interior of each tent is a regulated abatement work area. For OSHA Class I and Class II asbestos abatement, the interior of the restricted area containment enclosure is the regulated abatement work area. For exterior non-friable asbestos abatement conducted without the establishment of negative air ventilation systems or containment enclosures, the entire restricted area surrounding the abatement location is considered to be the regulated abatement work area.

- (cx) **Regulated Asbestos-Containing Material (RACM).** Friable ACM or PACM, Category I Non-friable ACM that has become friable or has been or will be subjected to sanding, grinding, cutting or abrading, or Category II Non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations.
- (cy) **Remodel.** For purposes of this code, remodel shall mean the same as renovation.
- (cz) **Remote Decontamination System Enclosure.** Decontamination systems that are not attached to the regulated abatement work area but are within the work site.
- (da) **Removal.** Abatement, consisting of operations where ACM, PACM or asbestos material is removed or stripped from structures or substrates. This includes demolition operations.
- (db) **Renovation.** The altering of an existing building/structure, or a portion of building/structure components or systems, including the stripping, removal or abatement of ACM from a building or structure. Operations in which load-supporting structural members are wrecked or taken out are demolitions.
- (dc) **Repair (Asbestos).** Abatement, consisting of corrective action for a Minor Asbestos Project using required work practices to control fiber release from damaged ACM, PACM or asbestos material.
- (dd) **Repair.** The replacement, overhaul, rebuilding, reconstructing or reconditioning of any part of a building/structure component or system with like or similar material or parts, due to damage or excessive wear.
- (de) **Respiratory Protection.** NIOSH-approved respirators with appropriate NIOSH-approved filters.
- (df) **Restricted Area.** A restricted area established and marked for the abatement portion of an asbestos project. This area shall include, but not be limited to asbestos project regulated abatement work areas and any contiguous decontamination facilities, adjoining staging areas where work materials, debris or waste from such work may accumulate, remote decontamination areas, and waste storage areas (dumpsters, trailers, etc.).
- (dg) **Restricted Asbestos Handler (Allied Trades).** Any person who performs the duties described at Section 56-3.2 (d) (2) of this Part.
- (dh) **Satisfactory Clearance Air Sampling Results.** See Subpart 56-4.
- (di) **Sealant.** An encapsulating agent. A material which can be applied to asbestos containing material which prevents the release of asbestos fibers from the material either by creating a membrane over the surface (bridging encapsulant) or by penetrating into the material and binding its components together and to the substrate (penetrating encapsulant).

- (dj) **Sequential Abatement.** The abatement of different types of asbestos containing material within a common regulated abatement work area in a priority order. (See Section 56-8.6)
- (dk) **Shower Room.** A room between the clean room and the equipment room in the personal decontamination enclosure with hot and cold running water controllable at the tap and arranged for complete showering during decontamination.
- (dl) **Supervisor.** Any person who performs the duties described at Section 56-3.2 (d) (6) of this Part.
- (dm) **Suspect Miscellaneous ACM.** Any suspect asbestos-containing material that is not PACM, such as floor tiles, ceiling tiles, mastics/adhesives, sealants, roofing materials, cementitious materials, etc. A listing of typical suspect miscellaneous ACM can be found in Subpart 56-5. All suspect miscellaneous ACM must be assumed to be ACM, unless proven otherwise by appropriate bulk sampling and laboratory analyses.
- (dn) **Surfacing Material.** Material that is sprayed-on, troweled-on, or otherwise applied to surfaces (such as acoustical or finish plaster on ceilings and walls, and fireproofing materials on structural members, or other materials on surfaces for acoustical, fireproofing, or other purposes).
- (do) **Surfactant.** A chemical wetting agent added to water to reduce the surface tension of the water and improve its penetration for added mitigation of airborne fiber release.
- (dp) **Tent.** A fire retardant polyethylene enclosure that includes walls, ceiling and a floor as required to remove ACM, PACM or asbestos material.
- (dq) **Thermal System Insulation.** Insulation material applied to pipes, fittings, boilers, breeching, tanks, ducts or other structural components to prevent heat gain or loss.
- (dr) **Variance (Site-specific).** Relief in accordance with Section 30 of the Labor Law from specific sections of Industrial Code Rule 56 for a specific project.
- (ds) **Variance (Applicable) (AV).** Blanket relief in accordance with Section 30 of the Labor Law from specific sections of Industrial Code Rule 56 for a particular type of project.
- (dt) **Visible Emission.** Any emission of particulate material that can be seen without the aid of instruments.
- (du) **Washroom.** A room between the regulated abatement work area and the holding area in the waste decontamination system enclosure, where equipment and waste containers are wet cleaned or HEPA-vacuumed.



- (dv) **Waste Decontamination System Enclosure.** An area, consisting of a washroom and a holding area separated from each other by airlocks, designated for the controlled transfer of materials and equipment from the regulated abatement work area.
- (dw) **Waste Staging Area.** The area near the waste transfer airlock where containerized asbestos waste has been placed prior to removal from the regulated abatement work area.
- (dx) **Wet Cleaning.** The process of eliminating asbestos contamination from surfaces, equipment or other objects by using cloths, mops, or other cleaning tools that have been saturated with amended water.
- (dy) **Work Site.** Building, structure, parcel of land or premises where an asbestos project takes place.



## **APPENDIX B**

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### **Arctic Company & Personnel Licensure**



**New York State – Department of Labor**

Division of Safety and Health  
License and Certificate Unit  
State Campus, Building 12  
Albany, NY 12240

**ASBESTOS HANDLING LICENSE**

Arctic Enterprises, Inc.  
Ste100A  
222 Teall Ave  
Syracuse, NY 13210

FILE NUMBER: 14-75469  
LICENSE NUMBER: 75469  
LICENSE CLASS: FULL  
DATE OF ISSUE: 03/21/2019  
EXPIRATION DATE: 03/31/2020

Duly Authorized Representative – Janette Van Wie:

This license has been issued in accordance with applicable provisions of Article 30 of the Labor Law of New York State and of the New York State Codes, Rules and Regulations (12 NYCRR Part 56). It is subject to suspension or revocation for a (1) serious violation of state, federal or local laws with regard to the conduct of an asbestos project, or (2) demonstrated lack of responsibility in the conduct of any job involving asbestos or asbestos material.

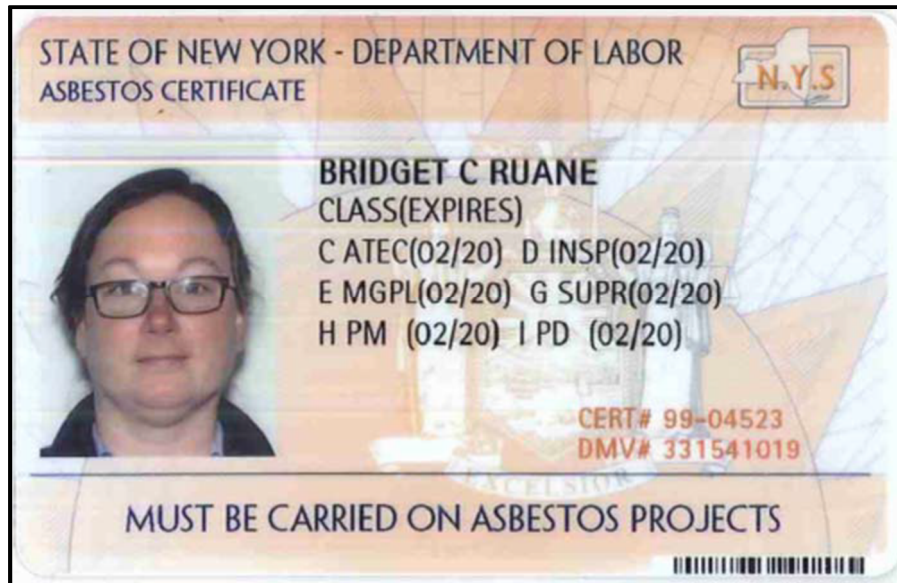
This license is valid only for the contractor named above and this license or a photocopy must be prominently displayed at the asbestos project worksite. This license verifies that all persons employed by the licensee on an asbestos project in New York State have been issued an Asbestos Certificate, appropriate for the type of work they perform, by the New York State Department of Labor.



Eileen M. Franko, Director  
For the Commissioner of Labor



## ASBESTOS CERTIFICATION



The following letter codes (as shown on the handling certificate) represent the corresponding asbestos classifications.

<b>A - Asbestos Handler</b>	<b>D - Asbestos Inspector</b>	<b>G - Asbestos Supervisor</b>
<b>B - Allied Trades</b>	<b>E - Management Planner</b>	<b>H - Asbestos Project Monitor</b>
<b>C - Air Sampling Technician</b>	<b>F - Operations &amp; Maintenance</b>	<b>I - Asbestos Project Designer</b>

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# Limited Hazardous Materials Pre-Renovation Survey Report

Pi Beta Phi House  
330 Triphammer Road  
Ithaca, New York 14850

Arctic Project Number: 2022.288

Prepared by:



ARCTIC ENTERPRISES, INC.  
222 Teall Ave, Suite 100A, Syracuse, New York 13210

January 5, 2023

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# Limited Hazardous Materials Pre-Renovation Survey Report

Pi Beta Phi House  
330 Triphammer Road  
Ithaca, New York 14850

***Prepared for:***

Ms. Catherine Blakemore  
Associate, LEED BD+C  
Holt Architects, P.C.  
619 West State Street Suite A  
Ithaca, New York 14850

***Author:***

Name: Matthew Rodriguez

Signature:



Title: Industrial Hygienist

Project Number: 2022.288

Report Status: FINAL

Date: January 5, 2023

Prepared by: Arctic Enterprises, Inc.

222 Teall Avenue

Suite 100A

Syracuse, New York 13210

***Reviewed by:***

Name: Janette Van Wie

Signature:



Title: President/Owner

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## ATTACHMENTS

- Attachment A: Arctic's Company License and Personnel Certifications
- Attachment B: Asbestos Bulk Sample Laboratory Reports
- Attachment C: Lead Bulk Sampling Laboratory Report
- Attachment D: PCB Bulk Sampling Laboratory Report
- Attachment E: Drawings (Figures 1 – 8)

## 1.0 INTRODUCTION

In accordance with your request, Arctic Enterprises, Inc. (Arctic) was retained by Holt Architects, P.C., to collect bulk samples of suspect asbestos-containing materials (ACM), lead-based paint (LBP) and polychlorinated biphenyls (PCBs) in caulks from the Pi Beta Phi House, located at 330 Triphammer Road, in Ithaca, New York. The sampling was conducted in preparation for the upcoming renovation projects under consideration.

## 2.0 ASBESTOS BULK SAMPLING

The asbestos bulk samples were collected by Mr. Matthew Rodriguez and Mr. Mike Benson, both New York State Department of Labor (NYSDOL) certified Asbestos Building Inspectors. A total of sixty-one (61) samples were identified and collected. Post collection, the samples were labeled and sent to AmeriSci New York, an approved environmental laboratory for analysis.

By regulatory definition, any building material containing greater than one percent (1%) asbestos must be considered an asbestos-containing material (ACM). Several of the materials sampled were found to be asbestos-containing, as determined by laboratory analysis. The laboratory analysis reports have been included in Attachment B. The table below (Table 2.1) summarizes the results:

**Table 2.1 – ASBESTOS BULK SAMPLE LABORATORY RESULTS**

SAMPLE NUMBER	SAMPLE LOCATION	MATERIAL DESCRIPTION	ASBESTOS CONTENT
WPLAST-001A	1 <sup>ST</sup> FLOOR CLOSET # 1	WALL PLASTER SKIM + BASE	NAD
WPLAST-001B	BASEMENT MAIN STAIRWELL	WALL PLASTER SKIM + BASE	NAD
WPLAST-001C	BASEMENT PRESIDENT'S BEDROOM	WALL PLASTER SKIM + BASE	NAD
WPLAST-001D	2 <sup>ND</sup> FLOOR BATHROOM	WALL PLASTER SKIM + BASE	NAD
WPLAST-001E	2 <sup>ND</sup> FLOOR HALLWAY	WALL PLASTER SKIM + BASE	NAD
WPLAST-001F	3 <sup>RD</sup> FLOOR MOP SINK	WALL PLASTER SKIM + BASE	NAD
WPLAST-001G	3 <sup>RD</sup> FLOOR CLOSET # 5	WALL PLASTER SKIM + BASE	NAD
CPLAST-002A	1 <sup>ST</sup> FLOOR CLOSET # 3	CEILING PLASTER SKIM + BASE	NAD
CPLAST-002B	BASEMENT MAIN STAIRWELL	CEILING PLASTER SKIM + BASE	NAD
CPLAST-002C	BASEMENT KITCHEN STORAGE	CEILING PLASTER SKIM + BASE	NAD



**Table 2.1 – ASBESTOS BULK SAMPLE LABORATORY RESULTS**

SAMPLE NUMBER	SAMPLE LOCATION	MATERIAL DESCRIPTION	ASBESTOS CONTENT
CPLAST-002D	1 <sup>ST</sup> FLOOR MAIN STAIRWELL	CEILING PLASTER SKIM + BASE	NAD
CPLAST-002E	2 <sup>ND</sup> FLOOR MAIN STAIRWELL	CEILING PLASTER SKIM + BASE	NAD
CPLAST-002F	3 <sup>RD</sup> FLOOR MOP SKINK	CEILING PLASTER SKIM + BASE	NAD
CPLAST-002G	3 <sup>RD</sup> FLOOR CLOSET # 5	CEILING PLASTER SKIM + BASE	NAD
TXTC-003A	1 <sup>ST</sup> FLOOR CLOSET # 3	TEXTURED CEILING	NAD
TXTC-003B	BASEMENT STAIRWELL LANDING	TEXTURED CEILING	NAD
TXTC-003C	BASEMENT HALLWAY	TEXTURED CEILING	NAD
TXTC-003D	2 <sup>ND</sup> FLOOR MAIN STAIRWELL LANDING	TEXTURED CEILING	NAD
TXTC-003E	3 <sup>RD</sup> FLOOR MOP SINK	TEXTURED CEILING	NAD
SR-004A	BASEMENT EXERCISE	SHEETROCK	NAD
SR-004B	1 <sup>ST</sup> FLOOR TV ROOM	SHEETROCK	NAD
JC-005A	BASEMENT EXERCISE ROOM	WHITE JOINT COMPOUND	NAD
JC-005B	1 <sup>ST</sup> FLOOR TV ROOM	WHITE JOINT COMPOUND	NAD
JC-005C	2 <sup>ND</sup> FLOOR BATHROOM	WHITE JOINT COMPOUND	NAD
JC-005D	1 <sup>ST</sup> FLOOR BATHROOM ACROSS BROOM CLOSETS #1,2,3	WHITE JOINT COMPOUND	NAD
JC-005E	1 <sup>ST</sup> FLOOR DINING ROOM	JOINT COMPOUND	NAD
BINSO-006A,B,C	3 <sup>RD</sup> FLOOR ATTIC	BROWN BLOWN-IN INSULATION	NAD
CT-007A,B	BASEMENT EXERCISE ROOM	WHITE/BROWN 2'X2' CEILING TILE	NAD
QTG-008A,B	KITCHEN DOOR TO STAIRWELL	GRAY QUARRY TILE GROUT	NAD
QTTS-009A,B	KITCHEN DOOR TO STAIRWELL	GRAY QUARRY TILE THIN SET	NAD
STUCCO-010A,B,C	3 <sup>RD</sup> FLOOR EXTERIOR STUCCO	GRAY STUCCO	NAD

**Table 2.1 – ASBESTOS BULK SAMPLE LABORATORY RESULTS**

SAMPLE NUMBER	SAMPLE LOCATION	MATERIAL DESCRIPTION	ASBESTOS CONTENT
SHINGLE-011A,B	NORTH SIDE ENTRY ROOF	BLACK SHINGLE	NAD
VB-012A,B	NORTH SIDE ENTRY ROOF	BLACK VAPOR BARRIER	NAD
STUCCO-013A,B,C	CEILING OF EXTERIOR PORCHES	GRAY STUCCO	NAD
PARGE-014A,B,C	EXTERIOR WALLS @ GROUND LEVEL	GRAY PARGE ON EXTERIOR OF FOUNDATION	NAD
WCLK-015A,B	BASEMENT WINDOWS	OFF WHITE CAULK ON EXTERIOR OF WINDOW	TRACE
WCLK-016A,B	1 <sup>ST</sup> FLOOR WINDOWS	WHITE EXTERIOR WINDOWS	1.5% CHRYSOTILE
FTM-017A,B	A: 2 <sup>ND</sup> FLOOR CLOSET # 2 B: 3 <sup>RD</sup> FLOOR MOP SINK	BLACK FLOOR TILE MASTIC	1.4% CHRYSOTILE

**Table Notes:**

NAD = No Asbestos Detected, TRACE = Less Than 1% Asbestos,  = Asbestos-Containing Materials

The following asbestos-containing materials (ACMs) and presumed asbestos-containing materials (PACMs) were identified during this sampling event:

**Table 2.2 – Approximate Quantity of ACMs & PACMs**

BUILDING MATERIAL	MATERIAL LOCATION	ESTIMATED QUANTITY	MATERIAL/ CONDITION
WHITE EXTERIOR WINDOW CAULK	1 <sup>ST</sup> , 2 <sup>ND</sup> , & 3 <sup>RD</sup> FLOOR WINDOWS	836 LF/26 SF	NF, INTACT
9" x 9" FLOOR TILE & BLACK MASTIC	BASEMENT -CHAPTER ROOM, 1 <sup>ST</sup> FLOOR LANDING, CORRIDOR, BATHROOM 2 <sup>ND</sup> - 3 <sup>RD</sup> FLOOR THROUGHOUT	6,000 SF	NF, INTACT
PRESUMED FIRE DOOR INSULATION	THROUGHOUT	TBD	FRIABLE, INTACT

**Table Notes:**

SF = Square Feet, LF= Linear Feet, NF =Non-Friable, F= Friable, TBD= TO BE DETERMINED

### 3.0 LEAD-BASED PAINT BULK SAMPLING

The lead-based paint samples were collected by Arctic's Industrial Hygiene Technicians, Mr. Mike Benson and Mr. Matthew Rodriguez. A total of three (3) lead samples were identified and collected. Post collection, the samples were labeled and sent to Schneider Laboratories, an approved environmental laboratory for analysis.

By regulatory definition, lead-based paint (LBP) is defined as any material containing a minimum of 0.5% lead by weight. None of the samples collected were identified as lead-based paint, as defined by the USEPA. It should be noted that materials containing any amount of lead are regulated by OSHA, additional handling and disposal considerations may apply. The laboratory report has been included in Attachment C. The table below summarizes the sampling results:

**Table 3.1 – LEAD BULK SAMPLE LABORATORY RESULTS**

SAMPLE NUMBER	SAMPLE LOCATION	MATERIAL DESCRIPTION	LEAD CONTENT*
PAINT-001	2 <sup>nd</sup> FLOOR CLOSET # 3	WHITE DOOR/TRIM PAINT	<0.00333%
PAINT-002	2 <sup>ND</sup> FLOOR CLOSET # 3	CREAM WALL PAINT	<0.0118%
PAINT-003	EXTERIOR TV ROOM WINDOW	WHITE WINDOW PAINT	0.00600%

**Table Notes:**

\* = Percentage of Lead by Weight

#### 4.0 PCB BULK SAMPLING

The PCB caulk/sealant samples were collected by Arctic's Industrial Hygiene Technicians, Ms. Bridget Ruane and Mr. Matthew Rodriguez. Two (2) samples were collected and submitted to Schneider Laboratories, an approved environmental laboratory for analysis in accordance with EPA 8082A methodology.

By regulatory definition, a PCB-containing bulk material is defined as containing at least 50 parts per million (ppm) PCBs. The samples collected did not contain PCBs (above the regulatory threshold), as determined by laboratory analysis. The laboratory report has been included in Attachment D. The table below summarizes the results:

**Table 4.1 – PCB BULK SAMPLE LABORATORY RESULTS**

SAMPLE NUMBER	SAMPLE LOCATION	MATERIAL DESCRIPTION	PCB CONTENT
WCLK-015P	EXTERIOR BASEMENT WINDOW CAULK	OFF WHITE WINDOW CAULK	BRL
WCLK-016P	EXTERIOR 1 <sup>ST</sup> FLOOR WINDOW CAULK	WHITE WINDOW CAULK	BRL

**Table Notes:**

BRL = Below Reporting Limit

## 5.0 PHOTOS



NON-ACM BLOWN-IN INSULATION IN ATTIC



ACM EXTERIOR WINDOW CAULK (FRAME TO BRICK)



NON-ACM STUCCO ON CEILING OF PORCHES



3<sup>RD</sup> FLOOR NON-ACM STUCCO





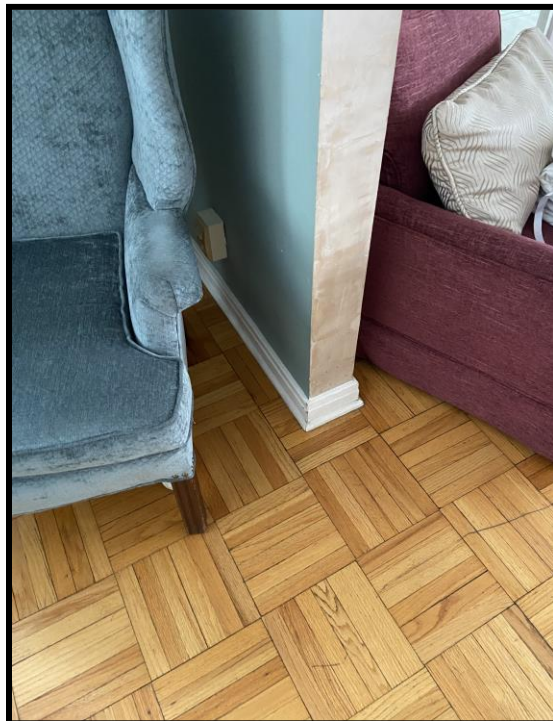
NON-ACM BASEMENT WINDOW CAULK



NO FOUNDATION MASTIC



NON-ACM QUARRY TILE GROUT/THINSET IN KITCHEN



NON-ACM SHEETROCK AND JOINT COMPOUND IN TV ROOM



Limited Hazardous Materials Pre-Renovation Survey Report  
Pi Beta Phi House  
330 Triphammer Road, Ithaca, New York

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ACM 9" x 9" FLOOR TILE AND ASSOCIATED BLACK MASTIC  
IN STAIRWELL TO BASEMENT



NON-ACM 2' x 2' CEILING TILE IN EXERCISE ROOM



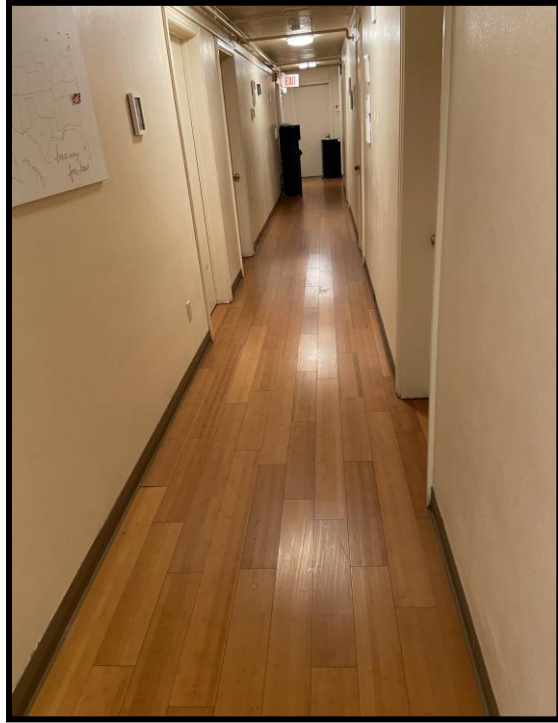
ACM 9" x 9" FLOOR TILE AND BLACK MASTIC IN  
BASEMENT MEETING ROOM



NO VERMICULITE OBSERVED IN WALL @ POWER PANEL



1<sup>st</sup> FLOOR BATHROOM ADJ. FOYER, LINOLEUM FLOORING  
NOT SAMPLED AT THIS TIME, ASSUME 9" FLOOR  
TILE/MASTIC IS PRESENT BELOW.



9" x 9" FLOOR TILE AND BLACK MASTIC OBSERVED  
UNDER CARPET IN ROOMS AND UNDER WOOD  
FLOORING IN HALLWAYS THROUGH 2<sup>ND</sup>-3<sup>RD</sup> FLOORS

## 6.0 SITE OBSERVATIONS

- The House Director's Suite was not accessible for sampling at the time our site visit.
- Destructive sampling of fire doors, quarry tile flooring in the kitchen and ceramic floor tile in the foyer and linoleum in the foyer bathroom was not conducted as part of this sampling event. Additional sampling of these materials would be required if future projects will impact them
- The 9" x 9" floor tile throughout was presumed to be asbestos-containing, the associated black floor tile mastic was confirmed ACM. These materials exist under wood flooring and carpeting in the majority of the building.
- Block walls in the basement scheduled to be impacted by the upcoming electrical upgrade were cored, no vermiculite was identified

## **7.0 OSHA AND NEW YORK STATE COMPLIANCE**

Trace Amounts of ACM – It should be noted that the Occupational Safety & Health Administration (OSHA) Asbestos Standard (29 CFR 1926.1101) has a definition for both "asbestos" and "asbestos-containing material." Under OSHA Asbestos Standard, the definition of asbestos covers all materials containing any concentration of detected asbestos, including those with concentrations less than or equal to one percent asbestos. Although work operations conducted in areas where a material contains less than or equal to one percent asbestos is an "unclassified" operation, the employer still must follow the requirements of 29 CFR 1926.1101(g) (1) [except (g)(1)(i)], (g)(2) and (g)(3) that describe engineering and work practice controls operations to prevent unnecessary asbestos exposures to their employees (worker protection regulations).

Transmittal of Building/Structure Asbestos Survey Information – As required by New York State industrial code rule 56, copies of the building/structure asbestos survey shall be immediately transmitted by the building/structure owner, as follows:

- (1) One (1) copy of the completed asbestos survey shall be sent by the owner or their agent to the local entity charged with issuing a permit for such demolition, renovation, remodeling or repair work under State or local laws.
- (2) One (1) copy of the completed asbestos survey for controlled demolition (as per Subpart 56-11.5) or pre-demolition asbestos projects shall also be submitted to the appropriate Asbestos Control Bureau district office.
- (3) One (1) copy of the completed asbestos survey shall be kept on the construction site with the asbestos notification and variance, if required, throughout the duration of the asbestos project and any associated demolition, renovation, remodeling or repair project.

## **8.0 SUMMARY**

During this sampling event, asbestos-containing materials were identified. No lead-based paints or PCB-containing caulks (over 50 ppm) were identified during this sampling event. The asbestos-containing materials scheduled to be impacted by the project will require abatement by a licensed asbestos abatement contractor prior to renovation activities. In addition, the owner is required to contract with an independent third-party monitor to provide visual inspections and any air sampling for the project, per NYSDOL Code Rule 56 (NYCRR Part 56). If you have any questions pertaining to this report, please contact our office at (315) 476-1757. We thank you for the opportunity to work with you on this project.

## **ATTACHMENT A**

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### **ARCTIC'S COMPANY LICENSE AND PERSONNEL CERTIFICATIONS**

**New York State – Department of Labor**

Division of Safety and Health  
License and Certificate Unit  
State Campus, Building 12  
Albany, NY 12240

**ASBESTOS HANDLING LICENSE**

Arctic Enterprises, Inc.  
Ste100A  
222 Teall Ave  
  
Syracuse, NY 13210

FILE NUMBER: 14-75469  
LICENSE NUMBER: 75469  
LICENSE CLASS: FULL  
DATE OF ISSUE: 04/26/2022  
EXPIRATION DATE: 04/30/2023

Duly Authorized Representative – Janette Van Wie:

This license has been issued in accordance with applicable provisions of Article 30 of the Labor Law of New York State and of the New York State Codes, Rules and Regulations (12 NYCRR Part 56). It is subject to suspension or revocation for a (1) serious violation of state, federal or local laws with regard to the conduct of an asbestos project, or (2) demonstrated lack of responsibility in the conduct of any job involving asbestos or asbestos material.

This license is valid only for the contractor named above and this license or a photocopy must be prominently displayed at the asbestos project worksite. This license verifies that all persons employed by the licensee on an asbestos project in New York State have been issued an Asbestos Certificate, appropriate for the type of work they perform, by the New York State Department of Labor.

Amy Phillips, Director  
For the Commissioner of Labor



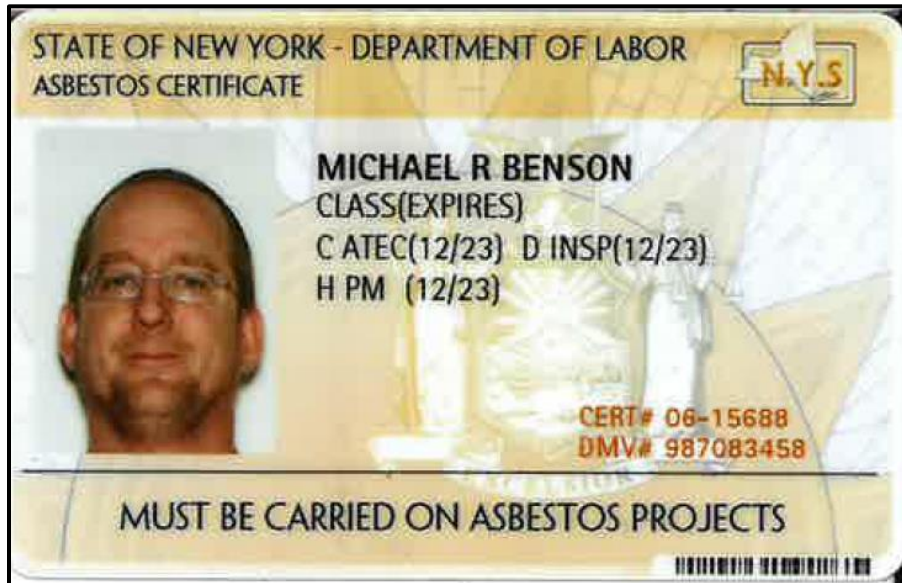
## ASBESTOS CERTIFICATION



The following letter codes (as shown on the handling certificate) represent the corresponding asbestos classifications.

<b>A - Asbestos Handler</b>	<b>D - Asbestos Inspector</b>	<b>G - Asbestos Supervisor</b>
<b>B - Allied Trades</b>	<b>E - Management Planner</b>	<b>H - Asbestos Project Monitor</b>
<b>C - Air Sampling Technician</b>	<b>F - Operations &amp; Maintenance</b>	<b>I - Asbestos Project Designer</b>

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A - Asbestos Handler	D - Asbestos Inspector	G - Asbestos Supervisor
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<b>C - Air Sampling Technician</b>	<b>F - Operations &amp; Maintenance</b>	<b>I - Asbestos Project Designer</b>

## **ATTACHMENT B**

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### **ASBESTOS BULK SAMPLE LABORATORY REPORTS**

Table I  
Summary of Bulk Asbestos Analysis Results

2022.288; Holt Architects; Pi Beta Phi House - 330 Triphammer Rd., Ithaca, NY

AmeriSci Sample #	Client Sample#	HG Area	Sample Weight (gram)	Heat Sensitive Organic %	Acid Soluble Inorganic %	Insoluble Non-Asbestos Inorganic %	** Asbestos % by PLM/DS	** Asbestos % by TEM
01.1	WPLAST-001A	001	----	----	----	----	NAD	NA
Location:	First Floor Closet 1 - Wall Plaster Skim & Base - Skim Coat							
01.2	WPLAST-001A	001	----	----	----	----	NAD	NA
Location:	First Floor Closet 1 - Wall Plaster Skim & Base - Base Coat							
02.1	WPLAST-001B	001	----	----	----	----	NAD	NA
Location:	Basement Main Stair Landing - Wall Plaster Skim & Base - Skim Coat							
02.2	WPLAST-001B	001	----	----	----	----	NAD	NA
Location:	Basement Main Stair Landing - Wall Plaster Skim & Base - Base Coat							
03.1	WPLAST-001C	001	----	----	----	----	NAD	NA
Location:	Basement Presidents Bedroom - Wall Plaster Skim & Base - Skim Coat							
03.2	WPLAST-001C	001	----	----	----	----	NAD	NA
Location:	Basement Presidents Bedroom - Wall Plaster Skim & Base - Base Coat							
04.1	WPLAST-001D	001	----	----	----	----	NAD	NA
Location:	2nd Floor Bathroom - Wall Plaster Skim & Base - Skim Coat							
04.2	WPLAST-001D	001	----	----	----	----	NAD	NA
Location:	2nd Floor Bathroom - Wall Plaster Skim & Base - Base Coat							
05.1	WPLAST-001E	001	----	----	----	----	NAD	NA
Location:	2nd Floor Hallway - Wall Plaster Skim & Base - Skim Coat							
05.2	WPLAST-001E	001	----	----	----	----	NAD	NA
Location:	2nd Floor Hallway - Wall Plaster Skim & Base - Base Coat							
06.1	WPLAST-001F	001	----	----	----	----	NAD	NA
Location:	3rd Floor Mop Sink - Wall Plaster Skim & Base - Skim Coat							
06.2	WPLAST-001F	001	----	----	----	----	NAD	NA
Location:	3rd Floor Mop Sink - Wall Plaster Skim & Base - Base Coat							
07.1	WPLAST-001G	001	----	----	----	----	NAD	NA
Location:	3rd Floor Closet #5 - Wall Plaster Skim & Base - Skim Coat							
07.2	WPLAST-001G	001	----	----	----	----	NAD	NA
Location:	3rd Floor Closet #5 - Wall Plaster Skim & Base - Base Coat							
08	CPLAST-002A	002	----	----	----	----	NAD	NA
Location:	1st Floor Closet 3 - Ceiling Plaster							
09	CPLAST-002B	002	----	----	----	----	NAD	NA
Location:	Basement Stairwell - Ceiling Plaster							





Table I  
Summary of Bulk Asbestos Analysis Results

2022.288; Holt Architects; Pj Beta Phi House - 330 Triphammer Rd., Ithaca, NY

AmeriSci Sample #	Client Sample#	HG Area	Sample Weight (gram)	Heat Sensitive Organic %	Acid Soluble Inorganic %	Insoluble Non-Asbestos Inorganic %	** Asbestos % by PLM/DS	** Asbestos % by TEM
10	CPLAST-002C	002	----	----	----	----	NAD	NA
Location: Basement Kitchen Storage - Ceiling Plaster								
11	CPLAST-002D	002	----	----	----	----	NAD	NA
Location: 1st Floor Main Stairs - Ceiling Plaster								
12	CPLAST-002E	002	----	----	----	----	NAD	NA
Location: 2nd Floor Main Stairs - Ceiling Plaster								
13	CPLAST-002F	002	----	----	----	----	NAD	NA
Location: 3rd Floor Mop Sink - Ceiling Plaster								
14	CPLAST-002G	002	----	----	----	----	NAD	NA
Location: 3rd Floor Closet #5 - Ceiling Plaster								
15	TXTC-003A	003	----	----	----	----	NAD	NA
Location: 1st Floor Closet #3 - Textured Ceiling								
16	TXTC-003B	003	----	----	----	----	NAD	NA
Location: Basement Stair Landing - Textured Ceiling								
17	TXTC-003C	003	----	----	----	----	NAD	NA
Location: Basement Hallway - Textured Ceiling								
18	TXTC-003D	003	----	----	----	----	NAD	NA
Location: 2nd Floor Stair Landing - Textured Ceiling								
19	TXTC-003E	003	----	----	----	----	NAD	NA
Location: 3rd Floor Mop Sink - Textured Ceiling								
20	SR-004A	004	----	----	----	----	NAD	NA
Location: Basement Exercise Room - Sheetrock								
21	SR-004B	004	----	----	----	----	NAD	NA
Location: 1st Floor TV Room - Sheetrock								
22	JC-005A	005	----	----	----	----	NAD	NA
Location: Basement Exercise Room - Joint Compound								
23	JC-005B	005	----	----	----	----	NAD	NA
Location: 1st Floor TV Room - Joint Compound								
24	JC-005C	005	----	----	----	----	NAD	NA
Location: 2nd Floor Bathroom - Joint Compound								
25	JC-005D	005	----	----	----	----	NAD	NA
Location: 1st Floor Bathroom - Joint Compound								



Table I  
Summary of Bulk Asbestos Analysis Results  
2022.288; Holt Architects; Pj Beta Phi House - 330 Triphammer Rd., Ithaca, NY

AmeriSci Sample #	Client Sample#	HG Area	Sample Weight (gram)	Heat Sensitive Organic %	Acid Soluble Inorganic %	Insoluble Non-Asbestos Inorganic %	** Asbestos % by PLM/DS	** Asbestos % by TEM
26	JC-005E	005	----	----	----	----	NAD	NA
Location: 1st Floor Dining Room Door - Joint Compound								
27	BINSO-006A	006	----	----	----	----	NAD	NA
Location: 3rd Floor Attic Area Off T. Storage Area - Blown Insulation								
28	BINSO-006B	006	----	----	----	----	NAD	NA
Location: 3rd Floor Attic Area Off T. Storage Area - Blown Insulation								
29	BINSO-006C	006	----	----	----	----	NAD	NA
Location: 3rd Floor Attic Area Off T. Storage Area - Blown Insulation								
30	CT-007A	007	0.137	27.1	29.9	43.0	NAD	NAD
Location: Basement Fitness Room - 2 X 2 Ceiling Tile								
31	CT-007B	007	0.136	27.0	32.1	40.9	NAD	NAD
Location: Basement Fitness Room - 2 X 2 Ceiling Tile								
32	QTG-008A	008	----	----	----	----	NAD	NA
Location: Kitchen Door Area To Stairwell - Quarry Tile Grout								
33	QTG-008B	008	----	----	----	----	NAD	NA
Location: Kitchen Door Area To Stairwell - Quarry Tile Grout								
34	QTTS-009A	009	----	----	----	----	NAD	NA
Location: Kitchen Door Area To Stairwell - Quarry Tile Thinset								
35	QTTS-009B	009	----	----	----	----	NAD	NA
Location: Kitchen Door Area To Stairwell - Quarry Tile Thinset								
36	STUCCO-010A	010	----	----	----	----	NAD	NA
Location: 3rd Floor Floor Stucco On Ext - Stucco Gray								
37	STUCCO-010B	010	----	----	----	----	NAD	NA
Location: 3rd Floor Floor Stucco On Ext - Stucco Gray								
38	STUCCO-010C	010	----	----	----	----	NAD	NA
Location: 3rd Floor Floor Stucco On Ext - Stucco Gray								
39	SHINGLE-011A	011	0.270	28.0	45.9	26.0	NAD	NAD
Location: Side Entry Roof - Shingle								
40	SHINGLE-011B	011	0.284	28.5	44.3	27.3	NAD	NAD
Location: Side Entry Roof - Shingle								
41	VB-012A	012	0.299	39.9	9.2	50.9	NAD	NAD
Location: Side Entry Roof - Vapor Barrier								





Table I  
Summary of Bulk Asbestos Analysis Results

2022.288; Holt Architects; Pi Beta Phi House - 330 Triphammer Rd., Ithaca, NY

AmeriSci Sample #	Client Sample#	HG Area	Sample Weight (gram)	Heat Sensitive Organic %	Acid Soluble Inorganic %	Insoluble Non-Asbestos Inorganic %	** Asbestos % by PLM/DS	** Asbestos % by TEM
42	VB-012B	012	0.266	68.2	15.3	16.4	NAD	NAD
Location: Side Entry Roof - Vapor Barrier								
43	STUCCO-013A	013	----	----	----	----	NAD	NA
Location: Exterior Porches N / E / S - Stucco Texture On Ceiling								
44	STUCCO-013B	013	----	----	----	----	NAD	NA
Location: Exterior Porches N / E / S - Stucco Texture On Ceiling								
45	STUCCO-013C	013	----	----	----	----	NAD	NA
Location: Exterior Porches N / E / S - Stucco Texture On Ceiling								
46	PARGE-014A	014	----	----	----	----	NAD	NA
Location: Exterior Walls - Parge On Base Of Foundation								
47	PARGE-014B	014	----	----	----	----	NAD	NA
Location: Exterior Walls - Parge On Base Of Foundation								
48	PARGE-014C	014	----	----	----	----	NAD	NA
Location: Exterior Walls - Parge On Base Of Foundation								
49	WCLK-015A	015	0.127	72.5	20.0	7.3	Chrysotile <0.25	Chrysotile <1.0
Location: North End Windows On Basement - Off White Caulk On Exterior								
50	WCLK-015B	015	0.124	73.3	21.1	5.4	Chrysotile <0.25	Chrysotile <1.0
Location: North End Windows On Basement - Off White Caulk On Exterior								
51	WCLK-016A	016	0.154	28.8	56.5	13.1	Chrysotile <0.25	Chrysotile 1.5
Location: 1st Floor Windows - White Window Caulk								
52	WCLK-016B	016	0.206	29.5	55.3	15.2	Chrysotile <0.25	Anthrophyllite Trace
Location: 1st Floor Windows - White Window Caulk								



Table I  
Summary of Bulk Asbestos Analysis Results

2022.288; Holt Architects; Pi Beta Phi House - 330 Triphammer Rd., Ithaca, NY

AmeriSci Sample #	Client Sample#	HG Area	Sample Weight (gram)	Heat Sensitive Organic %	Acid Soluble Inorganic %	Insoluble Non-Asbestos Inorganic %	** Asbestos % by PLM/DS	** Asbestos % by TEM
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Analyzed by: Feyza Gungor  
Date: 12/23/2022

*Feyza*

Reviewed by: Feyza Gungor

*Feyza*

\*\*Quantitative Analysis (Semi/Full); Bulk Asbestos Analysis - PLM by Appd E to Subpt E, 40 CFR 763 or NYSDOH ELAP 198.1 for New York friable samples or NYSDOH ELAP 198.6 for New York NOB samples; TEM (Semi/Full) by EPA 600/R-93/116 (or NYSDOH ELAP 198.4; for New York samples). Analysis using Hitachi, Model H600-Noran 7 System, Microscope, Serial #: 542-26-10. NAD = no asbestos detected during a quantitative analysis; NA = not analyzed; Trace = <1%; (SOF-V) = Sprayed On Fireproofing containing Vermiculite; (SM-V) = Surfacing Material containing Vermiculite; Quantitation for beginning weights of <0.1 grams should be considered as qualitative only; Qualitative Analysis: Asbestos analysis results of "Present" or "NVA = No Visible Asbestos" represents results for Qualitative PLM or TEM Analysis only (no accreditation coverage available from any regulatory agency for qualitative analyses): NVLAP (PLM) 200546-0, NYSDOH ELAP Lab 11480, NJ Lab ID #NY031.

Warning Note: PLM limitation, only TEM will resolve fibers <0.25 micrometers in diameter. TEM bulk analysis is representative of the fine grained matrix material and may not be representative of non-uniformly dispersed debris for which PLM evaluation is recommended (i.e. soils and other heterogeneous materials).



**AmeriSci New York**

117 EAST 30TH ST.  
NEW YORK, NY 10016  
TEL: (212) 679-8600 • FAX: (212) 679-3114

## PLM Bulk Asbestos Report

Arctic Enterprises, Inc.  
Attn: Janette Van Wie  
222 Teall Avenue  
Suite 201  
Syracuse, NY 13210

**Date Received** 12/21/22 **AmeriSci Job #** 222122715  
**Date Examined** 12/22/22 **P.O. #**  
**ELAP #** 11480 **Page** 1 of 11  
**RE:** 2022.288; Holt Architects; Pi Beta Phi House - 330 Triphammer Rd., Ithaca, NY

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
WPLAST-001A 001	222122715-01.1 <b>Location:</b> First Floor Closet 1 - Wall Plaster Skim & Base - Skim Coat	<b>No</b>	NAD (by NYS ELAP 198.1) by Bo Sun on 12/22/22
<b>Analyst Description:</b> White, Homogeneous, Non-Fibrous, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Non-fibrous 100%			
WPLAST-001A 001	222122715-01.2 <b>Location:</b> First Floor Closet 1 - Wall Plaster Skim & Base - Base Coat	<b>No</b>	NAD (by NYS ELAP 198.1) by Bo Sun on 12/22/22
<b>Analyst Description:</b> Gray, Homogeneous, Non-Fibrous, Cementitious, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Non-fibrous 100%			
WPLAST-001B 001	222122715-02.1 <b>Location:</b> Basement Main Stair Landing - Wall Plaster Skim & Base - Skim Coat	<b>No</b>	NAD (by NYS ELAP 198.1) by Bo Sun on 12/22/22
<b>Analyst Description:</b> White, Homogeneous, Non-Fibrous, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Non-fibrous 100%			
WPLAST-001B 001	222122715-02.2 <b>Location:</b> Basement Main Stair Landing - Wall Plaster Skim & Base - Base Coat	<b>No</b>	NAD (by NYS ELAP 198.1) by Bo Sun on 12/22/22
<b>Analyst Description:</b> Gray, Homogeneous, Non-Fibrous, Cementitious, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Non-fibrous 100%			
WPLAST-001C 001	222122715-03.1 <b>Location:</b> Basement Presidents Bedroom - Wall Plaster Skim & Base - Skim Coat	<b>No</b>	NAD (by NYS ELAP 198.1) by Bo Sun on 12/22/22
<b>Analyst Description:</b> White, Homogeneous, Non-Fibrous, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Non-fibrous 100%			



## PLM Bulk Asbestos Report

2022.288; Holt Architects; Pi Beta Phi House - 330 Tripphammer Rd., Ithaca, NY

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
WPLAST-001C 001	222122715-03.2 <b>Location:</b> Basement Presidents Bedroom - Wall Plaster Skim & Base - Base Coat	<b>No</b>	NAD (by NYS ELAP 198.1) by Bo Sun on 12/22/22
<b>Analyst Description:</b> Gray, Homogeneous, Non-Fibrous, Cementitious, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Non-fibrous 100%			
WPLAST-001D 001	222122715-04.1 <b>Location:</b> 2nd Floor Bathroom - Wall Plaster Skim & Base - Skim Coat	<b>No</b>	NAD (by NYS ELAP 198.1) by Bo Sun on 12/22/22
<b>Analyst Description:</b> Beige, Homogeneous, Non-Fibrous, Cementitious, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Non-fibrous 100%			
WPLAST-001D 001	222122715-04.2 <b>Location:</b> 2nd Floor Bathroom - Wall Plaster Skim & Base - Base Coat	<b>No</b>	NAD (by NYS ELAP 198.1) by Bo Sun on 12/22/22
<b>Analyst Description:</b> Gray, Homogeneous, Non-Fibrous, Cementitious, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Non-fibrous 100%			
WPLAST-001E 001	222122715-05.1 <b>Location:</b> 2nd Floor Hallway - Wall Plaster Skim & Base - Skim Coat	<b>No</b>	NAD (by NYS ELAP 198.1) by Bo Sun on 12/22/22
<b>Analyst Description:</b> Beige, Homogeneous, Non-Fibrous, Cementitious, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Non-fibrous 100%			
WPLAST-001E 001	222122715-05.2 <b>Location:</b> 2nd Floor Hallway - Wall Plaster Skim & Base - Base Coat	<b>No</b>	NAD (by NYS ELAP 198.1) by Bo Sun on 12/22/22
<b>Analyst Description:</b> Gray, Homogeneous, Non-Fibrous, Cementitious, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Non-fibrous 100%			
WPLAST-001F 001	222122715-06.1 <b>Location:</b> 3rd Floor Mop Sink - Wall Plaster Skim & Base - Skim Coat	<b>No</b>	NAD (by NYS ELAP 198.1) by Bo Sun on 12/22/22
<b>Analyst Description:</b> Green, Homogeneous, Non-Fibrous, Cementitious, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Non-fibrous 100%			

## PLM Bulk Asbestos Report

2022.288; Holt Architects; Pi Beta Phi House - 330 Tripphammer Rd., Ithaca, NY

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
WPLAST-001F 001	222122715-06.2 <b>Location:</b> 3rd Floor Mop Sink - Wall Plaster Skim & Base - Base Coat	<b>No</b>	NAD (by NYS ELAP 198.1) by Bo Sun on 12/22/22
<b>Analyst Description:</b> Gray, Homogeneous, Non-Fibrous, Cementitious, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Non-fibrous 100%			
WPLAST-001G 001	222122715-07.1 <b>Location:</b> 3rd Floor Closet #5 - Wall Plaster Skim & Base - Skim Coat	<b>No</b>	NAD (by NYS ELAP 198.1) by Bo Sun on 12/22/22
<b>Analyst Description:</b> Green, Homogeneous, Non-Fibrous, Cementitious, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Non-fibrous 100%			
WPLAST-001G 001	222122715-07.2 <b>Location:</b> 3rd Floor Closet #5 - Wall Plaster Skim & Base - Base Coat	<b>No</b>	NAD (by NYS ELAP 198.1) by Bo Sun on 12/22/22
<b>Analyst Description:</b> Gray, Homogeneous, Non-Fibrous, Cementitious, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Non-fibrous 100%			
CPLAST-002A 002	222122715-08 <b>Location:</b> 1st Floor Closet 3 - Ceiling Plaster	<b>No</b>	NAD (by NYS ELAP 198.1) by Bo Sun on 12/22/22
<b>Analyst Description:</b> White, Homogeneous, Non-Fibrous, Cementitious, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Non-fibrous 100%			
CPLAST-002B 002	222122715-09 <b>Location:</b> Basement Stairwell - Ceiling Plaster	<b>No</b>	NAD (by NYS ELAP 198.1) by Bo Sun on 12/22/22
<b>Analyst Description:</b> White, Homogeneous, Non-Fibrous, Cementitious, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Non-fibrous 100%			
CPLAST-002C 002	222122715-10 <b>Location:</b> Basement Kitchen Storage - Ceiling Plaster	<b>No</b>	NAD (by NYS ELAP 198.1) by Bo Sun on 12/22/22
<b>Analyst Description:</b> White, Homogeneous, Non-Fibrous, Cementitious, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Non-fibrous 100%			

## PLM Bulk Asbestos Report

2022.288; Holt Architects; Pi Beta Phi House - 330 Triphammer Rd., Ithaca, NY

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
CPLAST-002D 002	222122715-11 <b>Location:</b> 1st Floor Main Stairs - Ceiling Plaster	<b>No</b>	NAD (by NYS ELAP 198.1) by Bo Sun on 12/22/22
<b>Analyst Description:</b> Gray, Homogeneous, Non-Fibrous, Cementitious, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Non-fibrous 100%			
CPLAST-002E 002	222122715-12 <b>Location:</b> 2nd Floor Main Stairs - Ceiling Plaster	<b>No</b>	NAD (by NYS ELAP 198.1) by Bo Sun on 12/22/22
<b>Analyst Description:</b> Gray, Homogeneous, Non-Fibrous, Cementitious, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Non-fibrous 100%			
CPLAST-002F 002	222122715-13 <b>Location:</b> 3rd Floor Mop Sink - Ceiling Plaster	<b>No</b>	NAD (by NYS ELAP 198.1) by Bo Sun on 12/22/22
<b>Analyst Description:</b> Gray, Homogeneous, Non-Fibrous, Cementitious, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Non-fibrous 100%			
CPLAST-002G 002	222122715-14 <b>Location:</b> 3rd Floor Closet #5 - Ceiling Plaster	<b>No</b>	NAD (by NYS ELAP 198.1) by Bo Sun on 12/22/22
<b>Analyst Description:</b> Green, Homogeneous, Non-Fibrous, Cementitious, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Non-fibrous 100%			
TXTC-003A 003	222122715-15 <b>Location:</b> 1st Floor Closet #3 - Textured Ceiling	<b>No</b>	NAD (by NYS ELAP 198.1) by Bo Sun on 12/22/22
<b>Analyst Description:</b> White, Homogeneous, Non-Fibrous, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Non-fibrous 100%			
TXTC-003B 003	222122715-16 <b>Location:</b> Basement Stair Landing - Textured Ceiling	<b>No</b>	NAD (by NYS ELAP 198.1) by Bo Sun on 12/22/22
<b>Analyst Description:</b> White, Homogeneous, Non-Fibrous, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Non-fibrous 100%			

## PLM Bulk Asbestos Report

2022.288; Holt Architects; Pi Beta Phi House - 330 Triphammer Rd., Ithaca, NY

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
TXTC-003C 003	222122715-17 <b>Location:</b> Basement Hallway - Textured Ceiling	<b>No</b>	NAD (by NYS ELAP 198.1) by Bo Sun on 12/22/22
<b>Analyst Description:</b> White, Homogeneous, Non-Fibrous, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Non-fibrous 100%			
TXTC-003D 003	222122715-18 <b>Location:</b> 2nd Floor Stair Landing - Textured Ceiling	<b>No</b>	NAD (by NYS ELAP 198.1) by Bo Sun on 12/22/22
<b>Analyst Description:</b> White, Homogeneous, Non-Fibrous, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Non-fibrous 100%			
TXTC-003E 003	222122715-19 <b>Location:</b> 3rd Floor Mop Sink - Textured Ceiling	<b>No</b>	NAD (by NYS ELAP 198.1) by Bo Sun on 12/22/22
<b>Analyst Description:</b> White, Homogeneous, Non-Fibrous, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Non-fibrous 100%			
SR-004A 004	222122715-20 <b>Location:</b> Basement Exercise Room - Sheetrock	<b>No</b>	NAD (by NYS ELAP 198.1) by Bo Sun on 12/22/22
<b>Analyst Description:</b> Gray, Homogeneous, Non-Fibrous, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Cellulose 5%, Non-fibrous 95%			
SR-004B 004	222122715-21 <b>Location:</b> 1st Floor TV Room - Sheetrock	<b>No</b>	NAD (by NYS ELAP 198.1) by Bo Sun on 12/22/22
<b>Analyst Description:</b> Gray, Homogeneous, Fibrous, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Cellulose 5%, Non-fibrous 95%			
JC-005A 005	222122715-22 <b>Location:</b> Basement Exercise Room - Joint Compound	<b>No</b>	NAD (by NYS ELAP 198.1) by Bo Sun on 12/22/22
<b>Analyst Description:</b> White, Homogeneous, Non-Fibrous, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Non-fibrous 100%			

## PLM Bulk Asbestos Report

2022.288; Holt Architects; Pi Beta Phi House - 330 Triphammer Rd., Ithaca, NY

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
JC-005B 005	222122715-23 <b>Location:</b> 1st Floor TV Room - Joint Compound	<b>No</b>	NAD (by NYS ELAP 198.1) by Bo Sun on 12/22/22
<b>Analyst Description:</b> White, Homogeneous, Non-Fibrous, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Non-fibrous 100%			
JC-005C 005	222122715-24 <b>Location:</b> 2nd Floor Bathroom - Joint Compound	<b>No</b>	NAD (by NYS ELAP 198.1) by Bo Sun on 12/22/22
<b>Analyst Description:</b> White, Homogeneous, Non-Fibrous, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Non-fibrous 100%			
JC-005D 005	222122715-25 <b>Location:</b> 1st Floor Bathroom - Joint Compound	<b>No</b>	NAD (by NYS ELAP 198.1) by Bo Sun on 12/22/22
<b>Analyst Description:</b> White, Homogeneous, Non-Fibrous, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Non-fibrous 100%			
JC-005E 005	222122715-26 <b>Location:</b> 1st Floor Dining Room Door - Joint Compound	<b>No</b>	NAD (by NYS ELAP 198.1) by Bo Sun on 12/22/22
<b>Analyst Description:</b> White, Homogeneous, Non-Fibrous, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Non-fibrous 100%			
BINSO-006A 006	222122715-27 <b>Location:</b> 3rd Floor Attic Area Off T. Storage Area - Blown Insulation	<b>No</b>	NAD (by NYS ELAP 198.1) by Bo Sun on 12/22/22
<b>Analyst Description:</b> Brown, Homogeneous, Fibrous, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Cellulose 90%, Non-fibrous 10%			
BINSO-006B 006	222122715-28 <b>Location:</b> 3rd Floor Attic Area Off T. Storage Area - Blown Insulation	<b>No</b>	NAD (by NYS ELAP 198.1) by Bo Sun on 12/22/22
<b>Analyst Description:</b> Brown, Homogeneous, Fibrous, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Cellulose 90%, Non-fibrous 10%			



## PLM Bulk Asbestos Report

2022.288; Holt Architects; Pi Beta Phi House - 330 Tripphammer Rd., Ithaca, NY

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
BINSO-006C 006	222122715-29 <b>Location:</b> 3rd Floor Attic Area Off T. Storage Area - Blown Insulation	<b>No</b>	NAD (by NYS ELAP 198.1) by Bo Sun on 12/22/22
<b>Analyst Description:</b> Brown, Homogeneous, Fibrous, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Cellulose 90%, Non-fibrous 10%			
CT-007A 007	222122715-30 <b>Location:</b> Basement Fitness Room - 2 X 2 Ceiling Tile	<b>No</b>	NAD (by NYS ELAP 198.6) by Bo Sun on 12/22/22
<b>Analyst Description:</b> Brown, Homogeneous, Fibrous, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Non-fibrous 43%			
CT-007B 007	222122715-31 <b>Location:</b> Basement Fitness Room - 2 X 2 Ceiling Tile	<b>No</b>	NAD (by NYS ELAP 198.6) by Bo Sun on 12/22/22
<b>Analyst Description:</b> Brown, Homogeneous, Fibrous, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Non-fibrous 40.9%			
QTG-008A 008	222122715-32 <b>Location:</b> Kitchen Door Area To Stairwell - Quarry Tile Grout	<b>No</b>	NAD (by NYS ELAP 198.1) by Bo Sun on 12/22/22
<b>Analyst Description:</b> Gray, Homogeneous, Non-Fibrous, Cementitious, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Non-fibrous 100%			
QTG-008B 008	222122715-33 <b>Location:</b> Kitchen Door Area To Stairwell - Quarry Tile Grout	<b>No</b>	NAD (by NYS ELAP 198.1) by Bo Sun on 12/22/22
<b>Analyst Description:</b> Gray, Homogeneous, Non-Fibrous, Cementitious, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Non-fibrous 100%			
QTTS-009A 009	222122715-34 <b>Location:</b> Kitchen Door Area To Stairwell - Quarry Tile Thinset	<b>No</b>	NAD (by NYS ELAP 198.1) by Bo Sun on 12/22/22
<b>Analyst Description:</b> Gray, Homogeneous, Non-Fibrous, Cementitious, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Non-fibrous 100%			

## PLM Bulk Asbestos Report

2022.288; Holt Architects; Pi Beta Phi House - 330 Triphammer Rd., Ithaca, NY

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
QTTS-009B 009	222122715-35 <b>Location:</b> Kitchen Door Area To Stairwell - Quarry Tile Thinset	<b>No</b>	NAD (by NYS ELAP 198.1) by Bo Sun on 12/22/22
<b>Analyst Description:</b> Gray, Homogeneous, Non-Fibrous, Cementitious, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Non-fibrous 100%			
STUCCO-010A 010	222122715-36 <b>Location:</b> 3rd Floor Floor Stucco On Ext - Stucco Gray	<b>No</b>	NAD (by NYS ELAP 198.1) by Bo Sun on 12/22/22
<b>Analyst Description:</b> Gray, Homogeneous, Non-Fibrous, Cementitious, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Non-fibrous 100%			
STUCCO-010B 010	222122715-37 <b>Location:</b> 3rd Floor Floor Stucco On Ext - Stucco Gray	<b>No</b>	NAD (by NYS ELAP 198.1) by Bo Sun on 12/22/22
<b>Analyst Description:</b> Gray, Homogeneous, Non-Fibrous, Cementitious, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Non-fibrous 100%			
STUCCO-010C 010	222122715-38 <b>Location:</b> 3rd Floor Floor Stucco On Ext - Stucco Gray	<b>No</b>	NAD (by NYS ELAP 198.1) by Bo Sun on 12/22/22
<b>Analyst Description:</b> Gray, Homogeneous, Non-Fibrous, Cementitious, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Non-fibrous 100%			
SHINGLE-011A 011	222122715-39 <b>Location:</b> Side Entry Roof - Shingle	<b>No</b>	NAD (by NYS ELAP 198.6) by Bo Sun on 12/22/22
<b>Analyst Description:</b> Black, Homogeneous, Non-Fibrous, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Non-fibrous 26%			
SHINGLE-011B 011	222122715-40 <b>Location:</b> Side Entry Roof - Shingle	<b>No</b>	NAD (by NYS ELAP 198.6) by Bo Sun on 12/22/22
<b>Analyst Description:</b> Black, Homogeneous, Non-Fibrous, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Non-fibrous 27.3%			

## PLM Bulk Asbestos Report

2022.288; Holt Architects; Pi Beta Phi House - 330 Tripphammer Rd., Ithaca, NY

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
VB-012A 012	222122715-41 <b>Location:</b> Side Entry Roof - Vapor Barrier	<b>No</b>	NAD (by NYS ELAP 198.6) by Bo Sun on 12/22/22
<b>Analyst Description:</b> Black, Homogeneous, Non-Fibrous, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Non-fibrous 50.9%			
VB-012B 012	222122715-42 <b>Location:</b> Side Entry Roof - Vapor Barrier	<b>No</b>	NAD (by NYS ELAP 198.6) by Bo Sun on 12/22/22
<b>Analyst Description:</b> Black, Homogeneous, Non-Fibrous, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Non-fibrous 16.4%			
STUCCO-013A 013	222122715-43 <b>Location:</b> Exterior Porches N / E / S - Stucco Texture On Ceiling	<b>No</b>	NAD (by NYS ELAP 198.1) by Bo Sun on 12/22/22
<b>Analyst Description:</b> Gray, Homogeneous, Non-Fibrous, Cementitious, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Non-fibrous 100%			
STUCCO-013B 013	222122715-44 <b>Location:</b> Exterior Porches N / E / S - Stucco Texture On Ceiling	<b>No</b>	NAD (by NYS ELAP 198.1) by Bo Sun on 12/22/22
<b>Analyst Description:</b> Gray, Homogeneous, Non-Fibrous, Cementitious, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Non-fibrous 100%			
STUCCO-013C 013	222122715-45 <b>Location:</b> Exterior Porches N / E / S - Stucco Texture On Ceiling	<b>No</b>	NAD (by NYS ELAP 198.1) by Bo Sun on 12/22/22
<b>Analyst Description:</b> Gray, Homogeneous, Non-Fibrous, Cementitious, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Non-fibrous 100%			
PARGE-014A 014	222122715-46 <b>Location:</b> Exterior Walls - Parge On Base Of Foundation	<b>No</b>	NAD (by NYS ELAP 198.1) by Bo Sun on 12/22/22
<b>Analyst Description:</b> Gray, Homogeneous, Non-Fibrous, Cementitious, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Non-fibrous 100%			

## PLM Bulk Asbestos Report

2022.288; Holt Architects; Pi Beta Phi House - 330 Triphammer Rd., Ithaca, NY

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
PARGE-014B 014	222122715-47 <b>Location:</b> Exterior Walls - Parge On Base Of Foundation	<b>No</b>	NAD (by NYS ELAP 198.1) by Bo Sun on 12/22/22
<b>Analyst Description:</b> Gray, Homogeneous, Non-Fibrous, Cementitious, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Non-fibrous 100%			
PARGE-014C 014	222122715-48 <b>Location:</b> Exterior Walls - Parge On Base Of Foundation	<b>No</b>	NAD (by NYS ELAP 198.1) by Bo Sun on 12/22/22
<b>Analyst Description:</b> Gray, Homogeneous, Non-Fibrous, Cementitious, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Non-fibrous 100%			
WCLK-015A 015	222122715-49 <b>Location:</b> North End Windows On Basement - Off White Caulk On Exterior	<b>Yes</b>	Trace (<0.25 % pc) <sup>1</sup> (ELAP 400 PC) by Bo Sun on 12/22/22
<b>Analyst Description:</b> Off-White, Homogeneous, Non-Fibrous, Bulk Material <b>Asbestos Types:</b> Chrysotile <0.25 % pc <b>Other Material:</b> Non-fibrous 7.5%			
WCLK-015B 015	222122715-50 <b>Location:</b> North End Windows On Basement - Off White Caulk On Exterior	<b>Yes</b>	Trace (<0.25 % pc) <sup>1</sup> (ELAP 400 PC) by Bo Sun on 12/22/22
<b>Analyst Description:</b> Off-White, Homogeneous, Non-Fibrous, Bulk Material <b>Asbestos Types:</b> Chrysotile <0.25 % pc <b>Other Material:</b> Non-fibrous 5.6%			
WCLK-016A 016	222122715-51 <b>Location:</b> 1st Floor Windows - White Window Caulk	<b>Yes</b>	Trace (<0.25 % pc) <sup>1</sup> (ELAP 400 PC) by Bo Sun on 12/22/22
<b>Analyst Description:</b> White, Homogeneous, Non-Fibrous, Bulk Material <b>Asbestos Types:</b> Chrysotile <0.25 % pc <b>Other Material:</b> Non-fibrous 14.7%			
WCLK-016B 016	222122715-52 <b>Location:</b> 1st Floor Windows - White Window Caulk	<b>Yes</b>	Trace (<0.25 % pc) <sup>1</sup> (ELAP 400 PC) by Bo Sun on 12/22/22
<b>Analyst Description:</b> White, Homogeneous, Non-Fibrous, Bulk Material <b>Asbestos Types:</b> Chrysotile <0.25 % pc <b>Other Material:</b> Non-fibrous 15.2%			

Client Name: Arctic Enterprises, Inc.

## PLM Bulk Asbestos Report

2022.288; Holt Architects; Pi Beta Phi House - 330 Triphammer  
Rd., Ithaca, NY

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### Reporting Notes:

- (1) Sample prepared for analysis by ELAP 198.6 method

Analyzed by: Bo Sun  
Date: 12/22/2022



Reviewed by: Feyza Gungor



\*NAD/NSD =no asbestos detected; NA =not analyzed; NA/PS=not analyzed/positive stop, (SOF-V) = Sprayed On Fireproofing containing Vermiculite; (SM-V) = Surfacing Material containing Vermiculite; PLM Bulk Asbestos Analysis using Olympus, Model BH-2 Pol Scope, Microscope, Serial #: 229003, by Appd E to Subpt E, 40 CFR 763 quantified by either CVES or 400 pt ct as noted for each analysis (NVLAP 200546-0), ELAP PLM Method 198.1 for NY friable samples, which includes the identification and quantitation of vermiculite, or ELAP 198.6 for NOB samples, or EPA 400 pt ct by EPA 600-M4-82-020 (NY ELAP Lab 11480); Note:PLM is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. NAD or Trace results by PLM are inconclusive, TEM is currently the only method that can be used to determine if this material can be considered or treated as non asbestos-containing in NY State (also see EPA Advisory for floor tile, FR 59,146,38970,8/1/94) National Institute of Standards and Technology Accreditation requirements mandate that this report must not be reproduced except in full without the approval of the lab.This PLM report relates ONLY to the items tested. RI Cert AAL-094, CT Cert PH-0186, Mass Cert AA000054, NJ Lab ID #NY031.

\_\_\_\_\_END OF REPORT\_\_\_\_\_



## ASBESTOS BULK SAMPLE CHAIN OF CUSTODY

# # 222122715

Project Number 2022.288  
 Client Holt Architects  
 Address Pi Beta Phi House  
 330 Triphammer Rd., Ithaca, N.Y.

Contact Name: Bridget Ruane  
 Office Number: 315-476-1757  
 Fax Number: 315-476-1764  
 Email: [arcticlab@arcticent.com](mailto:arcticlab@arcticent.com)

SAMPLE ID	LOCATION	DESCRIPTION
WPLAST-001 A,B,C	1st floor / D Basement / C Basement closet 1 / Main stair / Presidents Den Room	Wall Plaster skin + Base
WPLAST-001 D,E	D Wall Plaster / 2nd floor 2nd floor Bath Room / Hallway	Wall plaster skin + Base
WPLAST-001 F,G	F 3rd floor / G 3rd floor Mop Sink / closet # 5	Wall Plaster skin + Base
CPLAST-002 A,B	A 1st floor / B Basement closet 3 / stairwell	ceiling Plaster
CPLAST-002 C,D	C Basement / D 1st floor Kitchen storage / main stairs	ceiling Plaster
CPLAST-002 E,F,G	E 2nd floor / F 3rd floor / G 3rd floor Main stairs / Mop Sink / closet # 5	ceiling Plaster
TXTC-003 A,B	A 1st floor / B Basement closet 3 / stair landing	Textured ceiling
TXTC-003 C,D,E	C Basement / D 2nd floor / E 3rd floor Hallway / stair landing / Mop Sink	Textured ceiling
SR-004 A,B	A Basement / B 1st floor Exercise room / TV room	Sheet Rock
SC-005 A,B	↓	Joint compound
SC-005 C,D	C 2nd floor / D 1st floor Bath Room / Bath Room	Joint compound
SC-005 E	1st floor Dining Room Door	Joint compound
DISO-006 A,B,C	3rd floor / Attic area off tacky storage Area	Blown Insulation
CT-007 A,B	Basement Fitness Room	2x2 ceiling tile
QTG-008 A,B	Kitchen Door area to stairwell	Quarry tile grout
QTS-009 A,B	↓	Quarry tile thin set

### Analyzing Sequence:

- 1 - Separate layers/mastics for individual analysis, if applicable.
- 2 - Determine method of analysis for PLM (198.1 or 198.6).
- 3 - If the PLM NOB result is equal to or greater than 1% asbestos, testing of material is complete. If the PLM NOB result is less than 1% asbestos, please analyze utilizing TEM.
- 4 - If submitted in series (A, B, C), please stop at first positive
- 5 - Report Results via e-mail

Sample Turnaround Time: 5 day

Sampled By: M. Rodriguez/Mike Benson	Date: 12/20/22	Samples: <u>35</u> / <u>52</u>
Shipped By: <u>Arctic</u>	Date:	
Received By Lab: <u>[Signature]</u>	Date: <u>12/21/22</u>	<u>14:20</u>



## ASBESTOS BULK SAMPLE CHAIN OF CUSTODY

# 222122715

Project Number 2022.288  
Client Holt Architects  
Address Pi Beta Phi House  
330 Triphammer Rd., Ithaca, N.Y.  
\_\_\_\_\_  
\_\_\_\_\_

Contact Name: Bridget Ruane  
Office Number: 315-476-1757  
Fax Number: 315-476-1764  
Email: [arcticlab@arcticent.com](mailto:arcticlab@arcticent.com)

SAMPLE ID	LOCATION	DESCRIPTION
Stucco-010A,B,C	3rd floor Stucco on Ext	<del>Stucco</del> Stucco gray
Shingle-011A,B	Side Entry Roof	Shingle
VB-012A,B	↓	Vapor Barrier
Stucco-013A,B,C	Exterior Porches N/E/S	Stucco texture on ceiling
Parge-014A,B,C	Exterior walls	Parge on Base of foundation
WCLK-015A,B	North End Windows on Basement	off white caulk on Exterior
WCLK-016A,B	1st floor windows	white window caulk

## Analyzing Sequence:

- 1 - Separate layers/mastics for individual analysis, if applicable.
- 2 - Determine method of analysis for PLM (198.1 or 198.6).
- 3 - If the PLM NOB result is equal to or greater than 1% asbestos, testing of material is complete. If the PLM NOB result is less than 1% asbestos, please analyze utilizing TEM.
- 4 - If submitted in series (A, B, C), please stop at first positive
- 5 - Report Results via e-mail

Sample Turnaround Time: 5 day

Sampled By: M. Rodriguez/Mike Benson	Date: 12/20/22	Samples: 171 52
Shipped By: FEDEX	Date:	
Received By Lab: [Signature]	Date: 12/21/22 14:20	



Table I  
Summary of Bulk Asbestos Analysis Results

2022.288; HOLT ARCH; 330 Triphammer Rd., Ithaca, NY - Pi Beta Phi

AmeriSci Sample #	Client Sample#	HG Area	Sample Weight (gram)	Heat Sensitive Organic %	Acid Soluble Inorganic %	Insoluble Non-Asbestos Inorganic %	** Asbestos % by PLM/DS	** Asbestos % by TEM
01	FTM-017A	017	0.163	77.8	13.0	8.9	NAD	Chrysotile <1.0
Location: 2nd Floor - Closet 2 - Black Floor Tile Mastic								
02	FTM-017B	017	0.080	62.4	23.6	12.6	NAD	Chrysotile 1.4
Location: 3rd Floor - Mop Closet - Black Floor Tile Mastic								

Analyzed by: Karol H. Lu  
Date: 1/5/2023



Reviewed by: Karol H. Lu



\*\*Quantitative Analysis (Semi/Full); Bulk Asbestos Analysis - PLM by Appd E to Subpt E, 40 CFR 763 or NYSDOH ELAP 198.1 for New York friable samples or NYSDOH ELAP 198.6 for New York NOB samples; TEM (Semi/Full) by EPA 600/R-93/116 (or NYSDOH ELAP 198.4; for New York samples). Analysis using Hitachi, Model H600-Noran 7 System, Microscope, Serial #: 600-27-6. NAD = no asbestos detected during a quantitative analysis; NA = not analyzed; Trace = <1%; (SOF-V) = Sprayed On Fireproofing containing Vermiculite; (SM-V) = Surfacing Material containing Vermiculite; Quantitation for beginning weights of <0.1 grams should be considered as qualitative only; Qualitative Analysis: Asbestos analysis results of "Present" or "NVA = No Visible Asbestos" represents results for Qualitative PLM or TEM Analysis only (no accreditation coverage available from any regulatory agency for qualitative analyses): NVLAP (PLM) 200546-0, NYSDOH ELAP Lab 11480, NJ Lab ID #NY031.

Warning Note: PLM limitation, only TEM will resolve fibers <0.25 micrometers in diameter. TEM bulk analysis is representative of the fine grained matrix material and may not be representative of non-uniformly dispersed debris for which PLM evaluation is recommended (i.e. soils and other heterogeneous materials).





**AmeriSci New York**

117 EAST 30TH ST.  
NEW YORK, NY 10016  
TEL: (212) 679-8600 • FAX: (212) 679-3114

## PLM Bulk Asbestos Report

Arctic Enterprises, Inc.  
Attn: Janette Van Wie  
222 Teall Avenue  
Suite 201  
Syracuse, NY 13210

**Date Received** 01/03/23 **AmeriSci Job #** 223011014  
**Date Examined** 01/03/23 **P.O. #**  
**ELAP #** 11480 **Page** 1 of 1  
**RE:** 2022.288; HOLT ARCH; 330 Triphammer Rd., Ithaca, NY - Pi  
Beta Phi

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
FTM-017A 017	223011014-01 <b>Location:</b> 2nd Floor - Closet 2 - Black Floor Tile Mastic	<b>No</b>	NAD (by NYS ELAP 198.6) by Jared C. Clarke on 01/03/23
<b>Analyst Description:</b> Black, Homogeneous, Non-Fibrous, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Non-fibrous 9.1%			
FTM-017B 017	223011014-02 <b>Location:</b> 3rd Floor - Mop Closet - Black Floor Tile Mastic	<b>No</b>	NAD (by NYS ELAP 198.6) by Jared C. Clarke on 01/03/23
<b>Analyst Description:</b> Black, Homogeneous, Non-Fibrous, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Non-fibrous 14%			

**Reporting Notes:**

Analyzed by: Jared C. Clarke  
Date: 1/3/2023

Reviewed by: Karol H. Lu

\*NAD/NSD =no asbestos detected; NA =not analyzed; NA/PS=not analyzed/positive stop, (SOF-V) = Sprayed On Fireproofing containing Vermiculite; (SM-V) = Surfacing Material containing Vermiculite; PLM Bulk Asbestos Analysis using Motic, Model BA310 Pol Scope, Microscope, Serial #: 1190000326, by Appd E to Subpt E, 40 CFR 763 quantified by either CVES or 400 pt ct as noted for each analysis (NVLAP 200546-0), ELAP PLM Method 198.1 for NY friable samples, which includes the identification and quantitation of vermiculite, or ELAP 198.6 for NOB samples, or EPA 400 pt ct by EPA 600-M4-82-020 (NY ELAP Lab 11480); Note:PLM is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. NAD or Trace results by PLM are inconclusive, TEM is currently the only method that can be used to determine if this material can be considered or treated as non asbestos-containing in NY State (also see EPA Advisory for floor tile, FR 59,146,38970,8/1/94) National Institute of Standards and Technology Accreditation requirements mandate that this report must not be reproduced except in full without the approval of the lab.This PLM report relates ONLY to the items tested. RI Cert AAL-094, CT Cert PH-0186, Mass Cert AA000054, NJ Lab ID #NY031.

\_\_\_\_\_END OF REPORT\_\_\_\_\_

Sampled By: <u>Matthew Rodriguez</u>	Date: <u>12/29/22</u>	Samples: <u>2</u> / <u>2</u>
Shipped By: <u>FedEx</u>	Date:	
Received By Lab: <u>Shenolyn Hernandez</u>	Date: <u>1/3/23 + 8:40</u>	
Results e-mailed By:	Date:	

## **ATTACHMENT C**

---

### **LEAD BULK SAMPLING LABORATORY REPORT**





## Analysis Report

# Schneider Laboratories Global, Inc

2512 W. Cary Street • Richmond, Virginia • 23220-5117  
804-353-6778 • 800-785-LABS (5227) • Fax 804-359-1475

**Customer:** Arctic Enterprises, Inc. (4677)  
**Address:** 222 Teall Ave. Ste. 100A  
Syracuse, NY 13210

**Order #:** 500197

**Matrix** Paint  
**Received** 12/22/22  
**Analyzed** 12/29/22  
**Reported** 12/29/22

**Attn:**

**Project:** Pi Beta Phi House  
**Location:** 330 Triphammer Rd  
**Number:** 2022.288

**PO Number:**

Sample ID	Cust. Sample ID	Location	Sample Date	Weight			
Parameter		Method		Total µg	% / Wt.	Conc.	RL*
500197-001	Paint -001	2nd FL Closet 3 White	12/20/22	301 mg			
Lead		EPA 7000B		<10.0 µg	<0.00333 %	<33.3 mg/kg	33.2 mg/kg
500197-002	Paint -002	2nd FL Closet 3 Cream	12/20/22	85.0 mg			
Lead		EPA 7000B		<10.0 µg	<0.0118 %	<118 mg/kg	118 mg/kg
<i>Sample weight below methods guidelines; results are accurate for weight provided.</i>							
500197-003	Paint -003	Ext Of TV Rm Window White	12/20/22	317 mg			
Lead		EPA 7000B		19.0 µg	0.00600 %	60.0 mg/kg	31.5 mg/kg

**Analyst: SA**  
**500197-12/29/22 02:52 PM**

Reviewed By: **Maggie Yokley**  
Analyst

### Federal Lead Paint Statute

Location	Level	Unit
Lead in paint by wt.	0.50	%
Lead in paint PPM	5000	mg/kg

Minimum reporting limit: 10.0 µg. All internal QC parameters were met. Unusual sample conditions, if any, are described. Do not reproduce this report except in full. Values are reported to three significant figures. PPM = mg/kg | PPB = µg/kg. The test results apply to the sample as received. AIHA LAP, LLC accredited for Lead (Lab ID 100527).



<b>Sampled By:</b> <i>Matthew Rodriguez</i>	<b>Date:</b> <i>12/20/22</i>	<b>No. of Samples</b> <i>3</i>
<b>Shipped By:</b> <i>UPS</i>	<b>Date:</b>	
<b>Received By Lab:</b>	<b>Date:</b>	
<b>Results e-mailed By:</b>	<b>Date:</b>	

**ATTACHMENT D**

---

**PCB LABORATORY REPORT**





## Analysis Report

# Schneider Laboratories Global, Inc

2512 W. Cary Street • Richmond, Virginia • 23220-5117  
804-353-6778 • 800-785-LABS (5227) • Fax 804-359-1475

**Customer:** Arctic Enterprises, Inc. (4677)  
**Address:** 222 Teall Ave. Ste. 100A  
Syracuse, NY 13210

**Order #:** 500196

**Matrix** Bulk  
**Received** 12/22/22  
**Reported** 12/23/22

**Attn:**

**Project:** Pi Beta Phi House  
**Location:** 330 Triphammer Rd, Ithaca NY  
**Number:** 2022.288

**PO Number:**

Sample ID	Cust. Sample ID	Location	Result	RL*	Units	Analysis Date	Analyst
Parameter		Method					
500196-001	WCLK-015P	North Basement Windows					
<b>Semi-volatile Organic Compounds</b>							
Aroclor - 1016		SW846 8082A	<594	594	µg/kg	12/22/22	AE
Aroclor - 1221		SW846 8082A	<594	594	µg/kg	12/22/22	AE
Aroclor - 1232		SW846 8082A	<594	594	µg/kg	12/22/22	AE
Aroclor - 1242		SW846 8082A	<594	594	µg/kg	12/22/22	AE
Aroclor - 1248		SW846 8082A	<594	594	µg/kg	12/22/22	AE
Aroclor - 1254		SW846 8082A	<594	594	µg/kg	12/22/22	AE
Aroclor - 1260		SW846 8082A	<594	594	µg/kg	12/22/22	AE
Aroclor - 1262		SW846 8082A	<594	594	µg/kg	12/22/22	AE
Aroclor - 1268		SW846 8082A	<594	594	µg/kg	12/22/22	AE
500196-002	WCLK-016P	1st Floor Windows					
<b>Semi-volatile Organic Compounds</b>							
Aroclor - 1016		SW846 8082A	<720	720	µg/kg	12/22/22	AE
Aroclor - 1221		SW846 8082A	<720	720	µg/kg	12/22/22	AE
Aroclor - 1232		SW846 8082A	<720	720	µg/kg	12/22/22	AE
Aroclor - 1242		SW846 8082A	<720	720	µg/kg	12/22/22	AE
Aroclor - 1248		SW846 8082A	<720	720	µg/kg	12/22/22	AE
Aroclor - 1254		SW846 8082A	<720	720	µg/kg	12/22/22	AE
Aroclor - 1260		SW846 8082A	<720	720	µg/kg	12/22/22	AE
Aroclor - 1262		SW846 8082A	<720	720	µg/kg	12/22/22	AE
Aroclor - 1268		SW846 8082A	<720	720	µg/kg	12/22/22	AE

All internal QC parameters were met. Unusual sample conditions, if any, are described. Surrogate Spike results designated with "D" indicate that the analyte was diluted out. "MI" indicates matrix interference. Concentration and \*Reporting Limit (RL) based on areas provided by client. Values are reported to three significant figures. Solid PPM = mg/kg | PPB = µg/kg and Water PPM = mg/L | PPB = µg/L. The test results apply to the sample as received.



## Analysis Report

# Schneider Laboratories Global, Inc

2512 W. Cary Street • Richmond, Virginia • 23220-5117  
804-353-6778 • 800-785-LABS (5227) • Fax 804-359-1475

**Customer:** Arctic Enterprises, Inc. (4677)  
**Address:** 222 Teall Ave. Ste. 100A  
Syracuse, NY 13210

**Order #:** 500196

**Matrix** Bulk  
**Received** 12/22/22  
**Reported** 12/23/22

**PO Number:**

**Attn:**  
**Project:** Pi Beta Phi House  
**Location:** 330 Triphammer Rd, Ithaca NY  
**Number:** 2022.288

Sample ID	Cust. Sample ID	Location	Result	RL*	Units	Analysis Date	Analyst
Parameter		Method					
500196-12/23/22 01:17 PM							

*Kelly Muncy*

Reviewed By: **Kelly Muncy**  
Manager

### Surrogate Recoveries

#### 500196-001 - PCB

DCB 80%  
TCMX MI

#### 500196-002 - PCB

DCB 94%  
TCMX MI

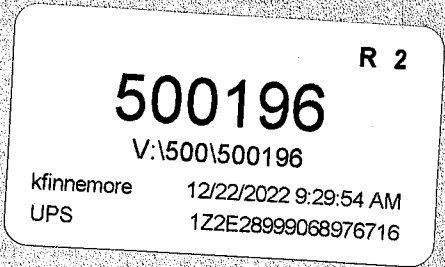
### State Certifications

Method	Parameter	New York	Virginia
SW846 8082A	Aroclor - 1016	ELAP Certified	VELAP Certified
SW846 8082A	Aroclor - 1221	ELAP Certified	VELAP Certified
SW846 8082A	Aroclor - 1232	ELAP Certified	VELAP Certified
SW846 8082A	Aroclor - 1242	ELAP Certified	VELAP Certified
SW846 8082A	Aroclor - 1248	ELAP Certified	VELAP Certified
SW846 8082A	Aroclor - 1254	ELAP Certified	VELAP Certified
SW846 8082A	Aroclor - 1260	ELAP Certified	VELAP Certified
SW846 8082A	Aroclor - 1262	ELAP Certified	VELAP Certified
SW846 8082A	Aroclor - 1268	ELAP Certified	VELAP Certified

State	Certificate Number
New York	ELAP 63558
Virginia	VELAP 12088

All internal QC parameters were met. Unusual sample conditions, if any, are described. Surrogate Spike results designated with "D" indicate that the analyte was diluted out. "MI" indicates matrix interference. Concentration and \*Reporting Limit (RL) based on areas provided by client. Values are reported to three significant figures. Solid PPM = mg/kg | PPB = µg/kg and Water PPM = mg/L | PPB = µg/L. The test results apply to the sample as received.





Project Number	2022.288
Client	Holt Architects
Address	Pi Beta Phi House
	330 Triphammer Rd., Ithaca, N.Y.

Contact Name: Bridget Ruane  
Office Number: 315-476-1757  
Fax Number: 315-476-1764  
Email: [arcticlab@arcticent.com](mailto:arcticlab@arcticent.com)

[illegible]

**Reporting Information: e-mail – (arcticlab@arcticent.com)**

Sample Turnaround Time 5 day

Sampled By: <u>Matthew Rodriguez</u>	Date: <u>12/20/22</u>	Time: _____
Shipped By: <u>UPS</u>	Date: _____	
Received By Lab: _____	Date: _____	
No. of Samples <u>21</u>	Page <u>1</u> of <u>1</u>	

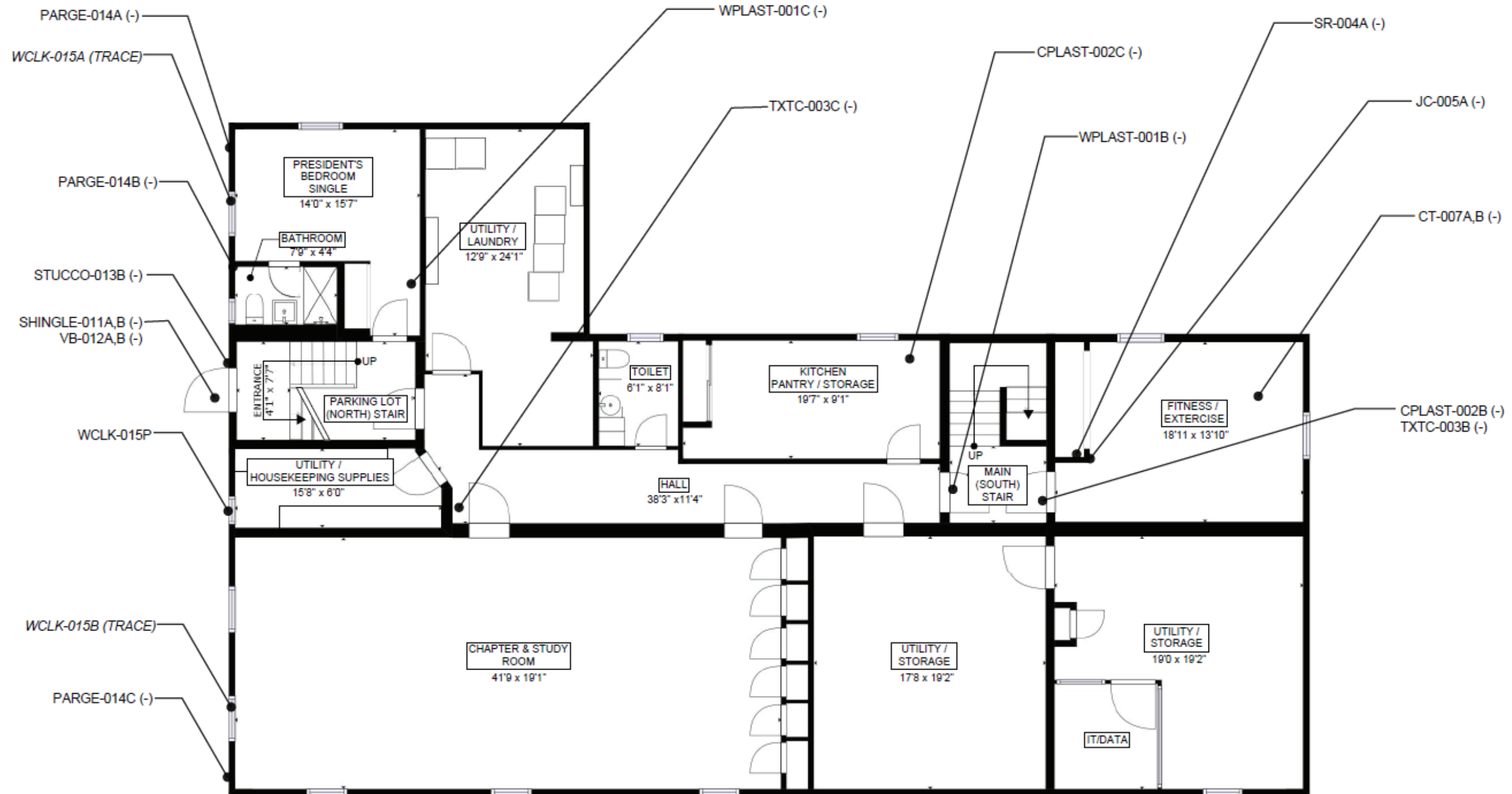


**ATTACHMENT E**

---

**DRAWINGS (FIGURES 1 – 8)**





PI BETA PHI HOUSE  
330 Triphammer Road  
Ithaca, New York 14850

LIMITED HAZARDOUS  
MATERIALS PRE-  
RENOVATION SURVEY

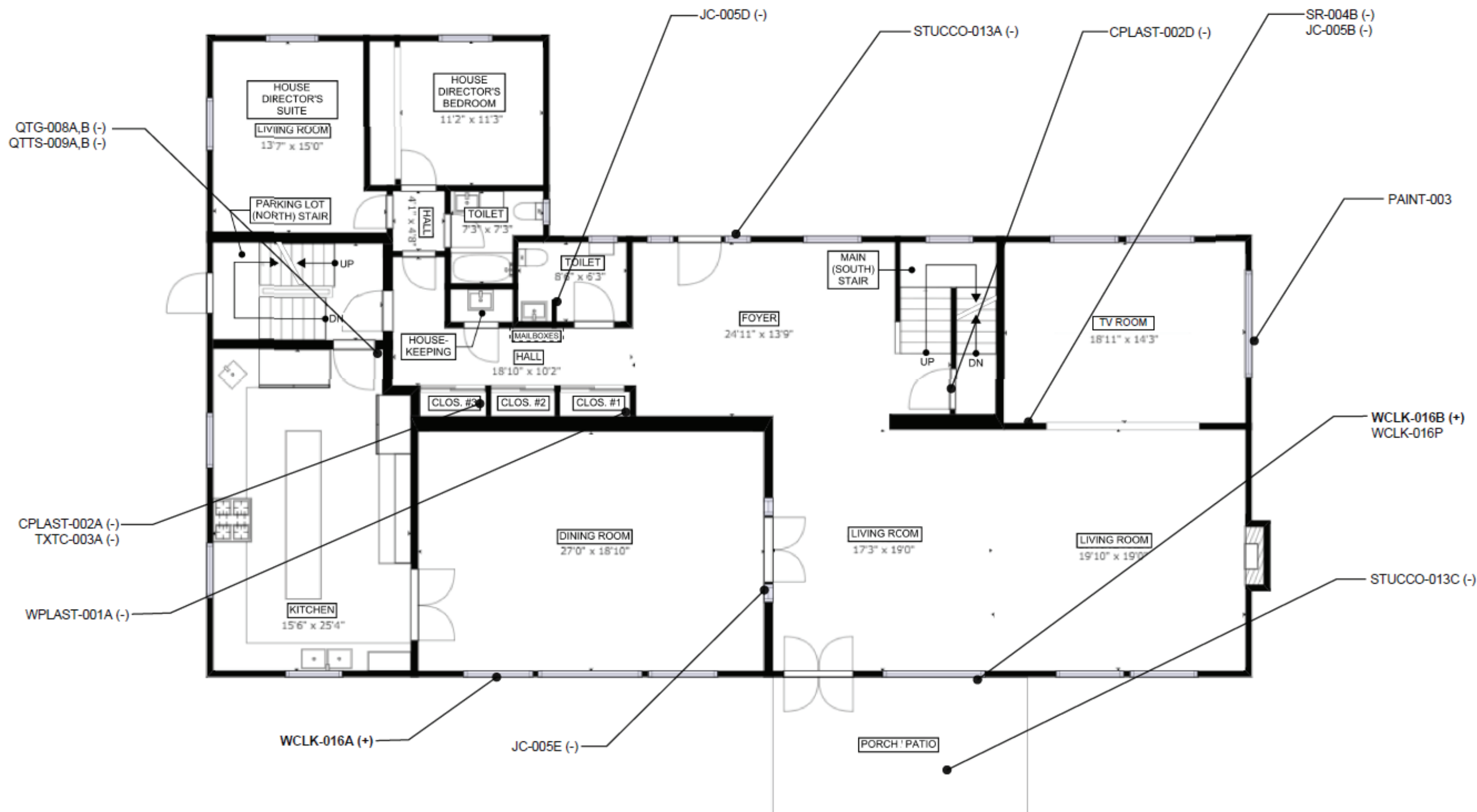
Arctic Project No.: 2022.288  
Date: January 2023  
By: JWW  
Scale: None

SAMPLE LOCATION  
DRAWING

BASEMENT

Figure  
1





PI BETA PHI HOUSE  
330 Triphammer Road  
Ithaca, New York 14850

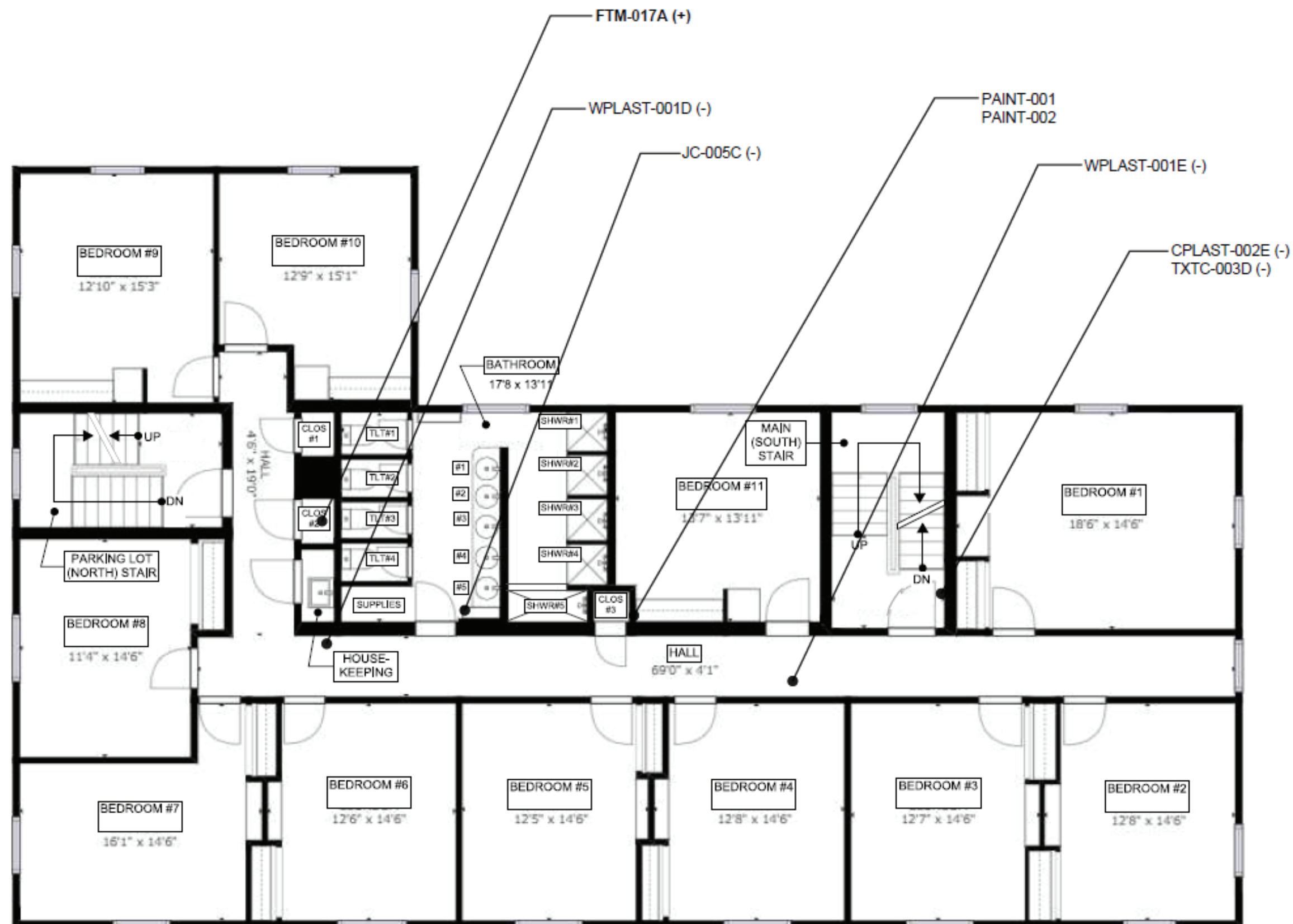
LIMITED HAZARDOUS  
MATERIALS PRE-  
RENOVATION SURVEY

Arctic Project No.: 2022.288  
Date: January 2023  
By: JWW  
Scale: None

SAMPLE LOCATION  
DRAWING

FIRST FLOOR

Figure  
2



PI BETA PHI HOUSE  
330 Triphammer Road  
Ithaca, New York 14850

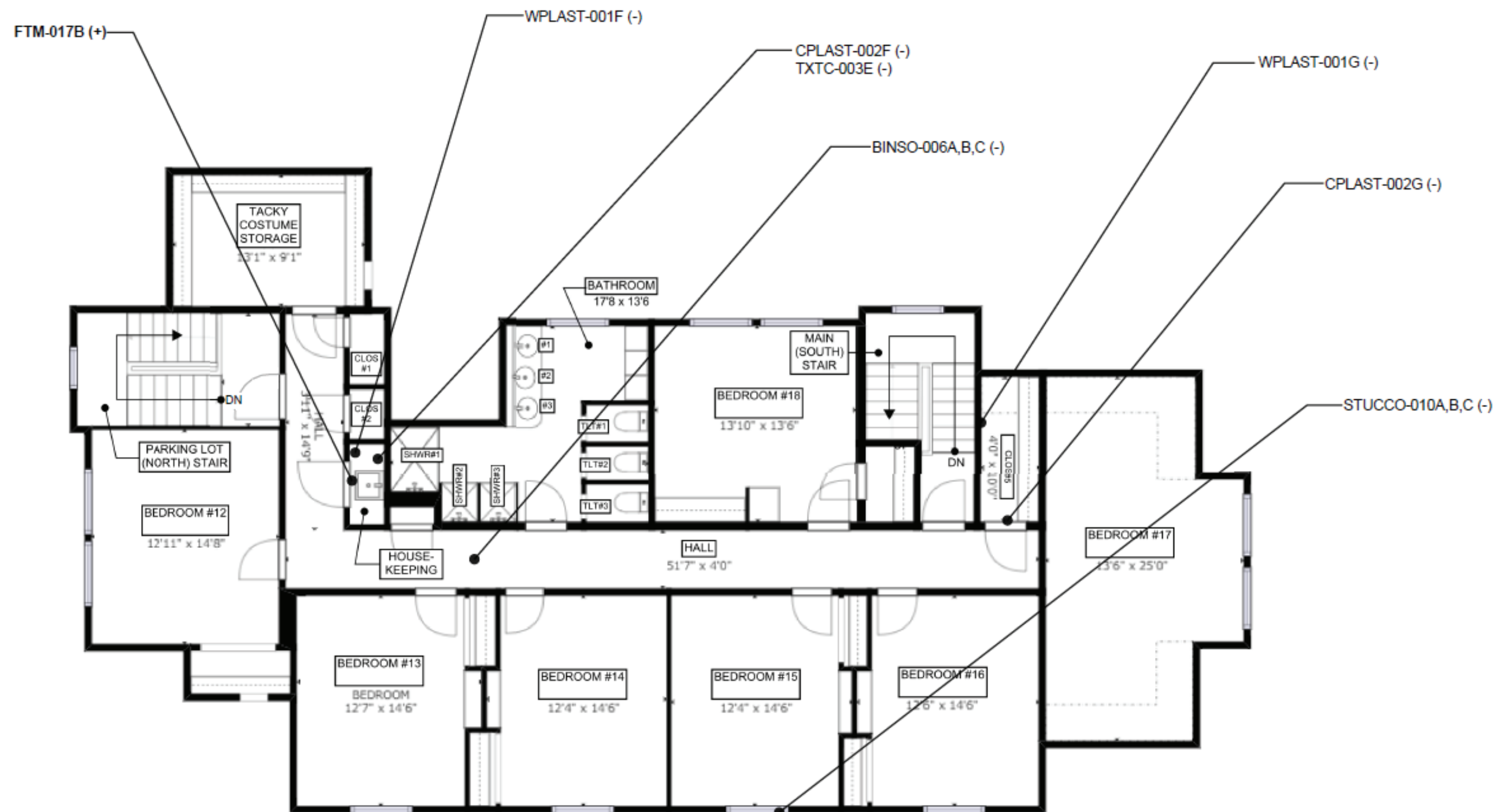
LIMITED HAZARDOUS  
MATERIALS PRE-  
RENOVATION SURVEY

Arctic Project No.: 2022.288  
Date: January 2023  
By: JWW  
Scale: None

SAMPLE LOCATION  
DRAWING

SECOND FLOOR

Figure  
3



PI BETA PHI HOUSE  
330 Triphammer Road  
Ithaca, New York 14850

LIMITED HAZARDOUS  
MATERIALS PRE-  
RENOVATION SURVEY

Arctic Project No.: 2022.288

Date: January 2023

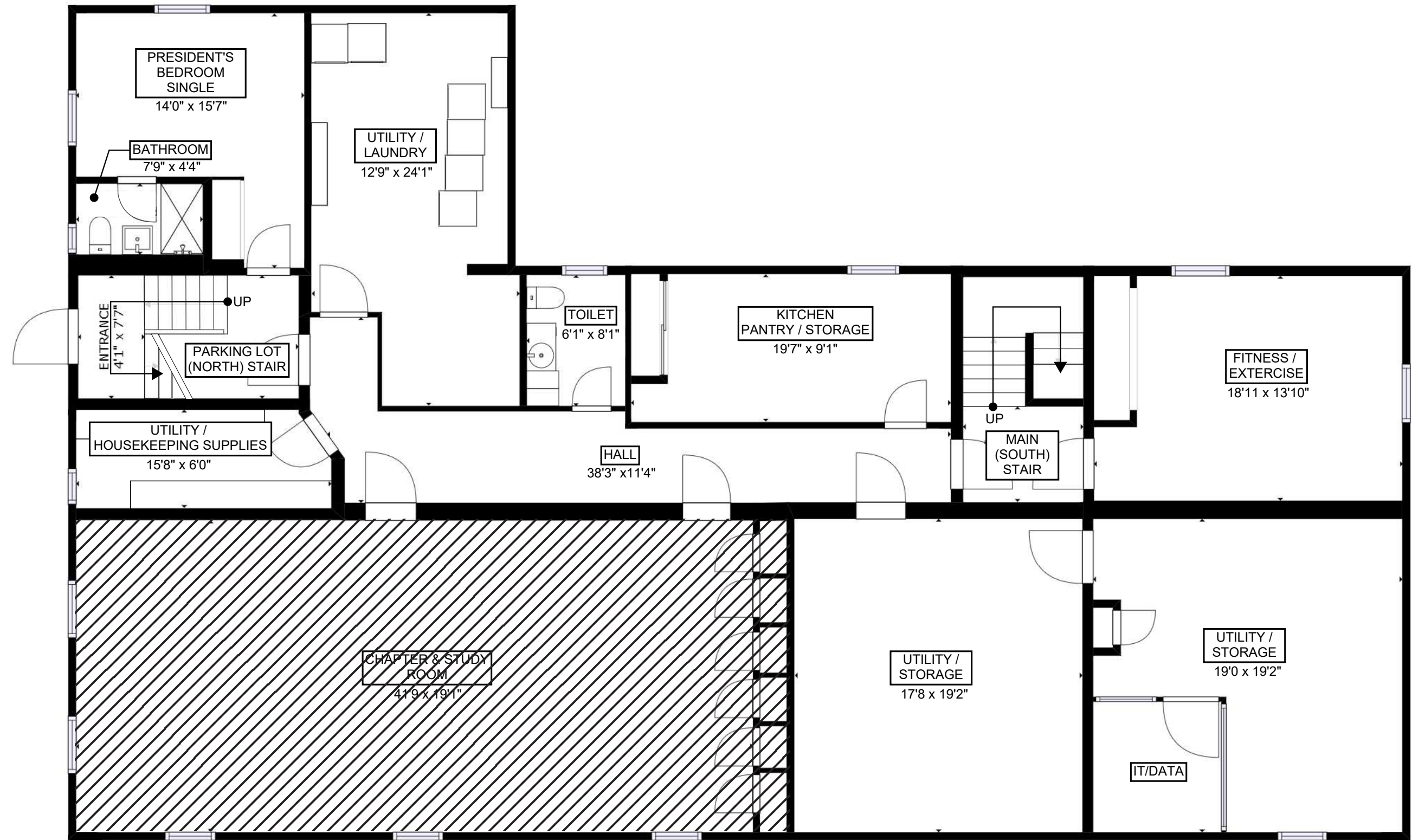
By: JWW

Scale: None

SAMPLE LOCATION  
DRAWING

THIRD FLOOR

Figure  
4



**LEGEND**  
/// ASBESTOS-CONTAINING 9" FLOOR TILE AND MASTIC

PI BETA PHI HOUSE  
330 Triphammer Road  
Ithaca, New York 14850

LIMITED HAZARDOUS  
MATERIALS PRE-  
RENOVATION SURVEY

Arctic Project No.: 2022.288  
Date: January 2023  
By: JWW  
Scale: None

POSITIVE MATERIAL  
LOCATION DRAWING

**BASEMENT**

**Figure**  
**5**

PI BETA PHI HOUSE  
330 Triphammer Road  
Ithaca, New York 14850

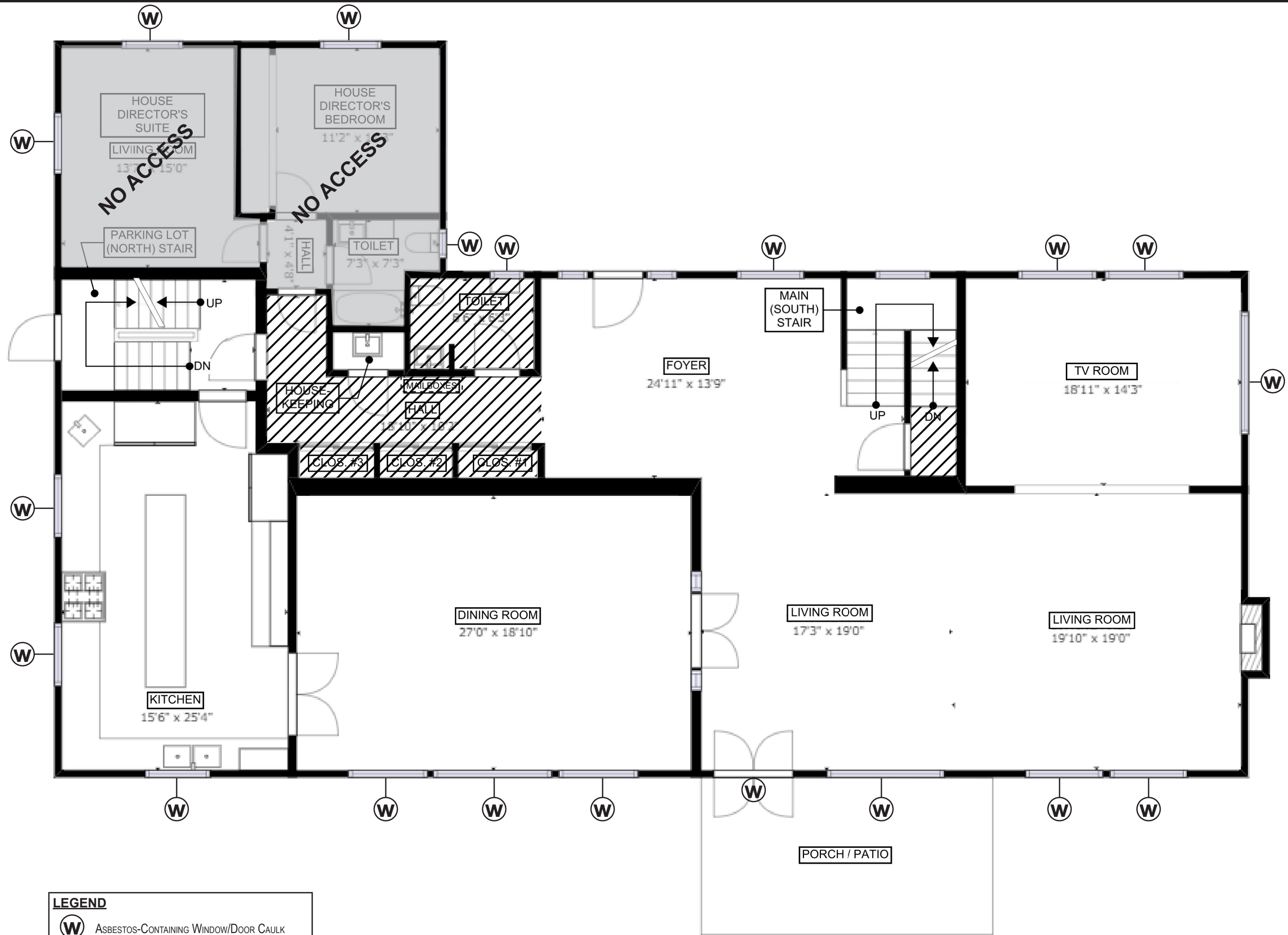
LIMITED HAZARDOUS  
MATERIALS PRE-  
RENOVATION SURVEY

Arctic Project No.: 2022.288  
Date: January 2023  
By: JWW  
Scale: None

POSITIVE MATERIAL  
LOCATION DRAWING

FIRST FLOOR

Figure  
6



**LEGEND**  
**W** ASBESTOS-CONTAINING WINDOW/DOOR CAULK  
**///** ASBESTOS-CONTAINING 9" FLOOR TILE AND MASTIC



PI BETA PHI HOUSE  
330 Triphammer Road  
Ithaca, New York 14850

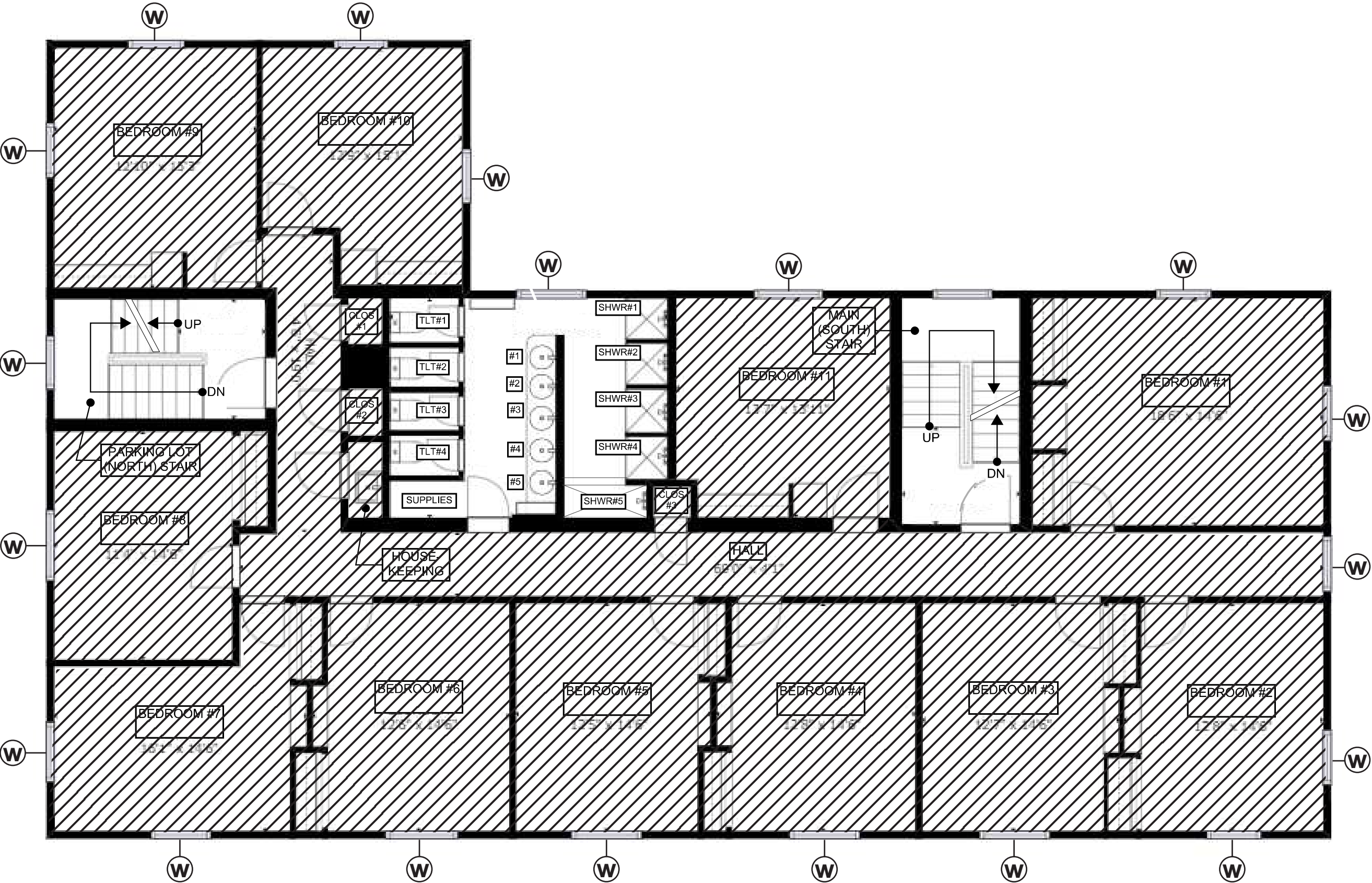
LIMITED HAZARDOUS  
MATERIALS PRE-  
RENOVATION SURVEY

Arctic Project No.: 2022.288  
Date: January 2023  
By: JWW  
Scale: None

POSITIVE MATERIAL  
LOCATION DRAWING

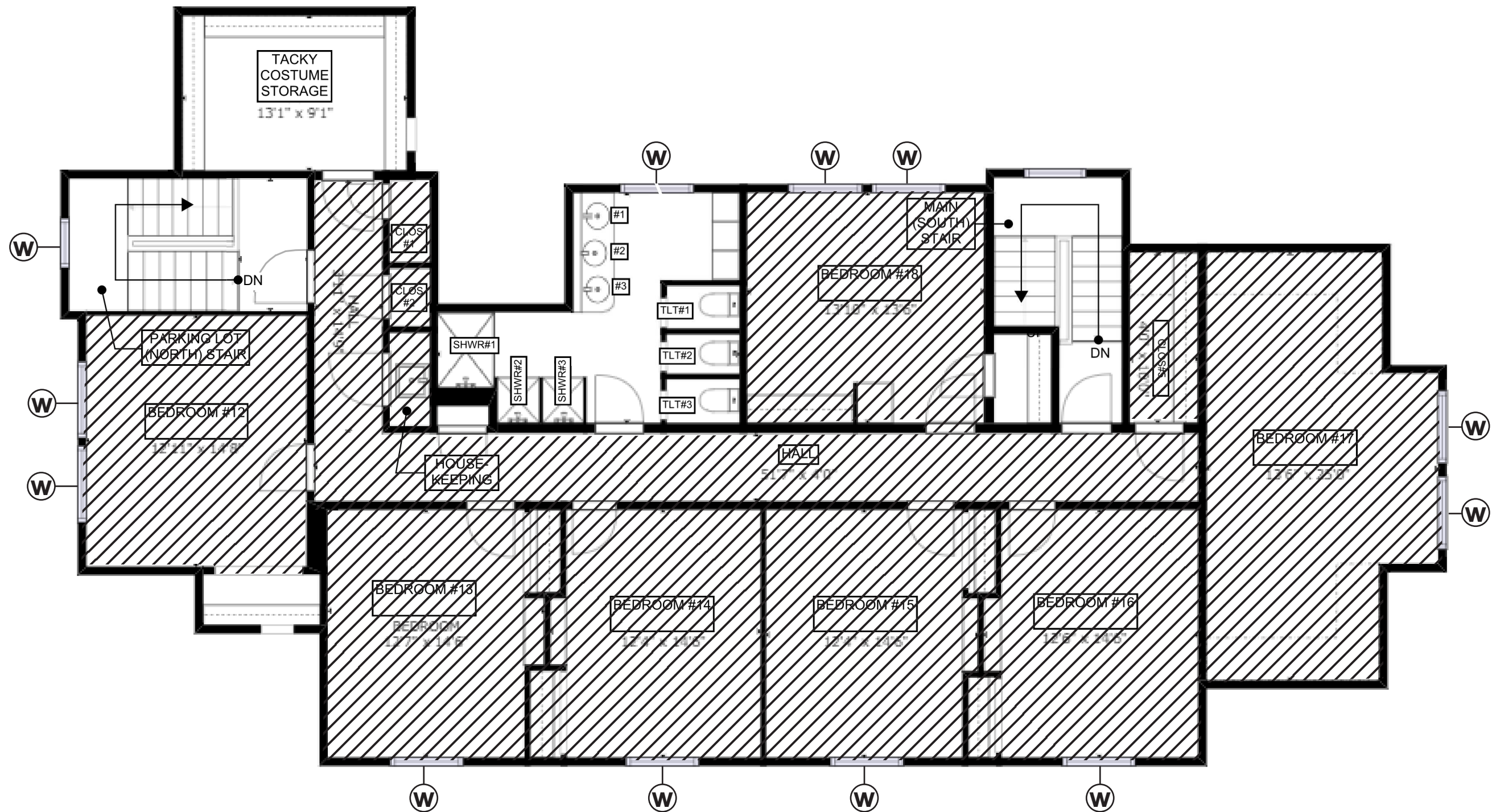
SECOND FLOOR

Figure  
7



LEGEND

- (W) ASBESTOS-CONTAINING WINDOW/DOOR CAULK
- /// ASBESTOS-CONTAINING 9" FLOOR TILE AND MASTIC



**LEGEND**

**W** ASBESTOS-CONTAINING WINDOW/DOOR CAULK

/// ASBESTOS-CONTAINING 9" FLOOR TILE AND MASTIC

PI BETA PHI HOUSE  
330 Triphammer Road  
Ithaca, New York 14850

LIMITED HAZARDOUS  
MATERIALS PRE-  
RENOVATION SURVEY

Arctic Project No.: 2022.288  
Date: January 2023  
By: JWW  
Scale: None

POSITIVE MATERIAL  
LOCATION DRAWING

THIRD FLOOR

Figure  
8

## **SECTION 040110 - MASONRY CLEANING**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### **1.2 SUMMARY**

- A. Section includes cleaning the following:

- 1. Unit masonry surfaces.
- 2. Stone surfaces.

#### **1.3 DEFINITIONS**

- A. Very Low-Pressure Spray: Under 100 psi.
- B. Low-Pressure Spray: 100 to 400 psi; 4 to 6 gpm.
- C. Medium-Pressure Spray: 400 to 800 psi; 4 to 6 gpm.
- D. High-Pressure Spray: 800 to 1200 psi; 4 to 6 gpm.

#### **1.4 PREINSTALLATION MEETINGS**

- A. Preinstallation Conference: Conduct conference at Project site.
  - 1. Review methods and procedures related to cleaning masonry including, but not limited to, the following:
    - a. Verify masonry-cleaning equipment and facilities needed to make progress and avoid delays.
    - b. Materials, material application, and sequencing.
    - c. Cleaning program.

#### **1.5 SEQUENCING AND SCHEDULING**

- A. Work Sequence: Perform masonry-cleaning work in the following sequence:
  - 1. Remove plant growth.
  - 2. Inspect for open mortar joints. Where repairs are required, delay further cleaning work until after repairs are completed, cured, and dried to prevent the intrusion of water and other cleaning materials into the wall.
  - 3. Remove paint.
  - 4. Clean masonry surfaces.

Pi Beta Phi  
EXTERIOR RENOVATIONS – PHASE 2  
330 Triphammer Road, Ithaca NY 14850  
HOLT Project No. 2021038

- B. As scaffolding is removed, patch anchor holes used to attach scaffolding. Patch holes in masonry units according to masonry repair Sections. Patch holes in mortar joints according to masonry repointing Sections.

## 1.6 ACTION SUBMITTALS

- A. Product Data: For each type of product.
  - 1. Include material descriptions and application instructions.
  - 2. Include test data substantiating that products comply with requirements.

## 1.7 QUALITY ASSURANCE

- A. Cleaning Specialist Qualifications: Engage an experience masonry cleaning firm to perform work of this Section. Firm shall have at least five (5) years of experience completing work similar in material, design, and extent to that indicated for this Project with a record of successful in-service performance.
  - 1. Field Supervision: Stone repair specialist firms shall maintain experienced full-time supervisors on Project site during times that masonry cleaning is in progress.
- B. Cleaning Program: Prepare a written cleaning program that describes cleaning process in detail, including materials, methods, and equipment to be used; protection of surrounding materials; and control of runoff during operations. Include provisions for supervising worker performance and preventing damage.
  - 1. If materials and methods other than those indicated are proposed for any phase of cleaning work, add a written description of such materials and methods, including evidence of successful use on comparable projects and demonstrations to show their effectiveness for this Project.
- C. Mockups: Prepare mockups of cleaning on existing surfaces to demonstrate aesthetic effects and to set quality standards for materials and execution.
  - 1. Cleaning: Clean an area approximately 25 sq. ft. for each type of masonry and surface condition.
    - a. Test cleaners and methods on samples of adjacent materials for possible adverse reactions. Do not test cleaners and methods known to have deleterious effect.
    - b. Allow a waiting period of not less than seven days after completion of sample cleaning to permit a study of sample panels for negative reactions.
  - 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.

## 1.8 FIELD CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit masonry-cleaning work to be performed according to product manufacturers' written instructions and specified requirements.
- B. Clean masonry surfaces only when air temperature is 40 deg F and above and is predicted to remain so for at least seven days after completion of cleaning.

## PART 2 - PRODUCTS

### 2.1 PAINT REMOVERS

- A. Alkaline Paste Paint Remover: Manufacturer's standard alkaline paste or gel formulation, for removing paint from masonry; containing no methylene chloride.
  - 1. Products: Subject to compliance with requirements, provide one of the following:
    - a. ABR Products, Inc.; 800 Brush Grade.
    - b. EaCo Chem, Inc.; Stripper Cream.
    - c. PROSOCO, Inc.; Sure Klean Heavy Duty Paint Stripper or Sure Klean Heavy Duty Paint Stripper D.
- B. Low-Odor, Solvent-Type Paste Paint Remover: Manufacturer's standard low-odor, water-rinsable, solvent-type paste, gel, or foamed emulsion formulation, for removing paint from masonry; containing no methanol or methylene chloride.
  - 1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
    - a. ABR Products, Inc.; ABR Citrus Paint Removers or Super Bio Strip Gel.
    - b. Cathedral Stone Products, Inc.; S-301.
    - c. EaCo Chem, Inc.; InStrip.
    - d. PROSOCO, Inc.; Enviro Klean SafStrip or Enviro Klean SafStrip 8.

### 2.2 CLEANING MATERIALS

- A. Water: Potable.
- B. Hot Water: Water heated to a temperature of 140 to 160 deg F.
- C. Detergent Solution, Job Mixed: Solution prepared by mixing 2 cups of tetrasodium pyrophosphate (TSPP), 1/2 cup of laundry detergent, and 20 quarts of hot water for every 5 gal. of solution required.
- D. Mold, Mildew, and Algae Remover, Job Mixed: Solution prepared by mixing 2 cups of tetrasodium pyrophosphate (TSPP), 5 quarts of 5 percent sodium hypochlorite (bleach), and 15 quarts of hot water for every 5 gal. of solution required.



Pi Beta Phi  
EXTERIOR RENOVATIONS – PHASE 2  
330 Triphammer Road, Ithaca NY 14850  
HOLT Project No. 2021038

- E. Nonacidic Liquid Cleaner: Manufacturer's standard mildly alkaline liquid cleaner formulated for removing mold, mildew, and other organic soiling from ordinary building materials, including polished stone, brick, aluminum, plastics, and wood.
  - 1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
    - a. ABR Products, Inc.; Building Wash 3.
    - b. D/2 Biological Solution.
    - c. Dumond Chemicals, Inc.; Safe n' Easy Architectural Cleaner/Restorer or Safe n' Easy Limestone Cleaner.
    - d. PROSOCO, Inc.; Stand Off All Surface Cleaner.
- F. Mild-Acid Cleaner: Manufacturer's standard mild-acid cleaner containing no muriatic (hydrochloric), hydrofluoric, or sulfuric acid; or ammonium bifluoride or chlorine bleaches.
  - 1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
    - a. ABR Products, Inc.; X-190 Limestone & Concrete Cleaner.
    - b. Cathedral Stone Inc.; MasonRe B General Purpose Stone & Brick
    - c. PROSOCO, Inc.; Enviro Klean BioWash or Sure Klean Light Duty Restoration Cleaner.

## 2.3 ACCESSORY MATERIALS

- A. Liquid Strippable Masking Agent: Manufacturer's standard liquid, film-forming, strippable masking material for protecting glass, metal, glazed masonry, and polished stone surfaces from damaging effects of acidic and alkaline masonry cleaners.
  - 1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
    - a. ABR Products, Inc.; ABR Rubber Mask.
    - b. PROSOCO, Inc.; Sure Klean Strippable Masking.

## 2.4 CHEMICAL CLEANING SOLUTIONS

- A. Dilute chemical cleaners with water to produce solutions not exceeding concentration recommended in writing by chemical-cleaner manufacturer.
- B. Acidic Cleaner Solution for Nonglazed Masonry and Unpolished Stone: Dilute acidic cleaner with water to produce hydrofluoric acid content of 3 percent or less, but not greater than that recommended in writing by chemical-cleaner manufacturer.

## **PART 3 - EXECUTION**

### **3.1 PROTECTION**

- A. Comply with each manufacturer's written instructions for protecting building and other surfaces against damage from exposure to its products. Prevent paint removers and chemical cleaning solutions from coming into contact with people, motor vehicles, landscaping, buildings, and other surfaces that could be harmed by such contact.
  - 1. Cover adjacent surfaces with materials that are proven to resist paint removers and chemical cleaners used unless products being used will not damage adjacent surfaces. Use protective materials that are waterproof and UV resistant. Apply masking agents according to manufacturer's written instructions. Do not apply liquid strippable masking agent to painted or porous surfaces. When no longer needed, promptly remove masking to prevent adhesive staining.
  - 2. Do not apply chemical solutions during winds of enough force to spread them to unprotected surfaces.
  - 3. Neutralize alkaline and acid wastes before disposal.
  - 4. Dispose of runoff from operations by legal means and in a manner that prevents soil erosion, undermining of paving and foundations, damage to landscaping, and water penetration into building interiors.
- B. Remove gutters and downspouts and associated hardware adjacent to immediate work area and store during masonry cleaning. Reinstall when masonry cleaning is complete.
  - 1. Provide temporary rain drainage during work to direct water away from building.

### **3.2 CLEANING MASONRY, GENERAL**

- A. Cleaning Appearance Standard: Cleaned surfaces are to have a uniform appearance as viewed from 10 feet away by Architect.
- B. Proceed with cleaning in an orderly manner; work from top to bottom of each scaffold width and from one end of each elevation to the other. Ensure that dirty residues and rinse water do not wash over dry, cleaned surfaces.
- C. Use only those cleaning methods indicated for each masonry material and location.
  - 1. Brushes: Do not use wire brushes or brushes that are not resistant to chemical cleaner being used.
  - 2. Spray Equipment: Use spray equipment that provides controlled application at volume and pressure indicated, measured at nozzle. Adjust pressure and volume to ensure that cleaning methods do not damage surfaces, including joints.
    - a. Equip units with pressure gauges.
    - b. For chemical-cleaner spray application, use low-pressure tank or chemical pump suitable for chemical cleaner indicated, equipped with nozzle having a cone-shaped spray.
    - c. For water-spray application, use fan-shaped spray that disperses water at an angle of 25 to 50 degrees.

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- d. For heated water-spray application, use equipment capable of maintaining temperature between 140 and 160 deg F at flow rates indicated.
    - e. For steam application, use steam generator capable of delivering live steam at nozzle.
  - D. Perform each cleaning method indicated in a manner that results in uniform coverage of all surfaces, including corners, moldings, and interstices, and that produces an even effect without streaking or damaging masonry surfaces. Keep wall wet below area being cleaned to prevent streaking from runoff.
  - E. Perform additional general cleaning, paint and stain removal, and spot cleaning of small areas that are noticeably different when viewed according to the "Cleaning Appearance Standard" Paragraph, so that cleaned surfaces blend smoothly into surrounding areas.
  - F. Water Application Methods:
    - 1. Water-Soak Application: Soak masonry surfaces by applying water continuously and uniformly to limited area for time indicated. Apply water at low pressures and low volumes in multiple fine sprays using perforated hoses or multiple spray nozzles. Erect a protective enclosure constructed of polyethylene sheeting to cover area being sprayed.
    - 2. Water-Spray Applications: Unless otherwise indicated, hold spray nozzle at least 6 inches from masonry surface and apply water in horizontal back-and-forth sweeping motion, overlapping previous strokes to produce uniform coverage.
  - G. Steam Cleaning: Apply steam to masonry surfaces at the very low pressures indicated for each type of masonry. Hold nozzle at least 6 inches from masonry surface and apply steam in horizontal back-and-forth sweeping motion, overlapping previous strokes to produce uniform coverage.
  - H. Chemical-Cleaner Application Methods: Apply chemical cleaners to masonry surfaces according to chemical-cleaner manufacturer's written instructions; use brush or spray application. Do not spray apply at pressures exceeding 50 psi. Do not allow chemicals to remain on surface for periods longer than those indicated or recommended in writing by manufacturer.
  - I. Rinse off chemical residue and soil by working upward from bottom to top of each treated area at each stage or scaffold setting. Periodically during each rinse, test pH of rinse water running off of cleaned area to determine that chemical cleaner is completely removed.
    - 1. Apply neutralizing agent and repeat rinse if necessary to produce tested pH of between 6.7 and 7.5.
  - J. After cleaning is complete, remove protection no longer required. Remove tape and adhesive marks.
- 3.3 PRELIMINARY CLEANING
- A. Removing Plant Growth: Completely remove visible plant, moss, and shrub growth from masonry surfaces. Carefully remove plants, creepers, and vegetation by cutting at roots and allowing remaining growth to dry as long as possible before removal. Remove loose soil and plant debris from open joints to whatever depth they occur.

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- B. Preliminary Cleaning: Before beginning general cleaning, remove extraneous substances that are resistant to planned cleaning methods. Extraneous substances include paint, calking, asphalt, and tar.
1. Carefully remove heavy accumulations of rigid materials from masonry surface with sharp chisel. Do not scratch or chip masonry surface.
  2. Remove asphalt and tar with solvent-type paste paint remover.
    - a. Comply with requirements in "Paint Removal" Article.
    - b. Apply paint remover only to asphalt and tar by brush without prewetting.
    - c. Allow paint remover to remain on surface for 10 to 30 minutes.
    - d. Repeat application if needed.

### 3.4 PAINT REMOVAL

- A. Paint-Remover Application, General: Apply paint removers according to paint-remover manufacturer's written instructions. Do not allow paint removers to remain on surface for periods longer than those indicated or recommended in writing by manufacturer.
- B. Paint Removal with Solvent-Type Paste Paint Remover:
1. Remove loose and peeling paint using low, medium, or high-pressure water spray, scrapers, stiff brushes, or a combination of these. Let surface dry thoroughly.
  2. Apply thick coating of paint remover to painted surface with natural-fiber cleaning brush, deep-nap roller, or large paint brush. Apply in one or two coats according to manufacturer's written instructions.
  3. Allow paint remover to remain on surface for period recommended in writing by manufacturer or as determined by preconstruction testing.
  4. Rinse with cold water applied by low -pressure spray to remove chemicals and paint residue.

### 3.5 CLEANING MASONRY

- A. Cold-Water Soak:
1. Apply cold water by intermittent spraying to keep surface moist.
  2. Use perforated hoses or other means that apply a fine water mist to entire surface being cleaned.
  3. Apply water in cycles of five minutes on and 20 minutes off.
  4. Continue spraying until surface encrustation has softened enough to permit its removal by water wash, as indicated by cleaning tests.
  5. Remove soil and softened surface encrustation from surface with cold water applied by low-pressure spray.
- B. Cold-Water Wash: Use cold water applied by low -pressure spray.
- C. Hot-Water Wash: Use hot water applied by low -pressure spray.
- D. Steam Cleaning: Apply steam at very low pressures not exceeding 30 psi. Remove dirt softened by steam with wood scrapers, stiff-nylon or -fiber brushes, or cold-water wash, as indicated by cleaning tests.

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E. Detergent Cleaning:

1. Wet surface with cold water applied by low-pressure spray.
2. Scrub surface with detergent solution using medium-soft brushes until soil is thoroughly dislodged and can be removed by rinsing. Use small brushes to remove soil from mortar joints and crevices. Dip brush in solution often to ensure that adequate fresh detergent is used and that surface remains wet.
3. Rinse with cold water applied by low -pressure spray to remove detergent solution and soil.
4. Repeat cleaning procedure above where required to produce cleaning effect established by mockup.

F. Mold, Mildew, and Algae Removal:

1. Wet surface with cold water applied by low-pressure spray.
2. Apply mold, mildew, and algae remover by brush or low-pressure spray.
3. Scrub surface with medium-soft brushes until mold, mildew, and algae are thoroughly dislodged and can be removed by rinsing. Use small brushes for mortar joints and crevices. Dip brush in mold, mildew, and algae remover often to ensure that adequate fresh cleaner is used and that surface remains wet.
4. Rinse with cold water applied by low -pressure spray to remove mold, mildew, and algae remover and soil.
5. Repeat cleaning procedure above where required to produce cleaning effect established by mockup.

G. Nonacidic Liquid Chemical Cleaning:

1. Wet surface with cold water applied by low-pressure spray.
2. Apply cleaner to surface in two applications by brush or low-pressure spray.
3. Let cleaner remain on surface for period recommended in writing by chemical-cleaner manufacturer and established by mockup.
4. Rinse with cold water applied by low -pressure spray to remove chemicals and soil.
5. Repeat cleaning procedure above where required to produce cleaning effect established by mockup. Do not repeat more than once. If additional cleaning is required, use steam cleaning.

H. Mild-Acid Chemical Cleaning:

1. Wet surface with cold water applied by low-pressure spray.
2. Apply cleaner to surface in two applications by brush or low-pressure spray.
3. Let cleaner remain on surface for period recommended in writing by chemical-cleaner manufacturer.
4. Rinse with cold water applied by low -pressure spray to remove chemicals and soil.
5. Repeat cleaning procedure above where required to produce cleaning effect established by mockup. Do not repeat more than once. If additional cleaning is required, use steam cleaning.

### 3.6 FINAL CLEANING

- A. Clean adjacent non-masonry surfaces of spillage and debris. Use detergent and soft brushes or cloths.
- B. Remove debris from gutters and downspouts. Rinse off roof and flush gutters and downspouts.
- C. Remove masking materials, leaving no residues that could trap dirt.

### END OF SECTION 040110



## **SECTION 040120.63 - BRICK MASONRY REPAIR**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### **1.2 SUMMARY**

- A. Section Includes:
  - 1. Repairing brick masonry, including replacing units.
  - 2. Removing abandoned anchors.
  - 3. Painting steel uncovered during the work.

#### **1.3 DEFINITIONS**

- A. Low-Pressure Spray: 100 to 400 psi; 4 to 6 gpm.
- 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.
- C. Saturation Coefficient: Ratio of the weight of water absorbed during immersion in cold water to weight absorbed during immersion in boiling water; used as an indication of resistance of masonry units to freezing and thawing.

#### **1.4 PREINSTALLATION MEETINGS**

- A. Preinstallation Conference: Conduct conference at Project site.
  - 1. Review methods and procedures related to brick masonry repair including, but not limited to, the following:
    - a. Verify brick masonry repair specialist's personnel, equipment, and facilities needed to make progress and avoid delays.
    - b. Materials, material application, sequencing, tolerances, and required clearances.
    - c. Quality-control program.

#### **1.5 SEQUENCING AND SCHEDULING**

- A. Work Sequence: Perform brick masonry repair work in the following sequence, which includes work specified in this and other Sections:

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1. Remove plant growth.
2. Inspect masonry for open mortar joints and point them before cleaning to prevent the intrusion of water and other cleaning materials into the wall.
3. Remove paint.
4. Clean masonry.
5. Rake out mortar from joints surrounding masonry to be replaced and from joints adjacent to masonry repairs along joints.
6. Repair masonry, including replacing existing masonry with new masonry materials.
7. Rake out mortar from joints to be repointed.
8. Point mortar and sealant joints.
9. After repairs and repointing have been completed and cured, perform a final cleaning to remove residues from this work.

- B. As scaffolding is removed, patch anchor holes used to attach scaffolding. Patch holes in masonry units according to "Masonry Unit Patching" Article. Patch holes in mortar joints according to Section 040120.64 "Brick Masonry Repointing."

## 1.6 ACTION SUBMITTALS

- A. Product Data: For each type of product.
1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.
  2. Include recommendations for product application and use. Include test data substantiating that products comply with requirements.

## 1.7 QUALITY ASSURANCE

- A. Brick Masonry Repair Specialist Qualifications: Engage an experienced brick masonry repair firm with a minimum of five (5) years experience with brick masonry repair to perform work of this Section. Firm shall have completed work similar in material, design, and extent to that indicated for this Project with a record of successful in-service performance. Experience in only installing masonry is insufficient experience for masonry repair work.
1. Field Supervision: Brick masonry repair specialist firm shall maintain experienced full-time supervisors on Project site during times that brick masonry repair work is in progress.
  2. Brick Masonry Repair Worker Qualifications: When masonry units are being patched, assign at least one worker per crew who is trained and certified by manufacturer of patching compound to apply its products.
- B. Quality-Control Program: Prepare a written quality-control program for this Project to systematically demonstrate the ability of personnel to properly follow methods and use materials and tools without damaging masonry. Include provisions for supervising performance and preventing damage.
- C. Mockups: Prepare mockups of brick masonry repair to demonstrate aesthetic effects and to set quality standards for materials and execution and for fabrication and installation.

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1. Masonry Repair: Prepare sample areas for each type of masonry repair work performed. If not otherwise indicated, size each mockup not smaller than two adjacent whole units or approximately 48 inches in least dimension. Construct sample areas in locations in existing walls where directed by Architect unless otherwise indicated. Demonstrate quality of materials, workmanship, and blending with existing work. Include the following as a minimum:
  - a. Replacement: Four brick units replaced.
  - b. Patching: Three small holes at least 1 inch in diameter for each type of brick indicated to be patched.
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.
3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

#### 1.8 DELIVERY, STORAGE, AND HANDLING

- A. Deliver masonry units to Project site strapped together in suitable packs or pallets or in heavy-duty cartons and protected against impact and chipping.
- B. Deliver packaged materials to Project site in manufacturer's original and unopened containers, labeled with manufacturer's name and type of products.
- C. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.
- D. Store hydrated lime in manufacturer's original and unopened containers. Discard lime if containers have been damaged or have been opened for more than two days.
- E. Store sand where grading and other required characteristics can be maintained and contamination avoided.
- F. Handle masonry units to prevent overstressing, chipping, defacement, and other damage.

#### 1.9 FIELD CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit brick masonry repair work to be performed according to product manufacturers' written instructions and specified requirements.
- B. Temperature Limits, General: Repair masonry units only when air temperature is between 40 and 90 deg F and is predicted to remain so for at least seven days after completion of the Work unless otherwise indicated.
- C. Cold-Weather Requirements: Comply with the following procedures for masonry repair unless otherwise indicated:

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1. When air temperature is below 40 deg F, heat mortar ingredients, masonry repair materials, and existing masonry walls to produce temperatures between 40 and 120 deg F.
  2. When mean daily air temperature is below 40 deg F, provide enclosure and heat to maintain temperatures above 32 deg F within the enclosure for seven days after repair.
- D. Hot-Weather Requirements: Protect masonry repairs when temperature and humidity conditions produce excessive evaporation of water from mortar and repair materials. Provide artificial shade and wind breaks, and use cooled materials as required to minimize evaporation. Do not apply mortar to substrates with temperatures of 90 deg F and above unless otherwise indicated.
- E. For manufactured repair materials, perform work within the environmental limits set by each manufacturer.

## **PART 2 - PRODUCTS**

### **2.1 MASONRY MATERIALS**

- A. Face Brick: Refer to Section 042000 "Unit Masonry" for Masonry Materials.

### **2.2 MORTAR MATERIALS**

- A. Refer to Section 042000 "Unit Masonry" for Mortar Materials.

### **2.3 MANUFACTURED REPAIR MATERIALS**

- A. Brick Patching Compound: Factory-mixed cementitious product that is custom manufactured for patching brick masonry.
1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
    - a. Cathedral Stone Products, Inc.; Jahn M100 Terra Cotta and Brick Repair Mortar.
  2. Use formulation that is vapor and water permeable (equal to or more than the masonry unit), exhibits low shrinkage, has lower modulus of elasticity than masonry units being repaired, and develops high bond strength to all types of masonry.
  3. Use formulation having working qualities and retardation control to permit forming and sculpturing where necessary.
  4. Formulate patching compound in colors and textures to match each masonry unit being patched. Provide sufficient number of colors to enable matching of the color, texture, and variation of each unit.

## 2.4 ACCESSORY MATERIALS

- A. Setting Buttons and Shims: Resilient plastic, nonstaining to masonry, sized to suit joint thicknesses and bed depths of masonry units, less the required depth of pointing materials unless removed before pointing.
- B. Masking Tape: Nonstaining, nonabsorbent material; compatible with mortar, joint primers, sealants, and surfaces adjacent to joints; and that easily comes off entirely, including adhesive.
- C. Antirust Coating: Fast-curing, lead- and chromate-free, self-curing, universal modified-alkyd primer according to MPI #23 (surface-tolerant, anticorrosive metal primer) SSPC-Paint 20 or SSPC-Paint 29 zinc-rich coating Insert requirement.
  - 1. Surface Preparation: Use coating requiring no better than SSPC-SP 2, "Hand Tool Cleaning," surface preparation according to manufacturer's literature or certified statement.
- D. Other Products: Select materials and methods of use based on the following, subject to approval of a mockup:
  - 1. Previous effectiveness in performing the work involved.
  - 2. Minimal possibility of damaging exposed surfaces.
  - 3. Consistency of each application.
  - 4. Uniformity of the resulting overall appearance.
  - 5. Do not use products or tools that could leave residue on surfaces.

## PART 3 - EXECUTION

### 3.1 PROTECTION

- A. Prevent mortar from staining face of surrounding masonry and other surfaces.
  - 1. Cover sills, ledges, and other projecting items to protect them from mortar droppings.
  - 2. Keep wall area wet below rebuilding and repair work to discourage mortar from adhering.
  - 3. Immediately remove mortar splatters in contact with exposed masonry and other surfaces.
- B. Remove gutters and downspouts and associated hardware adjacent to masonry and store during masonry repair. Reinstall when repairs are complete.

### 3.2 MASONRY REPAIR, GENERAL

- A. Appearance Standard: Repaired surfaces are to have a uniform appearance as viewed from 10 feet away by Architect.

### 3.3 ABANDONED ANCHOR REMOVAL

- A. Remove abandoned anchors, brackets, wood nailers, and other extraneous items.
  - 1. Remove items carefully to avoid spalling or cracking masonry.

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2. Notify Architect before proceeding if an item cannot be removed without damaging surrounding masonry. Do the following where directed:
  - a. Cut or grind off item approximately 3/4 inch beneath surface and core drill a recess of same depth in surrounding masonry as close around item as practical.
  - b. Immediately paint exposed end of item with two coats of antirust coating, following coating manufacturer's written instructions and without exceeding manufacturer's recommended dry film thickness per coat. Keep paint off sides of recess.
3. Patch hole where each item was removed unless directed to remove and replace masonry unit.

### 3.4 BRICK REMOVAL AND REPLACEMENT

- A. Remove bricks that are damaged, spalled, or deteriorated or are to be reused. Carefully remove entire units from joint to joint, without damaging surrounding masonry, in a manner that permits replacement with full-size units.
  1. When removing single bricks, remove material from center of brick and work toward outside edges.
- B. Support and protect remaining masonry that surrounds removal area.
- C. Maintain flashing, reinforcement, lintels, and adjoining construction in an undamaged condition. Coordinate with new flashing, reinforcement, and lintels, which are specified in other Sections.
- D. Notify Architect of unforeseen detrimental conditions including voids, cracks, bulges, and loose units in existing masonry backup, rotted wood, rusted metal, and other deteriorated items.
- E. Remove in an undamaged condition as many whole bricks as possible.
  1. Remove mortar, loose particles, and soil from brick by cleaning with hand chisels, brushes, and water.
  2. Remove sealants by cutting close to brick with utility knife and cleaning with solvents.
  3. Store brick for reuse. Store off ground, on skids, and protected from weather.
  4. Deliver cleaned brick not required for reuse to Owner unless otherwise indicated.
- F. Clean masonry surrounding removal areas by removing mortar, dust, and loose particles in preparation for brick replacement.
- G. Replace removed damaged brick with other removed brick in good condition, where possible, or with new brick matching existing brick. Do not use broken units unless they can be cut to usable size.
- H. Install replacement brick into bonding and coursing pattern of existing brick. If cutting is required, use a motor-driven saw designed to cut masonry with clean, sharp, unchipped edges.
  1. Maintain joint width for replacement units to match existing joints.



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- I. Lay replacement brick with rebuilding (setting) mortar and with completely filled bed, head, and collar joints. Butter ends with enough mortar to fill head joints and shove into place. Wet both replacement and surrounding bricks that have ASTM C 67 initial rates of absorption (suction) of more than 30 g/30 sq. in. per min. Use wetting methods that ensure that units are nearly saturated but surface is dry when laid.
  - 1. Rake out mortar used for laying brick before mortar sets according to Section 040120.64 "Brick Masonry Repointing." Point at same time as repointing of surrounding area.
  - 2. When mortar is hard enough to support units, remove shims and other devices interfering with pointing of joints.
- J. Curing: Cure mortar by maintaining in thoroughly damp condition for at least 72 consecutive hours, including weekends and holidays.
  - 1. Hairline cracking within the mortar or mortar separation at edge of a joint is unacceptable. Completely remove such mortar and repoint.

### 3.5 PAINTING STEEL UNCOVERED DURING THE WORK

- A. Notify Architect if steel is exposed during masonry removal. Where Architect determines that steel is structural, or for other reasons cannot be totally removed, prepare and paint it as follows:
  - 1. Surface Preparation: Remove paint, rust, and other contaminants according to SSPC-SP 2, "Hand Tool Cleaning", , , as applicable to comply with paint manufacturer's recommended preparation.
  - 2. Antirust Coating: Immediately paint exposed steel with two coats of antirust coating, following coating manufacturer's written instructions and without exceeding manufacturer's recommended rate of application (dry film thickness per coat).
- B. If on inspection and rust removal, the thickness of a steel member is found to be reduced from rust by more than 1/16 inch, notify Architect before proceeding.

### 3.6 MASONRY UNIT PATCHING

- A. Patch the following masonry units unless another type of repair or replacement is indicated:
  - 1. Units indicated to be patched.
  - 2. Units with holes.
  - 3. Units with chipped edges or corners. Patch chipped edges or corners measuring more than 3/4 inch in least dimension.
  - 4. Units with small areas of deep deterioration. Patch deep deteriorations measuring more than 3/4 inch in least dimension and more than 1/4 inch deep.
- B. Remove and replace existing patches unless otherwise indicated or approved by Architect.
- C. Patching Bricks:

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1. Remove loose material from masonry surface. Carefully remove additional material so patch does not have feathered edges but has square or slightly undercut edges on area to be patched and is at least 1/4 inch thick, but not less than recommended in writing by patching compound manufacturer.
2. Mask adjacent mortar joint or rake out for repointing if patch extends to edge of masonry unit.
3. Mix patching compound in individual batches to match each unit being patched. Combine one or more colors of patching compound, as needed, to produce exact match.
4. Rinse surface to be patched and leave damp, but without standing water.
5. Brush-coat surfaces with slurry coat of patching compound according to manufacturer's written instructions.
6. Place patching compound in layers as recommended in writing by patching compound manufacturer, but not less than 1/4 inch or more than 2 inches thick. Roughen surface of each layer to provide a key for next layer.
7. Trowel, scrape, or carve surface of patch to match texture and surrounding surface plane or contour of masonry unit. Shape and finish surface before or after curing, as determined by testing, to best match existing masonry unit.
8. Keep each layer damp for 72 hours or until patching compound has set.
9. Remove and replace patches with hairline cracks or that show separation from brick at edges, and those that do not match adjoining brick in color or texture.

### 3.7 FINAL CLEANING

- A. After mortar has fully hardened, thoroughly clean exposed masonry 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.
- B. Clean adjacent nonmasonry surfaces. Use detergent and soft brushes or cloths.
- C. Clean mortar and debris from roof; remove debris from gutters and downspouts. Rinse off roof and flush gutters and downspouts.
- D. Remove masking materials, leaving no residues that could trap dirt.

### 3.8 FIELD QUALITY CONTROL

- A. Architect's Project Representatives: Architect will assign Project representatives to help carry out Architect's responsibilities at the site, including observing progress and quality of portion of the Work completed. Allow Architect's Project representatives use of lift devices and scaffolding, as needed, to observe progress and quality of portion of the Work completed.

### 3.9 MASONRY WASTE DISPOSAL

- A. Salvageable Materials: Unless otherwise indicated, excess masonry materials are Contractor's property.
- B. Masonry Waste: Remove masonry waste and legally dispose of off Owner's property.

## END OF SECTION 040120.63

## **SECTION 040120.64 - BRICK MASONRY REPOINTING**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### **1.2 SUMMARY**

- A. Section Includes:
  - 1. Repointing joints with mortar.

#### **1.3 DEFINITIONS**

- A. Low-Pressure Spray: 100 to 400 psi ; 4 to 6 gpm.

#### **1.4 PREINSTALLATION MEETINGS**

- A. Preinstallation Conference: Conduct conference at Project site.
  - 1. Review methods and procedures related to repointing brick masonry including, but not limited to, the following:
    - a. Verify brick masonry repointing specialist's personnel, equipment, and facilities needed to make progress and avoid delays.
    - b. Materials, material application, sequencing, tolerances, and required clearances.
    - c. Quality-control program.

#### **1.5 SEQUENCING AND SCHEDULING**

- A. Work Sequence: Perform brick masonry repointing work in the following sequence, which includes work specified in this and other Sections:
  - 1. Remove plant growth.
  - 2. Inspect masonry for open mortar joints and permanently or temporarily point them before cleaning to prevent the intrusion of water and other cleaning materials into the wall.
  - 3. Remove paint.
  - 4. Clean masonry.
  - 5. Rake out mortar from joints surrounding masonry to be replaced and from joints adjacent to masonry repairs along joints.
  - 6. Repair masonry, including replacing existing masonry with new masonry materials.
  - 7. Rake out mortar from joints to be repointed.
  - 8. Point mortar and sealant joints.
  - 9. After repairs and repointing have been completed and cured, perform a final cleaning to remove residues from this work.

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- B. As scaffolding is removed, patch anchor holes used to attach scaffolding. Patch holes in masonry units according to Section 040120.63 "Brick Masonry Repair." Patch holes in mortar joints according to "Repointing Masonry" Article.

## 1.6 ACTION SUBMITTALS

- A. Product Data: For each type of product.
  - 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.
  - 2. Include recommendations for product application and use. Include test data substantiating that products comply with requirements.

## 1.7 QUALITY ASSURANCE

- A. Brick Masonry Repointing Specialist Qualifications: Engage an experienced brick masonry repointing firm to perform work of this Section. Firm shall have completed work similar in material, design, and extent to that indicated for this Project with a record of successful in-service performance. Experience in only installing masonry is insufficient experience for masonry repointing work.
  - 1. Field Supervision: Brick masonry repointing specialist firms shall maintain experienced full-time supervisors on Project site during times that brick masonry repointing work is in progress.
- B. Quality-Control Program: Prepare a written quality-control program for this Project to systematically demonstrate the ability of personnel to properly follow methods and use materials and tools without damaging masonry. Include provisions for supervising performance and preventing damage.
- C. Mockups: Prepare mockups of brick masonry repointing to demonstrate aesthetic effects and to set quality standards for materials and execution.
  - 1. Repointing: Rake out joints in two separate areas as indicated for each type of repointing required, and repoint one of the areas.
  - 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.
  - 3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

## 1.8 DELIVERY, STORAGE, AND HANDLING

- A. Deliver packaged materials to Project site in manufacturer's original and unopened containers, labeled with manufacturer's name and type of products.
- B. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.

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- C. Store hydrated lime in manufacturer's original and unopened containers. Discard lime if containers have been damaged or have been opened for more than two days.
- D. Store sand where grading and other required characteristics can be maintained and contamination avoided.

## 1.9 FIELD CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit repointing work to be performed according to product manufacturers' written instructions and specified requirements.
- B. Temperature Limits, General: Repoint mortar joints only when air temperature is between 40 and 90 deg F and is predicted to remain so for at least seven days after completion of the Work unless otherwise indicated.
- C. Cold-Weather Requirements: Comply with the following procedures for mortar-joint pointing unless otherwise indicated:
  - 1. When air temperature is below 40 deg F, heat mortar ingredients and existing masonry walls to produce temperatures between 40 and 120 deg F.
  - 2. When mean daily air temperature is below 40 deg F, provide enclosure and heat to maintain temperatures above 32 deg F within the enclosure for seven days after pointing.
- D. Hot-Weather Requirements: Protect mortar-joint pointing when temperature and humidity conditions produce excessive evaporation of water from mortar materials. Provide artificial shade and wind breaks, and use cooled materials as required to minimize evaporation. Do not apply mortar to substrates with temperatures of 90 deg F and above unless otherwise indicated.

## PART 2 - PRODUCTS

### 2.1 MORTAR MATERIALS

- A. Refer to Section 042000 "Unit Masonry" for Mortar Materials.

## PART 3 - EXECUTION

### 3.1 PROTECTION

- A. Prevent mortar from staining face of surrounding masonry and other surfaces.
  - 1. Cover sills, ledges, and other projecting items to protect them from mortar droppings.
  - 2. Keep wall area wet below pointing work to discourage mortar from adhering.
  - 3. Immediately remove mortar splatters in contact with exposed masonry and other surfaces.

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- B. Remove gutters and downspouts and associated hardware adjacent to masonry and store during masonry repointing. Reinstall when repointing is complete.
  - 1. Provide temporary rain drainage during work to direct water away from building.

### 3.2 MASONRY REPOINTING, GENERAL

- A. Appearance Standard: Repointed surfaces are to have a uniform appearance as viewed from 10 feet away by Architect.

### 3.3 REPOINTING MASONRY

- A. Rake out and repoint joints to the following extent:
  - 1. All joints in areas indicated.
  - 2. Joints indicated as sealant-filled joints.
  - 3. Joints at locations of the following defects:
    - a. Holes and missing mortar.
    - b. Cracks that can be penetrated 1/4 inch or more by a knife blade 0.027 inch thick.
    - c. Cracks 1/16 inch or more in width and of any depth.
    - d. Hollow-sounding joints when tapped by metal object.
    - e. Eroded surfaces 1/4 inch or more deep.
    - f. Deterioration to point that mortar can be easily removed by hand, without tools.
    - g. Joints filled with substances other than mortar.
- 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 joint width plus 1/8 inch , but not less than 1/2 inch or not less than that required to expose sound, unweathered mortar. Do not remove unsound mortar more than 2 inches deep; consult Architect for direction.
  - 2. Remove mortar from masonry surfaces within raked-out joints to provide reveals with square backs and to expose masonry for contact with pointing mortar. Brush, vacuum, or flush joints to remove dirt and loose debris.
  - 3. Do not spall edges of masonry units or widen joints. Replace or patch damaged masonry units as directed by Architect.
- D. Notify Architect of unforeseen detrimental conditions including voids in mortar joints, cracks, loose masonry units, 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, and allow it to become thumbprint hard before applying next layer.



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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 to become thumbprint hard before applying next layer. Where existing masonry units have worn or rounded edges, slightly recess finished mortar surface below face of masonry to avoid widened joint faces. Take care not to spread mortar beyond joint edges onto exposed masonry 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.
  6. Hairline cracking within mortar or mortar separation at edge of a joint is unacceptable. Completely remove such mortar and repoint.
- F. Where repointing work precedes cleaning of existing masonry, allow mortar to harden at least 30 days before beginning cleaning work.

### 3.4 FINAL CLEANING

- A. After mortar has fully hardened, thoroughly clean exposed masonry 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.
- B. Clean adjacent nonmasonry surfaces. Use detergent and soft brushes or cloths.
- C. Clean mortar and debris from roof; remove debris from gutters and downspouts. Rinse off roof and flush gutters and downspouts.
- D. Remove masking materials, leaving no residues that could trap dirt.

### 3.5 FIELD QUALITY CONTROL

- A. Architect's Project Representatives: Architect will assign Project representatives to help carry out Architect's responsibilities at the site, including observing progress and quality of portion of the Work completed. Allow Architect's Project representatives use of lift devices and scaffolding, as needed, to observe progress and quality of portion of the Work completed.

**END OF SECTION 040120.64**

## **SECTION 061053 - MISCELLANEOUS ROUGH CARPENTRY**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### **1.2 SUMMARY**

- A. Section Includes:
  - 1. Wood blocking and nailers.
  - 2. Wood furring.
  - 3. Plywood backing panels.
- B. Related Requirements:
  - 1. Section 061600 "Sheathing" for sheathing, subflooring, and underlayment.

#### **1.3 DEFINITIONS**

- A. Boards or Strips: Lumber of less than 2 inches nominal size in least dimension.
- B. Dimension Lumber: Lumber of 2 inches nominal or greater size but less than 5 inches nominal size in least dimension.

#### **1.4 ACTION SUBMITTALS**

- A. Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details.
  - 1. Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Indicate type of preservative used and net amount of preservative retained.
  - 2. Include data for fire-retardant treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Include physical properties of treated materials based on testing by a qualified independent testing agency.
  - 3. For fire-retardant treatments, include physical properties of treated lumber both before and after exposure to elevated temperatures, based on testing by a qualified independent testing agency according to ASTM D 5664.
  - 4. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to Project site.

## 1.5 QUALITY ASSURANCE

- A. Testing Agency Qualifications: For testing agency providing classification marking for fire-retardant-treated material, an inspection agency acceptable to authorities having jurisdiction that periodically performs inspections to verify that the material bearing the classification marking is representative of the material tested.

## 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Stack lumber flat with spacers beneath and between each bundle to provide air circulation. Protect lumber from weather by covering with waterproof sheeting, securely anchored. Provide for air circulation around stacks and under coverings.

## PART 2 - PRODUCTS

### 2.1 WOOD PRODUCTS, GENERAL

- A. Maximum Moisture Content of Lumber: 15 percent unless otherwise indicated.

### 2.2 WOOD-PRESERVATIVE-TREATED MATERIALS

- A. Preservative Treatment by Pressure Process: AWP A 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.
  - 2. For exposed items indicated to receive a stained or natural finish, chemical formulations shall not require incising, contain colorants, bleed through, or otherwise adversely affect finishes.
- B. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Do not use material that is warped or 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.
  - 1. For exposed lumber indicated to receive a stained or natural finish, mark end or back of each piece.
- D. Application: Treat items indicated on Drawings, and the following:
  - 1. Wood sills, furring, blocking, stripping, and similar concealed members in contact with masonry or concrete.

## 2.3 FIRE-RETARDANT-TREATED MATERIALS

- A. General: Where fire-retardant-treated materials are indicated, materials shall comply with requirements in this article, that are acceptable to authorities having jurisdiction, and with fire-test-response characteristics specified as determined by testing identical products per test method indicated by a qualified testing agency.
- B. Fire-Retardant-Treated Lumber and Plywood by Pressure Process: Products with a flame-spread index of 25 or less when tested according to ASTM E 84, and with no evidence of significant progressive combustion when the test is extended an additional 20 minutes, and with the flame front not extending more than 10.5 feet beyond the centerline of the burners at any time during the test.
  - 1. Treatment shall not promote corrosion of metal fasteners.
  - 2. Exterior Type: Treated materials shall comply with requirements specified above for fire-retardant-treated lumber and plywood by pressure process after being subjected to accelerated weathering according to ASTM D2898. Use for exterior locations and where indicated.
  - 3. Interior Type A: Treated materials shall have a moisture content of 28 percent or less when tested according to ASTM D 3201 at 92 percent relative humidity. Use where exterior type is not indicated.
  - 4. Design Value Adjustment Factors: Treated lumber shall be tested according to ASTM D5664, and design value adjustment factors shall be calculated according to ASTM D6841. For enclosed roof framing, framing in attic spaces, and where high-temperature fire-retardant treatment is indicated, provide material with adjustment factors of not less than 0.85 modulus of elasticity and 0.75 for extreme fiber in bending for Project's climatological zone.
- C. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Kiln-dry plywood after treatment to a maximum moisture content of 15 percent.
- D. Identify fire-retardant-treated wood with appropriate classification marking of qualified testing agency.
  - 1. For exposed lumber indicated to receive a stained or natural finish, mark end or back of each piece.
- E. Application: Treat items indicated on Drawings, and the following:
  - 1. Concealed blocking.
  - 2. Plywood backing panels.

## 2.4 MISCELLANEOUS LUMBER

- A. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:
  - 1. Blocking.
  - 2. Furring strips.
  - 3. Nailers.
  - 4. Furring.

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- B. Dimension Lumber Items: Construction or No. 2 grade lumber of any of the following species:
  - 1. Mixed southern pine or southern pine; SPIB.
  - 2. Western woods; WCLIB or WWPA.
  - 3. Northern species; NLGA.
  - 4. Eastern softwoods; NeLMA.
- C. Concealed Boards: 15 percent maximum moisture content of 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.
  - 4. Western woods, Construction or No. 2 Common grade; WCLIB or WWPA.
- D. For blocking not used for attachment of other construction, Utility, Stud, or No. 3 grade lumber of any species may be used provided that it is cut and selected to eliminate defects that will interfere with its attachment and purpose.
- E. For blocking and nailers used for attachment of other construction, select and cut lumber to eliminate knots and other defects that will interfere with attachment of other work.
- F. For furring strips for installing plywood or hardboard paneling, select boards with no knots capable of producing bent-over nails and damage to paneling.

## 2.5 PLYWOOD BACKING PANELS

- A. Equipment Backing Panels: Plywood, DOC PS1, Exterior, C-C Plugged, fire-retardant treated, in thickness indicated or, if not indicated, not less than 3/4-inch nominal thickness.

## 2.6 FASTENERS

- A. General: Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacture.
  - 1. Where carpentry is exposed to weather, in ground contact, pressure-preservative treated, or in area of high relative humidity, provide fasteners of Type 304 stainless steel.
- B. Nails, Brads, and Staples: ASTM F1667.
- C. Screws for Fastening to Metal Framing: ASTM C1002 or ASTM C954, length as recommended by screw manufacturer for material being fastened.
- D. Power-Driven Fasteners: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC70.
- E. Post-Installed Anchors: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC01, ICC-ES AC58, ICC-ES AC193, or ICC-ES AC308 as appropriate for the substrate.

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1. Material: Carbon-steel components, zinc plated to comply with ASTM B 633, Class Fe/Zn 5.
2. Material: Stainless steel with bolts and nuts complying with ASTM F 593 and ASTM F594, Alloy Group 1 or 2 .

### **PART 3 - EXECUTION**

#### **3.1 INSTALLATION, GENERAL**

- A. Set carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit carpentry accurately to other construction. Locate furring, nailers, blocking, grounds, and similar supports to comply with requirements for attaching other construction.
- B. Install plywood backing panels by fastening to studs; coordinate locations with utilities requiring backing panels. Install fire-retardant-treated plywood backing panels with classification marking of testing agency exposed to view.
- C. Provide blocking and framing as indicated and as required to support facing materials, fixtures, specialty items, and trim.
  1. Provide blocking for all wall-mounted equipment indicated on Drawings, including owner furnished items.
- D. Provide fire blocking in furred spaces, stud spaces, and other concealed cavities as indicated and as follows:
  1. Fire block furred spaces of walls, at each floor level, at ceiling, and at not more than 96 inches o.c. with solid wood blocking or noncombustible materials accurately fitted to close furred spaces.
  2. Fire block concealed spaces of wood-framed walls and partitions at each floor level, at ceiling line of top story, and at not more than 96 inches o.c. Where fire blocking is not inherent in framing system used, provide closely fitted solid wood blocks of same width as framing members and 2-inch nominal thickness.
  3. Fire block concealed spaces behind combustible cornices and exterior trim at not more than 20 feet o.c.
- E. Sort and select lumber so that natural characteristics do not interfere with installation or with fastening other materials to lumber. Do not use materials with defects that interfere with function of member or pieces that are too small to use with minimum number of joints or optimum joint arrangement.
- F. Comply with AWP A M4 for applying field treatment to cut surfaces of preservative-treated lumber.
  1. Use inorganic boron for items that are continuously protected from liquid water.
  2. Use copper naphthenate for items not continuously protected from liquid water.
- G. Where wood-preservative-treated lumber is installed adjacent to metal decking, install continuous flexible flashing separator between wood and metal decking.



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- H. Securely attach carpentry work to substrate by anchoring and fastening as indicated, complying with the following:
  - 1. Table 2304.9.1, "Fastening Schedule," in ICC's International Building Code.
  - 2. ICC-ES evaluation report for fastener.
- I. Use steel common nails unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting wood. Drive nails snug but do not countersink nail heads unless otherwise indicated.

### 3.2 WOOD BLOCKING AND NAILER INSTALLATION

- A. Install where indicated and where required for screeding or attaching other work. Form to shapes indicated and cut as required for true line and level of attached work. Coordinate locations with other work involved.
- B. Attach items to substrates to support applied loading. Recess bolts and nuts flush with surfaces unless otherwise indicated.
- C. Provide permanent grounds of dressed, pressure-preservative-treated, key-beveled lumber not less than 1-1/2 inches wide and of thickness required to bring face of ground to exact thickness of finish material. Remove temporary grounds when no longer required.

### 3.3 PROTECTION

- A. Protect miscellaneous rough carpentry from weather. If, despite protection, miscellaneous rough carpentry becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.

### END OF SECTION

## **SECTION 061600 - SHEATHING**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### **1.2 SUMMARY**

- A. Section Includes:
  - 1. Wall sheathing.
- B. Related Requirements:
  - 1. Section 061053 "Miscellaneous Rough Carpentry" for plywood backing panels.

#### **1.3 ACTION SUBMITTALS**

- A. Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details.
  - 1. Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated plywood complies with requirements. Indicate type of preservative used and net amount of preservative retained.
  - 2. Include data for fire-retardant treatment from chemical treatment manufacturer and certification by treating plant that treated plywood complies with requirements. Include physical properties of treated materials.
  - 3. For fire-retardant treatments, include physical properties of treated plywood both before and after exposure to elevated temperatures, based on testing by a qualified independent testing agency according to ASTM D 5516.
  - 4. For products receiving waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to Project site.

#### **1.4 QUALITY ASSURANCE**

- A. Testing Agency Qualifications: For testing agency providing classification marking for fire-retardant-treated material, an inspection agency acceptable to authorities having jurisdiction that periodically performs inspections to verify that the material bearing the classification marking is representative of the material tested.

## 1.5 DELIVERY, STORAGE, AND HANDLING

- A. Stack panels flat with spacers beneath and between each bundle to provide air circulation. Protect sheathing from weather by covering with waterproof sheeting, securely anchored. Provide for air circulation around stacks and under coverings.

## PART 2 - PRODUCTS

### 2.1 PERFORMANCE REQUIREMENTS

- A. Fire-Resistance Ratings: As tested according to ASTM E 119; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
  - 1. Fire-Resistance Ratings: Indicated by design designations from UL's "Fire Resistance Directory" or from the listings of another qualified testing agency.

### 2.2 WOOD PANEL PRODUCTS

- A. Emissions: Products shall meet the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."
- B. Thickness: As needed to comply with requirements specified, but not less than thickness indicated.
- C. Factory mark panels to indicate compliance with applicable standard.

### 2.3 PRESERVATIVE-TREATED PLYWOOD

- A. Preservative Treatment by Pressure Process: AWP A 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.
- B. Mark plywood with appropriate classification marking of an inspection agency acceptable to authorities having jurisdiction.
- C. Application: Treat items indicated on Drawings and plywood in contact with masonry or concrete or used with roofing, flashing, vapor barriers, and waterproofing.

## 2.4 FIRE-RETARDANT-TREATED PLYWOOD

- A. General: Where fire-retardant-treated materials are indicated, use materials complying with requirements in this article that are acceptable to authorities having jurisdiction and with fire-test-response characteristics specified as determined by testing identical products per test method indicated by a qualified testing agency.
- B. Fire-Retardant-Treated Plywood by Pressure Process: Products with a flame-spread index of 25 or less when tested according to ASTM E 84, and with no evidence of significant progressive combustion when the test is extended an additional 20 minutes, and with the flame front not extending more than 10.5 feet beyond the centerline of the burners at any time during the test.
  - 1. Use treatment that does not promote corrosion of metal fasteners.
  - 2. Exterior Type: Treated materials shall comply with requirements specified above for fire-retardant-treated plywood by pressure process after being subjected to accelerated weathering according to ASTM D 2898. Use for exterior locations and where indicated.
  - 3. Interior Type A: Treated materials shall have a moisture content of 28 percent or less when tested according to ASTM D 3201/D 3201M at 92 percent relative humidity. Use where exterior type is not indicated.
  - 4. Design Value Adjustment Factors: Treated lumber plywood shall be tested according to ASTM D 5516 and design value adjustment factors shall be calculated according to ASTM D 6305. Span ratings after treatment shall be not less than span ratings specified. For roof sheathing and where high-temperature fire-retardant treatment is indicated, span ratings for temperatures up to 170 deg F shall be not less than span ratings specified.
- C. Kiln-dry material after treatment to a maximum moisture content of 15 percent. Do not use material that is warped or does not comply with requirements for untreated material.
- D. Identify fire-retardant-treated plywood with appropriate classification marking of qualified testing agency.
- E. Application: Treat plywood indicated on Drawings, and the following:
  - 1. Wall sheathing within 48 inches of fire and party walls.

## 2.5 WALL SHEATHING

- A. Plywood Sheathing: DOC PS 1, Exterior, Structural I sheathing.
  - 1. Span Rating: Not less than 16/0.
  - 2. Nominal Thickness: Not less than 1/2 inch.

## 2.6 FASTENERS

- A. General: Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacture.
  - 1. For roof and wall sheathing, provide fasteners of Type 304 stainless steel.
- B. Nails, Brads, and Staples: ASTM F 1667.

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- C. Power-Driven Fasteners: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC70.
- D. Screws for Fastening Sheathing to Wood Framing: ASTM C 1002.

## 2.7 MISCELLANEOUS MATERIALS

- A. Adhesives for Field Gluing Panels to Wood Framing: Formulation complying with APA AFG-01 or ASTM D 3498 that is approved for use with type of construction panel indicated by manufacturers of both adhesives and panels.
  - 1. Adhesives shall have a VOC content of 50 g/L or less.

## PART 3 - EXECUTION

### 3.1 INSTALLATION, GENERAL

- A. Do not use materials with defects that impair quality of sheathing or pieces that are too small to use with minimum number of joints or optimum joint arrangement. Arrange joints so that pieces do not span between fewer than three support members.
- B. Cut panels at penetrations, edges, and other obstructions of work; fit tightly against abutting construction unless otherwise indicated.
- C. Securely attach to substrate by fastening as indicated, complying with the following:
  - 1. Table R602.3(1), "Fastener Schedule for Structural Members," and Table R602.3(2), "Alternate Attachments," in the ICC's International Residential Code for One- and Two-Family Dwellings.
  - 2. ICC-ES evaluation report for fastener.
- D. Use common wire nails unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections. Install fasteners without splitting wood.
- E. Coordinate wall and roof sheathing installation with flashing and joint-sealant installation so these materials are installed in sequence and manner that prevent exterior moisture from passing through completed assembly.
- F. Do not bridge building expansion joints; cut and space edges of panels to match spacing of structural support elements.
- G. Coordinate sheathing installation with installation of materials installed over sheathing so sheathing is not exposed to precipitation or left exposed at end of the workday when rain is forecast.

### 3.2 WOOD STRUCTURAL PANEL INSTALLATION

- A. General: Comply with applicable recommendations in APA Form No. E30, "Engineered Wood Construction Guide," for types of structural-use panels and applications indicated.
- B. Fastening Methods: Fasten panels as indicated below:
  - 1. Wall Sheathing:
    - a. Nail or staple to wood framing. Apply a continuous bead of glue to framing members at edges of wall sheathing panels.
    - b. Screw to wood framing.
    - c. Space panels 1/8 inch apart at edges and ends.

**END OF SECTION**



## **SECTION 062023 - INTERIOR FINISH CARPENTRY**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### **1.2 SUMMARY**

- A. Section Includes:
  - 1. Interior trim at windows.
- B. Related Requirements:
  - 1. Section 061053 "Miscellaneous Rough Carpentry" for furring, blocking, and other carpentry work not exposed to view.
  - 2. Section 099123 "Interior Painting" for priming and backpriming of interior finish carpentry.

#### **1.3 DEFINITIONS**

- A. MDF: Medium-density fiberboard.
- B. MDO: Plywood with a medium-density overlay on the face.

#### **1.4 ACTION SUBMITTALS**

- A. Product Data: For each type of process and factory-fabricated product. Indicate component materials, dimensions, profiles, textures, and colors and include construction and application details.
  - 1. Include data for wood-preservative treatment from chemical-treatment manufacturer and certification by treating plant that treated materials comply with requirements. Indicate type of preservative used and net amount of preservative retained. Include chemical-treatment manufacturer's written instructions for finishing treated material.
  - 2. Include data for fire-retardant treatment from chemical-treatment manufacturer and certification by treating plant that treated materials comply with requirements.
  - 3. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced before shipment to Project site to levels specified.
- B. Samples for Initial Selection: For each type of product involving selection of colors, profiles, or textures.

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C. Samples for Verification:

1. For each species and cut of lumber and panel products with nonfactory-applied finish, with half of exposed surface finished, 50 sq. in. for lumber and 8 by 10 inches for panels.
2. For each finish system and color of lumber and panel products with factory-applied finish, 50 sq. in. for lumber and 8 by 10 inches for panels.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Stack lumber, plywood, and other panels flat with spacers between each bundle to provide air circulation. Protect materials from weather by covering with waterproof sheeting, securely anchored. Provide for air circulation around stacks and under coverings.
- B. Deliver interior finish carpentry materials only when environmental conditions comply with requirements specified for installation areas. If interior finish carpentry materials must be stored in other than installation areas, store only where environmental conditions comply with requirements specified for installation areas.

1.6 FIELD CONDITIONS

- A. Environmental Limitations: Do not deliver or install interior finish carpentry materials until building is enclosed and weatherproof, wet work in space is completed and nominally dry, and HVAC system is operating and maintaining temperature and relative humidity at occupancy levels during the remainder of the construction period.
- B. Do not install finish carpentry materials that are wet, moisture damaged, or mold damaged.
  1. Indications that materials are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
  2. Indications that materials are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

**PART 2 - PRODUCTS**

2.1 MATERIALS, GENERAL

- A. Lumber: 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 American Lumber Standard Committee's Board of Review. Grade lumber by an agency certified by the American Lumber Standard Committee's 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. For exposed lumber, mark grade stamp on end or back of each piece, or omit grade stamp and provide certificates of grade compliance issued by grading agency.
- B. Softwood Plywood: DOC PS 1.

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- C. Hardboard: ANSI A135.4.
- D. Particleboard: ANSI A208.1, Grade M-2-Exterior Glue.

## 2.2 FIRE-RETARDANT-TREATED MATERIALS

- A. General: For applications indicated, use materials complying with requirements in this article that are acceptable to authorities having jurisdiction and comply with testing requirements; testing will be conducted by a qualified testing agency.
- B. Fire-Retardant-Treated Lumber and Plywood by Pressure Process: Products with a flame-spread index of 25 or less when tested according to ASTM E 84, with no evidence of significant progressive combustion when the test is extended an additional 20 minutes, and with the flame front not extending more than 10.5 feet beyond the centerline of the burners at any time during the test.
  - 1. Kiln dry lumber and plywood after treatment to a maximum moisture content of 19 and 15 percent, respectively.
- C. For exposed items indicated to receive a stained or natural finish, use organic resin chemical formulations that do not contain colorants, and provide materials that do not have marks from spacer sticks on exposed face.
- D. Do not use material that does not comply with requirements for untreated material or is warped or discolored.
- E. Identify fire-retardant-treated wood with appropriate classification marking of testing and inspecting agency acceptable to authorities having jurisdiction.
  - 1. For exposed lumber indicated to receive a stained or natural finish, mark end or back of each piece.
  - 2. For exposed plywood indicated to receive a stained or natural finish, mark back of each piece.
- F. Application: Where indicated.

## 2.3 INTERIOR TRIM

- A. Moldings for Opaque Finish (Painted Finish): Made to patterns included in MMPA's "WM/Series Wood Moulding Patterns."
  - 1. Hardwood Moldings: MMPA HWM 4, P-grade.
    - a. Species: Aspen, basswood, cottonwood, gum, magnolia, soft maple, tupelo, or yellow poplar.
    - b. Maximum Moisture Content: 9 percent.
  - 2. Finger Jointing: Not allowed.
  - 3. Casing Pattern: As indicated on Drawings.

## 2.4 MISCELLANEOUS MATERIALS

- A. Fasteners for Interior Finish Carpentry: Nails, screws, and other anchoring devices of type, size, material, and finish required for application indicated to provide secure attachment, concealed where possible.
- B. Glue: Aliphatic-resin, polyurethane, or resorcinol wood glue recommended by manufacturer for general carpentry use.
  - 1. Adhesives shall have a VOC content of 30 g/L or less.
- C. Multipurpose Construction Adhesive: Formulation complying with ASTM D 3498 that is recommended for indicated use by adhesive manufacturer.
  - 1. Adhesives shall have a VOC content of 70 g/L or less.

## 2.5 FABRICATION

- A. Back out or kerf backs of the following members, except those with ends exposed in finished work:
  - 1. Interior standing and running trim, except shoe and crown molds.
  - 2. Wood-board paneling.
- B. Ease edges of lumber less than 1 inch in nominal thickness to 1/16-inch radius and edges of lumber 1 inch or more in nominal thickness to 1/8-inch radius.

# PART 3 - EXECUTION

## 3.1 EXAMINATION

- A. Examine substrates, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Examine finish carpentry materials before installation. Reject materials that are wet, moisture damaged, and mold damaged.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

## 3.2 PREPARATION

- A. Clean substrates of projections and substances detrimental to application.
- B. Before installing interior finish carpentry, condition materials to average prevailing humidity in installation areas for a minimum of 24 hours unless longer conditioning is recommended by manufacturer.

### 3.3 INSTALLATION, GENERAL

- A. Do not use materials that are unsound; warped; improperly treated or finished; inadequately seasoned; too small to fabricate with proper jointing arrangements; or with defective surfaces, sizes, or patterns.
- B. Install interior finish carpentry level, plumb, true, and aligned with adjacent materials. Use concealed shims where necessary for alignment.
  - 1. Scribe and cut interior finish carpentry to fit adjoining work. Refinish and seal cuts as recommended by manufacturer.
  - 2. Where face fastening is unavoidable, countersink fasteners, fill surface flush, and sand unless otherwise indicated.
  - 3. Install to tolerance of 1/8 inch in 96 inches for level and plumb. Install adjoining interior finish carpentry with 1/32-inch maximum offset for flush installation and 1/16-inch maximum offset for reveal installation.
  - 4. Install stairs with no more than 3/16-inch variation between adjacent treads and risers and with no more than 3/8-inch variation between largest and smallest treads and risers within each flight.
  - 5. Coordinate interior finish carpentry with materials and systems in or adjacent to it. Provide cutouts for mechanical and electrical items that penetrate interior finish carpentry.

### 3.4 STANDING AND RUNNING TRIM INSTALLATION

- A. Install with minimum number of joints practical, using full-length pieces from maximum lengths of lumber available. Do not use pieces less than 24 inches long, except where necessary. Stagger joints in adjacent and related standing and running trim. Cope at returns, miter at outside corners, and cope at inside corners to produce tight-fitting joints with full-surface contact throughout length of joint. Use scarf joints for end-to-end joints. Plane backs of casings to provide uniform thickness across joints where necessary for alignment.
  - 1. Match color and grain pattern of trim for transparent finish (stain or clear finish) across joints.
  - 2. Install trim after gypsum-board joint finishing operations are completed.
  - 3. Install without splitting; drill pilot holes before fastening where necessary to prevent splitting. Fasten to prevent movement or warping. Countersink fastener heads on exposed carpentry work and fill holes.

### 3.5 ADJUSTING

- A. Replace interior finish carpentry that is damaged or does not comply with requirements. Interior finish carpentry may be repaired or refinished if work complies with requirements and shows no evidence of repair or refinishing. Adjust joinery for uniform appearance.

### 3.6 CLEANING

- A. Clean interior finish carpentry on exposed and semiexposed surfaces. Restore damaged or soiled areas and touch up factory-applied finishes if any.

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3.7 PROTECTION

- A. Protect installed products from damage from weather and other causes during construction.
- B. Remove and replace finish carpentry materials that are wet, moisture damaged, and mold damaged.
  - 1. Indications that materials are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
  - 2. Indications that materials are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

**END OF SECTION**



## SECTION 072500 - WEATHER BARRIERS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
  - 1. Self-adhering weather barrier

#### 1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product.
  - 1. For building wrap, include data on air and water-vapor permeance based on testing according to referenced standards.
- B. Shop Drawings: Show details of building wrap at terminations, openings, and penetrations. Show details of flexible flashing applications.

#### 1.3 QUALITY ASSURANCE

- A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer.
  - 1. Installer shall be licensed by ABAA according to ABAA's Quality Assurance Program and shall employ ABAA-certified installers and supervisors on Project.
- B. Integrated Exterior Mockups: Build mockups in compliance with Section 014000 "Quality Requirements" to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for materials and execution.

### PART 2 - PRODUCTS

#### 2.1 WATER-RESISTIVE BARRIER

- A. Self-Adhering Weather Barrier: ASTM E 1677, Type I air barrier; with flame-spread and smoke-developed indexes of less than 25 and 450, respectively, when tested according to ASTM E 84; UV stabilized; and acceptable to authorities having jurisdiction.
  - a. **Hunter Panel; VP-SA WRB Vapor Permeable weather barrier**
  - 2. Water-Vapor Permeance: Not less than 20 perms per ASTM E 96/E 96M, Desiccant Method (Procedure A).
  - 3. Air Permeance: Not more than 0.004 cfm/sq. ft. at 0.3-inch wg when tested according to ASTM E 2178.

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4. Allowable UV Exposure Time: Not less than three months.
5. Flame Propagation Test: Materials and construction shall be as tested according to NFPA 285.

### **PART 3 - EXECUTION**

#### **3.1 WATER-RESISTIVE BARRIER INSTALLATION**

- A. Cover exposed exterior surface of sheathing with water-resistive barrier securely fastened to framing immediately after sheathing is installed.
- B. Cover sheathing with water-resistive barrier as follows:
  1. Cut back barrier 1/2 inch on each side of the break in supporting members at expansion- or control-joint locations.
  2. Apply barrier to cover vertical flashing with a minimum 4-inch overlap unless otherwise indicated.
- C. Self-adhering weather barrier: Apply horizontally with a 2-inch overlap and a 6-inch end lap; fasten to sheathing with galvanized staples or roofing nails.
- D. Self-adhering weather barrier: Comply with manufacturer's written instructions and warranty requirements.
  1. Seal seams, edges, fasteners, and penetrations with tape.
  2. Extend into jambs of openings and seal corners with tape.

### **END OF SECTION**

## **SECTION 076200 - SHEET METAL FLASHING AND TRIM**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### **1.2 SUMMARY**

- A. Section Includes:
  - 1. Formed wall sheet metal fabrications.
- B. Related Requirements:
  - 1. Section 061053 "Miscellaneous Rough Carpentry" for wood nailers, curbs, and blocking.
  - 2. Section 077100 "Roof Specialties" for manufactured copings, roof-edge specialties, roof-edge drainage systems, reglets, and counterflashings.

#### **1.3 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.

#### **1.4 PREINSTALLATION MEETINGS**

- A. Preinstallation Conference: Conduct conference at Project site.
  - 1. Review construction schedule. Verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
  - 2. Review requirements for insurance and certificates if applicable.
  - 3. Review sheet metal flashing observation and repair procedures after flashing installation.

#### **1.5 ACTION SUBMITTALS**

- A. Product Data: For each type of product.
- B. Shop Drawings: For sheet metal flashing and trim.

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1. Include plans, elevations, sections, and attachment details.
2. Detail fabrication and installation layouts, expansion-joint locations, and keyed details. Distinguish between shop- and field-assembled Work.
3. Include identification of material, thickness, weight, and finish for each item and location in Project.
4. Include details for forming, including profiles, shapes, seams, and dimensions.
5. Include details for joining, supporting, and securing, including layout and spacing of fasteners, cleats, clips, and other attachments. Include pattern of seams.
6. Include details of termination points and assemblies.
7. Include details of expansion joints and expansion-joint covers, including showing direction of expansion and contraction from fixed points.
8. Include details of edge conditions, including eaves, ridges, valleys, rakes, crickets, flashings, and counterflashings.
9. Include details of special conditions.
10. Include details of connections to adjoining work.

C. Samples for Verification: For each type of exposed finish.

1. Sheet Metal Flashing: 12 inches long by actual width of unit, including finished seam and in required profile. Include fasteners, cleats, clips, closures, and other attachments.
2. Anodized Aluminum Samples: Samples to show full range to be expected for each color required.

## 1.6 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For sheet metal flashing and trim, and its accessories, to include in maintenance manuals.

## 1.7 QUALITY ASSURANCE

- A. Fabricator Qualifications: Employs skilled workers who custom fabricate sheet metal flashing and trim similar to that required for this Project and whose products have a record of successful in-service performance.
- B. Integrated Exterior Mockups: Build mockups in compliance with Section 014000 "Quality Requirements" to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for materials and execution.

## 1.8 DELIVERY, STORAGE, AND HANDLING

- A. 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.

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- B. 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.

## 1.9 WARRANTY

- A. Special Warranty on Finishes: Manufacturer agrees to repair finish or replace sheet metal flashing and trim that shows evidence of deterioration of factory-applied finishes within specified warranty period.
  - 1. Exposed Panel Finish: Deterioration includes, but is not limited to, the following:
    - a. Color fading more than 5 Delta E units when tested in accordance with ASTM D2244.
    - b. Chalking in excess of a No. 8 rating when tested in accordance with ASTM D4214.
    - c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.
  - 2. Finish Warranty Period: 20 years from date of Substantial Completion.

## PART 2 - PRODUCTS

### 2.1 PERFORMANCE REQUIREMENTS

- A. Sheet metal flashing and trim assemblies, including cleats, anchors, and fasteners, shall 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 shall not rattle, leak, or loosen, and shall remain watertight.
- B. Sheet Metal Standard for Flashing and Trim: Comply with NRCA's "The NRCA Roofing Manual: Architectural Metal Flashing, Condensation and Air Leakage Control, and Reroofing" and SMACNA's "Architectural Sheet Metal Manual" requirements for dimensions and profiles shown unless more stringent requirements are indicated.
- C. Sheet Metal Standard for Copper: Comply with CDA's "Copper in Architecture Handbook." Conform to dimensions and profiles shown unless more stringent requirements are indicated.
- D. FM Approvals Listing: Manufacture and install copings and roof edge flashings that are listed in FM Approvals' "RoofNav" and approved for windstorm classification, Class 1-90. Identify materials with name of fabricator and design approved by FM Approvals.
- E. 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.
  - 1. Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces.

## 2.2 SHEET METALS

- A. Protect mechanical and other finishes on exposed surfaces from damage by applying strippable, temporary protective film before shipping.
- B. Copper Sheet: ASTM B370, cold-rolled copper sheet, H00 or H01 temper.
  - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - a. Hussey Copper Ltd.
    - b. Revere Copper Products, Inc.
  - 2. Source Limitations: Obtain sheet from single source from single manufacturer.
  - 3. Nonpatinated, Exposed Finish: Mill.
- C. 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. Color Anodic Finish, Coil Coated: AAMA 611, AA-M12C22A42/A44, Class I, 0.018 mm or thicker.
    - a. Color: As selected by Architect from full range of industry colors and color densities.
    - b. Color Range: 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.

## 2.3 MISCELLANEOUS MATERIALS

- A. Provide materials and types of fasteners, solder, 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. Solder:
  - 1. For Copper: ASTM B32, Grade Sn50, 50 percent tin and 50 percent lead with maximum lead content of 0.2 percent.
- 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 polyurethane polysulfide silicone polymer sealant; of type, grade, class, and use classifications required to seal joints in sheet metal flashing and trim and remain watertight.



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- E. Butyl Sealant: ASTM C1311, single-component, solvent-release butyl rubber sealant; polyisobutylene plasticized; heavy bodied for hooked-type expansion joints with limited movement.

## 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. Do not use exposed fasteners on faces exposed to view.
- 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:
  - 1. Fabricate nonmoving seams with flat-lock seams. Tin edges to be seamed, form seams, and solder.

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2. Seams for Aluminum: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with epoxy seam sealer. Rivet joints where necessary for strength.

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

## 2.5 WALL SHEET METAL FABRICATIONS

- A. Through-Wall Flashing: Fabricate continuous flashings in minimum 96-inch- long, but not exceeding 12-foot- long, sections, under copings, and at shelf angles. Fabricate discontinuous lintel, sill, and similar flashings to extend 6 inches beyond each side of wall openings; and form with 2-inch- high, end dams. Fabricate from the following materials:
  1. Copper: 16 oz./sq. ft..
  2. Aluminum: 20-gauge equivalent (0.032 inch) thick.
- B. Opening Flashings in Frame Construction: Fabricate head, sill, jamb, and similar flashings to extend 4 inches beyond wall openings. Form head and sill flashing with 2-inch- high, end dams. Fabricate from the following materials:
  1. Copper: 16 oz./sq. ft..
  2. 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.
  3. Verify that air- or water-resistant barriers have been installed over sheathing or backing substrate to prevent air infiltration or water penetration.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 INSTALLATION OF UNDERLAYMENT

- A. Felt Underlayment: Install felt underlayment, wrinkle free, using adhesive to minimize use of mechanical fasteners under sheet metal flashing and trim.
  1. Install in shingle fashion to shed water.
  2. Lap joints not less than 2 inches.

### 3.3 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 solder.
  - 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. Space individual cleats not more than 12 inches apart. Attach each cleat with at least two fasteners. Bend tabs over fasteners.
  - 6. Install exposed sheet metal flashing and trim with limited oil-canning, and free of buckling and tool marks.
  - 7. Do not field cut sheet metal flashing and trim by torch.
  - 8. 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 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.

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- 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. Soldered Joints: Clean surfaces to be soldered, removing oils and foreign matter.
  - 1. Pretin edges of sheets with solder to width of 1-1/2 inches; however, reduce pretinning where pretinned surface would show in completed Work.
  - 2. Do not solder aluminum sheet.
  - 3. Do not use torches for soldering.
  - 4. Heat surfaces to receive solder, and flow solder into joint.
    - a. Fill joint completely.
    - b. Completely remove flux and spatter from exposed surfaces.
  - 5. Copper Soldering: Tin edges of uncoated sheets, using solder for copper.
- H. Rivets: Rivet joints in uncoated aluminum where necessary for strength.

### 3.4 INSTALLATION OF WALL FLASHINGS

- A. Install sheet metal wall flashing to intercept and exclude penetrating moisture in accordance with cited sheet metal standard unless otherwise indicated. Coordinate installation of wall flashing with installation of wall-opening components such as windows, doors, and louvers.
- B. Opening Flashings in Frame Construction: Install continuous head, sill, jamb, and similar flashings to extend 4 inches beyond wall openings.

### 3.5 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.

### 3.6 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.

### 3.7 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.

**END OF SECTION**

## **SECTION 077100 - ROOF SPECIALTIES**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### **1.2 SUMMARY**

- A. Section Includes:
  - 1. Roof-edge drainage systems.
- B. Related Requirements:
  - 1. Section 061053 "Miscellaneous Rough Carpentry" for wood nailers, curbs, and blocking.
  - 2. Section 074113.13 "Formed Metal Roof Panels" for roof-edge drainage-system components provided by metal-roof-panel manufacturer.
  - 3. Section 076200 "Sheet Metal Flashing and Trim" for custom- and site-fabricated sheet metal flashing and trim.
  - 4. Section 079200 "Joint Sealants" for field-applied sealants between roof specialties and adjacent materials.
- C. Preinstallation Conference: Conduct conference at Project site.
  - 1. Meet with Owner, Architect, Owner's insurer if applicable, roofing-system testing and inspecting agency representative, roofing Installer, roofing-system manufacturer's representative, Installer, structural-support Installer, and installers whose work interfaces with or affects roof specialties, including installers of roofing materials and accessories.
  - 2. Examine substrate conditions for compliance with requirements, including flatness and attachment to structural members.
  - 3. Review special roof details, roof drainage, and condition of other construction that will affect roof specialties.

#### **1.3 ACTION SUBMITTALS**

- A. Product Data: For each type of product.
  - 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.
- B. Shop Drawings: For roof specialties.
  - 1. Include plans, elevations, expansion-joint locations, keyed details, and attachments to other work. Distinguish between plant- and field-assembled work.



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2. Include details for expansion and contraction; locations of expansion joints, including direction of expansion and contraction.
3. Indicate profile and pattern of seams and layout of fasteners, cleats, clips, and other attachments.
4. Detail termination points and assemblies, including fixed points.
5. Include details of special conditions.

C. Samples for Verification:

1. Include Samples of each type of roof specialty to verify finish and color selection, in manufacturer's standard sizes.

#### 1.4 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For roofing specialties to include in maintenance manuals.

#### 1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: A qualified manufacturer offering products meeting requirements that are FM Approvals listed for specified class.
- B. Integrated Exterior Mockups: Build mockups in compliance with Section 014000 "Quality Requirements" to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for materials and execution.

#### 1.6 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.

#### 1.7 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.

## 1.8 WARRANTY

- A. Special Warranty on Painted Finishes: Manufacturer agrees to repair finish or replace roof specialties that show evidence of deterioration of factory-applied finishes within specified warranty period.
  - 1. Fluoropolymer Finish: Deterioration includes, but is not limited to, the following:
    - a. Color fading more than 5 Hunter units when tested according to ASTM D 2244.
    - b. Chalking in excess of a No. 8 rating when tested according to ASTM D 4214.
    - c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.
  - 2. Finish Warranty Period: 20 years from date of Substantial Completion.

## PART 2 - PRODUCTS

### 2.1 PERFORMANCE REQUIREMENTS

- A. General Performance: Roof specialties shall 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. FM Approvals' Listing: Manufacture and install roof-edge specialties that are listed in FM Approvals' "RoofNav" and approved for windstorm classification, Class 1-90. Identify materials with FM Approvals' markings.
- C. SPRI Wind Design Standard: Manufacture and install roof-edge specialties tested according to SPRI ES-1 and capable of resisting the following design pressures:
  - 1. Design Pressure: As indicated on Drawings.
- D. 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.
  - 1. Temperature Change (Range): 120 deg F, ambient; 180 deg F, material surfaces.

### 2.2 ROOF-EDGE DRAINAGE SYSTEMS

- A. Basis-of-Design Product: Subject to compliance with requirements, provide **Hickman Company, W.P.** or comparable product by one of the following:
  - 1. ATAS International, Inc.
  - 2. Metal-Era, Inc.
  - 3. Metal-Fab Manufacturing, LLC.
  - 4. Petersen Aluminum Corporation.

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- B. Gutters: Manufactured in uniform section, seamless with matching corner units, ends, outlet tubes, and other accessories. Elevate back edge at least 1 inch 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: 16-gauge (0.050 inch) thick.
  - 2. Gutter Profile: Style K according to SMACNA's "Architectural Sheet Metal Manual."
  - 3. Corners: Factory mitered and mechanically clinched and sealed watertight.
  - 4. Gutter Supports: Straps with finish matching the gutters.
  - 5. Size: As Indicated on Drawings.
- C. Downspouts: 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: 16-gauge (0.050 inch) thick.
  - 2. Size: As Indicated on Drawings.
- D. Downspouts: Corrugated rectangular 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: 16-gauge (0.050 inch) thick.
  - 2. Size: As Indicated on Drawings.
- E. Aluminum Finish: Color anodic.
  - 1. Color: As selected by Architect from manufacturer's full range.

## 2.3 MATERIALS

- A. Aluminum Sheet: ASTM B 209 , alloy as standard with manufacturer for finish required, with temper to suit forming operations and performance required.

## 2.4 UNDERLAYMENT MATERIALS

- A. Felt: ASTM D226/D 226M, Type II (No. 30), asphalt-saturated organic felt, nonperforated.
- B. Slip Sheet: Rosin-sized building paper, 3-lb/100 sq. ft. minimum.

## 2.5 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.
  - 3. Fasteners for Stainless-Steel Sheet: Series 300 stainless steel.

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- B. Elastomeric Sealant: ASTM C920, elastomeric silicone polymer sealant of type, grade, class, and use classifications required by roofing-specialty manufacturer for each application.
- C. Butyl Sealant: ASTM C 1311, single-component, solvent-release butyl rubber sealant; polyisobutylene plasticized; heavy bodied for hooked-type joints with limited movement.
- D. Bituminous Coating: Cold-applied asphalt emulsion complying with ASTM D1187/D 1187M.

## 2.6 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. Coil-Coated Aluminum Sheet Finishes:
  - 1. Color Anodic Finish: AAMA 611, AA-M12C22A42/A44, Class I, 0.018 mm or thicker.

## 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 UNDERLAYMENT INSTALLATION

- A. Felt Underlayment: Install with adhesive for temporary anchorage to minimize use of mechanical fasteners under roof specialties. Apply in shingle fashion to shed water, with lapped joints of not less than 2 inches.
- B. Slip Sheet: Install with tape or adhesive for temporary anchorage to minimize use of mechanical fasteners under roof specialties. Apply in shingle fashion to shed water, with lapped joints of not less than 2 inches.

### 3.3 INSTALLATION, GENERAL

- A. General: 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 level, plumb, true to line and elevation; with limited oil-canning and without warping, jogs in alignment, buckling, or tool marks.
  - 2. Provide uniform, neat seamless Gutters 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 stainless-steel 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.
- C. Expansion Provisions: Allow for thermal expansion of exposed roof specialties.
  - 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.
- 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.

### 3.4 ROOF-EDGE DRAINAGE-SYSTEM INSTALLATION

- A. General: 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.
- B. Gutters: To be fabricated as seamless sections. Allow for thermal expansion. Attach gutters to firmly anchored gutter supports spaced not more than 24 inches part. Attach ends with rivets and seal with sealant to make watertight. Slope to downspouts.

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1. Install gutter with expansion joints at locations indicated but not exceeding 50 feet apart. Install expansion-joint caps.
  2. Install continuous leaf guards on gutters with noncorrosive fasteners, removable or hinged to swing open for cleaning gutters.
- C. Downspouts: Join sections with manufacturer's standard telescoping joints. Provide hangers with fasteners designed to hold downspouts securely to walls and 1 inch away from walls; locate fasteners at top and bottom and at approximately 60 inches o.c.
1. Provide elbows at base of downspouts at grade to direct water away from building.
- D. Conductor Heads: Anchor securely to wall with elevation of conductor top edge 1 inch below gutter discharge.

### 3.5 CLEANING AND PROTECTION

- A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.
- B. 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.
- C. Replace roof specialties that have been damaged or that cannot be successfully repaired by finish touchup or similar minor repair procedures.

### END OF SECTION



## **SECTION 079200 - JOINT SEALANTS**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### **1.2 SUMMARY**

- A. Section Includes:
  - 1. Silicone joint sealants.
  - 2. Nonstaining silicone joint sealants.
  - 3. Urethane joint sealants.
  - 4. Mildew-resistant joint sealants.
  - 5. Butyl joint sealants.
  - 6. Latex joint sealants.
- B. Related Requirements:
  - 1. Section 079219 "Acoustical Joint Sealants" for sealing joints in sound-rated construction.

#### **1.3 PREINSTALLATION MEETINGS**

- A. Preinstallation Conference: Conduct conference at Project site.

#### **1.4 ACTION SUBMITTALS**

- A. Product Data: For each joint-sealant product.
- B. Samples for Verification: Manufacturer's color charts consisting of strips of cured sealants showing the full range of colors available for each product exposed to view.
- C. Joint-Sealant Schedule: Include the following information:
  - 1. Joint-sealant application, joint location, and designation.
  - 2. Joint-sealant manufacturer and product name.
  - 3. Joint-sealant formulation.
  - 4. Joint-sealant color.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: An authorized representative who is trained and approved by manufacturer.

1.6 FIELD CONDITIONS

- A. Do not proceed with installation of joint sealants under the following conditions:
1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer or are below 40 deg F.
  2. When joint substrates are wet.
  3. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.
  4. Where contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

1.7 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.
- B. Special warranties specified in this article exclude deterioration or failure of joint sealants from the following:
1. Movement of the structure caused by stresses on the sealant exceeding sealant manufacturer's written specifications for sealant elongation and compression.
  2. Disintegration of joint substrates from causes exceeding design specifications.
  3. Mechanical damage caused by individuals, tools, or other outside agents.
  4. Changes in sealant appearance caused by accumulation of dirt or other atmospheric contaminants.

**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. VOC Content of Interior Sealants: Sealants and sealant primers used inside the weatherproofing system shall comply with the following:
1. Architectural sealants shall have a VOC content of 250 g/L or less.
  2. Sealants and sealant primers for nonporous substrates shall have a VOC content of 250 g/L or less.

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

## 2.2 SILICONE JOINT SEALANTS

- A. Silicone, S, NS, 50, NT: Single-component, nonsag, plus 50 percent and minus 50 percent movement capability, nontraffic-use, neutral-curing silicone joint sealant; ASTM C 920, Type S, Grade NS, Class 50, Use NT.

## 2.3 NONSTAINING SILICONE JOINT SEALANTS

- A. Nonstaining Joint Sealants: No staining of substrates when tested according to ASTM C 1248.
- B. Silicone, Nonstaining, S, NS, 50, NT: Nonstaining, single-component, nonsag, plus 50 percent and minus 50 percent movement capability, nontraffic-use, neutral-curing silicone joint sealant; ASTM C 920, Type S, Grade NS, Class 50, Use NT.

## 2.4 URETHANE JOINT SEALANTS

- A. Urethane, S, P, 25, T, NT: Single-component, pourable, plus 25 percent and minus 25 percent movement capability, traffic- and nontraffic-use, urethane joint sealant; ASTM C 920, Type S, Grade P, Class 25, Uses T and NT.

## 2.5 MILDEW-RESISTANT JOINT SEALANTS

- A. Mildew-Resistant Joint Sealants: Formulated for prolonged exposure to humidity with fungicide to prevent mold and mildew growth.
- B. Silicone, Mildew Resistant, Acid Curing, S, NS, 25, NT: Mildew-resistant, single-component, nonsag, plus 25 percent and minus 25 percent movement capability, nontraffic-use, acid-curing silicone joint sealant; ASTM C 920, Type S, Grade NS, Class 25, Use NT.

## 2.6 BUTYL JOINT SEALANTS

- A. Butyl-Rubber-Based Joint Sealants: ASTM C1311.

## 2.7 LATEX JOINT SEALANTS

- A. Acrylic Latex: Acrylic latex or siliconized acrylic latex, ASTM C834, Type OP, Grade NF.

## 2.8 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.

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- 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.

## 2.9 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 EXAMINATION

- A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 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. Concrete.

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- b. Masonry.
  - c. Exterior insulation and finish systems.
- 3. Remove laitance and form-release agents from concrete.
- 4. 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. Glass.
  - c. Glazed surfaces of ceramic tile.
- 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.

### 3.3 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 C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.
- C. Install sealant backings of kind 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.

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- 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 per Figure 8A in ASTM C1193 unless otherwise indicated.
  4. Provide flush joint profile at locations indicated on Drawings according to Figure 8B in ASTM C 1193.
  5. Provide recessed joint configuration of recess depth and at locations indicated on Drawings according to Figure 8C in ASTM C1193.
    - a. Use masking tape to protect surfaces adjacent to recessed tooled joints.

### 3.4 CLEANING

- A. 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.

### 3.5 PROTECTION

- A. 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.

### 3.6 JOINT-SEALANT SCHEDULE

- A. Joint-Sealant Application: Exterior joints in vertical surfaces and horizontal nontraffic surfaces.
1. Joint Locations:
    - a. Construction joints in cast-in-place concrete.
    - b. Joints between plant-precast architectural concrete units.
    - c. Control and expansion joints in unit masonry.
    - d. Joints in dimension stone cladding.
    - e. Joints in glass unit masonry assemblies.
    - f. Joints in exterior insulation and finish systems.
    - g. Joints between metal panels.
    - h. Joints between different materials listed above.
    - i. Perimeter joints between materials listed above and frames of doors and windows.
    - j. Other joints as indicated on Drawings.
  2. Joint Sealant: Silicone, nonstaining, S, NS, 50, NT.
  3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.



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- B. Joint-Sealant Application: Interior joints in vertical surfaces and horizontal nontraffic surfaces.
1. Joint Locations:
    - a. Control and expansion joints on exposed interior surfaces of exterior walls.
    - b. Tile control and expansion joints.
    - c. Other joints as indicated on Drawings.
  2. Joint Sealant: Silicone, S, NS, 50, NT.
  3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.
- C. Joint-Sealant Application: Interior joints in vertical surfaces and horizontal nontraffic surfaces not subject to significant movement.
1. Joint Locations:
    - a. Control joints on exposed interior surfaces of exterior walls.
    - b. Perimeter joints between interior wall surfaces and frames of interior doors and windows.
    - c. Other joints as indicated on Drawings.
  2. Joint Sealant: Acrylic latex.
  3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.
- D. Joint-Sealant Application: Mildew-resistant interior joints in vertical surfaces and horizontal nontraffic surfaces.
1. Joint Locations:
    - a. Joints between plumbing fixtures and adjoining walls, floors, and counters.
    - b. Tile control and expansion joints where indicated.
    - c. Other joints as indicated on Drawings.
  2. Joint Sealant: Silicone, mildew resistant, acid curing, S, NS, 25, NT.
  3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.
- E. Joint-Sealant Application: Concealed mastics.
1. Joint Locations:
    - a. Aluminum thresholds.
    - b. Sill plates.
    - c. Other joints as indicated on Drawings.
  2. Joint Sealant: Butyl-rubber based.
  3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.

**END OF SECTION**

## **SECTION 079219 - ACOUSTICAL JOINT SEALANTS**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### **1.2 SUMMARY**

- A. Section includes acoustical joint sealants.
- B. Related Requirements:
  - 1. Section 079200 "Joint Sealants" for elastomeric, latex, and butyl-rubber-based joint sealants for nonacoustical applications.

#### **1.3 ACTION SUBMITTALS**

- A. Product Data: For each acoustical joint sealant.
- B. Samples for Verification: For each kind and color of acoustical joint sealant required, provide Samples with joint sealants in 1/2-inch-wide joints formed between two 6-inch- long strips of material matching the appearance of exposed surfaces adjacent to joint sealants.

#### **1.4 WARRANTY**

- A. Special Installer's Warranty: Installer agrees to repair or replace acoustical joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
  - 1. Warranty Period: Two years from date of Substantial Completion.

### **PART 2 - PRODUCTS**

#### **2.1 PERFORMANCE REQUIREMENTS**

- A. Provide acoustical joint-sealant products that effectively reduce airborne sound transmission through perimeter joints and openings in building construction, as demonstrated by testing representative assemblies according to ASTM E 90.
- B. VOC Content of Interior Sealants: Sealants and sealant primers shall comply with the following:

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1. Acoustical sealants and sealant primers shall have a VOC content of 250 g/L or less.

## 2.2 ACOUSTICAL JOINT SEALANTS

- A. Acoustical Sealant for Exposed and Concealed Joints: Manufacturer's standard nonsag, paintable, nonstaining latex acoustical sealant complying with ASTM C 834.
  1. Colors of Exposed Acoustical Joint Sealants: As selected by Architect from manufacturer's full range of colors.

## 2.3 MISCELLANEOUS MATERIALS

- A. Primer: Material recommended by acoustical-joint-sealant manufacturer where required for adhesion of sealant to joint substrates.
- 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 EXAMINATION

- A. Examine joints indicated to receive acoustical joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 PREPARATION

- A. Surface Cleaning of Joints: Clean out joints immediately before installing acoustical joint sealants to comply with joint-sealant manufacturer's written instructions.
- B. Joint Priming: Prime joint substrates where recommended by acoustical-joint-sealant manufacturer. 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.

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- 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.

### 3.3 INSTALLATION OF ACOUSTICAL JOINT SEALANTS

- A. Comply with acoustical joint-sealant manufacturer's written installation instructions unless more stringent requirements apply.
- B. STC-Rated Assemblies: Seal construction at perimeters, behind control joints, and at openings and penetrations with a continuous bead of acoustical joint sealant. Install acoustical joint sealants at both faces of partitions, at perimeters, and through penetrations. Comply with ASTM C 919, ASTM C 1193, and manufacturer's written recommendations for closing off sound-flanking paths around or through assemblies, including sealing partitions to underside of floor slabs above acoustical ceilings.
- C. Acoustical Ceiling Areas: Apply acoustical joint sealant at perimeter edge moldings of acoustical ceiling areas in a continuous ribbon concealed on back of vertical legs of moldings before they are installed.

### 3.4 CLEANING

- A. 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 acoustical joint sealants and of products in which joints occur.

### 3.5 PROTECTION

- A. Protect acoustical 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 acoustical joint sealants immediately so installations with repaired areas are indistinguishable from original work.

## END OF SECTION

## **SECTION 085200 - WOOD WINDOWS**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### **1.2 SUMMARY**

- A. Section includes aluminum-clad wood windows.

#### **1.3 PREINSTALLATION MEETINGS**

- A. Preinstallation Conference: Conduct conference at Project site.
  - 1. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
  - 2. Review, discuss, and coordinate the interrelationship of wood windows with other exterior wall components. Include provisions for anchoring, flashing, weeping, sealing perimeters, and protecting finishes.
  - 3. Review and discuss the sequence of work required to construct a watertight and weathertight exterior building envelope.
  - 4. Inspect and discuss the condition of substrate and other preparatory work performed by other trades.

#### **1.4 ACTION SUBMITTALS**

- A. Product Data: For each type of product.
  - 1. Include construction details, material descriptions, glazing and fabrication methods, dimensions of individual components and profiles, hardware, and finishes for wood windows.
- B. Shop Drawings: For wood windows.
  - 1. Include plans, elevations, sections, hardware, accessories, insect screens, operational clearances, and details of installation, including anchor, flashing, and sealant installation.
- C. Product Schedule: For wood windows. Use same designations indicated on Drawings.

## 1.5 INFORMATION SUBMITTALS

- A. Sample Warranties: For manufacturer's warranties.

## 1.6 QUALITY ASSURANCE

- A. Mockups: Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for materials and execution.
  - 1. Build mockup of typical wall area as shown on Drawings.
  - 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.
  - 3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

## 1.7 FIELD CONDITIONS

- A. Field Measurements: Where windows are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication, and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
  - 1. Locate concealed framing, blocking, and reinforcements that support windows by field measurements before being enclosed/concealed by construction and indicate measurements on Shop Drawings.
- B. Established Dimensions: Where windows are indicated to fit to other construction, establish dimensions for areas where windows are to fit.

## 1.8 WARRANTY

- A. Manufacturer's Warranty: Manufacturer agrees to repair or replace wood windows that fail in materials or workmanship within specified warranty period.
  - 1. Failures include, but are not limited to, the following:
    - a. Failure to meet performance requirements.
    - b. Structural failures including excessive deflection, water leakage, and air infiltration.
    - c. Faulty operation of movable sash and hardware.
    - d. Deterioration of materials and finishes beyond normal weathering.
    - e. Failure of insulating glass.
  - 2. Warranty Period:
    - a. Window: 10 years from date of Substantial Completion.
    - b. Glazing Units:
      - 1) 20 years from date of Substantial Completion.



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- c. Aluminum-Cladding Finish: 20 years from date of Substantial Completion.
- d. Factory-applied Interior Finish: 5 years from date of Substantial Completion
- e. Hardware Finish: 10 years from date of Substantial Completion.

## 1.9 STORAGE AND HANDLING

- A. Store window units in an upright position in a clean and dry storage area above ground and protected from weather.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Source Limitations: Obtain wood windows from single source from single manufacturer.

### 2.2 WINDOW PERFORMANCE REQUIREMENTS

- A. Product Standard: Comply with AAMA/WDMA/CSA 101/I.S.2/A440 for definitions and minimum standards of performance, materials, components, accessories, and fabrication unless more stringent requirements are indicated.
  - 1. Window Certification: WDMA certified with label attached to each window.
- B. Performance Class and Grade: AAMA/WDMA/CSA 101/I.S.2/A440 as follows:
  - 1. Minimum Performance Class: LC.
  - 2. Minimum Performance Grade: 35.
- C. Thermal Transmittance: NFRC 100 maximum whole-window U-factor of 0.30 Btu/sq. ft. x h x deg F.
- D. Solar Heat-Gain Coefficient (SHGC): NFRC 200 maximum whole-window SHGC of 0.22.

### 2.3 WOOD WINDOWS

- A. Aluminum-Clad Wood Windows:
  - 1. Manufacturers: Subject to compliance with requirements, provide products by **Marvin Windows, Ultimate Series**.
    - a. Window Assembly Types:
      - 1) Horizontal Sliding Unit: Ultimate XX Glider
      - 2) Casement Unit: Ultimate Casement – Project In
      - 3) Fixed/Picture Unit: Ultimate Picture
    - b. Substitutions will NOT be accepted.

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- c. Marvin Windows Representative: **Stacey Evans | Architectural Project Manager**  
**| C. 315-604-7069.**
- B. Frames and Sashes: Fine-grained wood lumber complying with AAMA/WDMA/CSA 101/I.S.2/A440; kiln dried to a moisture content of not more than 12 percent at time of fabrication; free of visible finger joints, blue stain, knots, pitch pockets, and surface checks larger than 1/32 inch deep by 2 inches wide; water-repellent preservative treated.
  - 1. Exterior Finish: Aluminum-clad wood.
    - a. Aluminum Finish: Manufacturer's standard fluoropolymer two-coat system with fluoropolymer color topcoat containing not less than 70 percent PVDF resin by weight and complying with AAMA 2605.
    - b. Color: Cashmere.
  - 2. Interior Finish: Prefinished White Interior meeting WDMA TM-14.
    - a. Color: Pre-finished Stone White.
- C. Glass: Clear annealed glass, ASTM C 1036, Type 1, Class 1, q3.
- D. Pattern Glass: Provide Marvin Windows and Doors, *GLUE CHIP*. Provide at all toilets/bathrooms and at all basement windows unless otherwise noted.
- E. Insulating-Glass Units: ASTM E 2190.
  - 1. Glass: ASTM C 1036, Type 1, Class 1, q3.
    - a. Tint: Clear.
    - b. Decorative (Pattern) Glass: Glue chip, where indicated on drawings.
  - 2. Lites:
    - a. Horizontal Sliding: Double-sash, single-lite each.
    - b. Fixed/Picture: Single-sash, single-lite.
  - 3. Filling: Fill space between glass lites with argon.
  - 4. U Factor: 0.30 or greater.
  - 5. SHGC: 0.22 or greater.
  - 6. Low-E3 Coating: Sputtered on second or third surface.
- F. Glazing System: Manufacturer's standard factory-glazing system that produces weathertight seal.
- G. Hardware, General: Provide manufacturer's standard hardware fabricated from aluminum, stainless steel, carbon steel complying with AAMA 907, or other corrosion-resistant material compatible with adjacent materials; designed to smoothly operate, tightly close, and securely lock windows, and sized to accommodate sash weight and dimensions.
  - 1. Exposed Hardware Color and Finish: White.
  - 2. Sash Lock:
    - a. Glider Windows: Provide sash lock/ handle at meeting rail in with auto lock feature.

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- b. Casement Windows: Multi-point sequential concealed locking system in the jamb opposite the hinge side for casement units. Folding handle color white.
  - 3. Hinges (casement windows):
    - a. Steel hinges coated with E-Gard at the sill to the bottom rail and the head jamb to the top rail.
  - 4. Window Opening Control Device (WOCD): Provide factory device that prevents the window opening more than 4". It meets ASTM F2090-10 specifications for window fall prevention standards. The system consists of a device that allows for egress (when applied to an egress size window) by bypassing the 4" stop feature.
  - 5. Refer to drawing for locations.
- H. Weather Stripping: Provide full-perimeter weather stripping for each operable sash unless otherwise indicated.
- I. Fasteners: Noncorrosive and compatible with window members, trim, hardware, anchors, and other components.
  - 1. Exposed Fasteners: Do not use exposed fasteners to greatest extent possible. For application of hardware, use fasteners that match finish hardware being fastened.

## 2.4 ACCESSORIES

- A. Casings:
  - 1. Material: 0.050" (1.3mm) thick extruded aluminum. Factory applied Brickmould Casing.
  - 2. Profiles:
    - a. Brick Mold Casing: Manufacturer's standard 1-5/16 inch BMC (A79A).
    - b. Mullion Cover: Manufacturer's standard.
      - 1) Size and Configuration: Refer to Drawings.
  - 3. Color/Finish: Cashmere.

## 2.5 INSECT SCREENS

- A. General: Fabricate insect screens to integrate with window frame. Provide screen for each operable exterior sash. Screen wickets are not permitted.
  - 1. Type and Location: Full, outside screen sized to fit window frame.
  - 2. Omit screens at fixed/picture windows.
- B. Aluminum Frames: Manufacturer's standard aluminum alloy complying with SMA 1004 or SMA 1201. Fabricate frames with mitered or coped joints or corner extrusions, concealed fasteners, and removable PVC spline/anchor concealing edge of frame.
  - 1. Tubular Framing Sections and Cross Braces: Extruded aluminum sheet.
  - 2. Finish for Exterior Screens: Matching color and finish of cladding.
- C. Mesh Fabric: Fiberglass mesh resistant to shrinkage, stretch, impact damage, and weather deterioration. Comply with ASTM D 3656/D 3656M.

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1. Mesh Color: Manufacturer's standard; Bright View Mesh.

## 2.6 FABRICATION

- A. Fabricate wood windows in sizes indicated. Include a complete system for installing and anchoring windows.
- B. Glaze wood windows in the factory.
- C. Weather strip each operable sash to provide weathertight installation.
- D. Mullions: Provide mullions and cover plates, matching window units, complete with anchors for support to structure and installation of window units. Allow for erection tolerances and provide for movement of window units due to thermal expansion and building deflections. Provide mullions and cover plates capable of withstanding design wind loads of window units.
- E. Complete fabrication, assembly, finishing, hardware application, and other work in the factory to greatest extent possible. Disassemble components only as necessary for shipment and installation. Allow for scribing, trimming, and fitting at Project site.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine openings, substrates, structural support, anchorage, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Verify rough opening dimensions, levelness of sill plate, and operational clearances.
- C. Examine wall flashings, vapor retarders, water and weather barriers, and other built-in components to ensure weathertight window installation.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 INSTALLATION

- A. Comply with manufacturer's written instructions for installing windows, hardware, accessories, and other components. For installation procedures and requirements not addressed in the manufacturer's written instructions, comply with installation requirements in ASTM E 2112.
- B. Install windows level, plumb, square, true to line, without distortion, anchored securely in place to structural support, and in proper relation to wall flashing and other adjacent construction to produce weathertight construction.

### 3.3 ADJUSTING, CLEANING, AND PROTECTION

- A. Adjust operating sashes and hardware for a tight fit at contact points and weather stripping for smooth operation and weathertight closure.
- B. Clean exposed surfaces immediately after installing windows. Remove excess sealants, glazing materials, dirt, and other substances.
  - 1. Keep protective films and coverings in place until final cleaning.
- C. Remove and replace sashes if glass has been broken, chipped, cracked, abraded, or damaged during construction period.
- D. Protect window surfaces from contact with contaminating substances resulting from construction operations. If contaminating substances do contact window surfaces, remove contaminants immediately according to manufacturer's written instructions.

### END OF SECTION

## **SECTION 085413 - FIBERGLASS WINDOWS**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### **1.2 SUMMARY**

- A. Section includes fiberglass-framed windows.

#### **1.3 PREINSTALLATION MEETINGS**

- A. Preinstallation Conference: Conduct conference at the Project site.
  - 1. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
  - 2. Review, discuss, and coordinate the interrelationship of fiberglass windows with other exterior wall components. Include provisions for anchoring, flashing, weeping, sealing perimeters, and protecting finishes.
  - 3. Review and discuss the sequence of work required to construct a watertight and weathertight exterior building envelope.
  - 4. Inspect and discuss the condition of substrate and other preparatory work performed by other trades.

#### **1.4 ACTION SUBMITTALS**

- A. Product Data: For each type of product.
  - 1. Include construction details, material descriptions, glazing and fabrication methods, dimensions of individual components and profiles, hardware, and finishes for fiberglass windows.
- B. Shop Drawings: For fiberglass windows.
  - 1. Include plans, elevations, sections, hardware, accessories, insect screens, operational clearances, and details of installation, including anchor, flashing, and sealant installation.
- C. Product Schedule: For fiberglass windows. Use same designations indicated on Drawings.

## 1.5 INFORMATIONAL SUBMITTALS

- A. Sample Warranties: For manufacturer's warranties.

## 1.6 QUALITY ASSURANCE

- A. Mockups: Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for materials and execution.
  - 1. Build mockup of typical wall area as shown on Drawings.
  - 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.
  - 3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

## 1.7 FIELD CONDITIONS

- A. Field Measurements: Where windows are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication, and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
  - 1. Locate concealed framing, blocking, and reinforcements that support windows by field measurements before being enclosed/concealed by construction and indicate measurements on Shop Drawings.
- B. Established Dimensions: Where windows are indicated to fit to other construction, establish dimensions for areas where windows are to fit.

## 1.8 WARRANTY

- A. Manufacturer's Warranty: Manufacturer agrees to repair or replace fiberglass windows that fail in materials or workmanship within specified warranty period.
  - 1. Failures include, but are not limited to, the following:
    - a. Failure to meet performance requirements.
    - b. Structural failures including excessive deflection, water leakage, and air infiltration.
    - c. Faulty operation of movable sash and hardware.
    - d. Deterioration of materials and finishes beyond normal weathering.
    - e. Failure of insulating glass.
  - 2. Warranty Period:
    - a. Window: 10 years from date of Substantial Completion.
    - b. Glazing Units: 20 years from date of Substantial Completion.
    - c. Hardware Finish: 10 years from date of Substantial Completion.



## 1.9 STORAGE AND HANDLING

- A. Store window units in an upright position in a clean and dry storage area above ground and protected from weather.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Source Limitations: Obtain fiberglass windows from single source from single manufacturer.

### 2.2 WINDOW PERFORMANCE REQUIREMENTS

- A. Product Standard: Comply with AAMA/WDMA/CSA 101/I.S.2/A440 for definitions and minimum standards of performance, materials, components, accessories, and fabrication unless more stringent requirements are indicated.
  - 1. Window Certification: WDMA certified with label attached to each window.
- B. Performance Class and Grade: AAMA/WDMA/CSA 101/I.S.2/A440 as follows:
  - 1. Minimum Performance Class: LC.
  - 2. Minimum Performance Grade: 35.
- C. Thermal Transmittance: NFRC 100 maximum whole-window U-factor of 0.30 Btu/sq. ft. x h x deg F.
- D. Solar Heat-Gain Coefficient (SHGC): NFRC 200 maximum whole-window SHGC of 0.22.

### 2.3 FIBERGLASS WINDOWS

- A. Fiberglass Windows:
  - 1. Manufacturers: Subject to compliance with requirements, provide products by **Marvin Windows, Ultrex Infinity Series**.
    - a. Operating Types:
      - 1) Horizontal sliding;
      - 2) Fixed.
    - b. Substitutions will NOT be accepted.
    - c. Marvin Windows Representative: **Stacey Evans | Architectural Project Manager**  
**| C. 315-604-7069.**
- B. Frames and Sashes: Pultruded fiberglass complying with AAMA/WDMA/CSA 101/I.S.2/A440 and with exposed exterior fiberglass surfaces finished with manufacturer's standard cross-head extruded acrylic organic coating system complying with AAMA 624-10 and 00022716.
  - 1. Exterior Color: Cashmere.

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2. Interior Finish: Stone White.
- C. Glass: Clear annealed glass, ASTM C 1036, Type 1, Class 1, q3.
1. Kind: Tempered where indicated on drawings.
- D. Insulating-Glass Units: ASTM E 2190.
1. Glass: ASTM C 1036, Type 1, Class 1, q3.
    - a. Tint: Clear.
    - b. Decorative (Pattern) Glass: Glue chip, where indicated on drawings.
  2. Lites:
    - a. Horizontal Sliding: Double-sash, single-lite each.
    - b. Fix/Picture: Single-sash, single-lite.
  3. Filling: Fill space between glass lites with air argon.
  4. U Factor: 0.30 or greater.
  5. SHGC: 0.22 or greater.
  6. Low-E3 Coating: Sputtered on second or third surface.
- E. Glazing System: Manufacturer's standard factory-glazing system that produces weathertight seal.
- F. Hardware, General: Provide manufacturer's standard hardware fabricated from aluminum, stainless steel, carbon steel complying with AAMA 907, or other corrosion-resistant material compatible with adjacent materials; designed to smoothly operate, tightly close, and securely lock fiberglass windows, and sized to accommodate sash weight and dimensions.
1. Exposed Hardware Color and Finish: White.
- G. Horizontal-Sliding Window Hardware:
1. Sill Cap/Track: Extruded-aluminum track with natural anodized finish Rigid PVC or other weather-resistant plastic track with manufacturer's standard integral color Manufacturer's standard Insert track material and finish of dimensions and profile indicated; designed to comply with performance requirements indicated and to drain to the exterior.
  2. Locks and Latches: Allow unobstructed movement of the sash across adjacent sash in direction indicated and operated from the inside only. Provide manufacturer's standard lock(s) as recommended.
    - a. One sash lock on units up to 48 inches (1219mm) in height, two locks on units greater than 48 inches.
  3. Roller Assemblies: Low-friction design.
- H. Weather Stripping: Provide full-perimeter weather stripping for each operable sash unless otherwise indicated.
- I. Fasteners: Noncorrosive and compatible with window members, trim, hardware, anchors, and other components.
1. Exposed Fasteners: Do not use exposed fasteners to greatest extent possible. For application of hardware, use fasteners that match finish hardware being fastened.

## 1.2 ACCESSORIES

- A. Casings.
  - 1. Material: Pultruded fiberglass complying with AAMA/WDMA/CSA 101/I.S.2/A440 and with exposed exterior fiberglass surfaces finished with manufacturer's standard cross-head extruded acrylic organic coating system complying with AAMA 624-10.
  - 2. Profiles:
    - a. Brick Mold Casing: Manufacturer's standard 1-5/16 inch BMC (A79A).
    - b. Mullion Cover: Manufacturer's standard.
      - 1) Size and Configuration: Refer to Drawings.
  - 3. Color: Cashmere.

## 1.3 INSECT SCREENS

- A. General: Fabricate insect screens to integrate with window frame. Provide screen for each operable exterior sash. Screen wickets are not permitted.
  - 1. Type and Location: Half, outside for sliding sashes.
- B. Aluminum Frames: Manufacturer's standard aluminum alloy complying with SMA 1004 or SMA 1201. Fabricate frames with mitered or coped joints or corner extrusions, concealed fasteners, and removable PVC spline/anchor concealing edge of frame.
  - 1. Tubular Framing Sections and Cross Braces: Roll formed from aluminum sheet.
  - 2. Finish for Exterior Screens: Cashmere.
- C. Glass-Fiber Mesh Fabric: Fiberglass mesh resistant to shrinkage, stretch, impact damage, and weather deterioration. Comply with ASTM D 3656/D 3656M.
  - 1. Mesh Color: Manufacturer's standard; Bright View Mesh.

## 1.4 FABRICATION

- A. Fabricate fiberglass windows in sizes indicated. Include a complete system for installing and anchoring windows.
- B. Glaze fiberglass windows in the factory.
- C. Weather strip each operable sash to provide weathertight installation.
- D. Mullions: Provide mullions and cover plates, matching window units, complete with anchors for support to structure and installation of window units. Allow for erection tolerances and provide for movement of window units due to thermal expansion and building deflections. Provide mullions and cover plates capable of withstanding design wind loads of window units.
- E. Complete fabrication, assembly, finishing, hardware application, and other work in the factory to greatest extent possible. Disassemble components only as necessary for shipment and installation. Allow for scribing, trimming, and fitting at Project site.

## **PART 2 - EXECUTION**

### **2.1 EXAMINATION**

- A. Examine openings, substrates, structural support, anchorage, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Verify rough opening dimensions, levelness of sill plate, and operational clearances.
- C. Examine wall flashings, vapor retarders, water and weather barriers, and other built-in components to ensure weathertight window installation.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

### **2.2 INSTALLATION**

- A. Comply with manufacturer's written instructions for installing windows, hardware, accessories, and other components. For installation procedures and requirements not addressed in the manufacturer's written instructions, comply with installation requirements in ASTM E 2112.
- B. Install windows level, plumb, square, true to line, without distortion, anchored securely in place to structural support, and in proper relation to wall flashing and other adjacent construction to produce weathertight construction.

### **2.3 ADJUSTING, CLEANING, AND PROTECTION**

- A. Adjust operating sashes and hardware for a tight fit at contact points and weather stripping for smooth operation and weathertight closure.
- B. Clean exposed surfaces immediately after installing windows. Remove excess sealants, glazing materials, dirt, and other substances.
  - 1. Keep protective films and coverings in place until final cleaning.
- C. Remove and replace sashes if glass has been broken, chipped, cracked, abraded, or damaged during construction period.
- D. Protect window surfaces from contact with contaminating substances resulting from construction operations. If contaminating substances do contact window surfaces, remove contaminants immediately according to manufacturer's written instructions.

## **END OF SECTION**

## **SECTION 090320 – PLASTER REPAIR**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### **1.2 SUMMARY**

- A. Section Includes:
  - 1. Repair and replacement of interior gypsum plaster.
- B. Related Requirements:
  - 1. Section 061053 "Miscellaneous Rough Carpentry" for grounds, and furring that support lath and plaster.

#### **1.3 PREINSTALLATION MEETINGS**

- A. Preinstallation Conference: Conduct conference at Project site.
  - 1. Review methods and procedures related to the repair of plaster including, but not limited to, the following:
    - a. Materials, material application, colors, patterns, and sequencing.
    - b. Plasterwork treatment program.
    - c. Coordination with building occupants.

#### **1.4 SEQUENCING AND SCHEDULING**

- A. Perform repair of plaster in the following sequence, which includes work specified in this and other Sections:
  - 1. Dismantle existing surface-mounted objects and hardware that overlie plaster surfaces except items indicated to remain in place. Tag items with location identification and protect.
  - 2. Verify that temporary protections have been installed.
  - 3. Examine condition of plaster surfaces.
  - 4. Clean plaster surface and remove paint and other finishes to the extent required.

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5. Repair and replace existing plaster and supports to the degree required for a uniform, tightly adhered surface on which to paint or apply other finishes.
6. Cure repaired surfaces and allow them to dry for proper finishing.
7. Paint and apply other finishes.
8. Reinstall dismantled surface-mounted objects and hardware unless otherwise indicated.

#### 1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product.
  1. Include recommendations for product application and use.
- B. Shop Drawings: For each configuration of new or replicated plaster molding and ornament required for the work.
  1. Include plans, elevations, and sections that show locations and extent of work.
  2. Show full-size details of configurations, joint locations, and attachments to other work.

#### 1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For qualified plaster repair specialist.

#### 1.7 QUALITY ASSURANCE

- A. Plaster Repair Specialist Qualifications: A qualified plastering specialist with expertise in matching and performing the types of plasterwork repairs required.
- B. Plasterwork Repair Program: Prepare a written, detailed description of materials, methods, equipment, and sequence of operations to be used for repair work and protection of surrounding materials and Project site.
  1. Include methods and procedures to protect plastered surfaces from damage caused by construction operations, including, but not limited to, exposure to moisture, vibration, mechanical damage, and soiling.
  2. If materials and methods other than those indicated are proposed for any phase of repair work, add a written description of such materials and methods, including evidence of successful use on comparable projects, and demonstrations to show their effectiveness for this Project.
- C. Mockups: Prepare mockups for each type of plaster repair and reconstruction work to demonstrate aesthetic effects and to set quality standards for materials and execution and for fabrication and installation.
  1. Locate mockups on existing surfaces where directed by Architect.
  2. Number and Size: Two wall surfaces of at least 50 sq. ft. or approximately 48 inches in least dimension to represent surfaces and conditions for application of each type of plaster repair and reconstruction under same conditions as the completed Work. Include at least the following:

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- a. Install 4-sq. ft. area of wet-applied plaster replacement with grooves simulating stone joints, as indicated.
  - b. Patch 10-sq. ft. area of wet-applied plaster replacement with grooves simulating stone joints, as indicated.
  - c. Install 6 linear ft. of wet-applied plaster molding.
  - d. Repair 3 linear ft. of plaster cracks.
  - e. Reattach 4-sq. ft. area of delaminated plaster that has not fallen.
3. Simulate finished lighting conditions for review of mockups.
  4. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
  5. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

**1.8 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver packaged materials to Project site in manufacturer's original and unopened containers, labeled with manufacturer's name and type of products.
- B. Store materials on elevated platforms, under cover, and in a dry location with ambient temperatures continuously maintained at not less than 45 deg F.
- C. Store hydrated lime in manufacturer's original and unopened containers. Discard lime if containers have been damaged or have been opened for more than two days.
- D. Store materials not in use in tightly covered containers.
- E. Store sand where grading and other required characteristics can be maintained and contamination avoided.

**1.9 FIELD CONDITIONS**

- A. Comply with plaster-material manufacturers' written instructions. For gypsum plaster, also comply with ASTM C 842 requirements.
- B. Temperatures: Maintain temperatures in work areas at not less than 55 deg F or greater than 80 deg F for at least seven days before application of plaster, continuously during application, and for seven days after plaster has set or until plaster has dried.
- C. Conditioning: Acclimatize cast-plaster fabrications to ambient temperature and humidity of spaces in which they are installed. Remove packaging and move units into installation spaces not less than 48 hours before installing them.



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- D. Field Measurements: Where cast-plaster fabrications are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
- E. Avoid conditions that result in plaster drying out too quickly.
  - 1. Distribute heat evenly; prevent concentrated or uneven heat on plaster.
  - 2. Maintain relative humidity levels for prevailing ambient temperature that produce normal drying conditions.
  - 3. Ventilate work areas in a manner that prevents drafts of air from contacting surfaces during plaster application and until plaster is dry.

## **PART 2 - PRODUCTS**

### **2.1 GYPSUM PLASTER MATERIALS**

- A. Gypsum Materials:
  - 1. Gypsum Gaging Plaster. ASTM C 28/C 28M.
- B. Hydrated Lime: ASTM C 206, Type S.
- C. Aggregates:
  - 1. Aggregate for Base-Coat Plasters: ASTM C 35, sand.
  - 2. Aggregate for Float Finishes: ASTM C 35, sand; graded per ASTM C 842.
- D. Fiber: 1/2 to 1 inch in length; composed of glass or polypropylene fiber; free of grease, waxes, and oils; and beaten well to separate fibers before blending into unfibered plaster material.
  - 1. Proportion of Fiber to Unfibered Plaster Material: 3.5 oz./cu. ft. of unfibered plaster material, adjusted as required to produce a well-fibered, cohesive, spreadable, stiff mix with fibers uniformly distributed.
- E. Bonding Compound: ASTM C 631.

### **2.2 LATH**

- A. Metal Lath:
  - 1. Expanded-Metal Lath: ASTM C 847, cold-rolled carbon-steel sheet, ASTM A 653/A 653M, G60, hot-dip galvanized zinc coated.
    - a. Diamond-Mesh Lath: Flat or Self-furring, 3.4 lb/sq. yd..
    - b. Flat Rib Lath: Rib depth of not more than 1/8 inch, 3.4 lb/sq. yd..
    - c. 3/8-Inch Rib Lath: 3.4 lb/sq. yd..

## 2.3 TRIM ACCESSORIES

- A. General: According to ASTM C 841 for gypsum plaster; coordinate depth of trim and accessories with thicknesses and number of plaster coats required.
- B. Metal Accessories:
  - 1. Cornerite: Fabricated from expanded-metal lath with ASTM A 653/A 653M, G60, hot-dip galvanized zinc coating.
  - 2. Striplath: Fabricated from expanded-metal lath with ASTM A 653/A 653M, G60, hot-dip galvanized zinc coating.
  - 3. Cornerbeads: Fabricated from zinc-coated (galvanized) steel.
    - a. Small nose cornerbead with expanded flanges; use unless otherwise indicated.
    - b. Small nose cornerbead with perforated flanges; use on curved corners.
    - c. Small nose cornerbead with expanded flanges reinforced by perforated stiffening rib; use on columns and for finishing unit masonry corners.
    - d. Bull nose cornerbead, radius of 3/4 inch minimum, with expanded flanges; use at locations indicated on Drawings.
  - 4. Casing Beads: Fabricated from zinc-coated (galvanized) steel; square-edged style; with expanded flanges.
  - 5. Control Joints: Fabricated from zinc-coated (galvanized) steel; one-piece-type, folded pair of unperforated screeds in M-shaped configuration; with perforated flanges and removable protective tape on plaster face of control joint.
  - 6. Expansion Joints: Fabricated from zinc-coated (galvanized) steel; folded pair of unperforated screeds in M-shaped configuration; with expanded flanges.
  - 7. Two-Piece Expansion Joints: Fabricated from zinc or zinc-coated (galvanized) steel; formed to produce slip-joint and square-edged reveal that is adjustable from 1/4 to 5/8 inch wide; with perforated flanges.

## 2.4 MISCELLANEOUS MATERIALS

- A. Water for Mixing and Finishing Plaster: Potable and free of substances capable of affecting plaster set or of damaging plaster, lath, or accessories.
- B. Fasteners for Attaching Lath to Substrates:
  - 1. For Gypsum Plaster: ASTM C 841.
- C. Wire Ties: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, not less than 0.0475-inch diameter, unless otherwise indicated.
- D. Plaster-Stabilization Materials: Acrylic emulsion(s) and related installation products shall have proven effectiveness in reattaching delaminated plaster and shall have been used previously by historic treatment specialist with successful results.
  - 1. Acrylic Emulsion(s), General: Aqueous emulsion(s) of acrylic polymer, adhesive to plaster and plaster substrates, nontoxic, and non-reemulsifiable after curing.
  - 2. Prewet Solution: Low-viscosity acrylic emulsion.

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3. Adhesive: Thickened acrylic emulsion; thickener as recommended in writing by resin manufacturer and plaster repair specialist.
- E. Other Products: Select materials and methods of use based on the following, subject to approval of a mockup:
  1. Previous effectiveness in performing the work involved.
  2. Little possibility of damaging exposed surfaces.
  3. Consistency of each application.
  4. Uniformity of the resulting overall appearance.
  5. Do not use products or tools that could do the following:
    - a. Remove, alter, or in any way harm the present condition or future preservation of existing surfaces, including surrounding surfaces not in contract.
    - b. Leave an unintended residue on surfaces.

### **PART 3 - EXECUTION**

#### **3.1 TREATMENT OF PLASTER, GENERAL**

- A. Plaster Appearance Standard: Completed work is to have a uniform appearance as viewed by Architect from building interior at 5 feet away from surface and from building exterior at 20 feet away from surface.
- B. General: In treating of plaster, disturb it as minimally as possible and as follows unless otherwise indicated:
  1. Dismantle loose, damaged, or deteriorated plaster, lath, and support systems that cannot be repaired.
  2. Verify extent of plaster deterioration against that indicated on Drawings. Consult Architect on types and extent of required work.
  3. Verify that substrate surface conditions are suitable for repairs.
  4. Provide lath, furring, and support systems for plaster included in the work of this Section.
  5. Replace lost details in new, wet-applied and cast plaster that replicate existing or indicated plaster configurations.
  6. Leave repaired plasterwork in proper condition for painting or applying other finishes as indicated.
  7. Install temporary protective measures to protect historic surfaces that shall be treated later.
- C. Illumination: Perform plastering work with adequate, uniform illumination that does not distort the flatness or curvature of surfaces.

### 3.2 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for substrate and environmental conditions, installation tolerances, and other conditions affecting performance of the Work.
  - 1. If existing substrates cannot be prepared to an acceptable condition for plastering work, notify Architect in writing.
  - 2. Notify Architect of undocumented detrimental conditions including cracks, bulges, loose backup, rotted wood, rusted metal, and other deteriorated items.
- B. Masonry Substrates: Verify that mortar joints are struck flush. Notify Architect of undocumented masonry substrate without flush joints. Proceed with plastering as directed by Architect.
- C. Begin plastering work only after unsatisfactory conditions have been corrected.

### 3.3 PREPARATION FOR PLASTERING

- A. Substrates: Prepare according to plaster manufacturer's written instructions and as follows:
  - 1. Clean surfaces to remove dust, loose particles, grease, oil, incompatible curing compounds, form-release agents, and other foreign matter and deposits that could impair bond with plaster.
  - 2. Remove ridges and protrusions greater than 1/8 inch and fill depressions greater than 1/4 inch with patching material. Allow to set and dry.

### 3.4 PLASTER REMOVAL AND REPLACEMENT, GENERAL

- A. Dismantle plaster that is damaged or deteriorated to the limits indicated. Carefully dismantle areas along straight edges that lie over supports, without damaging surrounding plasterwork.
- B. Maintain lath and supporting members in an undamaged condition so far as practicable. Dismantle damaged lath and supports that cannot be repaired or resecured and replace with new work of same type.
- C. Notify Architect of undocumented detrimental conditions including cracks, bulges, loose backup, rotted wood, rusted metal, and other deteriorated items.
- D. Do not deviate more than plus or minus 1/8 inch in 10 feet from a true plane in finished plaster surfaces, as measured by a 10-foot straightedge placed on surface.
- E. Clean substrate surfaces to remove grease, waxes, oils, waterborne staining, debris, and other foreign matter and deposits that could impair bond with repair material.
- F. Wet wood lath, masonry and concrete bases before plaster application. Keep substrate damp to the touch but without visible water droplets.

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- G. Wet remaining plaster abutting the replacement plaster before installing new plasterwork.
- H. Finish plaster flush with metal frames and other built-in metal items or accessories that act as a plaster ground unless otherwise indicated. Where casing bead does not terminate plaster at metal frame, cut base coat free from metal frame before plaster sets and groove finish coat at junctures with metal.
- I. Provide plaster surfaces that are ready to receive field-applied finishes indicated.

### 3.5 FLAT GYPSUM-PLASTER REMOVAL AND REPLACEMENT

- A. General: Dismantle deteriorated plaster to existing sound plaster. Use replacement plaster mixes of gypsum, lime, and aggregate; and application according to ASTM C 842 unless otherwise indicated.
  - 1. Inspect for lath deterioration. If any, replace lath.
  - 2. Sand bonding surfaces of repair area, and clean the surface with a nonmetallic bristle brush.
  - 3. Wet substrate to damp condition, but without visible water droplets, then install new plaster to original profiles.
- B. Bonding Compound: Apply on unit masonry and concrete plaster bases.
- C. Gypsum-Plaster Base Coats:
  - 1. Base Coats over Expanded-Metal Lath:
    - a. Scratch Coat: Gypsum wood-fibered plaster; neat or with job-mixed sand.
    - b. Brown Coat: Gypsum neat plaster with job-mixed sand.
- D. Gypsum-Plaster Finish Coats:
  - 1. Finish-Coat Mix for Float Finishes: Gypsum gaging plaster.
- E. Gypsum-Plaster Finishes: Match finish(es) of design reference sample(s).
  - 1. Provide float finish unless otherwise indicated.

### 3.6 REMOVING AND INSTALLING LATH AND ACCESSORIES

- A. General: Dismantle existing plaster as necessary to expose deteriorated or rusted lath, wire ties, and support system, back to firm substrates and supports. Repair with new materials, well secured to existing lath in good condition and to building structure.
  - 1. Cutting: Cut lath so it can be taken out completely from one support to the next. Cut to avoid cracking surrounding plaster.
  - 2. Cut out existing base-coat plaster beyond the edges of the new lath to permit new plaster to extend onto the old lath. Then step subsequent plaster coats to permit new plaster to extend over the old material.

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3. Fasten new lath to support system and to good existing lath. Wire tie at least every 6 inches.
  4. Install new lath according to ASTM C 841 for gypsum plaster.
- B. Notify Architect of undocumented detrimental conditions including cracks, bulges, loose backup, rotted wood, rusted metal, and other deteriorated items.
- C. Metal Lath: Install according to ASTM C 841 for gypsum plaster.
1. Partition Framing and Vertical Furring: Install flat diamond-mesh lath.
  2. Flat-Ceiling and Horizontal Framing: Install flat diamond-mesh lath.
  3. On Solid Surfaces, Not Otherwise Furred: Install self-furring, diamond-mesh lath.

### 3.7 PATCH-TYPE REPAIR

- A. General: Patch voids, fractured surfaces, and crushed areas in otherwise sound plaster that are larger than cracks.
1. Notify Architect of undocumented detrimental conditions including cracks, bulges, loose backup, rotted wood, rusted metal, and other deteriorated items.
  2. Inspect for deterioration of supporting plaster and lath, and repair or replace deteriorated material as required for a sound substrate.
  3. Rake perimeter of hole to sound plaster, and slightly undercut existing plaster to enable replacement plaster to tuck behind existing plaster.
  4. Replace missing lath in kind. Bridge gaps in wood lath with expanded-metal lath, overlapping wood by 6 inches and fastening them together.
  5. Clean hole to remove loose materials and other foreign matter and deposits that could impair bond with repair material. Where grease, waxes, oils, waterborne staining, or other foreign matter and deposits that could impair bond with repair material have penetrated into the plaster, enlarge the hole to remove these deposits.
  6. Wet substrate to damp condition, but without visible water droplets, then install patch material to original profiles.
  7. Maintain adjacent plasterwork in an undamaged condition so far as practicable.
- B. Gypsum-Plaster Mix: Gypsum gaging plaster.
- C. Finishing: Finish flat surfaces flush and with same texture as adjacent existing plaster. For molded plaster shapes, tool surface to restore the sharp edges and the shape of the molded shape to original contours.
- D. Hairline cracking within the plaster or plaster separation at edge of a patch is unacceptable. Completely dismantle such work and reinstall or repair.

### 3.8 HAIRLINE CRACK REPAIR

- A. General: Repair cracks 1/32 inch in width or narrower in otherwise sound plaster.

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1. Notify Architect of undocumented detrimental conditions including cracks, bulges, loose backup, rotted wood, rusted metal, and other deteriorated items.
  2. Maintain adjacent plasterwork in an undamaged condition so far as practicable.
- B. Existing Topcoat: Open crack in existing topcoat to at least 1/8 inch in width and check for broken fiber reinforcement in base coats.
- C. Existing Base Coats: Do not open crack wider in existing base coats unless inspection or other indication shows that the fiber reinforcement has broken. Where inspections indicate failure of fiber reinforcement, proceed as for a large crack repair, but only for length of crack with broken fiber reinforcement.
- D. Clean out crack to remove loose materials and other foreign matter and deposits that could impair bond with repair material. Where grease, waxes, oils, waterborne staining, or other foreign matter and deposits that could impair bond with repair material have penetrated into the topcoat plaster, widen the crack and sand surface of the exposed basecoat to remove these deposits.
- E. Wet substrate to damp condition, but without visible water droplets.
- F. Force repair material demonstrated in mockup into crack, filling crack to original plaster profile.
- G. Finishing: Finish flat surfaces flush and with same texture as adjacent existing plaster. For molded plaster shapes, tool surface to restore the sharp edges and the shape of the molded shape to original contours.

### 3.9 LARGE CRACK REPAIR

- A. General: Repair cracks over 1/32 inch in width in otherwise sound plaster at locations indicated on Drawings.
1. Notify Architect of undocumented detrimental conditions including cracks, bulges, loose backup, rotted wood, rusted metal, and other deteriorated items.
  2. Maintain adjacent plasterwork in an undamaged condition so far as practicable.
- B. Open crack to at least 1/8 inch in width and full depth with V-groove tool, and check for bond separation or lath deterioration.
- C. Abrade side surfaces of crack and remove inner crack debris by gouging (keying) the inside area of the crack.
- D. Clean out crack to remove loose materials and other foreign matter and deposits that could impair bond with repair material. Where grease, waxes, oils, waterborne staining, or other foreign matter and deposits that could impair bond with repair material have penetrated into the plaster, widen the crack to remove these deposits.
- E. Wet substrate to damp condition, but without visible water droplets.



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- F. Install repair material demonstrated in mockup to fill crack to original plaster profile.
- G. Finishing: Finish flat surfaces flush and with same texture as adjacent existing plaster. For molded plaster shapes, tool surface to restore the sharp edges and the shape of the molded shape to original contours.
- H. Offset Cracks: If the crack is offset in surface plane by more than 1/8 inch, dismantle the plaster on each side of the crack, a minimum width of 6 inches and down to the lath or other substrate. Then, repair as specified for flat-plaster removal and replacement.

### 3.10 REATTACHMENT OF DELAMINATED PLASTER

- A. General: Reattach plaster that has detached from its wooden lath.
  - 1. Notify Architect of undocumented detrimental conditions including cracks, bulges, loose backup, rotted wood, rusted metal, and other deteriorated items.
  - 2. Maintain adjacent plasterwork in an undamaged condition so far as practicable.
- B. Verify extent of detachment of plaster that has not yet fallen by tapping on plaster surface and evaluating the hollow or solid resonance.
- C. Protect floors from spillage and debris in the vicinity of work. Use materials resistant to the passage of fluids used in work.
- D. Drill 1/4-inch injection ports (holes) through the plaster spaced 3 to 6 inches apart over surface of detached plaster. Dislodge loose plaster particles, and vacuum debris from holes.
- E. Prewet injection ports, gaps at edges of lost plaster, back of plaster, and wooden lath with prewet solution.
- F. Inject adhesive into ports, enough to fill gaps between detached plaster and lath, and inject into gaps at edges of lost plaster.
- G. Clean off excess and smeared adhesive while wet.
- H. Apply temporary battens over surface of treated plaster to prevent further separation during repair work. Secure battens in place against plaster with screws through the battens and plaster and into the wood lath.
- I. Maintain temporary battens in place for a week or more, allowing adhesive to coalesce and dry.
- J. Remove battens, patch holes and missing plaster, and repair cracks.
- K. Completed plaster installation shall not deviate from a true plane by more than 1/8 inch as measured by a 5-foot straightedge placed at any location on a surface, except where existing plaster is retained as a substrate for new plasterwork.

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3.11      **CLEANING AND PROTECTION**

- A.      Protect work of other trades against damage. Promptly remove plaster from surfaces not indicated to be repaired or plastered. Do not scratch or damage finished surfaces.
- B.      Repair floors, walls, and other surfaces stained, marred, or otherwise damaged during plastering.
- C.      Correct damage to other historic surfaces and to new work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.
- D.      Remove temporary protection and enclosure of other work.

**END OF SECTION 090320**

## **SECTION 092400 - CEMENT PLASTERING**

### **PART 1 - GENERAL**

#### **1.1 SUMMARY**

- A. Section Includes:
  - 1. Exterior vertical plasterwork (stucco).

#### **1.2 PREINSTALLATION MEETINGS**

- A. Preinstallation Conference: Conduct conference at Project site.

#### **1.3 ACTION SUBMITTALS**

- A. Product Data: For each type of product.
- B. Shop Drawings: Show locations and installation of control and expansion joints, including plans, elevations, sections, details of components, and attachments to other work.
- C. Samples: For each type of factory-prepared finish coat and for each color and texture specified.
- D. Store materials inside under cover, and keep them dry and protected against damage from weather, moisture, direct sunlight, surface contamination, corrosion, construction traffic, and other causes.
- E. Samples for Initial Selection: For each type of factory-prepared finish coat and for each color and texture specified.
- F. Samples for Verification: For each type of factory-prepared finish coat and for each color and texture specified, 12 by 12 inches, and prepared on rigid backing.

#### **1.4 QUALITY ASSURANCE**

- A. Mockups: Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for materials and execution.
  - 1. Build mockups for each substrate and finish texture indicated for cement plastering, including accessories.
    - a. Size: 100 sq. ft. in surface area.

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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.
3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

## 1.5 FIELD CONDITIONS

- A. Comply with ASTM C926 requirements.
- B. Exterior Plasterwork:
  1. Apply and cure plaster to prevent plaster drying out during curing period. Use procedures required by climatic conditions, including moist curing, providing coverings, and providing barriers to deflect sunlight and wind.
  2. Apply plaster when ambient temperature is greater than 40 deg F.
  3. Protect plaster coats from freezing for not less than 48 hours after set of plaster coat has occurred.
- C. Factory-Prepared Finishes: Comply with manufacturer's written recommendations for environmental conditions for applying finishes.

## PART 2 - PRODUCTS

### 2.1 PERFORMANCE REQUIREMENTS

- A. Fire-Resistance Ratings: Where indicated, provide cement plaster assemblies identical to those of assemblies tested for fire resistance according to ASTM E119 by a qualified testing agency.

### 2.2 METAL LATH

- A. Wire-Fabric Lath:
  1. Manufacturers: Subject to compliance with requirements, provide products by the following:
    - a. ClarkDietrich.
  2. Welded-Wire Lath: ASTM C933; self-furring, 1.14 lb/sq. yd..
- B. Paper Backing: FS UU-B-790a, Type I, Grade D, Style 2 vapor-permeable paper.
  1. Provide paper-backed lath unless otherwise indicated at exterior locations.

## 2.3 ACCESSORIES

- A. General: Comply with ASTM C1063, and coordinate depth of trim and accessories with thicknesses and number of plaster coats required.
- B. Metal Accessories:
  - 1. Manufacturers: Subject to compliance with requirements, provide products by the following:
    - a. ClarkDietrich.
  - 2. Foundation Weep Screed: Fabricated from hot-dip galvanized-steel sheet, ASTM A653/A653M, G60 zinc coating.
  - 3. Cornerite: Fabricated from metal lath with ASTM A653/A653M, G60, hot-dip galvanized-zinc coating.
  - 4. External- (Outside-) Corner Reinforcement: Fabricated from metal lath with ASTM A653/A653M, G60, hot-dip galvanized-zinc coating.
  - 5. Casing Beads: Fabricated from zinc-coated (galvanized) steel; square-edged style; with expanded flanges.
  - 6. Control Joints: Fabricated from zinc-coated (galvanized) steel; one-piece-type, folded pair of unperforated screeds in M-shaped configuration; with perforated flanges and removable protective tape on plaster face of control joint.
  - 7. Expansion Joints: Fabricated from zinc-coated (galvanized) steel; folded pair of unperforated screeds in M-shaped configuration; with expanded flanges.

## 2.4 MISCELLANEOUS MATERIALS

- A. Water for Mixing and Finishing Plaster: Potable and free of substances capable of affecting plaster set or of damaging plaster, lath, or accessories.
- B. Fiber for Base Coat: Alkaline-resistant glass or polypropylene fibers, 1/2 inch long, free of contaminants, manufactured for use in cement plaster.
- C. Bonding Compound: ASTM C932.
- D. Fasteners for Attaching Metal Lath to Substrates: ASTM C1063.
- E. Wire: ASTM A641/A641M, Class 1 zinc coating, soft temper, not less than 0.0475-inch diameter unless otherwise indicated.

## 2.5 PLASTER MATERIALS

- A. Portland Cement: ASTM C150/C150M, Type II.
  - 1. Color for Finish Coats: As Indicated on Drawings.
- B. Lime: ASTM C206, Type S; or ASTM C207, Type S.

- C. Sand Aggregate: ASTM C897.
  - 1. Color for Job-Mixed Finish Coats: In color matching Architect's sample.

## 2.6 PLASTER MIXES

- A. General: Comply with ASTM C926 for applications indicated.
  - 1. Fiber Content: Add fiber to base-coat mixes after ingredients have mixed at least two minutes. Comply with fiber manufacturer's written instructions for fiber quantities in mixes, but do not exceed 1 lb of fiber/cu. yd. of cementitious materials.
- B. Base-Coat Mixes for Use over Metal Lath: Scratch and brown coats for three-coat plasterwork as follows:
  - 1. Portland Cement Mixes:
    - a. Scratch Coat: For cementitious material, mix 1 part portland cement and 3/4 to 1-1/2 parts lime. Use 2-1/2 to 4 parts aggregate per part of cementitious material.
    - b. Brown Coat: For cementitious material, mix 1 part portland cement and 3/4 to 1-1/2 parts lime. Use 3 to 5 parts aggregate per part of cementitious material, but not less than volume of aggregate used in scratch coat.
- C. Job-Mixed Finish-Coat Mixes:
  - 1. Portland Cement Mix: For cementitious materials, mix 1 part portland cement and 1-1/2 to 2 parts lime. Use 1-1/2 to 3 parts aggregate per part of cementitious material.
- D. Factory-Prepared Finish-Coat Mixes: For ready-mixed finish-coat plasters, comply with manufacturer's written instructions.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 PREPARATION

- A. Protect adjacent work from soiling, spattering, moisture deterioration, and other harmful effects caused by plastering.
- B. Prepare smooth, solid substrates for plaster according to ASTM C926.

### 3.3 INSTALLING ACCESSORIES

- A. Install according to ASTM C1063 and at locations indicated on Drawings.
- B. Reinforcement for External (Outside) Corners:
  - 1. Install lath-type, external-corner reinforcement at exterior locations.
- C. Control Joints: Locate as approved by Architect for visual effect and as follows:
  - 1. As required to delineate plasterwork into areas (panels) of the following maximum sizes:
    - a. Vertical Surfaces: 144 sq. ft..
    - b. Horizontal and Other Nonvertical Surfaces: 100 sq. ft..
  - 2. At distances between control joints of not greater than 18 feet o.c.
  - 3. As required to delineate plasterwork into areas (panels) with length-to-width ratios of not greater than 2-1/2:1.
  - 4. Where control joints occur in surface of construction directly behind plaster.
  - 5. Where plasterwork areas change dimensions, to delineate rectangular-shaped areas (panels) and to relieve the stress that occurs at the corner formed by the dimension change.

### 3.4 PLASTER APPLICATION

- A. General: Comply with ASTM C926.
  - 1. Do not deviate more than plus or minus 1/4 inch in 10 feet from a true plane in finished plaster surfaces when measured by a 10-foot straightedge placed on surface.
  - 2. Finish plaster flush with metal frames and other built-in metal items or accessories that act as a plaster ground unless otherwise indicated. Where casing bead does not terminate plaster at metal frame, cut base coat free from metal frame before plaster sets and groove finish coat at junctures with metal.
  - 3. Provide plaster surfaces that are ready to receive field-applied finishes indicated.
- B. Walls; Base-Coat Mixes for Use over Metal Lath: For scratch and brown coats, for three-coat plasterwork with 3/4-inch total thickness, as follows:
  - 1. Portland cement mixes.
- C. Plaster Finish Coats: Apply to provide finish to match existing.

### 3.5 PLASTER REPAIRS

- A. Repair or replace work to eliminate cracks, dents, blisters, buckles, crazing and check cracking, dry outs, efflorescence, sweat outs, and similar defects and where bond to substrate has failed.



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**3.6      CLEANING AND PROTECTION**

- A.      Remove temporary protection and enclosure of other work after plastering is complete. Promptly remove plaster from door frames, windows, and other surfaces not indicated to be plastered. Repair floors, walls, and other surfaces stained, marred, or otherwise damaged during plastering.

**END OF SECTION**

## **SECTION 099113 - EXTERIOR PAINTING**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### **1.2 SUMMARY**

- A. Section includes surface preparation and the application of paint systems on the following exterior substrates:
  - 1. Steel and iron.
  - 2. Wood.
- B. Related Requirements:
  - 1. Section 099123 "Interior Painting" for painting interior surfaces.

#### **1.3 DEFINITIONS**

- A. MPI Gloss Level 1: Not more than five units at 60 degrees and 10 units at 85 degrees, according to ASTM D 523.
- B. MPI Gloss Level 3: 10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.
- C. MPI Gloss Level 4: 20 to 35 units at 60 degrees and not less than 35 units at 85 degrees, according to ASTM D 523.
- D. MPI Gloss Level 5: 35 to 70 units at 60 degrees, according to ASTM D 523.
- E. MPI Gloss Level 6: 70 to 85 units at 60 degrees, according to ASTM D 523.
- F. MPI Gloss Level 7: More than 85 units at 60 degrees, according to ASTM D 523.

#### **1.4 ACTION SUBMITTALS**

- A. Product Data: For each type of product. Include preparation requirements and application instructions.
  - 1. Include printout of current "MPI Approved Products List" for each product category specified, with the proposed product highlighted.
  - 2. Indicate VOC content.

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- B. Samples for Verification: For each type of paint system and each color and gloss of topcoat.
  - 1. Submit Samples on rigid backing, 8 inches square.
  - 2. Apply coats on Samples in steps to show each coat required for system.
  - 3. Label each coat of each Sample.
  - 4. Label each Sample for location and application area.

## 1.5 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
  - 1. Paint: 5 percent, but not less than 1 gal. of each material and color applied.

## 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F.
  - 1. Maintain containers in clean condition, free of foreign materials and residue.
  - 2. Remove rags and waste from storage areas daily.

## 1.7 FIELD CONDITIONS

- A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F.
- B. Do not apply paints in snow, rain, fog, or mist; when relative humidity exceeds 85 percent; at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.

# PART 2 - PRODUCTS

## 2.1 MANUFACTURERS

- A. Basis-of-Design Product: Subject to compliance with requirements, provide Sherwin-Williams Company (The). or comparable product by one of the following:
  - 1. Benjamin Moore & Co.
  - 2. Glidden Professional.

## 2.2 PAINT, GENERAL

- A. MPI Standards: Products shall comply with MPI standards indicated and shall be listed in its "MPI Approved Products Lists."
- B. Material Compatibility:

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1. Materials for use within each paint system shall be 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, products shall be recommended in writing by topcoat manufacturers for use in paint system and on substrate indicated.
- C. VOC Content: For field applications, paints and coatings shall comply with VOC content limits of authorities having jurisdiction and the following VOC content limits:
1. Flat Paints and Coatings: 50 g/L.
  2. Nonflat Paints and Coatings: 50 g/L.
  3. Primers, Sealers, and Undercoaters: 100 g/L.
  4. Rust-Preventive Coatings: 100 g/L.
- D. Colors: As scheduled on Drawings.

### **PART 3 - EXECUTION**

#### **3.1 EXAMINATION**

- A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.
- B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:
  1. Wood: 15 percent.
- C. Verify suitability of substrates, including surface conditions and compatibility, with existing finishes and primers.
- D. Proceed with coating application only after unsatisfactory conditions have been corrected.
  1. Application of coating indicates acceptance of surfaces and conditions.

#### **3.2 PREPARATION**

- A. Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" applicable to substrates and paint systems indicated.
- B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.
  1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection.
- C. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.

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1. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.
- D. Steel Substrates: Remove rust, loose mill scale, and shop primer if any. Clean using methods recommended in writing by paint manufacturer but not less than the following:
  1. SSPC-SP 2.
- E. Shop-Primed Steel Substrates: Clean field welds, bolted connections, and areas where shop paint is abraded. Paint exposed areas with the same material as used for shop priming to comply with SSPC-PA 1 for touching up shop-primed surfaces.
- F. Wood Substrates:
  1. Scrape and clean knots, use power or pressure washing if directed by Architect. Before applying primer, apply coat of knot sealer recommended in writing by topcoat manufacturer for exterior use in paint system indicated.
  2. Sand surfaces that will be exposed to view, and dust off.
  3. Prime edges, ends, faces, undersides, and backsides of wood.
  4. After priming, fill holes and imperfections in the finish surfaces with putty or plastic wood filler. Sand smooth when dried.
- G. Plastic Trim Fabrication Substrates: Remove dust, dirt, and other foreign material that might impair bond of paints to substrates.

### 3.3 APPLICATION

- A. Apply paints according to manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual."
  1. Use applicators and techniques suited for paint and substrate indicated.
  2. Paint surfaces behind movable items same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed items with prime coat only.
  3. Paint both sides and edges of exterior doors and entire exposed surface of exterior door frames.
  4. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
  5. Primers specified in painting schedules may be omitted on items that are factory primed or factory finished if acceptable to topcoat manufacturers.
- B. Tint undercoats same color as topcoat, but tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Provide sufficient difference in shade of undercoats to distinguish each separate coat.
- C. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.
- D. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

### 3.4 CLEANING AND PROTECTION

- A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.
- B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.
- C. 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.
- D. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

### 3.5 EXTERIOR PAINTING SCHEDULE

- A. Steel and Iron Substrates:
  - 1. Water-Based Light Industrial Coating System, MPI EXT 5.1C:
    - a. Prime Coat: **Primer, Sherwin Williams Pro Cryl Primer.**
    - b. Intermediate Coat: **Sherwin Williams Pro Industrial Alkyd Urethane Enamel; matching topcoat.**
    - c. Topcoat: **Sherwin Williams Pro Industrial Alkyd Urethane Enamel; matching, semi-gloss (MPI Gloss Level 5).**
- B. Wood Substrates: Wood trim Architectural woodwork Doors and Wood board siding.
  - 1. Water-Based Light Industrial Coating System, MPI EXT 6.3J:
    - a. Prime Coat: Primer, alkyd for exterior wood, MPI #5.
    - b. Intermediate Coat: Light industrial coating, exterior, water based, matching topcoat.
    - c. Topcoat: Light industrial coating, exterior, water based, semi-gloss (MPI Gloss Level 5), MPI #163.

**END OF SECTION**

## **SECTION 099123 - INTERIOR PAINTING**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### **1.2 SUMMARY**

- A. Section includes surface preparation and the application of paint systems on interior substrates.

#### **1.3 DEFINITIONS**

- A. MPI Gloss Level 1: Not more than five units at 60 degrees and 10 units at 85 degrees, according to ASTM D 523.
- B. MPI 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. MPI Gloss Level 3: 10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.
- D. MPI 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. MPI Gloss Level 5: 35 to 70 units at 60 degrees, according to ASTM D 523.
- F. MPI Gloss Level 6: 70 to 85 units at 60 degrees, according to ASTM D 523.
- G. MPI Gloss Level 7: More than 85 units at 60 degrees, according to ASTM D 523.

#### **1.4 ACTION SUBMITTALS**

- A. Product Data: For each type of product. Include preparation requirements and application instructions.
  - 1. Include Printout of current "MPI Approved Products List" for each product category specified, with the proposed product highlighted.
  - 2. Indicate VOC content.
- B. Samples for Initial Selection: For each type of topcoat product.
- C. Samples for Verification: For each type of paint system and in each color and gloss of topcoat.



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1. Submit Samples on rigid backing, 8 inches square.
  2. Apply coats on Samples in steps to show each coat required for system.
  3. Label each coat of each Sample.
  4. Label each Sample for location and application area.
- D. Product List: Cross-reference to paint system and locations of application areas. Use same designations indicated on Drawings and in schedules. Include color designations.

## 1.5 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
1. Paint: 5 percent, but not less than 1 gal. of each material and color applied.

## 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F.
1. Maintain containers in clean condition, free of foreign materials and residue.
  2. Remove rags and waste from storage areas daily.

## 1.7 FIELD CONDITIONS

- A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F.
- B. Do not apply paints when relative humidity exceeds 85 percent; at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.

# PART 2 - PRODUCTS

## 2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Benjamin Moore & Co.
  2. Glidden Professional.
  3. Sherwin-Williams Company (The).
- B. Products: Subject to compliance with requirements, provide products listed in the Interior Painting Schedule for each paint category indicated in Part 3 below.

## 2.2 PAINT, GENERAL

- A. MPI Standards: Products shall comply with MPI standards indicated and shall be listed in its "MPI Approved Products Lists."
- B. Material Compatibility:
  - 1. Materials for use within each paint system shall be 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, products shall be recommended in writing by topcoat manufacturers for use in paint system and on substrate indicated.
- C. VOC Content: For field applications that are inside the weatherproofing system, paints and coatings shall comply with VOC content limits of authorities having jurisdiction and the following VOC content limits:
  - 1. Flat Paints and Coatings: 50 g/L.
  - 2. Nonflat Paints and Coatings: 50 g/L.
  - 3. Dry-Fog Coatings: 150 g/L.
  - 4. Primers, Sealers, and Undercoaters: 100 g/L.
  - 5. Rust-Preventive Coatings: 100 g/L.
  - 6. Zinc-Rich Industrial Maintenance Primers: 100 g/L.
  - 7. Pretreatment Wash Primers: 420 g/L.
  - 8. Shellacs, Clear: 730 g/L.
  - 9. Shellacs, Pigmented: 550 g/L.
- D. Low-Emitting Materials: For field applications that are inside the weatherproofing system, 90 percent of paints and coatings shall comply with the requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."
- E. Colors: As indicated in a color schedule on the Drawings.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.
- B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:
  - 1. Concrete: 12 percent.
  - 2. Masonry (Clay and CMUs): 12 percent.
  - 3. Wood: 15 percent.
  - 4. Gypsum Board: 12 percent.
  - 5. Plaster: 12 percent.

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- C. Gypsum Board Substrates: Verify that finishing compound is sanded smooth.
- D. Plaster Substrates: Verify that plaster is fully cured.
- E. Verify suitability of substrates, including surface conditions and compatibility, with existing finishes and primers.
- F. Proceed with coating application only after unsatisfactory conditions have been corrected.
  - 1. Application of coating indicates acceptance of surfaces and conditions.

### 3.2 PREPARATION

- A. Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" applicable to substrates and paint systems indicated.
- B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.
  - 1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.
- C. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.
  - 1. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.
- D. Concrete Substrates: Remove release agents, curing compounds, efflorescence, and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces to be painted exceeds that permitted in manufacturer's written instructions.
- E. Masonry Substrates: Remove efflorescence and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces or mortar joints exceeds that permitted in manufacturer's written instructions.
- F. Wood Substrates:
  - 1. Scrape and clean knots, and apply coat of knot sealer before applying primer.
  - 2. Sand surfaces that will be exposed to view, and dust off.
  - 3. Prime edges, ends, faces, undersides, and backsides of wood.
  - 4. After priming, fill holes and imperfections in the finish surfaces with putty or plastic wood filler. Sand smooth when dried.

### 3.3 APPLICATION

- A. Apply paints according to manufacturer's written instructions and to recommendations in "MPI Manual."
  - 1. Use applicators and techniques suited for paint and substrate indicated.

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2. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
  3. Paint front and backsides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.
  4. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
  5. Primers specified in painting schedules may be omitted on items that are factory primed or factory finished if acceptable to topcoat manufacturers.
- B. Tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Tint undercoats to match color of topcoat, but provide sufficient difference in shade of undercoats to distinguish each separate coat.
- C. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.
- D. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.
- E. Painting Plumbing, HVAC, Electrical, Communication, and Electronic Safety and Security Work:
1. Paint the following work where exposed in occupied spaces:
    - a. Equipment, including panelboards.
    - b. Uninsulated metal piping.
    - c. Uninsulated plastic piping.
    - d. Pipe hangers and supports.
    - e. Metal conduit.
    - f. Plastic conduit.
    - g. Duct, equipment, and pipe insulation having cotton or canvas insulation covering or other paintable jacket material.
    - h. Other items as directed by Architect.
  2. Paint portions of internal surfaces of metal ducts, without liner, behind air inlets and outlets that are visible from occupied spaces.

### 3.4 CLEANING AND PROTECTION

- A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.
- B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.
- C. 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.

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- D. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

### 3.5 INTERIOR PAINTING SCHEDULE

- A. Concrete Substrates, Nontraffic Surfaces:
1. Water-Based Light Industrial Coating System MPI INT 3.1L:
    - a. Prime Coat: Primer, alkali resistant, water based, MPI #3.
    - b. Intermediate Coat: Light industrial coating, interior, water based, matching topcoat.
    - c. Topcoat: Light industrial coating, interior, water based (MPI Gloss Level 3), MPI #151.
- B. CMU Substrates:
1. Water-Based Light Industrial Coating System, MPI INT 4.2K:
    - a. Block Filler: Block filler, latex, interior/exterior, MPI #4.
    - b. Intermediate Coat: Light industrial coating, interior, water based, matching topcoat.
    - c. Topcoat: Light industrial coating, interior, water based (MPI Gloss Level 3), MPI #151.
- C. Wood Substrates: Wood trim Architectural woodwork Doors Windows and wood board paneling.
1. Water-Based Light Industrial Coating System, MPI INT 6.3P:
    - a. Prime Coat: Primer sealer, alkyd, interior, MPI #45.
    - b. Intermediate Coat: Light industrial coating, interior, water based, matching topcoat.
    - c. Topcoat: Light industrial coating, interior, water based (MPI Gloss Level 3), MPI #151.
    - d. Topcoat: Light industrial coating, interior, water based, semi-gloss (MPI Gloss Level 5), MPI #153.
- D. Gypsum Board Substrates:
1. Water-Based Light Industrial Coating System, MPI INT 9.2L:
    - a. Application: Where "epoxy" paints are indicated.
    - b. Prime Coat: Primer sealer, latex, interior, MPI #50.
    - c. Intermediate Coat: Light industrial coating, interior, water based, matching topcoat.
    - d. Topcoat: Light industrial coating, interior, water based (MPI Gloss Level 3), MPI #151.
    - e. Topcoat: Light industrial coating, interior, water based, semi-gloss (MPI Gloss Level 5), MPI #153.

**END OF SECTION**