Moonlight
Architecture, Inc.
Architecture • Interior Design
Site Planning

PROJECT MANUAL FOR

PILOT POINT-
EXTERIOR RENOVATIONS

Cape Henlopen Road
Lewes, Delaware

For

Pilot Point Council of Owner's
50 Cascade Lane
Rehoboth Beach, Delaware 19971

Project No. 14048

15 January, 2016

Set No. _____

Moonlight Architecture, Inc. • 16529 Coastal Highway • Suite A • Lewes • Delaware • 19958
DE (302) 645-9361 • MD (410) 677-4747 • Fax (302) 645-9364 • email moonlightarch.com

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INVITATION TO BID

The Pilot Point Council of Owner's will receive sealed bids at the office of Moonlight Architecture, Inc., 29003 Lewes-Georgetown Highway, Lewes, Delaware 19958 until 4:30 p.m. on Thursday, March 3, 2016 for the following Project:

Construction of the:
Pilot Point – Exterior Renovations
Cape Henlopen Drive
Lewes, Delaware 19958

Fax and Email Bids will be accepted, but it is the Contractor's responsibility to verify that their bid was received by no later than the set bid due date and time. Any bid received after 4:30 p.m. on Thursday, March 3, 2016 will not be accepted.

A mandatory Pre-Bid Meeting will be held at 1:00 p.m. on Thursday February 4, 2016 at Unit #17 of Pilot Point, Cape Henlopen Drive, Lewes, Delaware 19958. If you need directions, please contact Mr. Robert W. Rollins (Moonlight Architecture, Inc.) at (302) 645-9361. **ATTENDANCE AT THE PRE-BID MEETING IS A PREREQUISITE FOR SUBMITTING A BID ON THE PROJECT.**

Plans and Specifications may be examined and obtained on or after Monday February 1, 2016 at the office of Moonlight Architecture, Inc., 29003 Lewes-Georgetown Highway, Lewes, DE 19958. One (1) set of Plans and Specifications will be provided to each Bidder at no cost. Additional sets of Plans and Specifications will be available to Bidders at the cost of reproduction. A PDF copy of the Plans and Specifications will be available to the General Contractors only, no Sub-Contractors. Partial sets of Plans & Specifications will not be released.

The Pilot Point Council of Owner's reserves the right to waive irregularities and reject any or all bids.

Mr. Ed Kingman
Owner's Representative

TABLE OF CONTENTS

SPECIFICATIONS

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BID FORM

TO: Pilot Point Council of Owner's
c/o Moonlight Architecture, Inc.
29003 Lewes-Georgetown Highway
Lewes, DE 19958

BID FOR: Pilot Point -
Exterior Renovations
Cape Henlopen Drive
Lewes, Delaware

BIDDER: _____(Name)

_____(Address)

_____

I/We the Bidder have received the Bidding Documents for the subject Project, including the complete Project Manual and Drawings, all of which are dated January 15, 2016. I/We have also received Addenda Nos. _____ issued during the bidding period. Furthermore, I/We have visited and examined the site and existing building and have correlated the conditions present that affect the Work specified and shown on the Drawings and submit the following Bid: I/We agree:

1. To hold my/our Bid open for a period of (30) thirty days from the date bids are to be received.
2. To enter into and execute a Contract, if awarded on the basis of this Bid, and to furnish all Bonds and Insurance required by the Bidding Documents.
3. To accomplish the Work in accordance with the Contract Documents.
4. To complete the Work by the time stipulated in the Contract Documents.
5. To provide Time & Material Rates to be used on Project with Bid.

I/We will execute the complete work included in the **Base Bid** for this project for the lump sum price of:

_____

($_____)

Base Bid Breakdown by Building:

1. Building 1B Price:

   _____

   ($_____)

2. Building 2B Price:

_____

($_____)

3. Building 3A Price:

_____

($_____)

4. Building 4A Price:

_____

($_____)

5. Building 5A Price:

_____

($_____)

6. Building 6C Price:

_____

($_____)

7. Building 7C Price:

_____

($_____)

8. Building 8D Price:

_____

($_____)

9. Building 9D Price:

_____

($_____)

Unit Prices:

ITEM	UNIT	UNIT PRICE
1. Replace one (1) sq. ft. of damaged existing 5/8" thick T-1-11 siding with new 5/8" thick exterior grade plywood wall sheathing.	Each	$_____

DATE:_____ SIGNED:_____

TITLE:_____

Attachments: Subcontractor List
Time & Material Rates

PILOT POINT COUNCIL OF OWNER'S
PILOT POINT – EXTERIOR RENOVATIONS
SUB-CONTRACTOR LIST

DEMOLITION Name: _____.

Address: _____.

CARPENTRY Name: _____.

Address: _____.

SIDING Name: _____.

Address: _____.

CAULKING Name: _____.

Address: _____.

PAINTING Name: _____.

Address: _____.

DRAWING INDEX

.

A-5E	BUILDING 5A - UNIT 27 ELEVATIONS
A-5F	BUILDING 5A - UNIT 28 ELEVATIONS
A-5G	BUILDING 5A - UNIT 29 ELEVATIONS
A-5H	BUILDING 5A - UNIT 30 ELEVATIONS
A-5J	BUILDING 5A - UNIT 31 ELEVATIONS
A-5K	BUILDING 5A - UNIT 32 ELEVATIONS
A-6A	BUILDING 6C - BUILDING FLOOR PLAN
A-6B	BUILDING 6C - EXTERIOR ELEVATIONS
A-6C	BUILDING 6C - EXTERIOR ELEVATIONS
A-6D	BUILDING 6C - UNIT 33 ELEVATIONS
A-6E	BUILDING 6C - UNIT 34 ELEVATIONS
A-6F	BUILDING 6C - UNIT 35 ELEVATIONS
A-6G	BUILDING 6C - UNIT 36 ELEVATIONS
A-6H	BUILDING 6C - UNIT 37 ELEVATIONS
A-6J	BUILDING 6C - UNIT 38 ELEVATIONS
A-6K	BUILDING 6C - UNIT 39 ELEVATIONS
A-7A	BUILDING 7C - BUILDING FLOOR PLAN
A-7B	BUILDING 7C - EXTERIOR ELEVATIONS
A-7C	BUILDING 7C - EXTERIOR ELEVATIONS
A-7D	BUILDING 7C - UNIT 40 ELEVATIONS
A-7E	BUILDING 7C - UNIT 41 ELEVATIONS
A-7F	BUILDING 7C - UNIT 42 ELEVATIONS
A-7G	BUILDING 7C - UNIT 43 ELEVATIONS
A-7H	BUILDING 7C - UNIT 44 ELEVATIONS
A-7J	BUILDING 7C - UNIT 45 ELEVATIONS
A-7K	BUILDING 7C - UNIT 46 ELEVATIONS
A-8A	BUILDING 8D - BUILDING FLOOR PLAN
A-8B	BUILDING 8D - EXTERIOR ELEVATIONS
A-8C	BUILDING 8D - EXTERIOR ELEVATIONS
A-8D	BUILDING 8D - UNIT 47 ELEVATIONS
A-8E	BUILDING 8D - UNIT 48 ELEVATIONS
A-8F	BUILDING 8D - UNIT 49 ELEVATIONS
A-8G	BUILDING 8D - UNIT 50 ELEVATIONS
A-8H	BUILDING 8D - UNIT 51 ELEVATIONS
A-8J	BUILDING 8D - UNIT 52 ELEVATIONS
A-8K	BUILDING 8D - UNIT 53 ELEVATIONS
A-9A	BUILDING 9D - BUILDING FLOOR PLAN
A-9B	BUILDING 9D - EXTERIOR ELEVATIONS
A-9C	BUILDING 9D - EXTERIOR ELEVATIONS
A-9D	BUILDING 9D - UNIT 54 ELEVATIONS
A-9E	BUILDING 9D - UNIT 55 ELEVATIONS
A-9F	BUILDING 9D - UNIT 56 ELEVATIONS
A-9G	BUILDING 9D - UNIT 57 ELEVATIONS
A-9H	BUILDING 9D - UNIT 58 ELEVATIONS
A-9J	BUILDING 9D - UNIT 59 ELEVATION

.

A-9K	BUILDING 9D - UNIT 60 ELEVATIONS
A-10	DETAILS
A-11	DETAILS
A-12	DETAILS
A-13	DETAILS

END OF SECTION

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AGREEMENT FORM

1.1 GENERAL

A. The Form of Agreement for work to be performed under this Contract shall be AIA Document A101-2007, "Standard Form of Agreement Between Owner and Contractor", where the basis of payment is a stipulated sum.

B. The Form of Agreement will be completed by the Architect and shall be subject to the approval of the Owner and the Contractor prior to their execution of the Agreement.

C. The uncompleted Form of Agreement is available for examination in the Architect's Office.

END OF SECTION

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BONDS, CERTIFICATES AND ADMINISTRATIVE FORMS

1.1 GENERAL

A. RELATED WORK SPECIFIED ELSEWHERE:

1. Section D: Agreement Form
2. Section F: General Conditions
3. Section G: Supplementary Conditions

B. FORMS SUBMITTED BY CONTRACTOR:

1. Reference is made throughout this Project Manual to a number of standard forms which the Contractor is required to submit to the Architect prior to and during the execution of the Work of this Project.

2. The Contractor shall be responsible for obtaining and submitting the following forms to the Architect when the forms are completed as specified.

    a. Prior to commencing work:

        1. AIA Document G715, "Certificate of Insurance."
        2. AIA Document A312, “Performance Bond and Payment Bond.”

    b. During the execution of the Work, as appropriate, and prior to final payment:

        1. AIA Document G702, "Application and Certificate for Payment."
        2. AIA Document G703, "Continuation Sheet" for G702, "Application and Certificate for Payment."
        3. AIA Document G706, "Contractor's Affidavit of Payment of Debts and Claims."
        4. AIA Document G706A, "Contractor's Affidavit of Release of Liens."
        5. AIA Document G707, "Consent of Surety to Final Payment."
        6. AIA Document G707A, "Consent of Surety to Reduction in or Partial Release of Retainage."

3. The forms specified above are available for examination in the Architect's office by prospective Bidders. Failure to examine the specified documents and to make allowances for them in their Bid, shall not relieve the Contractor from using the forms and complying with their requirements.

C. FORMS PREPARED BY ARCHITECT:

1. The Architect shall prepare the following standard forms, as appropriate:

    a. AIA Document G701, "Change Order."
    b. AIA Document G704, "Certificate of Substantial Completion."
    c. AIA Document G713, "Construction Change Authorization."
    d. AIA Document A710, "Architect's Supplemental instruction."
    e. AIA Document G709, "Proposal Request."

END OF SECTION

GENERAL CONDITIONS

1.1 GENERAL

A. GENERAL CONDITIONS:

1. General Conditions for this project is the American Institute of Architect's Document A201, "General Conditions of the Contract for Construction", consisting of 15 Articles.

2. A copy of the AIA Document A201 is on file and may be reviewed in the Architect's office. The Contractor will be held to have examined and become familiar with all provisions of the said AIA Document A201 which shall be as binding as though written in full herein.

END OF SECTION

SUPPLEMENTARY CONDITIONS

1.1 REFERENCED GENERAL CONDITIONS

The General Conditions of this Contract is the American Institute of Architect's Document A201, " General Conditions of the Contract for Construction", consisting of 15 articles.

1.2 SUPPLEMENTARY CONDITIONS

The following Supplementary Conditions modify, change, delete from or add to AIA Document A201. Where any Article of the General Conditions is modified or deleted by these Supplementary Conditions, the unaltered provisions of the article, paragraph, subparagraph, or clause shall remain in effect.

1.3 REFERENCE TO DIVISION 1: GENERAL REQUIREMENTS

Where provisions of the General Conditions relate to project administration or work-related requirements of the Contract, the requirements of those paragraphs may be modified, supplemented, or expanded by provisions specified in various sections of DIVISION 1, GENERAL REQUIREMENTS, of the Specifications.

1.4 MODIFICATIONS TO THE GENERAL CONDITIONS

ARTICLE 1: GENERAL PROVISIONS

1.1 BASIC DEFINITIONS:

1.1.1 Add the following to Subparagraph 1.1.1:

"The Contractor acknowledges and warrants that he has closely examined all the Contract Documents, that they are suitable and sufficient to enable the Contractor to complete the Work in a timely manner for the Contract Sum, and that they include all work, whether or not shown or described, which reasonably may be inferred to be required or useful for the completion of the Work in full compliance with all applicable codes, laws, ordinances and regulations.

Add the following to Subparagraph 1.1.3:

"The Work shall include the obligation of the Contractor to visit the site of the project prior to submitting a proposal. Such site visit shall be for the purpose of familiarizing the Contractor with the conditions as they exist and the character of the operations to be carried on under the Contract documents, including all existing site conditions, access to the site, physical characteristic of the site and surrounding areas, and verifying the size and layout of the buildings."

1.2 CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS:

Add the following to Subparagraph 1.2.1:

“Such documents shall be enumerated in the Owner-Contractor Agreement.”

Add the following Subparagraph 1.2.2:

"Execution of the Contract by the Contractor is a representation that the Contractor has carefully examined the Contract documents and the site, and represents that the Contractor is thoroughly familiar with the nature and location of the Work, the site, the specific conditions under which the Work is to be performed, and all matters which may in any way affect the Work or it's performance. The Contractor further represents that as a result of such examinations and investigations, the Contractor thoroughly understands the Contract Documents and their intent and purpose, and is familiar with all applicable codes, ordinances, laws, regulations and rules as they apply to the Work, and that the Contractor will abide by same. Claims for additional time or additional compensation as a result of the Contractor's failure to follow the foregoing procedure and to familiarize itself with all local conditions and the Contract Documents will not be permitted."

Add the following to Subparagraph 1.2.3:

"In the event of conflicting provisions, the more specific provision will take precedence over the less specific; the more stringent will take precedence over the less stringent; the more expensive item will take precedence over the less expensive. On all drawings, figures take precedence over scaled dimensions. Scaling of dimensions, if done, is done at the Contractor's own risk."

Add to 1.2 the following new subparagraphs:

1.2.4 The word "PROVIDE" as used in the Contract Documents shall mean "FURNISH AND INSTALL" and shall include, without limitation, all labor, materials, equipment, transportation, services and other items required to complete the referenced tasks.

1.2.5 The word "PRODUCT" as used in the Contract Documents includes: materials, systems, and equipment.

ARTICLE 2: OWNER:

2.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER:

Delete the existing subparagraph 2.2.5 in its entirety and substitute the following new Subparagraph 2.2.5:

2.2.5 The Contractor awarded the project will be furnished two (2) copies of Drawings and Project Manuals at no cost. Additional copies are available to the Contractor at the cost of reproduction, postage and handling.

ARTICLE 3: CONTRACTOR:

3.2 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR:

Add the following to Subparagraph 3.2.1:

"Should any words or numbers that are necessary to a clear understanding of the

Work be illegible or omitted, or should an error or discrepancy occur in any of the Contract Documents, the Contractor shall immediately notify the Architect of such omission, error or discrepancy, and the Contractor shall not proceed with that portion of the Work until clarification is received. In the event the Contractor proceeds without so notifying the Architect, the Contractor shall be responsible for the cost of correcting same, including any resulting damage".

3.3 SUPERVISION AND CONSTRUCTION PROCEDURES:

Add the following to Subparagraph 3.3.3:

"The Contractor shall be responsible for and coordinate any and all inspections required by any governmental body having jurisdiction over the Project. Failure to obtain any licenses or other approvals because of the failure of the Contractor to conform to this requirement shall not extend the Contract Time, and the Contractor shall not be entitled to an increase in the Contract Sum therefore. All permits shall be paid by the Owner."

3.7 PERMITS, FEES AND NOTICES AND COMPLIANCE WITH LAWS:

3.7.1 Add the following to Subparagraph 3.7.1:

"Copies of any and all permits, licenses and certificates shall be delivered to the Architect and Owner as soon as they are obtained. Along with the request for final payment, the Contractor shall deliver the originals of such permits, licenses and certificates to the Architect."

3.7.2 Add the following to Subparagraph 3.7.2:

"If the Contractor fails to give such notices, it shall be liable for and shall indemnify and hold harmless the Owner and the Architect, and their respective employees, officers and agents, against any resulting fines, penalties, judgments or damages, including reasonable attorneys fees, imposed on or incurred by the parties indemnified hereunder."

3.12 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES:

Add the following to Subparagraph 3.12.8:

"The Architect will review shop drawings and other Contractor submittals in accordance with Subparagraph 4.2.7, and will review the first submission without additional cost to the Owner. However, if the Architect rejects the first submittal and is required to review second or subsequent submittals, the time incurred in those further reviews shall be chargeable to the Contractor submitting such items as a back charge from the Owner and in accordance with the Architect's then prevailing regular fee schedule."

ARTICLE 4: ARCHITECT:

4.1 GENERAL:

Add the following to Subparagraph 4.1.1:

"Wherever the term Architect is used throughout the Contract Documents, it shall mean Moonlight Architecture, Inc. or their authorized representatives".

4.2 ADMINISTRATION OF THE CONTRACT:

Add the following to Subparagraph 4.2.7:

"The Contractor shall not submit any shop drawing that is merely a tracing or other copy of any of the Contract Documents. Each shop drawing must be prepared by the Contractor, or a subcontractor or supplier of the Contractor. The Architect shall have the authority to reject any shop drawing that violates this provision, and no extension of the Contract Time shall be given on account of such rejection."

ARTICLE 5: SUBCONTRACTORS:

NO MODIFICATIONS

ARTICLE 6: CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS:

NO MODIFICATIONS.

ARTICLE 7: CHANGES IN THE WORK:

7.3 CONSTRUCTION CHANGE DIRECTIVES:

In the first sentence of Subparagraph 7.3.7, delete the words "a reasonable allowance for overhead and profit" and substitute "an allowance for overhead and profit in accordance with Clauses 7.3.10.1 through 7.3.10.6 below."

Add the following Subparagraph 7.3.11 to 7.3:

7.3.11 In Subparagraphs 7.3.7, the allowance for the combined overhead and profit included in the total cost to the Owner, shall be based on the following schedule:

.1 For the Contractor, for work performed by the Contractor's own forces, ten percent of the cost.

.2 For the Contractor, for work performed by the Contractor's Subcontractor, ten percent of the amount due the Subcontractor.

.3 For each Subcontractor or Sub-subcontractor involved, for Work performed by that Subcontractor's or Sub-subcontractor's own forces, ten percent of the cost.

.4 For each Subcontractor, for Work performed by the Sub-subcontractors, ten percent of the amount due the Sub-contractor.

.5 Cost to which overhead and profit is to be applied shall be determined in accordance with Subparagraph 7.3.6.

.6 In order to facilitate checking of quotations for extras or credits, all proposals, except those so minor that their propriety can be seen by inspection, shall be accompanied by a complete itemization of costs including labor, materials

and Subcontracts. Labor and materials shall be itemized in the manner prescribed above. Where major cost items are Subcontracts, they shall be itemized also. In no case will a change involving over $100.00 be approved without such itemization.

Items .1 thru .6 above shall not exceed 10% of the actual costs.

ARTICLE 9: PAYMENTS AND COMPLETION:

9.3 APPLICATIONS FOR PAYMENT:

Add the following to Subparagraph 9.3.1:

9.3.1.3 “Application for Payment shall be submitted on AIA Document G702 "Application and Certificate for Payment”, supported by AIA Document G703, "Continuation Sheet. A pencil copy of the Application for Payment should be submitted initially by a date specified for work completed to that date and then a certified Payment for Application will be submitted for payment in 30 days."

9.3.1.4 “All Applications for Payment shall be notarized by a Delaware notary”.

9.3.1.5 “Until Substantial Completion, the Owner will pay 90% of the amount due the Contractor on account of Progress Payments. At 50% completion of the Project, the Owner may opt to pay 95% of the amount due the Contractor on account of Progress Payments. Stored materials will be paid at 100% showing certified receipts from the supplier,once the materials are stored in a bonded warehouse or trailer on-site with insurance showing the amount of materials stored”. This applies only to work completed in place, not stored off-site.

ARTICLE 10: PROTECTION OF PERSONS AND PROPERTY:

NO MODIFICATIONS.

ARTICLE 11: INSURANCE AND BONDS:

11.1 CONTRACTOR'S LIABILITY INSURANCE:

(Submit AIA Document G715, Acord Certificate of Insurance 25-S.

Delete Subparagraph 11.1.2 in its entirety and substitute the following new Subparagraph:

11.1.2 The insurance required by Subparagraph 11.1.1 shall be written on a comprehensive general liability form with all coverages indicated. Coverages shall be on an "OCCURRENCE" basis not an "ACCIDENT" basis. The insurance shall be specified below or required by laws, whichever is greater, and shall include contractual liability insurance as applicable to the Contractor's obligations under paragraphs 3.18 and 10.2.5. The Contractor is responsible for providing any additional insurance deemed necessary to protect their interest from other hazards or claims in excess of the minimum coverages. The Contractor should include Builder’s Risk Insurance with the value of their bid. The Contractor's minimum limits of liability, which it shall also require from it’s Subcontractors unless it shall insure their operations under its policy,

are as follows:

11.1.2.1 Worker's or Workmen's Compensation: Minimum limit on Employees' Liability to the $100,000 minimum limit for all employees working at one site.

11.1.2.2 Public Liability and Automobile Liability Insurance Coverage to be provided for both the Owner and the Contractor:

a. Bodily Injury:
$500,000 for each individual.
$1,000,000 for each accident.

b. Property Damage:
$500,000 for each accident.

11.1.2.3 Completed Operations: Owner and Contractors Liability and Contractual Coverage:

a. Bodily Injury:
$500,000 for each individual.
$1,000,000 for each accident.

b. Property Damage:
$1,000,000 for each accident.

c. Completed operations coverage will be maintained for a period of two years after.

Add the following new clause to Subparagraph 11.1.3:

11.1.3.1 "The Contractor shall furnish one copy of each of the Certificates of Insurance herein required for each copy of the Agreement which shall specifically set forth evident of all coverage required by subparagraph 11.1.2.1, 11.1.2.2 and 11.1.2.3. The form of Certificate shall be AIA Document G715, Acord Certificate of Insurance 25-S,or other form acceptable to the Owner. The Contractor shall furnish to the Owner copies of any endorsements that are subsequently issued amending coverage or limits."

11.3 PROPERTY INSURANCE:

11.3.1 Modify the first sentence of Subparagraph 11.3.1 as follows: Delete "Unless otherwise provided, the Owner" and substitute "the Contractor."

Add the following sentences:

The form of policy for this coverage shall be Completed Value. If the Owner is damaged by the failure of the Contractor to maintain such insurance, then the Contractor shall bear all reasonable costs properly attributable thereto.

11.4 PERFORMANCE BOND AND PAYMENT BOND:

Delete Subparagraph 11.4.1 in its entirety and substitute the following new Subparagraph 11.4.1:

11.4.1 The Contractor shall furnish a Performance Bond in an amount equal to one hundred percent (100%) of the contract Sum. The bond shall be used as security for and conditioned upon the faithful performance and execution of the Contract.

The Contractor shall furnish a Labor and Material Payment Bond in an amount equal to one hundred percent (100%) of the Contract Sum. The bond shall be used as security for and conditioned upon the complete payment of all persons performing labor or furnishing materials on this project under this contract.

Simultaneously with the execution of the Contract, the Contractor shall execute the required bonds with a corporate Surety authorized to do business in the State of Delaware. The bonds shall be payable to the Owner. The Contractor shall bear the cost of the Bonds. All the forms (bonds) shall be notarized by a Delaware notary.

ARTICLE 12: UNCOVERING AND CORRECTION OF WORK:

NO MODIFICATIONS.

ARTICLE 13: MISCELLANEOUS PROVISIONS:

ADD THE FOLLOWING:

13.8 ANTITRUST CLAIMS:

13.8.1 As consideration for the award the execution by the Owner of this Contract, the contractor hereby grants, conveys, sells, assigns, and transfers to the Owner all of its right, title and interest in and to all known or unknown causes of action it presently has or may now or hereafter acquire under the antitrust laws of the United States and the State of Delaware, relating to the particular goods or services purchased or acquired by the Owner pursuant to this contract.

13.9 EQUALITY OF EMPLOYMENT OPPORTUNITY:

13.9.1 During the performance of this contract, the Contractor agrees as follows: 1) The Contractor will not discriminate against any employee or applicant for employment because of race, creed, color, sex or national origin. The Contractor will take affirmative action to ensure that applicants are employed and the employees are treated during employment without regard to their race, creed, color, sex or national original. Such action shall include, but not be limited to the following: Employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places available to employees and applicants for employment notices to be provided by the contracting agency setting forth this nondiscrimination clause. 2) The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race creed, color, sex or national origin.

The term "contract for public works" means construction, reconstruction, demolition, alteration and repair work and maintenance work paid for in whole or in part out of the funds of a public body.

13.10 SAFETY PRECAUTIONS:

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

13.11 HAZARDOUS WASTE:

13.11.1 In the event the Contractor encounters on the site material reasonably believed to be hazardous waste which has not been rendered harmless, the Contractor shall immediately stop work in the area affected and report the condition to the Owner and Architect in writing. The Work in the affected area shall not thereafter be resumed except by written agreement of the Owner and Contractor if in fact the material is hazardous and has not been rendered harmless. The Work in the affected area shall be resumed in the absence of hazardous waste or when it has been rendered harmless, by written agreement of the Owner and Contractor, or in accordance with final determination by the Owner on which arbitration has not been demanded, or by arbitration under Article 15.

13.11.2 The Contractor shall not be required pursuant to Article to perform without consent any Work relating to hazardous waste.

13.11.3 To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, 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 attorney's fees, arising out of or resulting from performance of the Work in the affected area if in fact the material is hazardous waste 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) including losses of use resulting therefrom, but only to the extent caused in whole or in pat by negligent acts or omissions of the Owner, anyone directly or indirectly employed by the Owner, or anyone for whose acts the Owner 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 right or obligations of indemnity which would otherwise exist as to a party or person described in this Subparagraph.

13.12 FEES:

13.12.1 Contractor agrees that the Project shall be substantially completed no later than the date referenced in Section 011000. In the event that Contractor fails to substantially complete the Project by the date referenced, Contractor agrees to reimburse Owner for all additional Architect's fees or costs incurred after the referenced date as a result of Contractor's delay.

13.13 HAZARDOUS MATERIALS:

13.13.1 No hazardous materials or components containing known hazardous materials shall be used in the construction of the work. Asbestos, lead or mercury shall not be allowed in any form. No components containing PCB's (polychlorinated biphenyl) shall be used in the construction of the work.

13.14 DISPUTE RESOLUTION TRANSACTION CLAUSE:

13.14.1 Should the Architect or any of its employees or consultants be required to appear at any arbitration or court hearing or trials due to the service of a subpoena relating to any dispute involving the General Contractor or any of the Subcontractors, Sub-subcontractors or suppliers on the project, the General Contractor shall pay then prevailing hourly rate of the Architect's employees and consultants for all time spent in complying with the subpoena, including all time spent in preparation for an attendance at any such hearing or trial, and reimbursable expenses for printing, travel and lodging.

13.15 CONFLICTS WITH FEDERAL STATUTES OR REGULATIONS:

13.15.1 If any provision of these Contract Documents conflict or is inconsistent with any statute, rule or regulation of the Government of the United States of America, the Contractor shall immediately upon discovery of such conflict or inconsistency notify the Owner and Architect.

13.16 STATE LICENSE AND TAX REQUIREMENTS:

13.16.1 Each Contractor and Subcontractor shall be licensed to do business in the State of Delaware and shall pay all fees and taxes due under State laws. In conformance with Section 2503, Chapter 25, Title 30, Delaware Code, the Contractor shall furnish the State Tax Department, within ten (10) days after award of Contract, a statement of the total values of each contract and subcontract, together with the names and addresses of the contracting parties. The Contractor, before the payment of any award or amount payable to any Contractor or Subcontractor not a resident of Delaware, shall ascertain from said non-resident Contractor or Subcontractor and/or the State Tax Department, whether he has obtained a license and satisfied his liability paid by the non-resident Contractor or Subcontractor, the Contractor shall deduct from the award the amount payable to said non-resident Contractor or Subcontractor the amount of said license liability and shall pay same to the State Tax Department within ten (10) days after final payment and settlement with the non-resident Contractor or Subcontractor.

13.16.2 Taxes: The Contractor shall pay all sales, consumer, use and other taxes required by law.

13.17 OWNER DISTRICT REQUIREMENTS:

13.17.1 As required in the Hazardous Chemical Information Act of June 1984, all vendors supplying any materials that may be defined as hazardous, must provide Material Data Safety Sheets for those products. Any Chemical product should be considered hazardous if it has a warning caution on the label relating to a potential physical or health hazard, if it is known to be present in the work place, and if employees may be exposed under normal conditions or in any foreseeable emergency situation. Material Safety Data Sheets must be provided directly to the Owner along with shipping slips that include those products.

ARTICLE 14: TERMINATION OF THE CONTRACT:

NO MODIFICATIONS.

ARTICLE 15: CLAIMS AND DISPUTES:

NO MODIFICATIONS.

END OF SECTION

SECTION 011000 - SUMMARY

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Project information.
2. Work covered by Contract Documents.
3. Access to site.
4. Coordination with occupants.
5. Work restrictions.
6. Specification and drawing conventions.
7. Miscellaneous provisions.

B. Related Requirements:

1. Section 015000 "Temporary Facilities and Controls" for limitations and procedures governing temporary use of Owner's facilities.

1.2 PROJECT INFORMATION

A. Project Identification: Pilot Point Exterior Renovations

1. Project Location: Cape Henlopen Road; Lewes, Delaware.

B. Owner: Pilot Point Council of Owners; 50 Cascade Lane; Rehoboth Beach, Delaware 19971

1. Owner's Representative: Ed Kingman

C. Architect: Robert W. Rollins; Moonlight Architecture, Inc.; 29003 Lewes-Georgetown Highway; Lewes, Delaware 19958; Phone Number – (302) 546-9361.

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

1. The Work consists of exterior renovations to nine existing two-story residential buildings consisting of a total of sixty units. There is one building with 5 units, one building with 6 units, and the remaining seven buildings consist of seven units. There are four different building types. Exterior renovations to include: removal of existing wood siding & replacement with new fiber cement siding with water management system, removal of existing wood trim boards and replacement with new closed cell PVC trim boards, installation of new closed cell PVC band boards; installation of new closed cell PVC bead board ceilings, removal existing wood soffits & replacement with new fiber cement soffits; removal of existing handrails & replacement with new vinyl handrails, and removal of existing wood shed doors & replacement with new fiberglass doors, and other miscellaneous exterior renovations.

E. Work Sequence: Prior to commencement of the Work, the Contractor and the Owner shall walk the Project site to mark any items that will be or needs to be removed, such as existing landscaping. The work shall be conducted as follows:.

1. Work Timeline:
   a. Work shall commence within seven (7) days after execution of Agreement between Owner and Contractor and shall temporarily halt on June 17, 2016 for the summer. A minimum of two (2) buildings shall be completed in their entirety prior to June 17, 2016 stoppage. The two (2) buildings will be determined with the Successful Bidder prior to commencement of Work. If time permits, Work on a third building can be performed with condition that the building is completed in its entirety prior to the June 17, 2016 stoppage.
   b. Work on the remaining seven (7) buildings shall commence again on September 12, 2016 and be Substantially Complete by May 26, 2017.

2. If work is not substantially completed in the established timeframe, the Contractor shall be responsible for any additional cost associated with the delay in the project schedule and shall reimburse the Owner for any additional cost accrued by the Architect.

F. Type of Contract.

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

1.3 ACCESS TO SITE

A. General: Contractor shall have full use of Project site for construction operations during construction period.

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.
1. Driveways, Walkways and Entrances: Keep driveways and entrances serving premises clear and available to Owner and emergency vehicles at all times. Do not use these areas for parking or storage of materials unless approved by Owner and acceptable to Authorities having jurisdiction.

   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.

1.4 COORDINATION WITH OCCUPANTS

A. Full Owner Occupancy: Owner will occupy site and **existing** building(s) during entire construction period. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage.

1. Maintain access to existing walkways and other adjacent occupied or used facilities. Do not close or obstruct walkways or other occupied or used facilities without written permission from Owner and approval of authorities having jurisdiction.
2. Notify Owner not less than **72** hours in advance of activities that will affect Owner's operations.

1.5 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: On-site work hours is only limited by the requirements of the Pilot Point Council of Owner’s and the City of Lewes, Delaware (Authorities with jurisdiction over the Project).
1. City of Lewes work hours are from 7:00 a.m. to 8:00 p.m. from Monday through Saturday all year round. Work is prohibited on Sunday all year round and on these holidays, July 4 (Independence Day) and December 25 (Christmas). Contractor is responsible to verify work hours with City of Lewes.

C. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions to requirements indicated:

1. Notify **Owner** not less than **seven** days in advance of proposed utility interruptions.

D. Controlled Substances: Use of tobacco products and other controlled substances **within the on Project site** is not permitted.

1.6 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**.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011000

SECTION 012100 - ALLOWANCES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements governing allowances.

B. Types of allowances include the following:

1. Lump-sum allowances.

1.2 SELECTION AND PURCHASE

A. At the earliest practical date after award of the Contract, advise Architect of the date when final selection and purchase of each product described by an allowance must be completed 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 selected by Owner’s Representative from the designated supplier.

1.3 ACTION SUBMITTALS

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

1.4 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. Coordinate and process submittals for allowance items in same manner as for other portions of the Work.

1.5 COORDINATION

A. Coordinate allowance items with other portions of the Work. Furnish templates as required to coordinate installation.

1.6 **LUMP-SUM** ALLOWANCES

A. Allowance shall include cost to Contractor of specific products and materials selected by Owner's Representative 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 **selected by Owner's Representative** under allowance shall be included as part of the Contract Sum and not part of the allowance.

1.7 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 margins claimed.

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 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. 01 **Lump-Sum** Allowance: Include the sum of $16,250.00 (130 Light Fixtures - 60 Units x 2 Light Fixtures / Unit plus 10 extra Light Fixtures at $125 per Light Fixture) for the purchase and delivery of wall mounted coastal environment light fixture as selected by Owner's Representative.

END OF SECTION 012100

SECTION 012200 - UNIT PRICES

PART 1 - GENERAL

1.1 SUMMARY

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

1.2 DEFINITIONS

A. Unit price is **an amount incorporated in 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.

1.3 PROCEDURES

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

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

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF UNIT PRICES

A. Unit Price No. 01 – Wall Sheathing

1. Description: Replace one (1) sq.ft. of damaged existing 5/8” T-1-11 thick wood siding and replace with new 5/8” thick exterior grade plywood wall sheathing according to Section 061000 – Rough Carpentry
2. Unit of Measurement: 1 square foot

END OF SECTION 012200

SECTION 012500 - SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for substitutions.

1.2 DEFINITIONS

A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.

1.3 ACTION SUBMITTALS

A. Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

1. Substitution Request Form: Use **CSI Form 13.1A**.
2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:

    a. Statement indicating why specified product or fabrication or installation cannot be provided, if applicable.
    b. Coordination information, including a list of changes or revisions needed to other parts of the Work and to construction performed by Owner and separate contractors, that will be necessary to accommodate proposed substitution.
    c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Include annotated copy of applicable Specification Section. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
    d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
    e. Samples, where applicable or requested.
    f. Certificates and qualification data, where applicable or requested.
    g. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.
    h. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
    i. Research reports evidencing compliance with building code in effect for Project .
    j. Detailed comparison of Contractor's construction schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided

within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.

k. Cost information, including a proposal of change, if any, in the Contract Sum.

l. Contractor's certification that proposed substitution complies with requirements in the Contract Documents except as indicated in substitution request, is compatible with related materials, and is appropriate for applications indicated.

m. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.

3. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within **seven** days of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within **seven** days of receipt of request, or **seven** days of receipt of additional information or documentation, whichever is later.

a. Forms of Acceptance: Change Order, Construction Change Directive, or Architect's Supplemental Instructions for minor changes in the Work.

b. Use product specified if Architect does not issue a decision on use of a proposed substitution within time allocated.

1.4 QUALITY ASSURANCE

A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials.

PART 2 - PRODUCTS

2.1 SUBSTITUTIONS

A. Product Substitutions: Architect will consider requests for substitution if received before 4:30 p.m. on Friday, February 12, 2016. Requests received after that time may be considered or rejected at discretion of Architect.

1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:

a. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Architect for redesign and evaluation services.

b. Requested substitution does not require extensive revisions to the Contract Documents.

c. Requested substitution is consistent with the Contract Documents and will produce indicated results.
d. Substitution request is fully documented and properly submitted.
e. Requested substitution will not adversely affect Contractor's Construction Schedule.
f. Requested substitution has received necessary approvals of authorities having jurisdiction.
g. Requested substitution is compatible with other portions of the Work.
h. Requested substitution has been coordinated with other portions of the Work.
i. Requested substitution provides specified warranty.

B. Substitutions for Convenience: Not allowed.

END OF SECTION 012500

SUBSTITUTION REQUEST

Project: _____ Substitution Request Number: _____

_____ From: _____

To: _____ Date: _____

_____ A/E Project Number: _____

Re: _____ Contract For: _____

Specification Title: _____ Description: _____

Section: _____ Page: _____ Article/Paragraph: _____

Proposed Substitution: _____

Manufacturer: _____ Address: _____ Phone: _____

Trade Name: _____ Model No.: _____

Installer: _____ Address: _____ Phone: _____

History: [] New product [] 2-5 years old [] 5-10 yrs old [] More than 10 years old

Differences between proposed substitution and specified product: _____

_____

_____

[] Point-by-point comparative data attached - REQUIRED BY A/E

Reason for not providing specified item: _____

_____

Similar Installation:

Project: _____ Architect: _____

Address: _____ Owner: _____

_____ Date Installed: _____

Proposed substitution affects other parts of Work: [] No [] Yes; explain _____

_____

Savings to Owner for accepting substitution: ($ _____).

Proposed substitution changes Contract Time: [] No [] Yes [Add] [Deduct] _____ days.

Supporting Data Attached: [] Drawings [] Product Data [] Samples [] Tests [] Reports [] _____

SUBSTITUTION REQUEST
(Continued)

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
- Same warranty will be furnished for proposed substitution as for specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Cost data as stated above is complete. Claims for additional costs related to accepted substitution which may subsequently become apparent are to be waived.
- Proposed substitution does not affect dimensions and functional clearances.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.
- Coordination, installation, and changes in the Work as necessary for accepted substitution will be complete in all respects.

Submitted by: _____

Signed by: _____

Firm: _____

Address: _____

_____

Telephone: _____

Attachments: _____

_____

_____

_____

A/E's REVIEW AND ACTION

[] Substitution approved - Make submittals in accordance with Specification Section 01330.

[] Substitution approved as noted - Make submittals in accordance with Specification Section 01330.

[] Substitution rejected - Use specified materials.

[] Substitution Request received too late - Use specified materials.

Signed by: Date:

Additional Comments: [] Contractor [] Subcontractor [] Supplier [] Manufacturer [] A/E [] _____

_____

_____

_____

_____

_____

_____

_____

SECTION 012600 - CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

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

1.2 MINOR CHANGES IN THE WORK

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

1.3 PROPOSAL REQUESTS

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

1. Work Change Proposal Requests issued by **Architect** are not instructions either to stop work in progress or to execute the proposed change..
2. Within **14 days, when not otherwise specified,** after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.

    a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
    b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
    c. Include costs of labor and supervision directly attributable to the change.
    d. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.

B. Contractor-Initiated Work Change Proposals: If latent or changed conditions require modifications to the Contract, Contractor may initiate a claim by submitting a request for a change to **Architect**.

1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.

2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
4. Include costs of labor and supervision directly attributable to the change.
5. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
6. Comply with requirements in Section 012500 "Substitution Procedures" if the proposed change requires substitution of one product or system for product or system specified.

1.4 ADMINISTRATIVE CHANGE ORDERS

A. Allowance Adjustment: See Section 012100 "Allowances" for administrative procedures for preparation of Change Order Proposal for adjusting the Contract Sum to reflect actual costs of allowances.

B. Unit-Price Adjustment: See Section 012200 "Unit Prices" for administrative procedures for preparation of Change Order Proposal for adjusting the Contract Sum to reflect measured scope of unit-price work.

1.5 CHANGE ORDER PROCEDURES

A. On Owner's approval of a Work Changes Proposal Request, **Architect** will issue a Change Order for signatures of Owner and Contractor on **AIA Document G701**.

1.6 CONSTRUCTION CHANGE DIRECTIVE

A. **Construction** Change Directive: **Architect** may issue a **Construction** Change Directive on **AIA Document G714**. **Construction** Change Directive instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.

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

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

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

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012600

SECTION 012900 - PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

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

1.2 SCHEDULE OF VALUES

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

1. Coordinate line items in the schedule of values with other required administrative forms and schedules, including the following:

    a. Application for Payment forms with continuation sheets.
    b. Submittal schedule.
    c. 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.

2. Arrange schedule of values consistent with format of **AIA Document G703**.
3. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with Project Manual table of contents. Provide multiple line items for principal subcontract amounts.

4. Round amounts to nearest whole dollar; total shall equal 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.
6. Provide separate line items in the schedule of values for initial cost of materials, for each subsequent stage of completion, and for total installed value of that part of the Work.

7. 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.
8. Each item in the schedule of values and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item.

    a. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in the schedule of values or distributed as general overhead expense, at Contractor's option.

9. Schedule Updating: Update and resubmit the schedule of values before the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

1.3 APPLICATIONS FOR PAYMENT

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

1. Initial Application for Payment, Application for Payment at time of Substantial Completion, and final Application for Payment involve additional requirements.

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

C. Payment Application Times: Submit Application for Payment to Architect by the seventh day of the month. The period covered by each Application for Payment is one month, ending on the **last day of the month**.

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

E. 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 of Change Orders and Construction Change Directives issued before last day of construction period covered by application.

F. Transmittal: Submit **four** signed and notarized original copies of each Application for Payment to **Architect** by a method ensuring receipt **within 24 hours**. One copy shall include waivers of lien and similar attachments if required.

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

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.

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. Waiver Forms: Submit executed waivers of lien on forms acceptable to Owner.

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. List of Contractor's staff assignments.
7. List of Contractor's principal consultants.
8. Copies of building permits.
9. Copies of authorizations and licenses from authorities having jurisdiction for
10. Report of preconstruction conference.
11. Certificates of insurance and insurance policies.
12. Performance and Payment (Material & Labor) Bond

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 Certificates of Partial 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 G706-1994, "Contractor's Affidavit of Payment of Debts and Claims."
5. AIA Document G706A-1994, "Contractor's Affidavit of Release of Liens."
6. AIA Document G707-1994, "Consent of Surety to Final Payment."
7. Evidence that claims have been settled.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012900

SECTION 013100 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:

1. Coordination drawings.
2. Requests for Information (RFIs).
3. Project meetings.

1.2 DEFINITIONS

A. RFI: Request from Owner, Architect, or Contractor seeking information required by or clarifications of the Contract Documents.

1.3 INFORMATIONAL SUBMITTALS

A. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. **Use CSI Form 1.5A.** Include the following information in tabular form:

1. Name, address, and telephone number of entity performing subcontract or supplying products.
2. Number and title of related Specification Section(s) covered by subcontract.
3. Drawing number and detail references, as appropriate, covered by subcontract.

1.4 GENERAL COORDINATION PROCEDURES

A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections, that depend on each other for proper installation, connection, and operation.

1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
2. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair.
3. Make adequate provisions to accommodate items scheduled for later installation.

B. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.

1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.

C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:

1. Preparation of Contractor's construction schedule.
2. Preparation of the schedule of values.
3. Installation and removal of temporary facilities and controls.
4. Delivery and processing of submittals.
5. Progress meetings.
6. Preinstallation conferences.
7. Project closeout activities.

1.5 COORDINATION DRAWINGS

A. Coordination Drawings, General: Prepare coordination drawings according to requirements in individual Sections, where installation is not completely shown on Shop Drawings, where limited space availability necessitates coordination, or if coordination is required to facilitate integration of products and materials fabricated or installed by more than one entity.

1. Content: Project-specific information, drawn accurately to a scale large enough to indicate and resolve conflicts. Do not base coordination drawings on standard printed data. Include the following information, as applicable:

   a. Indicate functional and spatial relationships of components.
   b. Indicate dimensions shown on the Drawings. Specifically note dimensions that appear to be in conflict with submitted items and minimum clearance requirements. Provide alternate sketches to Architect indicating proposed resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the Contract.
   c. Indicate required installation sequences.
2. Review: Architect will review coordination drawings to confirm that the Work is being coordinated, but not for the details of the coordination, which are Contractor's responsibility.

1.6 REQUESTS FOR INFORMATION (RFIs)

A. General: Immediately on discovery of the need for additional information or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the form specified.

1. Architect will return RFIs submitted to Architect by other entities controlled by Contractor with no response.
2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.

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B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:

1. Project name.
2. Project number.
3. Date.
4. Name of Contractor.
5. Name of Architect.
6. RFI number, numbered sequentially.
7. RFI subject.
8. Specification Section number and title and related paragraphs, as appropriate.
9. Drawing number and detail references, as appropriate.
10. Field dimensions and conditions, as appropriate.
11. Contractor's suggested resolution. If Contractor's solution(s) impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
12. Contractor's signature.
13. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.

C. RFI Forms: **AIA Document G716**.

D. Architect's Action: Architect will review each RFI, determine action required, and respond. Allow **seven** working days for Architect's response for each RFI. RFIs received by Architect after 1:00 p.m. will be considered as received the following working day.

1. The following RFIs will be returned without action:

    a. Requests for approval of submittals.
    b. Requests for approval of substitutions.
    c. Requests for coordination information already indicated in the Contract Documents.
    d. Requests for adjustments in the Contract Time or the Contract Sum.
    e. Requests for interpretation of Architect's actions on submittals.
    f. Incomplete RFIs or inaccurately prepared RFIs.

2. Architect's action may include a request for additional information, in which case Architect's time for response will date from time of receipt of additional information.
3. Architect's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Section 012600 "Contract Modification Procedures."

    a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect in writing within **10** days of receipt of the RFI response.

E. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log bi-**weekly Use CSI Log Form 13.2B. Include the following:**

1. Project name.
2. Name and address of Contractor.

3. Name and address of Architect.
4. RFI number including RFIs that were dropped and not submitted.
5. RFI description.
6. Date the RFI was submitted.
7. Date Architect's response was received.

F. On receipt of Architect's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Architect within **seven** days if Contractor disagrees with response.

1. Identification of related Minor Change in the Work, Construction Change Directive, and Proposal Request, as appropriate.

1.7 PROJECT MEETINGS

A. General: **Schedule and conduct** meetings and conferences at Project site unless otherwise indicated.

1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Architect of scheduled meeting dates and times.
2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
3. Minutes: Entity responsible for conducting meeting will record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and Architect, within **three** days of the meeting.

B. Preconstruction Conference: **Architect will schedule and conduct** a preconstruction conference before starting construction, at a time convenient to Owner and Architect, but no later than **15** days after execution of the Agreement.

1. Attendees: Authorized representatives of Owner, Architect, Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
2. Agenda: Discuss items of significance that could affect progress, including the following:

a. Tentative construction schedule.
b. Critical work sequencing and long-lead items.
c. Designation of key personnel and their duties.
d. Procedures for processing field decisions and Change Orders.
e. Procedures for RFIs.
f. Procedures for processing Applications for Payment.
g. Distribution of the Contract Documents.
h. Submittal procedures.
i. Preparation of record documents.
j. Use of the premises.
k. Work restrictions.
l. Working hours.
m. Owner's occupancy requirements.
n. Responsibility for temporary facilities and controls.

o. Procedures for disruptions and shutdowns.
p. Construction waste management.
q. Parking availability.
r. Office, work, and storage areas.
s. Equipment deliveries and priorities.
t. First aid.
u. Security.
v. Progress cleaning.

3. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes.

C. Preinstallation Conferences: Conduct a preinstallation conference at Project site before each construction activity that requires coordination with other construction.

1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Architect of scheduled meeting dates.
2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:

a. Contract Documents.
b. Options.
c. Related RFIs.
d. Related Change Orders.
e. Purchases.
f. Deliveries.
g. Submittals.
h. Review of mockups.
i. Possible conflicts.
j. Compatibility problems.
k. Time schedules.
l. Weather limitations.
m. Manufacturer's written instructions.
n. Warranty requirements.
o. Compatibility of materials.
p. Acceptability of substrates.
q. Temporary facilities and controls.
r. Space and access limitations.
s. Regulations of authorities having jurisdiction.
t. Testing and inspecting requirements.
u. Installation procedures.
v. Coordination with other work.
w. Required performance results.
x. Protection of adjacent work.
y. Protection of construction and personnel.

3. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.

4. Reporting: Distribute minutes of the meeting to each party present and to other parties requiring information.
5. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.

D. Progress Meetings: **Conduct** progress meetings twice a month.

1. Attendees: In addition to representatives of Owner, and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
2. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.

    a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.

        1) Review schedule for next period.

    b. Review present and future needs of each entity present, including the following:

        1) Interface requirements.
        2) Sequence of operations.
        3) Status of submittals.
        4) Deliveries.
        5) Off-site fabrication.
        6) Access.
        7) Site utilization.
        8) Temporary facilities and controls.
        9) Progress cleaning.
        10) Quality and work standards.
        11) Status of correction of deficient items.
        12) Field observations.
        13) Status of RFIs.
        14) Status of proposal requests.
        15) Pending changes.
        16) Status of Change Orders.
        17) Pending claims and disputes.
        18) Documentation of information for payment requests.

3. Minutes: Entity responsible for conducting the meeting will record and distribute the meeting minutes to each party present and to parties requiring information.

a. Schedule Updating: Revise Contractor's construction schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013100

SECTION 013200 - CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:

1. Contractor's construction schedule.
2. Construction schedule updating reports.
3. Daily construction reports.
4. Site condition reports.

1.2 INFORMATIONAL SUBMITTALS

A. Format for Submittals: Submit required submittals in the following format:
1. **Three** paper copies.

B. Contractor's Construction Schedule: Initial schedule, of size required to display entire schedule for entire construction period.

C. Construction Schedule Updating Reports: Submit with Applications for Payment.

D. Daily Construction Reports: Submit at **monthly** intervals.

E. Site Condition Reports: Submit at time of discovery of differing conditions.

1.3 COORDINATION

A. Coordinate Contractor's construction schedule with the schedule of values, **list of subcontracts,** submittal schedule, progress reports, payment requests, and other required schedules and reports.

1. Secure time commitments for performing critical elements of the Work from entities involved.
2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

PART 2 - PRODUCTS

2.1 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

A. Time Frame: Extend schedule from date established for **commencement of the Work** to date of **final completion**.

B. Activities: Treat each story or separate area as a separate numbered activity for each main element of the Work.

C. Constraints: Include constraints and work restrictions indicated in the Contract Documents in schedule, and show how the sequence of the Work is affected.

D. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, Substantial Completion, and final completion**.**

E. Upcoming Work Summary: Prepare summary report indicating activities scheduled to occur or commence prior to submittal of next schedule update.

F. Recovery Schedule: When periodic update indicates the Work is fourteen or more calendar days behind the current approved schedule, submit a separate recovery schedule indicating means by which Contractor intends to regain compliance with the schedule.

2.2 CONTRACTOR'S CONSTRUCTION SCHEDULE (GANTT CHART)

A. Gantt-Chart Schedule: Submit a comprehensive, fully developed, horizontal, Gantt-chart-type, Contractor's construction schedule within **twenty-one** days of date established for **commencement of the Work**.

B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line.

1. For construction activities that require three months or longer to complete, indicate an estimated completion percentage in **10** percent increments within time bar.

2.3 REPORTS

A. Daily Construction Reports: Prepare a daily construction report recording the following information concerning events at Project site:

1. List of subcontractors at Project site.
2. List of separate contractors at Project site.
3. Approximate count of personnel at Project site.
4. Equipment at Project site.
5. Material deliveries.
6. High and low temperatures and general weather conditions, including presence of rain or snow.
7. Accidents.
8. Meetings and significant decisions.
9. Unusual events.
10. Stoppages, delays, shortages, and losses.
11. Meter readings and similar recordings.
12. Emergency procedures.
13. Orders and requests of authorities having jurisdiction.
14. Change Orders received and implemented.
15. **Construction** Change Directives received and implemented.

16. Services connected and disconnected.
17. Equipment or system tests and startups.
18. Partial completions and occupancies.
19. Substantial Completions authorized.

B. Site Condition Reports: Immediately on discovery of a difference between site conditions and the Contract Documents, prepare and submit a detailed report. Submit with a Request for Information. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.

PART 3 - EXECUTION

3.1 CONTRACTOR'S CONSTRUCTION SCHEDULE

A. Contractor's Construction Schedule Updating: At **monthly** intervals, update schedule to reflect actual construction progress and activities. Issue schedule **one week** before each regularly scheduled progress meeting.

1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.
2. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.
3. As the Work progresses, indicate final completion percentage for each activity.

B. Distribution: Distribute copies of approved schedule to Architect, Owner, separate contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.

1. Post copies in Project meeting rooms and temporary field offices.
2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

END OF SECTION 013200

SECTION 013300 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes requirements for the submittal schedule and administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.

1.2 DEFINITIONS

A. Action Submittals: Written and graphic information and physical samples that require Architect's responsive action.

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.

1.3 ACTION SUBMITTALS

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

1.4 SUBMITTAL ADMINISTRATIVE REQUIREMENTS

A. Architect's Digital Data Files: Electronic copies of digital data files of the Contract Drawings will **not** be provided by Architect for Contractor's use in preparing submittals.

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. Coordinate transmittal of different types of submittals for related parts of the Work 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.

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 **fourteen** 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 **fourteen** days for review of each resubmittal.

D. Paper Submittals: Place a permanent label or title block on each submittal item for identification.

1. Indicate name of firm or entity that prepared each submittal on label or title block.
2. Provide a space approximately **6 by 8 inches (150 by 200 mm)** on label or beside title block to record Contractor's review and approval markings and action taken by .
3. Include the following information for processing and recording action taken:

    a. Project name.
    b. Date.
    c. Name of Architect.
    d. Name of Construction Manager.
    e. Name of Contractor.
    f. Name of subcontractor.
    g. Name of supplier.
    h. Name of manufacturer.
    i. Submittal number or other unique identifier, including revision identifier.

        1) Submittal number shall use Specification Section number followed by a decimal point and then a sequential number (e.g., 061000.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., 061000.01.A).

    j. Number and title of appropriate Specification Section.
    k. Drawing number and detail references, as appropriate.
    l. Location(s) where product is to be installed, as appropriate.
    m. Other necessary identification.

4. Additional Paper Copies: Unless additional copies are required for final submittal, and unless Architect observes noncompliance with provisions in the Contract Documents, initial submittal may serve as final submittal.

    a. Submit one copy of submittal to concurrent reviewer in addition to specified number of copies to Architect.

5. Transmittal for Paper Submittals: Assemble each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Architect will **return without review** submittals received from sources other than Contractor.

E. Options: Identify options requiring selection by Architect.

F. Deviations: Identify deviations from the Contract Documents on submittals.

G. 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.

H. 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.

I. 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.

PART 2 - PRODUCTS

2.1 SUBMITTAL PROCEDURES

A. General Submittal Procedure Requirements:

1. Action Submittals: Submit **four** paper copies of each submittal unless otherwise indicated. Architect will return **two** copies.
2. Informational Submittals: Submit **two** paper copies of each submittal unless otherwise indicated. Architect will not return copies.
3. Certificates and Certifications Submittals: Provide 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.
    a. Provide a notarized statement on original paper copy certificates and certifications where indicated.

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

1. If information must be specially prepared for submittal because standard published data are not suitable 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. Submit Product Data before or concurrent with Samples.
5. Submit Product Data in the following format:
   a. **Four** paper copies of Product Data unless otherwise indicated. Architect will return **two** copies.

C. 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.

2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least **8-1/2 by 11 inches (215 by 280 mm), but no larger than 24 by 36 inches.**
3. Submit Shop Drawings in the following format:
   a. **Three** opaque (bond) copies of each submittal. Architect will return **one** copy(ies).

D. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.

1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
2. Identification: Attach label on unexposed side of Samples that includes the following:

   a. Generic description of Sample.
   b. Product name and name of manufacturer.
   c. Sample source.
   d. Number and title of applicable Specification Section.
3. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.

   a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
   b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.

4. 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 **two** 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.

5. 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 **three** sets of Samples. Architect will retain **two** Sample sets; remainder will be returned. **Mark up and retain one returned Sample set as a project record sample.**

1) 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.

E. 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. Submit product schedule in the following format:
a. **Three** paper copies of product schedule or list unless otherwise indicated. Architect will return **one** copy.

F. Coordination Drawings Submittals: Comply with requirements specified in Section 013100 "Project Management and Coordination."

G. Contractor's Construction Schedule: Comply with requirements specified in Section 013200 "Construction Progress Documentation."

H. Application for Payment and Schedule of Values: Comply with requirements specified in Section 012900 "Payment Procedures.

I. Test and Inspection Reports and Schedule of Tests and Inspections Submittals: Comply with requirements specified in Section 014000 "Quality Requirements."

J. Closeout Submittals and Maintenance Material Submittals: Comply with requirements specified in Section 017700 "Closeout Procedures."

K. Maintenance Data: Comply with requirements specified in Section 017823 "Operation and Maintenance Data."

L. 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.

M. 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.

N. 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.

O. 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.

P. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.

Q. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.

R. 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.

S. 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.

T. 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.

U. Schedule of Tests and Inspections: Comply with requirements specified in Section 014000 "Quality Requirements."

V. 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.

W. 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.

X. 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.

Y. Design Data: Prepare and submit written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads.

Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

A. Action 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. Project Closeout and Maintenance Material Submittals: See requirements in Section 017700 "Closeout Procedures."

C. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, 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.

3.2 ARCHITECT'S ACTION

A. General: Architect will not review submittals that do not bear Contractor's approval stamp and will return them without action.

B. Action Submittals: Architect will review each submittal, make marks to indicate corrections or revisions required, and return it. Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate **action.**

C. 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.

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

E. Submittals not required by the Contract Documents may not be reviewed and may be discarded.

END OF SECTION 013300

SUBMITTAL TRANSMITTAL

Project: _____ Date: _____

_____ A/E Project Number: _____

TRANSMITTAL A

To (Contractor): _____ Date: _____ Submittal No. _____

From (Subcontractor): _____ By: _____ [] Resubmission

Qty. Reference / Number	**Title / Description / Manufacturer**	**Spec. Section Title and Paragraph / Drawing Detail Reference**

[] Submitted for review and approval
[] Resubmitted for review and approval
[] Complies with contract requirements
[] Will be available to meet construction schedule
[] A/E review time included in construction schedule
[] Substitution involved - Substitution request attached
[] If substitution involved, submission includes point-by-point comparative data or preliminary details
[] Items included in submission will be ordered immediately upon receipt of approval

Other remarks on above submission:

[] One copy retained by sender

TRANSMITTAL B

To (A/E): _____ Attn: _____ Date Rec'd by Contractor: _____

From (Contractor): _____ By: _____ Date Trnsmt'd by Contractor: _____

[] Approved
[] Approved as noted
[] Revise / Resubmit
[] Rejected / Resubmit

Other remarks on above submission:

[] One copy retained by sender

TRANSMITTAL C

To (Contractor): _____ Attn: _____ Date Rec'd by A/E: _____

From (A/E): _____ [] Other By: _____ Date Trnsmt'd by A/E: _____

[] Approved
[] Approved as noted
[] Not subject to review
[] No action required
[] Revise / Resubmit
[] Rejected / Resubmit
[] Approved as noted / Resubmit
[] Provide file copy with corrections identified
[] Sepia copies only returned
[] Point-by-point comparative data required to complete approval process
[] Submission Incomplete / Resubmit

Other remarks on above submission:

[] One copy retained by sender

TRANSMITTAL D

To (Subcontractor): _____ Attn: _____ Date Rec'd by Contractor: _____

From (Contractor): _____ By: _____ Date Trnsmt'd by Contractor: _____

Copies: [] Owner [] Consultants [] _____ [] _____ [] _____ [] One copy retained by sender

SUBCONTRACTORS AND MAJOR MATERIAL SUPPLIERS LIST

Project: _____ From (Contractor): _____

_____ Date: _____

To (A/E): _____ A/E Project Number: _____

_____ Contract For: _____

List Subcontractors and Major Material Suppliers proposed for use on this Project as required by the Construction Documents. Attach supplemental sheets if necessary.

Section Number	Section Title	Firm	Address	Phone Number (Fax Number)	Contact

[] Attachments

Signed by: Date:

Copies: [] Owner [] Consultants [] _____ [] _____ [] _____ [] _____ [] _____ [] _____ [] _____ [] File

SECTION 014000 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for quality assurance and quality control.

B. Testing and inspecting 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. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and -control procedures that facilitate compliance with the Contract Document requirements.
2. Requirements for Contractor to provide quality-assurance and -control services required by Architect, Owner or authorities having jurisdiction are not limited by provisions of this Section.
3. Specific test and inspection requirements are not specified in this Section.

1.2 DEFINITIONS

A. 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.

B. 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. Services do not include contract enforcement activities performed by Architect[**or Construction Manager**].

C. Mockups: Full-size physical assemblies that are constructed on-site. Mockups are constructed to verify selections made under Sample submittals; to demonstrate aesthetic effects and, where indicated, 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.

D. 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.

E. Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with specified requirements.

F. Source Quality-Control Testing: Tests and inspections that are performed at the source, e.g., plant, mill, factory, or shop.

G. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.

H. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.

I. 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, 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).

J. Experienced: When used with an entity or individual, "experienced" 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.

1.3 CONFLICTING REQUIREMENTS

A. Referenced Standards: If compliance with two or more standards is specified and the standards 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 a decision 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.

1.4 INFORMATIONAL SUBMITTALS

A. Testing Agency Qualifications: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.

1.5 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, and telephone number 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 inspecting.
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 Field Reports: Prepare written information documenting tests and inspections specified in other Sections. Include the following:

1. Name, address, and telephone number of representative making report.
2. Statement on condition of substrates and their acceptability for installation of product.
3. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
4. Results of operational and other tests and a statement of whether observed performance complies with requirements.
5. Other required items indicated in individual Specification Sections.

C. Permits, Licenses, and Certificates: For Owner's records, 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.

1.6 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.

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, 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 inspecting indicated, as documented according to **ASTM E 329** and with additional qualifications specified in individual Sections; and, where required by authorities having jurisdiction, that is acceptable to authorities.

1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
2. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.

H. Manufacturer's 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. Preconstruction Testing: Where testing agency is indicated to perform preconstruction testing for compliance with specified requirements for performance and test methods, comply with the following:

1. Contractor responsibilities include the following:

a. Provide test specimens representative of proposed products and construction.
b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
c. Build laboratory mockups at testing facility using personnel, products, and methods of construction indicated for the completed Work.
d. When testing is complete, remove test specimens, assemblies, **and** mockups; do not reuse products on Project.

2. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality-assurance service to Architect, with copy to Contractor. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.

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 in location and of size indicated or, if not indicated, as directed by Architect.
2. Notify Architect **seven** days in advance of dates and times when mockups will be constructed.

3. Demonstrate the proposed range of aesthetic effects and workmanship.
4. Obtain Architect's approval of mockups before starting work, fabrication, or construction.

    a. Allow **seven** days for initial review and each re-review of each mockup.

5. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
6. Demolish and remove mockups when directed unless otherwise indicated.

1.7 QUALITY CONTROL

A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.

1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspecting they are engaged to perform.
2. Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor**, and the Contract Sum will be adjusted by Change Order**.

B. Contractor Responsibilities: Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Perform additional quality-control activities required to verify that the Work complies with requirements, whether specified or not.

1. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.

    a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.

2. Notify testing agencies at least **24** hours in advance of time when Work that requires testing or inspecting will be performed.
3. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
4. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
5. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.

C. Manufacturer's Field Services: Where indicated, engage a manufacturer's representative to observe and inspect the Work. Manufacturer's representative's services include examination of substrates and conditions, verification of materials, inspection of completed portions of the Work, and submittal of written reports.

D. 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.

E. 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 location 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 any duties of Contractor.

F. Associated Services: Cooperate with agencies 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 inspecting. Assist agency in obtaining samples.
4. Facilities for storage and field curing of test samples.
5. Delivery of samples to testing agencies.
6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
7. Security and protection for samples and for testing and inspecting equipment at Project site.

G. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.

1. Schedule times for tests, inspections, obtaining samples, and similar activities.

1.8 SPECIAL TESTS AND INSPECTIONS

A. Special Tests and Inspections: **Engage** a qualified **testing agency** or **special inspector** to conduct special tests and inspections required by authorities having jurisdiction as the responsibility of Owner and as follows:

1. Verifying that manufacturer maintains detailed fabrication and quality-control procedures and reviews the completeness and adequacy of those procedures to perform the Work.
2. Notifying Architect and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
3. Submitting a certified written report of each test, inspection, and similar quality-control service to Architect with copy to Contractor and to authorities having jurisdiction.

4. Submitting a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.
5. Interpreting tests and inspections and stating in each report whether tested and inspected work complies with or deviates from the Contract Documents.
6. Retesting and reinspecting corrected work.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 REPAIR AND PROTECTION

A. General: On completion of testing, inspecting, 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.

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 014000

SECTION 014200 - REFERENCES

PART 1 - GENERAL

1.1 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.

1.2 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.

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.

1.3 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 indicated in Gale's "Encyclopedia of Associations: National Organizations of the U.S." or in Columbia Books' "National Trade & Professional Associations of the United States."

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 014200

SECTION 015000 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes requirements for temporary utilities, support facilities, and security and protection facilities.

1.2 USE CHARGES

A. General: Installation and removal of and use charges for temporary facilities shall be included in the Contract Sum unless otherwise indicated. Allow other entities to use temporary services and facilities without cost, including, but not limited to Owner, Architect, and authorities having jurisdiction.

1.3 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.

1.4 PROJECT CONDITIONS

PART 2 - PRODUCTS

2.1 MATERIALS

2.2 TEMPORARY FACILITIES

A. Field Offices, General: Prefabricated or mobile units with serviceable finishes, temperature controls, and foundations adequate for normal loading.

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.

2.3 EQUIPMENT

A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.

B. Self-Contained Toilet Units: Single-occupant units of chemical, aerated recirculation, or combustion type; vented; fully enclosed with a glass-fiber-reinforced polyester shell or similar nonabsorbent material.

C. Drinking-Water Fixtures: Containerized, tap-dispenser, bottled-water drinking-water units, including paper cup supply.
   1. Where power is accessible, provide electric water coolers to maintain dispensed water temperature at 45 to 55 deg.

D. Electrical Outlets: Properly configured, NEMA-polarized outlets to prevent insertion of 110- to 120-V plugs into higher-voltage outlets; equipped with ground-fault circuit interrupters, reset button, and pilot light

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work and as directed by the Owner. Relocate and modify facilities as required by progress of the Work.

B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed.

3.2 TEMPORARY UTILITY INSTALLATION

A. General: Install temporary service or connect to existing service.

   1. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.

B. Sanitary Facilities: Provide temporary toilets (self-contained toilet units), 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.

C. 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.

D. Ventilation and Humidity Control: Provide temporary ventilation required by construction activities for curing or drying of completed installations or for protecting installed construction

from adverse effects of high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce ambient condition required and minimize energy consumption.

E. Electric Power Service: Provide weatherproof, grounded electric power service and distribution system of sufficient size, capacity, and power characteristics required for construction operations. Do not use Owner's electrical power service. Supply portable electrical generators as required to perform work for the Project

F. Telephone Service: Provide temporary telephone service in common-use facilities for use by all construction personnel. Install **one** telephone line for each field office.

1. Provide additional telephone lines for the following:

a. Provide a dedicated telephone line for each facsimile machine in each field office.

2. At each telephone, post a list of important telephone numbers.

a. Police and fire departments.
b. Ambulance service.
c. Contractor's home office.
d. Contractor's emergency after-hours telephone number.
e. Architect's office.
f. Engineers' offices.
g. Owner's office.
h. Principal subcontractors' field and home offices.

3. Provide superintendent with cellular telephone for use when away from field office.

3.3 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 (9 m) 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.

B. Traffic Controls: Comply with requirements of authorities having jurisdiction.

1. Protect existing site improvements to remain including curbs, pavement, and utilities.
2. Maintain access for fire-fighting equipment and access to fire hydrants.

C. Parking: **Use designated areas of Owner's existing** parking areas for construction personnel.

D. Project Signs: Provide Project signs as indicated. Unauthorized signs are not permitted. Contractor shall engage an experienced sign painter to apply graphics for Project identification sign. Comply with details indicated.

1. Project Identification Sign: Provide 4’ x 8’ Project identification sign of wood frame and exterior grade plywood construction, painted, with exhibit lettering by professional sign painter, to Architect’s design and colors. List title of Project, names of Owner, Architect, Contractor, and other data required by Architect. Erect on site at location established by Architect.
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 touchup signs so they are legible at all times.

E. 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."

F. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.

G. 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.

H. 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.

I. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.

J. 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.
    1. Construct temporary enclosure for cutting and sanding of Azek closed cell PVC and James Hardie fiber cement products to prevent sawdust, shavings and debris from being blown and spread over the entire job site.

3.4 MOISTURE AND MOLD CONTROL

A. Contractor's Moisture Protection Plan: Avoid trapping water in finished work. Document visible signs of mold that may appear during construction.

B. Exposed Construction Phase: Before installation of weather barriers, when materials are subject to wetting and exposure and to airborne mold spores, protect materials from water damage.

3.5 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.

C. Termination and Removal: Remove each temporary facility when need for its service has ended, or no later than Substantial Completion.

1. Materials and facilities that constitute temporary facilities are property of Contractor. Owner reserves right to take possession of Project identification signs.

END OF SECTION 015000

SECTION 016000 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 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 012500 "Substitution Procedures" for requests for substitutions.

1.2 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 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 specific manufacturer's product is named and accompanied by the words "basis-of-design product," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of additional manufacturers named in the specification.

1.3 ACTION SUBMITTALS

A. Comparable Product Requests: Submit request for consideration of each comparable product. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

1. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within one week of receipt of a comparable product request. Architect will notify Contractor of approval or rejection of proposed comparable

product request within **14** days of receipt of request, or **seven** days of receipt of additional information or documentation, whichever is later.

a. Form of Approval: 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.

1.4 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.

1.5 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.

1.6 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. Refer to 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 not in conflict with 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.

B. Product Selection Procedures:

1. 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.

2. 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.
3. Products:

    a. Restricted List: 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**.
    b. Nonrestricted List: Where Specifications include a list of names of both available manufacturers and products, provide one of the products listed, or an unnamed product, that complies with requirements. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product.

4. Manufacturers:

    a. Restricted List: 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**.
    b. Nonrestricted List: Where Specifications include a list of available manufacturers, provide a product by one of the manufacturers listed, or a product by an unnamed manufacturer, that complies with requirements. Comply with requirements in "Comparable Products" Article for consideration of an unnamed manufacturer's product.

5. 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.

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: 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 the proposed product does not require revisions to the Contract Documents, that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.
2. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
3. Evidence that proposed product provides specified warranty.
4. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.
5. Samples, if requested.

PART 3 - EXECUTION (Not Used)

END OF SECTION 016000

SECTION 017300 - EXECUTION

PART 1 - GENERAL

1.1 SUMMARY

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

1.2 QUALITY ASSURANCE

A. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.

   1. 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.

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 work, investigate and

verify the existence and location of **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 roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
2. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
3. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.

C. 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 according to requirements in Section 013100 "Project Management and Coordination."

3.3 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.

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: Do not use tools or equipment that produce harmful 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 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 required per manufacturer’s instructions or directed by Architect.
2. Allow for building movement, including thermal expansion and contraction.

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. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

3.4 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. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, using methods least likely to damage elements retained or adjoining construction.

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

F. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other work. Patch with durable seams that are as invisible as practicable. 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.
3. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition and ensures thermal and moisture integrity of building enclosure.

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

3.5 PROGRESS CLEANING

A. 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 (27 deg C).
3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.

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.

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 assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.6 PROTECTION OF INSTALLED CONSTRUCTION

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

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

END OF SECTION 017300

SECTION 017700 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:

1. Substantial Completion procedures.
2. Final completion procedures.
3. Warranties.
4. Final cleaning.
5. Repair of the Work.

1.2 SUBSTANTIAL COMPLETION PROCEDURES

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

B. Submittals Prior to Substantial Completion: Complete the following a minimum of **10** days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.

1. Certificates of Release: Obtain and submit releases from authorities having jurisdiction permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
2. Submit closeout submittals specified in other Division 01 Sections, including project record documents, operation and maintenance manuals, and similar final record information.
3. Submit closeout submittals specified in individual Sections, including specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
4. Submit maintenance material submittals specified in individual Sections, including tools, spare parts, extra materials, and similar items, and deliver to location designated by **Owner.** Label with manufacturer's name and model number where applicable.
5. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.

C. Procedures Prior to Substantial Completion: Complete the following a minimum of **10** days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.

1. Advise Owner of pending insurance changeover requirements.

2. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
3. Complete final cleaning requirements, including touchup painting.
4. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

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

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected. If Work identified in previous inspections is still incomplete during reinspection and an additional reinspection is needed before certificate will be issued, the Contractor will be responsible for the Architect’s fees associated with any additional reinspections beyond the initial reinspection.
2. Results of completed inspection will form the basis of requirements for final completion.

1.3 FINAL COMPLETION PROCEDURES

A. Preliminary Procedures: Before requesting final inspection for determining final completion, complete the following:

1. Submit a final Application for Payment according to Section 012900 "Payment Procedures."
2. Certified List of Incomplete Items: Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. Certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
3. Certificate of Insurance: Submit evidence of final, continuing insurance coverage complying with insurance requirements.
4. Instruct Owner's personnel in operation, adjustment, and maintenance of products.

B. Inspection: Submit a written request for final inspection to determine acceptance. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected. If Work identified in previous inspections is still incomplete during reinspection and an additional reinspection is needed before certificate will be issued, the Contractor will be responsible for the Architect’s fees associated with any additional reinspections beyond the initial reinspection.

1.4 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

A. Organization of List: Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction. **Use CSI Form 14.1A.**

1. Organize list of spaces in sequential order, **starting with exterior areas first and proceeding from lowest floor to highest floor**.
2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
3. Submit list of incomplete items in the following format:
   a. Five paper copies unless otherwise indicated. Architect, will return **two** copies.

1.5 SUBMITTAL OF PROJECT WARRANTIES

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

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

1. Bind warranties and bonds in heavy-duty, three-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch (215-by-280-mm) paper.
2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.

C. Provide additional copies of each warranty to include in operation and maintenance manuals.

PART 2 - PRODUCTS

2.1 MATERIALS

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

PART 3 - EXECUTION

3.1 FINAL CLEANING

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

B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.

1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a designated portion of Project:

a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
d. Remove tools, construction equipment, machinery, and surplus material from Project site.
e. Clean exposed exterior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances.
f. Remove debris and surface dust from limited access spaces
g. Clean transparent materials, including glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials.
h. Remove labels that are not permanent.
i. Wipe surfaces of mechanical and electrical equipment and similar equipment. Remove excess lubrication, paint and other foreign substances.
j. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency.
k. Leave Project clean.

3.2 REPAIR OF THE WORK

A. Complete repair and restoration operations before requesting inspection for determination of Substantial Completion.

B. Repair or remove and replace defective construction. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment. Where damaged or worn items cannot be repaired or restored, provide replacements. Remove and replace operating components that cannot be repaired. Restore damaged construction and permanent facilities used during construction to specified condition.

1. Remove and replace chipped, scratched, and broken glass and other damaged transparent materials.
2. Touch up and otherwise repair and restore marred or exposed finishes and surfaces. Replace finishes and surfaces that already show evidence of repair or restoration.

    a. Do not paint over "UL" and other required labels and identification, including mechanical and electrical nameplates. Remove paint applied to required labels and identification.
3. Replace burned-out bulbs, bulbs noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.

END OF SECTION 017700

PUNCH LIST

Project: _____ From (A/E): _____

_____ Site Visit Date: _____

To (Contractor): _____ A/E Project Number: _____

_____ Contract For: _____

The following items require the attention of the Contractor for completion or correction. This list may not be all-inclusive, and the failure to include any items on this list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

Item Number	Room Number	Location (Area)	Description	Correction/Completion DateA/E	Verification Check

[] Attachments

Signed by: Date:

Copies: [] Owner [] Consultants [] _____ [] _____ [] _____ [] _____ [] _____ [] _____ [] _____ [] File

SECTION 017823 - OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for preparing maintenance manuals, including the following:
   1. Product maintenance manuals.

1.2 CLOSEOUT SUBMITTALS

A. Manual Content: Product maintenance manual content is specified in individual Specification Sections to be reviewed at the time of Section submittals. Submit reviewed product maintenance manual content formatted and organized as required by this Section.

B. Format: Submit product maintenance manual in the following format:

   1. **Two** paper copies. Include a complete directory. Enclose title pages and directories in clear plastic sleeves.

C. Manual Submittal: Submit product maintenance manual in final form prior to requesting inspection for Substantial Completion.

PART 2 - PRODUCTS

2.1 REQUIREMENTS FOR MANUAL

A. Directory: Prepare a single, comprehensive directory of maintenance data and materials, listing items and their location to facilitate ready access to desired information.

B. Organization: Unless otherwise indicated, organize manual. Manual shall contain the following materials, in the order listed:

   1. Title page.
   2. Table of contents.
   3. Manual contents.

C. Title Page: Include the following information:

   1. Subject matter included in manual.
   2. Name and address of Project.
   3. Name and address of Owner.
   4. Date of submittal.
   5. Name and contact information for Contractor.
   6. Name and contact information for Architect.

D. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.

E. Manual Contents: Organize into sets of manageable size.

F. Manual, Paper Copy: Submit manual in the form of hard copy, bound and labeled volumes.

1. Binders: Heavy-duty, three-ring, vinyl-covered, **loose-leaf** binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch (215-by-280-mm) paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.

a. Identify each binder on front and spine, with printed title "PRODUCT MAINTENANCE MANUAL," Project title or name, **and** subject matter of contents**, and indicate Specification Section number on bottom of spine**. Indicate volume number for multiple-volume sets.

2. Dividers: Heavy-paper dividers with plastic-covered tabs for each section of the manual. Mark each tab to indicate contents. Include typed list of products and major components included in the section on each divider, cross-referenced to Specification Section number and title of Project Manual.
3. Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.

a. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.
b. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.

2.2 PRODUCT MAINTENANCE MANUAL

A. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.

B. Source Information: List each product included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual.

C. Product Information: Include the following, as applicable:

1. Product name and model number.
2. Manufacturer's name.
3. Color, pattern, and texture.
4. Material and chemical composition.
5. Reordering information for specially manufactured products.

D. Maintenance Procedures: Include manufacturer's written recommendations and the following:

1. Inspection procedures.
2. Types of cleaning agents to be used and methods of cleaning.
3. List of cleaning agents and methods of cleaning detrimental to product.
4. Schedule for routine cleaning and maintenance.
5. Repair instructions.

E. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.

F. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

PART 3 - EXECUTION

3.1 MANUAL PREPARATION

A. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.

B. Manufacturers' Data: Where manuals contain manufacturers' standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.

END OF SECTION 017823

SECTION 017839 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 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.

1.2 CLOSEOUT SUBMITTALS

A. Record Drawings: Comply with the following:

1. Number of Copies: Submit **one** set of marked-up record prints.

B. Record Specifications: Submit **one paper copy** of Project's Specifications, including addenda and contract modifications.

C. Record Product Data: Submit **one paper copy** of each submittal.

PART 2 - PRODUCTS

2.1 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.

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. Record data as soon as possible after obtaining it.
c. Record and check the markup before enclosing concealed installations.

2. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.
3. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.

4. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.

B. Format: Identify and date each record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.

1. Record Prints: Organize record prints and newly prepared record Drawings into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
2. Identification: As follows:

a. Project name.
b. Date.
c. Designation "PROJECT RECORD DRAWINGS."
d. Name of Architect.
e. Name of Contractor.

2.2 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 **paper copy**.

2.3 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 **paper copy**.

PART 3 - EXECUTION

3.1 RECORDING AND MAINTENANCE

A. Recording: Maintain one copy of each submittal during the construction period for project record document purposes. Post changes and revisions to project record documents as they occur; do not wait until end of Project.

B. Maintenance of Record Documents and Samples: Store record documents and Samples 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.

END OF SECTION 017839

SECTION 024119 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Demolition and removal of selected portions of building or structure.

1.2 MATERIALS OWNERSHIP

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

1.3 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.

.

1. Before selective demolition, Owner, Architect and Contractor will walk each building prior to start of the Project to review conditions, identify what items should be removed, and who will be responsible for removal.

C. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.

D. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.

1. If suspected hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Hazardous materials will be removed by Owner under a separate contract.

E. Storage or sale of removed items or materials on-site is not permitted.

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 ASSE A10.6 and NFPA 241.

PART 3 - EXECUTION

3.1 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

A. Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect them against damage.

3.2 PROTECTION

A. Temporary Protection: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.

B. Remove temporary barricades and protections where hazards no longer exist.

3.3 SELECTIVE DEMOLITION

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:

1. 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. Temporarily cover openings to remain.
2. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
3. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
4. Dispose of demolished items and materials promptly.

B. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

C. 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.

3.4 CLEANING

A. Remove demolition waste materials from Project site **and dispose of them in an EPA-approved construction and demolition waste landfill acceptable to authorities having jurisdiction.**

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.

B. Burning: Do not burn demolished materials.

C. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations on a daily basis. Return adjacent areas to condition existing before selective demolition operations began.

END OF SECTION 024119

SECTION 061000 - ROUGH CARPENTRY

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Framing with dimension lumber.
2. Shear wall panels.
3. Rooftop equipment bases and support curbs.
4. Wood blocking**, cants,** and nailers.
5. Wood furring **and grounds**.
6. Wood sleepers.
7. Plywood backing panels.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, 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 ALSC Board of Review. Grade lumber by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.

1. Factory mark each piece of lumber with grade stamp of grading agency.
2. Dress lumber, S4S, unless otherwise indicated.

B. Maximum Moisture Content of Lumber: **19 percent** unless otherwise indicated.

2.2 WOOD-PRESERVATIVE-TREATED LUMBER

A. Preservative Treatment by Pressure Process: AWPA U1; Use Category UC2 **for interior construction not in contact with ground, Use Category UC3b for exterior construction not in contact with ground, and Use Category UC4a for items in contact with ground**.

1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium. **Do not use inorganic boron (SBX) for sill plates.**

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

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

D. Application: Treat **items indicated on Drawings, and the following:**

1. Wood cants, nailers, curbs, equipment support bases, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers, and waterproofing.
2. Wood sills, sleepers, blocking, **furring, stripping,** and similar concealed members in contact with masonry or concrete.
3. Wood framing members that are less than 18 inches (460 mm) above the ground.
4. Wood floor plates that are installed over concrete slabs-on-grade.

2.3 DIMENSION LUMBER FRAMING

A. Non-Load-Bearing Interior Partitions: **Standard, Stud, or No. 3** grade.

1. Application: **Interior partitions not indicated as load bearing**.
2. Species:

    a. Southern pine or mixed southern pine; SPIB.
    b. Northern species; NLGA.
    c. Eastern softwoods; NeLMA.
    d. Western woods; WCLIB or WWPA.

B. Framing Other Than Non-Load-Bearing Partitions: **Construction or No. 2** grade.

1. Application: Framing other than **interior partitions not indicated as load bearing**.
2. Species:

    a. Hem-fir (north); NLGA.
    b. Douglas fir-larch; WCLIB or WWPA.
    c. Southern pine or mixed southern pine; SPIB.
    d. Spruce-pine-fir; NLGA.
    e. Douglas fir-south; WWPA.
    f. Hem-fir; WCLIB or WWPA.
    g. Douglas fir-larch (north); NLGA.
    h. Spruce-pine-fir (south); NeLMA, WCLIB, or WWPA.

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. Nailers.
3. Rooftop equipment bases and support curbs.
4. Cants.
5. Furring.
6. Grounds.

B. Dimension Lumber Items: **Standard, Stud, or No. 3** grade lumber of any species.

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

1. Mixed southern pine or southern pine; No. **3** grade; SPIB.
2. Eastern softwoods; No. **3** Common grade; NeLMA.
3. Northern species; No. **3** Common grade; NLGA.
4. Western woods; **Standard or No. 3 Common** grade; WCLIB or WWPA.

2.5 FASTENERS

A. General: Fasteners shall be of size and type indicated and shall comply with requirements specified in this article for material and manufacture.

1. Where rough 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. Power-Driven Fasteners: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC70.

2.6 METAL FRAMING ANCHORS

A. Allowable design loads, as published by manufacturer, shall meet or exceed those **indicated**. Manufacturer's published values shall be determined from empirical data or by rational engineering analysis and demonstrated by comprehensive testing performed by a qualified independent testing agency. Framing anchors shall be punched for fasteners adequate to withstand same loads as framing anchors.

B. Galvanized-Steel Sheet: Hot-dip, zinc-coated steel sheet complying with ASTM A 653/A 653M, G60 (Z180) coating designation.

1. Use for interior locations unless otherwise indicated.

C. Hot-Dip, Heavy-Galvanized Steel Sheet: ASTM A 653/A 653M; structural steel (SS), high-strength low-alloy steel Type A (HSLAS Type A), or high-strength low-alloy steel Type B (HSLAS Type B); G185 (Z550) coating designation; and not less than 0.036 inch (0.9 mm) thick.

1. Use for wood-preservative-treated lumber and where indicated.

2.7 MISCELLANEOUS MATERIALS

A. Adhesives for Gluing **Furring and Sleepers** to Concrete or Masonry: Formulation complying with ASTM D 3498 that is approved for use indicated by adhesive manufacturer.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Framing Standard: Comply with AF&PA's WCD 1, "Details for Conventional Wood Frame Construction," unless otherwise indicated.

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

C. Install metal framing anchors to comply with manufacturer's written instructions. Install fasteners through each fastener hole.

D. Comply with AWPA M4 for applying field treatment to cut surfaces of preservative-treated lumber.

E. Securely attach rough carpentry work to substrate by anchoring and 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 ICC's International Residential Code for One- and Two-Family Dwellings.
2. ICC-ES evaluation report for fastener.

END OF SECTION 061000

SECTION 061600 - SHEATHING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Wall sheathing.

PART 2 - PRODUCTS

2.1 PRESERVATIVE-TREATED PLYWOOD

A. Preservative Treatment by Pressure Process: AWPA U1; **Use Category UC3b for exterior construction not in contact with ground, and Use Category UC4a for items in contact with ground**.

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**.

2.2 WALL SHEATHING

A. Plywood Sheathing: **DOC PS 1 Exposure 1, Structural I** sheathing.

2.3 FASTENERS

A. General: Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacture.

1. For **wall** sheathing, provide fasteners **Type 304 stainless steel**.

2.4 MISCELLANEOUS MATERIALS

A. Adhesives for Field Gluing Panels to Wood Framing: Formulation complying with **APA AFG-01** and **ASTM D 3498** that is approved for use with type of construction panel indicated by manufacturers of both adhesives and panels.

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. Coordinate **wall** 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.

E. Do not bridge building expansion joints; cut and space edges of panels to match spacing of structural support elements.

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** to wood framing.**Apply a continuous bead of glue to framing members at edges of wall sheathing panels.**
b. Space panels 1/8 inch (3 mm) apart at edges and ends.

END OF SECTION 061600

SECTION 066000 - PLASTIC FABRICATIONS

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Cellular pvc trim boards for corner boards, soffits, fascias, band boards, rake boards, architectural millwork and door/window trim.

1.02 REFERENCES

A. ASTM D792 - Density and Specific Gravity of Plastics by Displacement.

B. ASTM D570 - Water Absorption of Plastics.

C. ASTM D638 - Tensile Properties of Plastics.

D. ASTM D790 - Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials.

E. ASTM D1761 - Mechanical Fasteners in Wood.

F. ASTM D5420 - Standard Test Method for Impact Resistance of Flat, Rigid Plastic Specimen by means of a Striker Impacted by a Falling Weight.

G. ASTM D256 - Determining the Pendulum Impact Resistance of Plastics.

H. ASTM D696 - Coefficient of Linear Thermal Expansion of Plastics Between -30°C and 30°C with a Vitreous silica Dilatometer.

I. ASTM D635 - Rate of Burning and/or Extent and Time of Burning of Plastics in a Horizontal Position.

J. ASTM E84 - Surface Burning Characteristics of Building Materials.

K. ASTM D648 - Deflection Temperature of Plastics Under Flexural Load in the Edgewise Position.

L. ASTM D3679 - Standard Specification for Rigid Poly Vinyl Chloride (PVC) Siding.

1.03 SUBMITTALS

A. General: Submit listed submittals in accordance with Conditions of the Contract and Division 1 Submittal Procedures Section.
B. Product Data: Submit product data, manufacturer's catalogs, SPEC-DATA® product sheet, for specified products.

C. Samples: Submit three material samples representative of the texture, thickness and widths shown and specified herein.

1.04 QUALITY ASSURANCE

A. Regulatory Requirements: Check with Local Building Code for installation requirements.

B. Allowable Tolerances:
1. Variation in component length: -0.00 / +1.00”
2. Variation in component width: ± 1/16”
3. Variation in component thickness: ± 1/16”
4. Variation in component edge cut: ± 2°
5. Variation in Density -0% + 10%

C. Workmanship, Finish, and Appearance:
1. Free foam cellular pvc that is homogeneous and free of voids, holes, cracks, and foreign inclusions and other defects. Edges must be square, and top and bottom surfaces shall be flat with no convex or concave deviation.
2. Uniform surface free from cupping, warping, and twisting.

1.05 DELIVERY, STORAGE AND HANDLING

A. Trim materials should be stored on a flat and level surface on a full shipping pallet. Handle materials to prevent damage to product edges and corners. Store materials under a protective covering to prevent jobsite dirt and residue from collecting on the boards.

1.06 WARRANTY

A. Provide manufacturer’s 25 year warranty against defects in manufacturing that cause the products to rot, corrode, delaminate, or excessively swell from moisture.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Acceptable products: AZEK® Trimboards manufactured by Vycom Corporation, 801 Corey Street, Moosic, PA 18507.

B. Material: Free foam cellular pvc material with a small-cell microstructure and density of .55 grams/cm3.

1. Material shall have a minimum physical and performance properties specified in Section C on the following page.

C. Performance and physical characteristic requirements:

PROPERTY	UNITS	VALUE	ASTM METHOD
PHYSICAL			
Density	g/cm³	0.55	D 792
Water Absorption	%	0.15	D 570
MECHANICAL			
Tensile Strength	psi	2256	D 638
Tensile Modulus	psi	144,000	D 638
Flexural Strength	psi	3329	D 790
Flexural Modulus	psi	144,219	D 790
Nail Hold	Lbf/in of penetration	35	D 1761
Screw Hold	Lbf/in of penetration	680	D 1761
Staple Hold	Lbf/in of penetration	180	D 1761
Gardner Impact	in-lbs	103	D 5420
Charpy Impact (@23°C)	ft-lbs	4.5	D 256
THERMAL			
Coefficient of Linear Expansion	in/in/°F	3.2 x 10-5	D 696
Burning Rate	in/min	No burn when flame removed	D 635
Flame Spread Index	--	25	E 84
Heat Deflection Temp 264 psi	°F	150	D 648
Oil Canning (@140°F)	°F	Passed	D 648

D. PVC Trimboard:
1. Size:
   a. Nominal Width: As required per Construction Drawings.
   b. Nominal Thickness: 5/4 inch (1 inch actual size)
   c. Length: 20 feet
2. Finish:
   a. Traditional – smooth

E. PVC Sheet Board:
1. Size:
   a. Width x Length: 4 foot x 8 foot
   b. Thickness: 1 inch
2. Finish:
   a. Traditional – smooth

F. PVC Exterior Cornerboard:
1. Size:
   a. Nominal Corner Width: 4 inches
   b. Nominal Thickness: 5/4 inch (1inch actual size)
   c. Length: 20 feet
2. Finish:
   a. Traditional – smooth

F. PVC Interior Cornerboard:

1. Size:
    a. Nominal Corner Width: As required.
    b. Nominal Thickness: 5/4 inch (1 inch actual size)
    c. Length: 20 feet
2. Finish:
    a. Traditional – smooth

G. PVC Window and Door Trim:
1. Size:
    a. Nominal Width: 4 inches
    b. Nominal Thickness: 5/4 inch (1 inch actual size)
    c. Length: 20 feet
2. Finish:
    a. Traditional – smooth

H. PVC Beadboard:
1. Size:
    a. Width: 3 1/2 inch
    b. Thickness: 5/8 inch
    c. Length: 18 feet
2. Finish:
    a. Traditional - smooth

2.02 ACCESSORY PRODUCTS

A. Fasteners:
• Fasstenmaster Cortex Hidden Fastening System with stainless steel TORX ttap fasteners and AZEK plugs. Plugs must be AZEK plugs, as each closed cell PVC manufacturer color differs from others). No square head fasteners.
• Nails, Staples, small brads and wire nails must not be used as fastening members.
• The fasteners should be long enough to penetrate the solid wood substrate a minimum of 1 1/2”.
• Use 2 fasteners per every framing member for trimboards applications. Trimboards 12” or wider, as well as sheets, will require additional fasteners.
• Fasteners must be installed no more than 2” from the end of each board.
• AZEK should be fastened into a flat, solid substrate. Fastening AZEK into hollow or uneven areas must be avoided.
• Pre-drilling is typically not required unless a large fastener is used or product is installed in low temperatures.
• 3/8” and 1/2” sheet product is not intended to be ripped into trim pieces. These profiles must be glued to a substrate and mechanically fastened.

B. Adhesives:
• Glue all AZEK to AZEK joints such as window surrounds, long fascia runs, etc. with AZEK Adhesive, a cellular pvc cement, to prevent joint separation.
• The glue joint should be secured with a fastener and/or fastened on each side of the joint to allow adequate bonding time.

• AZEK Adhesive has a working time of 10 minutes and will be fully cured in 24 hours.
• If standard pvc cements are used, keep in mind these products typically cure quickly which will result in limited working time and may reduce adhesive strength.
• Surfaces to be glued should be smooth, clean and in complete contact with each other.
• To bond AZEK to other substrates, various adhesives may be used. Consult adhesive manufacturer to determine suitability.

C. Sealants:
• Use urethane, polyurethane or acrylic based sealants without silicone. Page 3 of 4

2.03 FINISHES

A. AZEK products do not require paint for protection, but may be painted to achieve a custom color.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Manufacturers instructions:
• Comply with manufacturer's product catalog installation instructions and product technical bulletin instructions.

B. Cutting:
• AZEK products can be cut using the same tools used to cut lumber.
• Carbide tipped blades designed to cut wood work well. Avoid fine tooth metal cutting blades.
• Rough edges from cutting may be caused by excessive friction, poor board support, or worn or improper tooling.

C. Drilling
• AZEK products can be drilled using the same tools used to drill lumber.
• Drilling AZEK products is similar to drilling a hardwood. Care should be taken to avoid frictional heat buildup.
• Use standard woodworking drills. Do not use drills made for normal rigid pvc.
• Periodic removal of AZEK shavings from the drill hole may be necessary.

D. Milling
• AZEK products can be milled using standard milling machines used to mill lumber.
• Relief Angle 20° to 30°
• Cutting speed to be optimized with the number of knives and feed rate.

E. Routing
• AZEK products can be routed using standard router bits and the same tools used to rout lumber.
• Carbide tipped router bits are recommended.

F. Edge Finishing
- Edges can be finished by sanding, grinding or filing with traditional woodworking tools.

G. Nail Location
- Use 2 fasteners per every framing member for trimboard applications.
- Trimboards over 12” or wider, as well as sheets, will require additional fasteners.
- Fasteners must be installed no more than 2” from the end of each board.

H. Thermal Expansion and Contraction
- AZEK products expand and contract with changes in temperature.
- Properly fastening AZEK material along its entire length will minimize expansion and contraction.
- When properly fastened, allow for 1/8” per 18 foot of AZEK product for expansion and contraction.
- Joints between pieces of AZEK should be glued to eliminate joint separation. When gaps are glued on a long run of AZEK, allow expansion and contraction at ends of the run.

I. Joints for Long Runs
- Use scarf joints with two fasteners on each side instead of butt joints

END OF SECTION 066000

SECTION 066300 – PLASTIC RAILING

PART 1 GENERAL

1.02 Summary

A. This section includes the following:
    1. Polyvinyl chloride (PVC) handrail components.
    2. Polyvinyl chloride Post Wraps
    3. Brackets

1.03 Definitions

A. Handrails
B. Post Wraps
C. Brackets

1.04 Submittals

A. Product Data: In the form of manufacturer’s technical data, specifications, and installations for handrails and accessories.
B. Shop Drawings showing handrail design.

1.05 Quality Assurance

A. Installer Qualifications: Engage an experienced installer who has at least three years experience and has completed at least five PVC railing projects with same material and of similar scope to that indicated for this project with a successful construction record of in-service performance.
B. Single-Source Responsibility: Obtain PVC handrail accessories, fittings and fastenings, from a single source.

1.06 Project Conditions

A. Field Measurements: Verify layout information for handrail shown on the drawings. Verify dimensions by field measurements.

1.07 Warranty

A. Manufacturer's Warranty: 20 year non-prorated limited warranty applies to commercial applications.

PART 2 PRODUCTS

2.01 Handrail Materials

A. General: Provide PVC handrail materials recognized to be of type indicated and tested to show compliance with indicated performances, and local building codes.
B. Available Manufacturer: Subject to compliance with requirements, manufacturers offering products that may be incorporated in the work include or an approved equal manufacturer:

    1. Certainteed Evernew
    2. Fairway Grandview

2.02 Polyvinyl Chloride (PVC) Handrail Components

A. General: Handrails and accessories shall be of high impact, Ultra Violet (U.V.) resistant, rigid PVC, and shall comply with ASTM D 1784, Class 14344B.
    1. Height: 36” per Building Code.
    2. Color: White
B. Handails: One piece extruded, of lengths indicated not pre-routed to receive balusters.
C. Post Caps: Molded, one piece.
D. Post Wrap with decorative base.
E. Accessories: Manufacturers’ standard and other accessories as required.

2.03 Miscellaneous Materials

A. Fasteners: Stainless steel or to be concealed or colored heads to match. Provide sizes as recommended by manufacturer.
B. Brackets: Provide stainless steel bracket for wall mount.

PART 3 EXECUTION

3.01 Installation, General

A. Install handrail in locations shown in compliance with manufacturer’s written instructions. During installation, PVC components shall be carefully handled and stored to avoid contact with abrasive surfaces. Install components in sequence as recommended by railing manufacturer.

3.02 Handrail Installation.

A. Support & Post Brackets: Install and space as per manufacturer recommendations and to meet Building Code requirements.

3.03 Adjusting and Cleaning

A. Remove all traces of dirt and soiled areas.

3.04 Demonstration

A. Instruct the owner's personnel on proper maintenance of handrail components.

END OF SECTION 066300

SECTION 072500 - WEATHER BARRIER

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Sheet applied weather barrier and related accessories for wall air/moisture barrier system.

1.2 REFERENCES

A. The American Association of Textile Chemists and Colorists (AATCC) 127 - Water Resistance: Hydrostatic Pressure Test.

B. American Society for Testing and Materials (ASTM) E-96 - Standard Test Methods for Water Vapor Transmission of Materials.

C. American Society for Testing and Materials (ASTM) D1117 - Standard Guide for Evaluating Nonwoven Fabrics.

D. American Society for Testing and Materials (ASTM) D3330 - Standard Test Method for Peel Adhesion of Pressure-Sensitive Tape1.

E. American Society for Testing and Materials (ASTM) D3759 - Standard Test Method for Tensile Strength and Elongation of Pressure-Sensitive Tapes.

F. PSTC-1 - Peel Adhesion of Single Coated Pressure-Sensitive Tapes at 180 Degree Angle.

G. TAPPI T-460 - Porosity - Gurley.

1.3 SYSTEM DESCRIPTION

A. The airtight components and secondary moisture protection of the building enclosure and the joints, junctures and transitions between materials, products, and assemblies forming the air-tightness and moisture barrier of the building enclosure are called "the air/moisture barrier system".

B. Air Barrier Penetrations: All penetrations of the air/moisture barrier and paths of air infiltration / exfiltration through the air/moisture barrier system shall be made air-tight.

C. Moisture Barrier Penetrations: All penetrations of the air/moisture barrier and paths of water migration through the air/moisture barrier system shall be made water shedding.

1.4 SUBMITTALS

A. Submit under provisions of Section 01300.

B. Product Data: Manufacturer's data sheets on each product to be used, including:
1. Preparation instructions and recommendations.

2. Storage and handling requirements and recommendations.
3. Installation methods.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: Minimum of 2 years experience with installation of similar products.

B. Mock-Up: Provide a mock-up for evaluation of surface preparation and sealing techniques and application workmanship.
1. Finish areas designated by Architect.
2. Do not proceed with remaining work until workmanship is approved by Architect.
3. Repair mock-up area as required to produce acceptable work.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.

B. Do not store in direct sunlight. Weather barrier shall be stored in a covered area. Do not expose to building site chemicals.

C. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.7 PROJECT CONDITIONS

A. Anticipate environmental conditions and schedule installation when conditions are within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.8 WARRANTY

A. Product Warranty: Limited product warranty against manufacturing defects.
1. HardieWrap Weather Barrier and related products for 10 years.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: James Hardie Building Products, Inc., which is located at: 26300 La Alameda Suite 400 ; Mission Viejo, CA 92691; Toll Free Tel: 866-274-3464; Tel: 949-367-4980; Fax: 949-367-4981; Email: request info (info@jameshardie.com); Web: www.jameshardiecommercial.com

B. Requests for approval of equal substitutions will be considered in accordance with provisions of Section 01600.

2.2 WEATHER BARRIER SYSTEM

A. Moisture Air Barrier Sheet:
1. Product: HardieWrap Weather Barrier as manufactured by James Hardie Building Systems.

2. Composition: Non-woven, non-perforated polyolefin.
3. Film: MicroTech Coating with micropores to balance water holdout and breathability.
4. Thickness: 11 mil (0.28 mm).
5. UV Stability: Up to 180 days.
6. Water Holdout (AATCC127): 128 inches (3250 mm).
7. Breathability/Water Vapor Permeance (ÅSTM E-96A): 15 perms.
8. Air Resistance (TAPPI T-460): >1800 sec/100 cc.
9. Tear Strength (ÅSTM D1117): 15 to 18 lb (6.8 to 8.2 kg).
10. Basis Weight: 19.4 lbs/1000 sf (9.5 kgs/100 sm).
11. Sizes: 3 feet by 195 feet (914 mm by 59.4 m), 9 feet by 100 feet (2743 mm by 30.5 m), 9 feet by 150 feet (2743 mm by 45.7 m), 10 feet by 100 feet (3048 mm by 30.5 m), 10 feet by 150 feet (3048 mm by 45.7 m).

B. Self-adhering Flashing: Designed for peel and stick application.
1. Product: HardieWrap Flashing as manufactured by James Hardie Building Systems.
2. Composition: Butyl rubber adhesive non-woven polyolefin backing; coated Kraft paper release.
3. Total Thickness: 25 mil (0.64 mm).
4. UV Stability: Up to 180 days.
5. Application Temperature: 30 degree F to 180 degree F (-1 degree C to 82 degree C).
6. Operating Temperature: -30 degree F to 200 degree F (-34 degree C to 93 degree C).
7. Packaging: Individually shrink-wrapped.
8. Roll Weight: 4 inch (102 mm) = 4.6 lb (2 kg)/roll, 6 inches (152 mm) = 6.9 lb (3 kg) /roll, 9 inches (229 mm) = 9.9 lb (4.5 kg)/roll.
9. Provide Width for Application Required: 4 inches by 100 feet (102 mm by 30.5 m) (2x4 construction), 6 inches by 100 feet (152 mm by 30.5 m) (2x4 construction), 9 inches by 100 feet (229 mm by 30.5) (2x6 construction).

C. Flexible Flashing:
1. Product: HardieWrap Flex Flashing as manufactured by James Hardie Building Systems.
2. Composition: Butyl rubber adhesive; creped cross-laminated polyolefin backing; polyethylene film release.
3. Total Thickness: 60 mil (1.5 mm).
4. Tensile Strength (ÅSTM D3759): 18 lb/inch (3.2kg/cm).
5. UV Stability: Up to 180 days.
6. Water Vapor Transfer Rate (ÅSTM E96-94): <.2g/100 square inches/24hrs.
7. Application Temperature: 30 degree F to 180 degree F (-1 degree C to 82 degree C).
8. Operating Temperature: -30 degree F to 200 degree F (-34 degree C to 93 degree C).
9. Packaging: Each roll is packed in a convenient dispenser box
10. Roll Weight: 6 inches (152 mm) = 22.2 lb (10kg)/roll, 9 inches (229 mm) = 33.3 lb (15 kg)/roll.
11. Provide Width for Application Required: 6 inches by 75 feet (152 mm by 23.9 m) (2x4 construction), 9 inches by 75 feet (229 mm by 23.9) (2x6 construction).

D. Seam Tape:
1. HardieWrap Seam Tape as manufactured by James Hardie Building Systems.
2. Composition: Polypropylene film coated with acrylic adhesive Total Thickness: 3.0 mil (.08 mm).
3. Adhesion Peel to HardieWrap (PSTC-1): 22 oz/inch (25 N/100 mm).
4. Tensile Strength (ÅSTM D3759): 32 lb/in (.58 kg/mm).
5. Elongation: 136 percent.
6. UV Stability: Up to 90 days.
7. Application Temperature: 30 degree F to 180 degree F (-1 degree C to 82 degree C).
8. Operating Temperature: -30 degree F to 200 degree F (-34 degree C to 93 degree C).
9. Packaging: Individually shrink-wrapped.
10. Roll Weight: 1 lb(0.5 kg)/roll.
11. Roll Size: 1-7/8 inches (43 mm) by 165 feet (50 m).

2.3 DRAINAGE MATERIAL

A. Drainage Material: Product comprises of ¼" thick closed-cell extruded polystyrene (XPS) thermoformed with contoured drainage channels on both sides. Product shall maintain a continuous open space between water-resistive barrier and exterior cladding to create a drainage plane and shall be used under **siding**. Fasten with corrosion resistant fastener (roofing nail or screw type) with metal or plastic washer as recommended by manufacturer for condition.

1. Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a.Kingspan Insulation, LLC.
1)Greenguard DC14 Drainage Mat

PART 2 EXECUTION

2.1 EXAMINATION

A. Do not begin installation until substrates have been properly prepared.

B. If framing preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

2.2 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

C. Weather barrier shall be installed before window and door installation. Do not install on saturated sheathing. Weather barrier can become slippery and should not be

used in any application where it may be walked on.

D. Weather barrier shall be installed on vertical wall applications only.

E. Manufacturer warrants weather barrier sheet only when covered within 180 days of its installation.

2.3 INSTALLATION

A. Moisture Air Barrier Sheet:
1. Weather barrier shall be installed before window and door installation. Do not install on saturated sheathing. Weather barrier can become slippery and should not be used in any application where it may be walked on.
2. Begin by affixing weather barrier extending at least 6 inches (152 mm) around a building corner. Unroll horizontally (with print side facing out) around the building covering rough window and door openings.
3. Fasten to studs or nailable sheathing material with galvanized construction grade staples or roofing nails a maximum of 18 inches (457 mm) in the vertical and horizontal direction.
4. Attach weather barrier so that it is taut and flat. The vertical overlap shall have a minimum of 6 inches (152 mm) and the vertical seam shall be taped.
5. Assure that the bottom edge of the weather barrier extends over the sill plate and foundation interface by at least 1 inch (25 mm).
6. Overlap upper layers of weather barrier (in shingle lap fashion) by a minimum of 6 inches below the horizontal edge, and tape the horizontal seam line.
7. At roof to wall intersection (or wall to deck), affix wrap to the wall such that it overlaps any step flashing already in place on the wall by at least 2 inches (51 mm).

B. Flexible Flashing:
1. Windows and Doors: Weather barrier is not designed nor guaranteed as a flashing material to prevent moisture or air from intruding behind weather barrier. Verify that flashing has previously been installed around all windows and door openings. Install flexible flashing per manufacturer's instructions.
   A. Use the inverted "Y" cut method at rough window and door openings. Do not place fasteners within 9 inches (229 mm) of the rough opening, door or window heads. This area shall not be fastened to allow for proper head flashing installation. At the top corners of the rough opening, cut the weather barrier at 45 degree to extend 9 inches (229 mm) past the joint.
   B. Fold the top flap up and out of the way and fasten temporarily.
   C. Fold the remaining three flaps in through the opening fastening them inside the opening with staples.
2. Rough Electrical and Plumbing Penetrations: Seal with a double layer of flashing. Install the top flashing piece over the bottom flashing piece overlapping flashing layers to cover flashing cut-out necessary for placement around penetration.

C. Drainage Material:

1. Install drainage material over building wrap and flashing to comply with manufacturer’s written instructions.

D. Repairs: For minor punctures or tears, less than 3 inches (76 mm), cover and completely seal with seam tape. For larger holes, greater than 3 inches (76 mm), use slit flashing technique.

A. Slit flashing requires making a horizontal slit above the damaged area and placing a cut piece of weather barrier into the slit, covering the damaged area. Tape the perimeter of the patched area.

2.4 PROTECTION

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION - 072500

SECTION 074630 - FIBER CEMENT MOUNTING BLOCKS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Fiber cement mounting blocks and trim fabrications for siding penetrations and detailing.

1.2 SUBMITTALS

A. Submit under provisions of Section 01300.

B. Product Data: Manufacturer's data sheets on each product to be used, including:
   1. Preparation instructions and recommendations.
   2. Storage and handling requirements and recommendations.
   3. Installation methods.

C. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.

D. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) square, representing actual product, color, and patterns.

1.3 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.

1.4 PROJECT CONDITIONS

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

1.5 WARRANTY

A. Material Warranty: Manufacturer's standard Limited Lifetime warranty. Refer to manufacturer's website for full text of warranty.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: SturdiMount - The Tapco Group, which is located at: 29797 Beck Rd.; Wixom, MI 48393; Toll Free Tel: 800-521-8486; Fax: 888-459-3647; Email: wayne_Sanderson@tapcoint.com; Web: www.thetapcogroup.com/brands/sturdimount

B. Substitutions: Not permitted.

2.2 MATERIALS

A. Fiber Cement Fabrications: Universal 4 Mount as manufactured by SturdiMount.
   1. Material: Fiber cement, 5/4 inch trim.
   2. Application: Dryer vents, 3 5/8 inch (92 mm) and 4 1/4 inch (108 mm) porch lights, and miscellaneous applications.
   3. Size: 8-1/2 inches by 11 inches (216 mm by 279 mm).
   4. Color shall be as follows:
      a. At Hardie Shingle Siding Locations: Cobble Stone.
      b. At Hardie Lap Siding Locations: Monterey Taupe.

B. Fiber Cement Fabrications: Split Mount as manufactured by SturdiMount.
   1. Material: Fiber cement, 5/4 inch trim.
   2. Application: Hose bibs, gas lines, HVAC drip lines, insecticide ports, and miscellaneous applications.
   3. Size: 6 inches by 8-1/2 inches (152 mm by 216 mm).
   4. Color shall be as follows:
      a. At Hardie Shingle Siding Locations: Cobble Stone.
      b. At Hardie Lap siding Locations: Monterey Taupe.

C. Fiber Cement Fabrications: Receptacle Mount as manufactured by SturdiMount.
   1. Material: Fiber cement, 5/4 inch trim.
   2. Application: Receptacle outlet, and miscellaneous applications.
   3. Size: 6 inches by 8-1/2 inches (152 mm by 216 mm).
   4. Color shall be as follows:
      a. At Hardie Shingle Siding Locations: Cobble Stone.
      b. At Hardie Lap Siding Locations: Monterey Taupe.

D. Fiber Cement Fabrications: Oversized Mount as manufactured by SturdiMount.
   1. Material: Fiber cement, 5/4 inch trim.
   2. Application: 3 5/8 inch (92 mm) and 4 1/4 inch (108 mm) coach lights, and miscellaneous applications.
   3. Size: 8-1/2 inches by 15 inches (216 mm by 381 mm).
   4. Color shall be as follows:
      a. At Hardie Shingle Siding Locations: Cobble Stone.
      b. At Hardie Lap Siding Locations: Monterey Taupe.

2.3 ACCESSORIES

A. Parts and Installation Products: As required for a complete installation.
   1. ABS plastic flange.
   2. Stainless steel staples.
   3. Stainless steel roofing nails, 2-1/2 inches (64 mm) long.
   4. Stainless steel brad nails, 2 inches (51 mm) long.
   5. Caulk/Sealant.
   6. Trim coil.

PART 3 EXECUTION

3.1 EXAMINATION

A. Do not begin installation until substrates have been properly prepared.

B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 INSTALLATION

A. Universal, Oversized and Receptacle Mounts: Install in accordance with manufacturer's recommendations and as follows:
   1. Place desired mount over the proper application needed. Align and level mount parallel with siding to be installed. Nail the top three and side two flange holes with 2-1/2 inches (64 mm) stainless steel roofing nails. Leave the bottom three flange nailing holes un-nailed.
   2. Cut trim coil at least 2 inches (51 mm) wider than mount flange.
   3. Slide trim coil under bottom part of plastic flange at least 2 inches (51 mm) above flange nailing holes. Position trim coil directly below and in between siding. Nail 2-1/2 inches (64 mm) stainless steel roofing nails through the remaining bottom three flange holes.

B. Split Mounts: Install in accordance with manufacturer's recommendations and as follows:
   1. Detach bottom half of block from plastic flange by placing finger through 1 inch (25 mm) hole and then pulling down and out until block is detached. Remove remaining glue pad from the face of the plastic flange.
   2. Feed water spigot or other application through the rectangular flange hole. Slide bottom half of block back up until tight. Face nail with 2 inch (51 mm) stainless steel brad nails. Do not caulk 22.5 inches (64 mm) weather cut edge.

3.4 PROTECTION

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION 074630

SECTION 074646 - FIBER CEMENT SIDING

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Factory-finished fiber cement lap siding, shingle, soffits and accessories; James Hardie Engineered for Climate Siding.

1.2 REFERENCES

A. ASTM C1186 - Standard Specification for Flat Fiber-Cement Sheets

B. ASTM D3359 - Standard Test Method for Measuring Adhesion by Tape Test, Tool and Tape.

C. ASTM E136 - Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750 degrees C.

1.3 SUBMITTALS

A. Submit under provisions of Section 01300.

B. Product Data: Manufacturer's data sheets on each product to be used, including:
1. Preparation instructions and recommendations.
2. Storage and handling requirements and recommendations.
3. Installation methods.

C. Shop Drawings: Provide detailed drawings of atypical non-standard applications of cementitious siding materials which are outside the scope of the standard details and specifications provided by the manufacturer.

D. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.

E. Verification Samples: For each finish product specified, two samples, minimum size 4 by 6 inches (100 by 150 mm), representing actual product, color, and patterns.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: Minimum of 2 years experience with installation of similar products.

B. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
1. Finish areas designated by Architect.
2. Do not proceed with remaining work until workmanship, color, and sheen are approved by Architect.
3. Refinish mock-up area as required to produce acceptable work.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.

B. Store siding on edge or lay flat on a smooth level surface. Protect edges and corners from chipping. Store sheets under cover and keep dry prior to installing.

C. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.6 PROJECT CONDITIONS

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

1.7 WARRANTY

A. Product Warranty: Limited, non-pro-rated product warranty.
1. HardiePlank lap siding for 30 years.
2. HardieSoffit panels for 30 years.
3. HardieShingle siding for 30 years.

B. Finish Warranty: Limited product warranty against manufacturing finish defects.
1. When used for its intended purpose, properly installed and maintained according to James Hardie's published installation instructions, James Hardie's ColorPlus finish with ColorPlus Technology, for a period of 15 years from the date of purchase: will not peel; will not crack; and will not chip. Finish warranty includes the coverage for labor and material.

C. Workmanship Warranty: Application limited warranty for 2 years.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: James Hardie Building Products, Inc., which is located at: 26300 La Alameda Suite 400 ; Mission Viejo, CA 92691; Toll Free Tel: 866-274-3464; Tel: 949-367-4980; Fax: 949-367-4981; Email: request info (info@jameshardie.com); Web: www.jameshardiecommercial.com

B. Substitutions: Not permitted.

2.2 SIDING

A. HardiePlank HZ5 lap siding, HardiPanel HZ5 vertical siding, HardieSoffit HZ5 panels and HardieShingle HZ5 siding requirement for Materials:
1. Fiber-cement Siding - complies with ASTM C 1186 Type A Grade II.
2. Fiber-cement Siding - complies with ASTM E 136 as a noncombustible material.
3. Fiber-cement Siding - complies with ≈STM E 84 Flame Spread Index = 0, Smoke Developed Index = 5.
4. CAL-FIRE, Fire Engineering Division Building Materials Listing - Wildland Urban Interface (WUI) Listed Product.
5. National Evaluation Report No. NER 405 (BOCA, ICBO, SBCCI, IBC, IRC).

6. City of Los Angeles, Research Report No. 24862.
7. Miami Dade County, Florida Notice of Acceptance 07-0418.04.
8. US Department of Housing and Urban Development Materials Release 1263d.
9. California DSA PA-019.
10. City of New York M EA 223-93-M.
11. Florida State Product Approval FL889.
12. Texas Department of Insurance Product Evaluation EC-23.

B. Lap Siding: HardiePlank HZ5 Lap siding with a sloped top, beveled drip edge and nailing line as manufactured by James Hardie Building Products, Inc.
   1. Type: Select Cedarmill 8-1/4 inches (210 mm) with 7 inches (178 mm) exposure.

C. Shingle Siding: HardieShingle HZ5 siding as manufactured by James Hardie Building Products, Inc.
   1. Type: HardieShingle Straight-Edge Notched Panel 48 inches (1219 mm) wide by 16 inches (406mm) high with 7 inches (178 mm) exposure.
   2. Type: HardieShingle Staggered-Edge Notched Panel 48 inches (1219 mm) wide by 16 inches (406mm) high with 7 inches (178 mm) exposure.
   3. Type: HardieShingle Half Round Notched Panel 48 inches (1219 mm) wide by 19 inches (483mm) high with 7 inches (178 mm) exposure.

D. Soffit Panels: HardieSoffit soffit panel, factory sealed on 5 sides as manufactured by James Hardie Building Products, Inc.
   1. Type: Smooth non-vented, 12 inches (305 mm) by 12 feet (3658 mm
   2. Type: Smooth non-vented, 24 inches (610 mm) by 8 feet (2438 mm).
   3. Type: Smooth vented, provides 5 square inches (32.3 sq.cm) of net free ventilation per linear foot, 12 inches (305 mm) by 12 feet (3658 mm).
   4. Type: Smooth vented, provides 5 square inches (32.3 sq.cm) of net free ventilation per linear foot, 124 inches (610 mm) by 8 feet (2438 mm).
   5. Thickness: 1/4 inch (6 mm).

2.3 FASTENERS

A. Wood Framing Fasteners:
   1. Wood Framing: Stainless steel fasteners.

2.4 SEALANT

A. Use an Elastomeric Joint Sealant complying with ASTM C920 Grade NS, Class 25 or higher or a Latex Joint Sealant complying with ASTM C834.
   1. Sealant must be applied in accordance with the sealant manufacturer's written instructions.
   2. Note – OSI Quad as well as some other sealant manufacturers do not allow tooling.

2.5 FINISHES

A. Factory Finish:
   1. Product: ColorPlus Technology by James Hardie.
   2. Definition: Factory applied finish; defined as a finish applied in the same

facility and company that manufactures the siding substrate.

3. Process:
   a. Factory applied finish by fiber cement manufacturer in a controlled environment within the fiber cement manufacturer's own facility utilizing a multi-coat, heat cured finish within one manufacturing process.
   b. Each finish color must have documented color match to delta E of 0.5 or better between product lines, manufacturing lots or production runs as measured by photospectrometer and verified by third party.
4. Protection: Factory applied finish protection such as plastic laminate that is removed once siding is installed
5. Accessories: Complete finishing system includes pre-packaged touch-up kit provided by fiber cement manufacturer. Provide quantities as recommended by manufacturer.

B. Factory Finish Color for Soffit and Siding Colors:
   1. Soffit Panels: Arctic White JH10-20.
   2. Shingle Siding: Cobble Stone JH40-10.
   3. Lap Siding: Monterey Taupe JH40-20.

PART 3 EXECUTION

3.1 EXAMINATION

A. Do not begin installation until substrates have been properly prepared.

B. If framing preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

C. Nominal 2 inch by 4 inch (51 m by 102 mm) wood framing selected for minimal shrinkage and complying with local building codes, including the use of water-resistive barriers or vapor barriers where required. Minimum 1-1/2 inches (38 mm) face and straight, true, of uniform dimensions and properly aligned.
   1. Install water-resistive barriers and claddings to dry surfaces.
   2. Repair any punctures or tears in the water-resistive barrier prior to the installation of the siding.
   3. Protect siding from other trades.

3.2 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

C. Install a water-resistive barrier is required in accordance with local building code requirements.

D. The water-resistive barrier must be appropriately installed with penetration and junction flashing in accordance with local building code requirements.

E. Install Engineered for ClimateTM HardieWrapTM weather barrier in accordance

with local building code requirements.

F. Use HardieWrapTM Seam Tape and joint and laps.

G. Install HardieWrapTM flashing, and HardieWrapTM Flex Flashing

3.3 INSTALLATION - HARDIEPLANK LAP SIDING

A. Install materials in strict accordance with manufacturer's installation instructions.

B. Starting: Install a minimum 1/4 inch (6 mm) thick lath starter strip at the bottom course of the wall. Apply planks horizontally with minimum 1-1/4 inches (32 mm) wide laps at the top. The bottom edge of the first plank overlaps the starter strip.

C. Allow minimum vertical clearance between the edge of siding and any other material in strict accordance with the manufacturer's installation instructions.

D. Align vertical joints of the planks over framing members.

E. Maintain clearance between siding and adjacent finished grade.

F. Locate splices at least one stud cavity away from window and door openings.

G. Wind Resistance: Where a specified level of wind resistance is required Hardieplank lap siding is installed to framing members and secured with fasteners described in Table No. 2 in National Evaluation Service Report No. NER-405.

H. Locate splices at least 12 inches (305 mm) away from window and door openings.

3.4 INSTALLATION - HARDIE SHINGLESIDE CLADDING

A. Install materials in strict accordance with manufacturer's installation instructions.

B. Substrate: Install a minimum 7/16 inch (11 mm) thick OSB wall sheathing or equivalent braced walls complying with applicable building codes.

C. Starting: Install a minimum 1/4 inch (6 mm) thick lath starter strip at the bottom course of the wall.

D. Maintain clearance between siding and adjacent finished grade.

E. Apply starter course of 10 inches (254 mm) shingles or 9-1/2 inches (241 mm) lap siding overlapping the starter strip.

F. Apply subsequent courses horizontally with a minimum 10 inch overlap at the top and a minimum 2 inch (51 mm) side lap. The bottom edge of the first two courses overlaps the starter strip.

G. Fasten between 1/2 inch (13 mm) and 1 inch (25 mm) in from the side edge and between 8-1/2 inches (216 mm) and 9 inches (229 mm) up from the shingle bottom edge.

H. Allow minimum vertical clearance between the edge of siding and any other material in strict accordance with the manufacturer's installation instructions.

I. Ensure vertical joints of overlapping shingle course do not align.

J. Wind Resistance: Where a specified level of wind resistance is required, Hardie Shingle siding is installed to substrate and secured with a minimum two fasteners described in Table No. 6, 7 and 8 in National Evaluation Service Report No. NER-405.

3.5 CUT EDGE TREATMENT

A. Paint all field cut edges using the ColorPlus Technology edge coater of same color as cut material.

3.6 JOINT TREATMENT

A. Provide Joint Flashing at siding joints as recommended by James Hardie.

3.7 PROTECTION

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION 074646

SECTION 076200 - SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Formed roof-drainage sheet metal fabrications.
   2. Formed wall sheet metal fabrications.

1.2 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.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. General: Sheet metal flashing and trim assemblies 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" and SMACNA's "Architectural Sheet Metal Manual"** requirements for dimensions and profiles shown unless more stringent requirements are indicated.

C. SPRI Wind Design Standard: Manufacture and install **roof edge flashings** tested according to SPRI ES-1 and capable of resisting the design pressure.

D. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes.

2.2 SHEET METALS

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

B. Aluminum Sheet: ASTM B 209 (ASTM B 209M), alloy as standard with manufacturer for finish required, with temper as required to suit forming operations and performance required.

   1. Exposed Coil-Coated Finish:

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

2. Color:**As selected from manufacturer's full range**.

2.3 MISCELLANEOUS MATERIALS

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

1. General: Blind fasteners or self-drilling screws, gasketed, with hex-washer head.

a. Exposed Fasteners: Heads matching color of sheet metal using plastic caps or factory-applied coating. Provide metal-backed EPDM or PVC sealing washers under heads of exposed fasteners bearing on weather side of metal.
b. Blind Fasteners: High-strength stainless-steel rivets suitable for metal being fastened.
c. Spikes and Ferrules: Same material as gutter; with spike with ferrule matching internal gutter width.

2. Fasteners for Aluminum Sheet: Series 300 stainless steel.

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 (13 mm) wide and 1/8 inch (3 mm) thick.

D. Elastomeric Sealant: ASTM C 920, elastomeric **silicone** polymer sealant; of type, grade, class, and use classifications required to seal joints in sheet metal flashing and trim and remain watertight.

E. Butyl Sealant: ASTM C 1311, single-component, solvent-release butyl rubber sealant; polyisobutylene plasticized; heavy bodied for hooked-type expansion joints with limited movement.

F. Epoxy Seam Sealer: Two-part, noncorrosive, aluminum seam-cementing compound, recommended by aluminum manufacturer for exterior nonmoving joints, including riveted joints.

G. Bituminous Coating: Cold-applied asphalt emulsion according to ASTM D 1187.

H. Asphalt Roofing Cement: ASTM D 4586, asbestos free, of consistency required for application.

2.4 FABRICATION, GENERAL

A. General: Custom fabricate sheet metal flashing and trim to comply with details shown and recommendations in cited sheet metal standard that apply to design, dimensions, geometry, metal thickness, and other characteristics of item required. Fabricate sheet metal flashing and trim in shop to greatest extent possible.

1. Obtain field measurements for accurate fit before shop fabrication.
2. 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.
3. Conceal fasteners and expansion provisions where possible. Do not use exposed fasteners on faces exposed to view.

B. 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 (25 mm) deep, filled with butyl sealant concealed within joints.
2. Use lapped expansion joints only where indicated on Drawings.

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

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

E. Fabricate cleats and attachment devices of sizes as recommended by cited sheet metal standard for application, but not less than thickness of metal being secured.

F. Seams: Fabricate nonmoving seams with flat-lock seams. Tin edges to be seamed, form seams, and solder.

G. Seams: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with elastomeric sealant unless otherwise recommended by sealant manufacturer for intended use. **Rivet joints where necessary for strength.**

H. Seams for Aluminum: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with epoxy seam sealer.**Rivet joints where necessary for strength.**

2.5 ROOF-DRAINAGE SHEET METAL FABRICATIONS

A. Hanging Ogee Style Gutters: Fabricate to cross section required, complete with end pieces, outlet tubes, and other accessories as required. Fabricate in minimum 96-inch- (2400-mm-) long sections. Furnish flat-stock gutter brackets and gutter spacers and straps fabricated from same metal as gutters, of size recommended by cited sheet metal standard but with thickness not less than twice the gutter thickness. Fabricate expansion joints, expansion-joint covers, and gutter accessories from same metal as gutters. **Shop fabricate interior and exterior corners.**

1. Fabricate from the Following Materials:

a. Aluminum: **0.040 inch (1.0 mm) thick**

B. Downspouts: Fabricate corrugated **rectangular** downspouts to dimensions indicated, complete with mitered elbows. Furnish with metal hangers from **same material as downspouts and anchors**. **Shop fabricate elbows.**

1. Hanger Style: Straps
2. Fabricate from the following materials:

C. Splash block at all downspouts.

2.6 ROOF SHEET METAL FABRICATIONS

A. Drip Edges: Fabricate from the following materials:
1. Aluminum: **0.032 inch (0.81 mm)** thick.

2.7 WALL SHEET METAL FABRICATIONS

A. Opening Flashings in Frame Construction: Fabricate head, sill, **jamb,** and similar flashings to extend 4 inches (100 mm) beyond wall openings. Form head and sill flashing with 2-inch- (50-mm-) high, end dams. Fabricate from the following materials:
1. Aluminum: **0.032 inch (0.81 mm)** thick.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. General: Anchor sheet metal flashing and trim and other components of the Work securely in place, with provisions for thermal and structural movement. Use fasteners, solder, protective coatings, separators, sealants, and other miscellaneous items as required to complete sheet metal flashing and trim system.

1. Install sheet metal flashing and trim true to line, levels, and slopes. Provide uniform, neat seams with minimum exposure of solder, welds, and sealant.
2. Install sheet metal flashing and trim to fit substrates and to result in watertight performance. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.
3. Space cleats not more than 12 inches (300 mm) apart. Attach each cleat with at least two fasteners. Bend tabs over fasteners.
4. Install exposed sheet metal flashing and trim with limited oil canning, and free of buckling and tool marks.
5. Torch cutting of sheet metal flashing and trim is not permitted.

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 and stainless-steel** 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. Space movement joints at maximum of **10 feet (3 m)** with no joints within 24 inches (600 mm) of corner or intersection.

1. Form expansion joints of intermeshing hooked flanges, not less than 1 inch (25 mm) deep, filled with sealant concealed within joints.
2. Use lapped expansion joints only where indicated on Drawings.

D. Fasteners: Use stainless steel fastener sizes that penetrate **wood blocking or sheathing not less than 1-1/4 inches (32 mm) for nails and not less than 3/4 inch (19 mm) for wood screws. 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. Prepare joints and apply sealants to comply with requirements of sealant manufacturer

G. Rivets: Rivet joints in uncoated aluminum where necessary for strength.

3.2 ROOF-DRAINAGE SYSTEM INSTALLATION

A. General: Install sheet metal roof-drainage items to produce complete roof-drainage system according to cited sheet metal standard unless otherwise indicated. Coordinate installation of roof perimeter flashing with installation of roof-drainage system.

B. Hanging Gutters: Join sections with **riveted and soldered joint**. Provide for thermal expansion. Attach gutters at eave or fascia to firmly anchor them in position. Provide end closures and seal watertight with sealant. Slope to downspouts.

1. Install gutter with expansion joints at locations indicated, but not exceeding, **50 feet (15.24 m)** apart. Install expansion-joint caps.

C. Downspouts: Join sections with 1-1/2-inch (38-mm) telescoping joints. Provide hangers with fasteners designed to hold downspouts securely to walls. Locate hangers at top and bottom and at approximately 60 inches (1500 mm) o.c.

3.3 ROOF FLASHING INSTALLATION

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

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

B. Roof Edge Flashing: Anchor to resist uplift and outward forces according to recommendations in cited sheet metal standard unless otherwise indicated. Interlock bottom edge of roof edge flashing with continuous cleat anchored to substrate.

3.4 WALL FLASHING INSTALLATION

A. General: Install sheet metal wall flashing to intercept and exclude penetrating moisture according to 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 (100 mm) beyond wall openings.

3.5 CLEANING AND PROTECTION

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

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

C. Clean off excess sealants.

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

END OF SECTION 076200

SECTION 079200 - JOINT SEALANTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Silicone joint sealants.
2. Mildew-resistant joint sealants.
3. Latex joint sealants.

1.2 ACTION SUBMITTALS

A. Product Data: For each joint-sealant product.

B. Samples: For each kind and color of joint sealant required.

PART 2 - PRODUCTS

2.1 JOINT SEALANTS, GENERAL

A. Colors of Exposed Joint Sealants: **As selected from manufacturer's full range**.

2.2 SILICONE JOINT SEALANTS

A. Silicone, S, NS, 25, NT: Single-component, nonsag, plus 25 percent and minus 25 percent movement capability, nontraffic-use, neutral-curing silicone joint sealant; ASTM C 920, Type S, Grade NS, Class 25, Use NT.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. Dow Corning Corporation.
b. GE Construction Sealants; Momentive Performance Materials Inc.
c. Pecora Corporation.
d. Tremco.

2.3 MILDEW-RESISTANT JOINT SEALANTS

A. Mildew-Resistant Joint Sealants: Formulated for prolonged exposure to humidity with fungicide to prevent mold and mildew growth.

B. Acrylic Latex: Acrylic latex or siliconized acrylic latex, ASTM C 834, Type OP, Grade NF.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. Pecora Corporation.
b. Tremco Incorporated.

2.4 JOINT-SEALANT BACKING

A. Cylindrical Sealant Backings: ASTM C 1330, **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.

B. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer.

2.5 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.

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

PART 3 - EXECUTION

3.1 PREPARATION

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

B. Joint Priming: Prime joint substrates where recommended by joint-sealant manufacturer or as indicated by preconstruction joint-sealant-substrate tests or prior experience.

C. Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces.

3.2 INSTALLATION OF JOINT SEALANTS

A. General: Comply with ASTM C 1193 and joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.

B. 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.

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

D. 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.

E. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants to form smooth, uniform beads of configuration indicated. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.

1. Provide concave joint profile per Figure 8A in ASTM C 1193 unless otherwise indicated.

END OF SECTION 079200

SECTION 081469 – STORM DOORS

PART 1- GENERAL

1.1 SUMMARY

A. Section Includes
   1. Full Glass Venting Storm Door

1.2 SUBMITTALS

A. Product Data: Submit manufacturer's product data and installation guides.

1.3 QUALITY ASSURANCE

A. Installer Qualifications: Utilize an installer having demonstrated experience on projects of similar size and complexity.

B. Products are built to meet performance requirements specified in ANSI/AAMA 1102.7.

C. Extruded aluminum parts are painted to meet appearance and durability standards specified in AAMA 2603, except where noted.

D. Steel hardware and components are coated for corrosion resistance in accordance with AAMA 907.

E. Products are supplied in a protective carton using the manufacturer's standard packaging method.

1.4 WARRANTY

A. Manufacturer's Warranty: Submit, manufacturer's standard limited warranty document. Manufacturer's limited warranty is in addition to, and not a limitation of, other rights owner may have under contract documents.

Part 2 – PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer:

   1. Andersen Corporation

      a. 3000 Series Full Glass Self Storing Anytime Venting

B. Substitutions: Not permitted.

2.2 MATERIALS

A. Door Frame; 1 ½" thick aluminum frame with reinforced corners.
   1. Core Material: Pine particle board with a nominal thickness of 0.6875
   2. Cladding Material: Aluminum skin with a nominal thickness of 0.020" (post paint).
   3. Color: Color as selected by Owner's representative from manufacturer's full range of standard colors.
   4. Sealant: Applied to bottom of door and bottom of window opening and 4 inches up the sides of the door and window opening.
   5. Kick Panel: Embossed aluminum panel with a nominal thickness of 0.020" (post paint).
   6. Window Insert: Extruded 6063 T-5 aluminum frame mounted to door frame using aluminum retainers and painted mounting screws.
   7. Lock case mounting slot is predrilled by the manufacturer.

B. Z-bars
   1. Z-bar Material: Extruded 6063 T-5 aluminum with a nominal wall thickness of 0.045".
   2. Hinge Material: Extruded 6063 T-5 aluminum with a nominal wall thickness of 0.045".
   3. Hinges: Four butt-type hinges preinstalled by the manufacturer in the hinge side z-bar using zinc coated steel hinge pin assemblies and self lubricating celcon bushings.
   4. Mounting holes, deadbolt and latch slots are predrilled by the manufacturer.
   5. Weather Stripping: Weather resistant nylon pile is preinstalled in the z-bar profiles in accordance with AAMA 701.

C. Glazing
   1. Glass: 1/8" face thickness tempered safety glass in compliance with CPSC 16 CFR 1201.
   2. Glass Finish: Clear
   3. Ventilating Unit: Extruded 6063 T-5 aluminum window frame with zinc die cast corner keys and window latches.
   4. Stationary Unit: Extruded aluminum window frame with zinc die cast corner keys and window latches.
   5. Window Surround: Polyvinyl chloride (PVC) glazing applied to the entire edge of each glass panel.

D. Insect Screen
   1. Screen: 18 x 16 mesh charcoal fiberglass cloth

2. Motor: Retractable roll screen and motor are preinstalled in the top of the window insert by the manufacturer.
3. Roll screen motor assembly is field replaceable.
4. Retention: Screen is retained on both sides by PVC screen tracks.

E. Hardware and Accessories
1. Handle Set: Traditional style handle.
2. Handle Set Finish: As selected by Owner's Representative from manufacturer's full range of standard finishes.
3. Lock Case: Mortised style lock case with keyed lock and deadbolt constructed of corrosion resistant materials.
4. Sweep: Adjustable aluminum sweep with anodized finish in accordance with AAMA 611.
5. Adjustable Standard Closer: Painted to match door finish.
6. Mounting Hardware: All necessary mounting and installation hardware is s upplied.

Commented [a1]: Delete if not required

2.3 PRODUCT PERFORMANCE

A. Structural
1. Door frame and components are built to meet the AAMA 1102.7 uniform load test requirement when tested in accordance with ASTM E330
2. Door frame and components are built to meet the AAMA 1102.7 rack and sag test requirements specified.
3. Door frame and components are built to meet the AAMA 1102.7 concentrated load test requirement when tested in accordance with ASTM E987.

B. Environmental
1. Product is built to meet the AAMA 1102.7 water drainage specification when tested in accordance with ASTM E331
2. Product is built to meet the AAMA 1102.7 environmental cycles specification when tested in accordance with ASTM D1183 and ASTM C297

PART 3– EXECUTION

3.1 EXAMINATION

A. Site Conditions
1. Measure the existing openings for compliance with the manufacturer's installation requirements.

2. Select storm door sizes to fit within the existing openings according to the manufacturer's door opening size chart.
3. Any rework of the existing openings necessary to meet manufacturer's requirements shall be completed prior to storm door installation.

b. Do not proceed with installation of units until all unacceptable conditions are corrected.

3.2 INSTALLATION

A. Install storm doors in accordance with the manufacturer's installation instructions.

3.3 ADJUSTING AND CLEANING

A. Adjust installed products for proper operation in accordance with the manufacturer's instructions

B. Clean installed products using cleaning material and methods specifically recommended by the manufacturer's instructions.

END OF SECTION 081469

DIVISION 081613 - FIBERGLASS ENTRY DOORS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Fiberglass Entry Doors

1.2 REFERENCES

A. National Fenestration Rating Council
   1. NFRC 100 – Procedure for Determining Fenestration Product U-Factors.
   2. NFRC 200 – Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance (VT) at Normal Incidence.
   3. NFRC 400 – Procedure for Determining Fenestration Product Air Leakage.

1.3 PERFORMANCE REQUIREMENTS

A. Door Unit Air Leakage, NFRC 400, 1.57 psf (25 mph): 0.50 cfm per square foot of frame or less.

B. Door Unit Water Penetration: No water penetration through door unit when tested in accordance with ASTM E 331or ASTM E 547 with water applied at rate of 5 gallons per hour per square foot at 0 psf.

C. Doors shall have a minimum/maximum U-Value of 0.33.

D. Doors shall qualify for Energy Star Rating.

1.4 SUBMITTALS

B. Product Data: Submit door manufacturer current product literature, including installation instructions.

C. Shop Drawings: Submit manufacturer's shop drawings, indicating dimensions, construction, component connections, anchorage methods and locations, accessories, hardware locations, and installation details.

1.5 QUALITY ASSURANCE

A. Quality Assurance Submittals:
   1. Provide documentation for specified performance as required.
   2. Manufacturers’ installation instructions.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Delivery: Deliver materials to site undamaged with labels clearly identifying manufacturer, product name, and installation instructions

B. Storage: Store materials in an upright position, off ground, under cover, and protected from weather, direct sunlight, and construction activities.

C. Handling: protect materials and finish during handling and installation to prevent damage.

1.7 WARRANTY

A. Therma-Tru® standard limited warranty for fiberglass Therma-Tru® Door Product and genuine Therma-Tru® components, including rot-resistant frames and mullions sourced from Therma-Tru used in commercial and multi-residential projects will be free from material and workmanship defects for a period of three years subject to certain limitations and restrictions.

PART 2 PRODUCTS

2.1 MANUFACTURER

A. Basis of design:
Therma-Tru Corp.
1750 Indian Wood Circle
Maumee, OH 43537
(419) 891-7400
(800) 843-7628
www.thermatru.com

B. Substitutions: Not permitted

2.2 FIBERGLASS ENTRY DOORS

A. Fiberglass Entry Doors: All fiberglass doors manufactured by Therma-Tru®. Specification is for complete entry systems with components manufactured by Therma-Tru® and assembled by independent fabricators.

1. Select Smooth Star

2. Construction:

a. Smooth Star:
1/16-inch minimum thickness, proprietary fiberglass-reinforced thermoset composite, surface lightly textured. Door edges are machinable kiln-dried pine, primed, lock edge reinforced with engineered lumber core, lockset area reinforced with solid blocking for hardware backup. Door bottom edge is moisture- and decay-resistant composite. Core is foamed-in-place polyurethane, density 1.9 pcf minimum.

3. Door Style:

c. Smooth-Star®
1. Enter Style Number: S100 (size as indicated on Drawings).

B. Frames: Provided and assembled by third party fabricators to exacting specifications from Therma-Tru to help maximize system performance. Therma-Tru® rot-resistant frames and mullions sourced from Therma-Tru.
   1. Milled from 5/4 kiln-dried material with profiled ½" stop and 6 degree sill gain prep.
   2. Jamb Width Standard 4 9/16".
   3. Rot Resistant – frames, mullions, and brickmould sourced through Therma-Tru.

C. Sills
   1. Coastal

2.3 HARDWARE

A. Hinges: Steel, 4 x 4 x 0.098 inches finished to match hardware, plated screws to match.

   1. Finish: US32D stainless steel.

B. Locking Hardware:
   1. Multi-point lock system includes stainless steel face plate.

2.4 INSTALLATION ACCESSORIES

A. Sill pan

B. Corner seal pad

C. Rain deflector

D. Rain Guard

PART 3 EXECUTION

3.1 EXAMINATION

A. Examine areas to receive doors. Notify Architect in writing any unacceptable conditions that would adversely affect installation or subsequent performance of the product. Do not proceed with installation until unsatisfactory conditions are corrected.

3.2 INSTALLATION

A. Install fiberglass doors in full compliance with Therma-Tru® written instructions and approved shop drawings.

B. Maintain alignment and compatibility with adjacent work.

3.3 FINISHING

A. Finish in compliance with Therma-Tru® written recommendations.

3.4 Protection

A. Protect installed products until completion of project.
B. Touch-up, repair or replace damaged products prior to Substantial Completion in accordance with Therma-Tru written recommendations.

END OF SECTION - 081613

SECTION 099113 - EXTERIOR PAINTING

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes surface preparation and the application of paint systems on **exterior substrates. The following exterior substrates:**
   1. Fiberglass.
   2. Wood.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product. Include preparation requirements and application instructions.

B. Samples: For each type of paint system and each color and gloss of topcoat.

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. Dulux (formerly ICI Paints); a brand of AkzoNobel.
   3. PPG Architectural Finishes, Inc.
   4. Sherwin-Williams Company (The).

B. Products: Subject to compliance with requirements, **available products that may be incorporated into the Work include, but are not limited to products** listed in the Exterior Painting Schedule for the paint category indicated. Paint Schedule based on paints by The Sherwin-Williams Company.

2.2 PAINT, GENERAL

A. 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.

B. Colors: **As selected from manufacturer's full range**.

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 for 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.

3.3 APPLICATION

A. Apply paints according to manufacturer's written instructions and recommendations.

B. 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. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, and leave in an undamaged condition.

B. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.5 EXTERIOR PAINTING SCHEDULE (based on The Sherwin-Williams Company paints)

A. Wood Substrates:

1. Prime Coat (1 coat): Multi-Purpose Latex Primer/Sealer

2. Finish Coat (2 coats): Duration Exterior Acrylic Latex, Semi-Gloss

B. Fiberglass Substrates:

1. Prime Coat (1 coat): Multi-Purpose Latex Primer/Sealer

2. Finish Coat (2 coats): Duration Exterior Acrylic Latex, Semi-Gloss

C. Metal Substrates:

1. Prime Coat (1 coat): Pro-Cryl Universal Acrylic Primer

2. Finish Coat (2 coats): DTM Acrylic Coating

END OF SECTION 099113

SECTION 014200 - REFERENCES

PART 1 - GENERAL

1.1 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.

1.2 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.

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.

1.3 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 indicated in Gale's "Encyclopedia of Associations: National Organizations of the U.S." or in Columbia Books' "National Trade & Professional Associations of the United States."

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 014200

SECTION 015000 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes requirements for temporary utilities, support facilities, and security and protection facilities.

1.2 USE CHARGES

A. General: Installation and removal of and use charges for temporary facilities shall be included in the Contract Sum unless otherwise indicated. Allow other entities to use temporary services and facilities without cost, including, but not limited to Owner, Architect, and authorities having jurisdiction.

1.3 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.

1.4 PROJECT CONDITIONS

PART 2 - PRODUCTS

2.1 MATERIALS

2.2 TEMPORARY FACILITIES

A. Field Offices, General: Prefabricated or mobile units with serviceable finishes, temperature controls, and foundations adequate for normal loading.

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.

2.3 EQUIPMENT

A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.

B. Self-Contained Toilet Units: Single-occupant units of chemical, aerated recirculation, or combustion type; vented; fully enclosed with a glass-fiber-reinforced polyester shell or similar nonabsorbent material.

C. Drinking-Water Fixtures: Containerized, tap-dispenser, bottled-water drinking-water units, including paper cup supply.
   1. Where power is accessible, provide electric water coolers to maintain dispensed water temperature at 45 to 55 deg.

D. Electrical Outlets: Properly configured, NEMA-polarized outlets to prevent insertion of 110- to 120-V plugs into higher-voltage outlets; equipped with ground-fault circuit interrupters, reset button, and pilot light

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work and as directed by the Owner. Relocate and modify facilities as required by progress of the Work.

B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed.

3.2 TEMPORARY UTILITY INSTALLATION

A. General: Install temporary service or connect to existing service.

   1. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.

B. Sanitary Facilities: Provide temporary toilets (self-contained toilet units), 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.

C. 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.

D. Ventilation and Humidity Control: Provide temporary ventilation required by construction activities for curing or drying of completed installations or for protecting installed construction

from adverse effects of high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce ambient condition required and minimize energy consumption.

E. Electric Power Service: Provide weatherproof, grounded electric power service and distribution system of sufficient size, capacity, and power characteristics required for construction operations. Do not use Owner's electrical power service. Supply portable electrical generators as required to perform work for the Project

F. Telephone Service: Provide temporary telephone service in common-use facilities for use by all construction personnel. Install **one** telephone line for each field office.

1. Provide additional telephone lines for the following:

a. Provide a dedicated telephone line for each facsimile machine in each field office.

2. At each telephone, post a list of important telephone numbers.

a. Police and fire departments.
b. Ambulance service.
c. Contractor's home office.
d. Contractor's emergency after-hours telephone number.
e. Architect's office.
f. Engineers' offices.
g. Owner's office.
h. Principal subcontractors' field and home offices.

3. Provide superintendent with cellular telephone for use when away from field office.

3.3 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 (9 m) 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.

B. Traffic Controls: Comply with requirements of authorities having jurisdiction.

1. Protect existing site improvements to remain including curbs, pavement, and utilities.
2. Maintain access for fire-fighting equipment and access to fire hydrants.

C. Parking: **Use designated areas of Owner's existing** parking areas for construction personnel.

D. Project Signs: Provide Project signs as indicated. Unauthorized signs are not permitted. Contractor shall engage an experienced sign painter to apply graphics for Project identification sign. Comply with details indicated.

1. Project Identification Sign: Provide 4’ x 8’ Project identification sign of wood frame and exterior grade plywood construction, painted, with exhibit lettering by professional sign painter, to Architect’s design and colors. List title of Project, names of Owner, Architect, Contractor, and other data required by Architect. Erect on site at location established by Architect.
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 touchup signs so they are legible at all times.

E. 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."

F. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.

G. 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.

H. 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.

I. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.

J. 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.
    1. Construct temporary enclosure for cutting and sanding of Azek closed cell PVC and James Hardie fiber cement products to prevent sawdust, shavings and debris from being blown and spread over the entire job site.

3.4 MOISTURE AND MOLD CONTROL

A. Contractor's Moisture Protection Plan: Avoid trapping water in finished work. Document visible signs of mold that may appear during construction.

B. Exposed Construction Phase: Before installation of weather barriers, when materials are subject to wetting and exposure and to airborne mold spores, protect materials from water damage.

3.5 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.

C. Termination and Removal: Remove each temporary facility when need for its service has ended, or no later than Substantial Completion.

1. Materials and facilities that constitute temporary facilities are property of Contractor. Owner reserves right to take possession of Project identification signs.

END OF SECTION 015000

SECTION 016000 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 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 012500 "Substitution Procedures" for requests for substitutions.

1.2 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 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 specific manufacturer's product is named and accompanied by the words "basis-of-design product," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of additional manufacturers named in the specification.

1.3 ACTION SUBMITTALS

A. Comparable Product Requests: Submit request for consideration of each comparable product. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

1. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within one week of receipt of a comparable product request. Architect will notify Contractor of approval or rejection of proposed comparable

product request within **14** days of receipt of request, or **seven** days of receipt of additional information or documentation, whichever is later.

a. Form of Approval: 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.

1.4 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.

1.5 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.

1.6 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. Refer to 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 not in conflict with 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.

B. Product Selection Procedures:

1. 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.

2. 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.
3. Products:

    a. Restricted List: 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**.
    b. Nonrestricted List: Where Specifications include a list of names of both available manufacturers and products, provide one of the products listed, or an unnamed product, that complies with requirements. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product.

4. Manufacturers:

    a. Restricted List: 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**.
    b. Nonrestricted List: Where Specifications include a list of available manufacturers, provide a product by one of the manufacturers listed, or a product by an unnamed manufacturer, that complies with requirements. Comply with requirements in "Comparable Products" Article for consideration of an unnamed manufacturer's product.

5. 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.

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: 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 the proposed product does not require revisions to the Contract Documents, that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.
2. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
3. Evidence that proposed product provides specified warranty.
4. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.
5. Samples, if requested.

PART 3 - EXECUTION (Not Used)

END OF SECTION 016000

SECTION 017300 - EXECUTION

PART 1 - GENERAL

1.1 SUMMARY

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

1.2 QUALITY ASSURANCE

A. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.

   1. 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.

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 work, investigate and

verify the existence and location of **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 roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
2. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
3. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.

C. 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 according to requirements in Section 013100 "Project Management and Coordination."

3.3 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.

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: Do not use tools or equipment that produce harmful 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 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 required per manufacturer’s instructions or directed by Architect.
2. Allow for building movement, including thermal expansion and contraction.

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. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

3.4 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. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, using methods least likely to damage elements retained or adjoining construction.

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

F. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other work. Patch with durable seams that are as invisible as practicable. 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.
3. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition and ensures thermal and moisture integrity of building enclosure.

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

3.5 PROGRESS CLEANING

A. 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 (27 deg C).
3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.

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.

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 assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.6 PROTECTION OF INSTALLED CONSTRUCTION

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

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

END OF SECTION 017300

SECTION 017700 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:

1. Substantial Completion procedures.
2. Final completion procedures.
3. Warranties.
4. Final cleaning.
5. Repair of the Work.

1.2 SUBSTANTIAL COMPLETION PROCEDURES

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

B. Submittals Prior to Substantial Completion: Complete the following a minimum of **10** days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.

1. Certificates of Release: Obtain and submit releases from authorities having jurisdiction permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
2. Submit closeout submittals specified in other Division 01 Sections, including project record documents, operation and maintenance manuals, and similar final record information.
3. Submit closeout submittals specified in individual Sections, including specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
4. Submit maintenance material submittals specified in individual Sections, including tools, spare parts, extra materials, and similar items, and deliver to location designated by **Owner.** Label with manufacturer's name and model number where applicable.
5. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.

C. Procedures Prior to Substantial Completion: Complete the following a minimum of **10** days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.

1. Advise Owner of pending insurance changeover requirements.

2. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
3. Complete final cleaning requirements, including touchup painting.
4. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

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

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected. If Work identified in previous inspections is still incomplete during reinspection and an additional reinspection is needed before certificate will be issued, the Contractor will be responsible for the Architect’s fees associated with any additional reinspections beyond the initial reinspection.
2. Results of completed inspection will form the basis of requirements for final completion.

1.3 FINAL COMPLETION PROCEDURES

A. Preliminary Procedures: Before requesting final inspection for determining final completion, complete the following:

1. Submit a final Application for Payment according to Section 012900 "Payment Procedures."
2. Certified List of Incomplete Items: Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. Certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
3. Certificate of Insurance: Submit evidence of final, continuing insurance coverage complying with insurance requirements.
4. Instruct Owner's personnel in operation, adjustment, and maintenance of products.

B. Inspection: Submit a written request for final inspection to determine acceptance. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected. If Work identified in previous inspections is still incomplete during reinspection and an additional reinspection is needed before certificate will be issued, the Contractor will be responsible for the Architect’s fees associated with any additional reinspections beyond the initial reinspection.

1.4 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

A. Organization of List: Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction. **Use CSI Form 14.1A.**

1. Organize list of spaces in sequential order, **starting with exterior areas first and proceeding from lowest floor to highest floor**.
2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
3. Submit list of incomplete items in the following format:
   a. Five paper copies unless otherwise indicated. Architect, will return **two** copies.

1.5 SUBMITTAL OF PROJECT WARRANTIES

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

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

1. Bind warranties and bonds in heavy-duty, three-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch (215-by-280-mm) paper.
2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.

C. Provide additional copies of each warranty to include in operation and maintenance manuals.

PART 2 - PRODUCTS

2.1 MATERIALS

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

PART 3 - EXECUTION

3.1 FINAL CLEANING

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

B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.

1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a designated portion of Project:

a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
d. Remove tools, construction equipment, machinery, and surplus material from Project site.
e. Clean exposed exterior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances.
f. Remove debris and surface dust from limited access spaces
g. Clean transparent materials, including glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials.
h. Remove labels that are not permanent.
i. Wipe surfaces of mechanical and electrical equipment and similar equipment. Remove excess lubrication, paint and other foreign substances.
j. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency.
k. Leave Project clean.

3.2 REPAIR OF THE WORK

A. Complete repair and restoration operations before requesting inspection for determination of Substantial Completion.

B. Repair or remove and replace defective construction. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment. Where damaged or worn items cannot be repaired or restored, provide replacements. Remove and replace operating components that cannot be repaired. Restore damaged construction and permanent facilities used during construction to specified condition.

1. Remove and replace chipped, scratched, and broken glass and other damaged transparent materials.
2. Touch up and otherwise repair and restore marred or exposed finishes and surfaces. Replace finishes and surfaces that already show evidence of repair or restoration.

    a. Do not paint over "UL" and other required labels and identification, including mechanical and electrical nameplates. Remove paint applied to required labels and identification.
3. Replace burned-out bulbs, bulbs noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.

END OF SECTION 017700

PUNCH LIST

Project: _____ From (A/E): _____

_____ Site Visit Date: _____

To (Contractor): _____ A/E Project Number: _____

_____ Contract For: _____

The following items require the attention of the Contractor for completion or correction. This list may not be all-inclusive, and the failure to include any items on this list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

Item Number	Room Number	Location (Area)	Description	Correction/Completion DateA/E	Verification Check

[] Attachments

Signed by: Date:

Copies: [] Owner [] Consultants [] _____ [] _____ [] _____ [] _____ [] _____ [] _____ [] _____ [] File

SECTION 017823 - OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for preparing maintenance manuals, including the following:
   1. Product maintenance manuals.

1.2 CLOSEOUT SUBMITTALS

A. Manual Content: Product maintenance manual content is specified in individual Specification Sections to be reviewed at the time of Section submittals. Submit reviewed product maintenance manual content formatted and organized as required by this Section.

B. Format: Submit product maintenance manual in the following format:

   1. **Two** paper copies. Include a complete directory. Enclose title pages and directories in clear plastic sleeves.

C. Manual Submittal: Submit product maintenance manual in final form prior to requesting inspection for Substantial Completion.

PART 2 - PRODUCTS

2.1 REQUIREMENTS FOR MANUAL

A. Directory: Prepare a single, comprehensive directory of maintenance data and materials, listing items and their location to facilitate ready access to desired information.

B. Organization: Unless otherwise indicated, organize manual. Manual shall contain the following materials, in the order listed:

   1. Title page.
   2. Table of contents.
   3. Manual contents.

C. Title Page: Include the following information:

   1. Subject matter included in manual.
   2. Name and address of Project.
   3. Name and address of Owner.
   4. Date of submittal.
   5. Name and contact information for Contractor.
   6. Name and contact information for Architect.

D. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.

E. Manual Contents: Organize into sets of manageable size.

F. Manual, Paper Copy: Submit manual in the form of hard copy, bound and labeled volumes.

1. Binders: Heavy-duty, three-ring, vinyl-covered, **loose-leaf** binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch (215-by-280-mm) paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.

a. Identify each binder on front and spine, with printed title "PRODUCT MAINTENANCE MANUAL," Project title or name, **and** subject matter of contents**, and indicate Specification Section number on bottom of spine**. Indicate volume number for multiple-volume sets.

2. Dividers: Heavy-paper dividers with plastic-covered tabs for each section of the manual. Mark each tab to indicate contents. Include typed list of products and major components included in the section on each divider, cross-referenced to Specification Section number and title of Project Manual.
3. Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.

a. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.
b. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.

2.2 PRODUCT MAINTENANCE MANUAL

A. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.

B. Source Information: List each product included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual.

C. Product Information: Include the following, as applicable:

1. Product name and model number.
2. Manufacturer's name.
3. Color, pattern, and texture.
4. Material and chemical composition.
5. Reordering information for specially manufactured products.

D. Maintenance Procedures: Include manufacturer's written recommendations and the following:

1. Inspection procedures.
2. Types of cleaning agents to be used and methods of cleaning.
3. List of cleaning agents and methods of cleaning detrimental to product.
4. Schedule for routine cleaning and maintenance.
5. Repair instructions.

E. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.

F. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

PART 3 - EXECUTION

3.1 MANUAL PREPARATION

A. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.

B. Manufacturers' Data: Where manuals contain manufacturers' standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.

END OF SECTION 017823

SECTION 017839 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 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.

1.2 CLOSEOUT SUBMITTALS

A. Record Drawings: Comply with the following:

1. Number of Copies: Submit **one** set of marked-up record prints.

B. Record Specifications: Submit **one paper copy** of Project's Specifications, including addenda and contract modifications.

C. Record Product Data: Submit **one paper copy** of each submittal.

PART 2 - PRODUCTS

2.1 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.

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. Record data as soon as possible after obtaining it.
c. Record and check the markup before enclosing concealed installations.

2. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.
3. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.

4. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.

B. Format: Identify and date each record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.

1. Record Prints: Organize record prints and newly prepared record Drawings into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
2. Identification: As follows:

a. Project name.
b. Date.
c. Designation "PROJECT RECORD DRAWINGS."
d. Name of Architect.
e. Name of Contractor.

2.2 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 **paper copy**.

2.3 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 **paper copy**.

PART 3 - EXECUTION

3.1 RECORDING AND MAINTENANCE

A. Recording: Maintain one copy of each submittal during the construction period for project record document purposes. Post changes and revisions to project record documents as they occur; do not wait until end of Project.

B. Maintenance of Record Documents and Samples: Store record documents and Samples 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.

END OF SECTION 017839

SECTION 024119 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Demolition and removal of selected portions of building or structure.

1.2 MATERIALS OWNERSHIP

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

1.3 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.

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1. Before selective demolition, Owner, Architect and Contractor will walk each building prior to start of the Project to review conditions, identify what items should be removed, and who will be responsible for removal.

C. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.

D. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.

1. If suspected hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Hazardous materials will be removed by Owner under a separate contract.

E. Storage or sale of removed items or materials on-site is not permitted.

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 ASSE A10.6 and NFPA 241.

PART 3 - EXECUTION

3.1 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

A. Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect them against damage.

3.2 PROTECTION

A. Temporary Protection: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.

B. Remove temporary barricades and protections where hazards no longer exist.

3.3 SELECTIVE DEMOLITION

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:

1. 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. Temporarily cover openings to remain.
2. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
3. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
4. Dispose of demolished items and materials promptly.

B. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

C. 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.

3.4 CLEANING

A. Remove demolition waste materials from Project site **and dispose of them in an EPA-approved construction and demolition waste landfill acceptable to authorities having jurisdiction.**

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.

B. Burning: Do not burn demolished materials.

C. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations on a daily basis. Return adjacent areas to condition existing before selective demolition operations began.

END OF SECTION 024119

SECTION 061000 - ROUGH CARPENTRY

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Framing with dimension lumber.
2. Shear wall panels.
3. Rooftop equipment bases and support curbs.
4. Wood blocking**, cants,** and nailers.
5. Wood furring **and grounds**.
6. Wood sleepers.
7. Plywood backing panels.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, 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 ALSC Board of Review. Grade lumber by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.

1. Factory mark each piece of lumber with grade stamp of grading agency.
2. Dress lumber, S4S, unless otherwise indicated.

B. Maximum Moisture Content of Lumber: **19 percent** unless otherwise indicated.

2.2 WOOD-PRESERVATIVE-TREATED LUMBER

A. Preservative Treatment by Pressure Process: AWPA U1; Use Category UC2 **for interior construction not in contact with ground, Use Category UC3b for exterior construction not in contact with ground, and Use Category UC4a for items in contact with ground**.

1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium. **Do not use inorganic boron (SBX) for sill plates.**

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

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

D. Application: Treat **items indicated on Drawings, and the following:**

1. Wood cants, nailers, curbs, equipment support bases, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers, and waterproofing.
2. Wood sills, sleepers, blocking, **furring, stripping,** and similar concealed members in contact with masonry or concrete.
3. Wood framing members that are less than 18 inches (460 mm) above the ground.
4. Wood floor plates that are installed over concrete slabs-on-grade.

2.3 DIMENSION LUMBER FRAMING

A. Non-Load-Bearing Interior Partitions: **Standard, Stud, or No. 3** grade.

1. Application: **Interior partitions not indicated as load bearing**.
2. Species:

    a. Southern pine or mixed southern pine; SPIB.
    b. Northern species; NLGA.
    c. Eastern softwoods; NeLMA.
    d. Western woods; WCLIB or WWPA.

B. Framing Other Than Non-Load-Bearing Partitions: **Construction or No. 2** grade.

1. Application: Framing other than **interior partitions not indicated as load bearing**.
2. Species:

    a. Hem-fir (north); NLGA.
    b. Douglas fir-larch; WCLIB or WWPA.
    c. Southern pine or mixed southern pine; SPIB.
    d. Spruce-pine-fir; NLGA.
    e. Douglas fir-south; WWPA.
    f. Hem-fir; WCLIB or WWPA.
    g. Douglas fir-larch (north); NLGA.
    h. Spruce-pine-fir (south); NeLMA, WCLIB, or WWPA.

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. Nailers.
3. Rooftop equipment bases and support curbs.
4. Cants.
5. Furring.
6. Grounds.

B. Dimension Lumber Items: **Standard, Stud, or No. 3** grade lumber of any species.

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

1. Mixed southern pine or southern pine; No. **3** grade; SPIB.
2. Eastern softwoods; No. **3** Common grade; NeLMA.
3. Northern species; No. **3** Common grade; NLGA.
4. Western woods; **Standard or No. 3 Common** grade; WCLIB or WWPA.

2.5 FASTENERS

A. General: Fasteners shall be of size and type indicated and shall comply with requirements specified in this article for material and manufacture.

1. Where rough 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. Power-Driven Fasteners: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC70.

2.6 METAL FRAMING ANCHORS

A. Allowable design loads, as published by manufacturer, shall meet or exceed those **indicated**. Manufacturer's published values shall be determined from empirical data or by rational engineering analysis and demonstrated by comprehensive testing performed by a qualified independent testing agency. Framing anchors shall be punched for fasteners adequate to withstand same loads as framing anchors.

B. Galvanized-Steel Sheet: Hot-dip, zinc-coated steel sheet complying with ASTM A 653/A 653M, G60 (Z180) coating designation.

1. Use for interior locations unless otherwise indicated.

C. Hot-Dip, Heavy-Galvanized Steel Sheet: ASTM A 653/A 653M; structural steel (SS), high-strength low-alloy steel Type A (HSLAS Type A), or high-strength low-alloy steel Type B (HSLAS Type B); G185 (Z550) coating designation; and not less than 0.036 inch (0.9 mm) thick.

1. Use for wood-preservative-treated lumber and where indicated.

2.7 MISCELLANEOUS MATERIALS

A. Adhesives for Gluing **Furring and Sleepers** to Concrete or Masonry: Formulation complying with ASTM D 3498 that is approved for use indicated by adhesive manufacturer.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Framing Standard: Comply with AF&PA's WCD 1, "Details for Conventional Wood Frame Construction," unless otherwise indicated.

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

C. Install metal framing anchors to comply with manufacturer's written instructions. Install fasteners through each fastener hole.

D. Comply with AWPA M4 for applying field treatment to cut surfaces of preservative-treated lumber.

E. Securely attach rough carpentry work to substrate by anchoring and 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 ICC's International Residential Code for One- and Two-Family Dwellings.
2. ICC-ES evaluation report for fastener.

END OF SECTION 061000

SECTION 061600 - SHEATHING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Wall sheathing.

PART 2 - PRODUCTS

2.1 PRESERVATIVE-TREATED PLYWOOD

A. Preservative Treatment by Pressure Process: AWPA U1; **Use Category UC3b for exterior construction not in contact with ground, and Use Category UC4a for items in contact with ground**.

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**.

2.2 WALL SHEATHING

A. Plywood Sheathing: **DOC PS 1 Exposure 1, Structural I** sheathing.

2.3 FASTENERS

A. General: Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacture.

1. For **wall** sheathing, provide fasteners **Type 304 stainless steel**.

2.4 MISCELLANEOUS MATERIALS

A. Adhesives for Field Gluing Panels to Wood Framing: Formulation complying with **APA AFG-01** and **ASTM D 3498** that is approved for use with type of construction panel indicated by manufacturers of both adhesives and panels.

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. Coordinate **wall** 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.

E. Do not bridge building expansion joints; cut and space edges of panels to match spacing of structural support elements.

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** to wood framing.**Apply a continuous bead of glue to framing members at edges of wall sheathing panels.**
b. Space panels 1/8 inch (3 mm) apart at edges and ends.

END OF SECTION 061600

SECTION 066000 - PLASTIC FABRICATIONS

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Cellular pvc trim boards for corner boards, soffits, fascias, band boards, rake boards, architectural millwork and door/window trim.

1.02 REFERENCES

A. ASTM D792 - Density and Specific Gravity of Plastics by Displacement.

B. ASTM D570 - Water Absorption of Plastics.

C. ASTM D638 - Tensile Properties of Plastics.

D. ASTM D790 - Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials.

E. ASTM D1761 - Mechanical Fasteners in Wood.

F. ASTM D5420 - Standard Test Method for Impact Resistance of Flat, Rigid Plastic Specimen by means of a Striker Impacted by a Falling Weight.

G. ASTM D256 - Determining the Pendulum Impact Resistance of Plastics.

H. ASTM D696 - Coefficient of Linear Thermal Expansion of Plastics Between -30°C and 30°C with a Vitreous silica Dilatometer.

I. ASTM D635 - Rate of Burning and/or Extent and Time of Burning of Plastics in a Horizontal Position.

J. ASTM E84 - Surface Burning Characteristics of Building Materials.

K. ASTM D648 - Deflection Temperature of Plastics Under Flexural Load in the Edgewise Position.

L. ASTM D3679 - Standard Specification for Rigid Poly Vinyl Chloride (PVC) Siding.

1.03 SUBMITTALS

A. General: Submit listed submittals in accordance with Conditions of the Contract and Division 1 Submittal Procedures Section.
B. Product Data: Submit product data, manufacturer's catalogs, SPEC-DATA® product sheet, for specified products.

C. Samples: Submit three material samples representative of the texture, thickness and widths shown and specified herein.

1.04 QUALITY ASSURANCE

A. Regulatory Requirements: Check with Local Building Code for installation requirements.

B. Allowable Tolerances:
1. Variation in component length: -0.00 / +1.00”
2. Variation in component width: ± 1/16”
3. Variation in component thickness: ± 1/16”
4. Variation in component edge cut: ± 2°
5. Variation in Density -0% + 10%

C. Workmanship, Finish, and Appearance:
1. Free foam cellular pvc that is homogeneous and free of voids, holes, cracks, and foreign inclusions and other defects. Edges must be square, and top and bottom surfaces shall be flat with no convex or concave deviation.
2. Uniform surface free from cupping, warping, and twisting.

1.05 DELIVERY, STORAGE AND HANDLING

A. Trim materials should be stored on a flat and level surface on a full shipping pallet. Handle materials to prevent damage to product edges and corners. Store materials under a protective covering to prevent jobsite dirt and residue from collecting on the boards.

1.06 WARRANTY

A. Provide manufacturer’s 25 year warranty against defects in manufacturing that cause the products to rot, corrode, delaminate, or excessively swell from moisture.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Acceptable products: AZEK® Trimboards manufactured by Vycom Corporation, 801 Corey Street, Moosic, PA 18507.

B. Material: Free foam cellular pvc material with a small-cell microstructure and density of .55 grams/cm3.

1. Material shall have a minimum physical and performance properties specified in Section C on the following page.

C. Performance and physical characteristic requirements:

PROPERTY	UNITS	VALUE	ASTM METHOD
PHYSICAL			
Density	g/cm³	0.55	D 792
Water Absorption	%	0.15	D 570
MECHANICAL			
Tensile Strength	psi	2256	D 638
Tensile Modulus	psi	144,000	D 638
Flexural Strength	psi	3329	D 790
Flexural Modulus	psi	144,219	D 790
Nail Hold	Lbf/in of penetration	35	D 1761
Screw Hold	Lbf/in of penetration	680	D 1761
Staple Hold	Lbf/in of penetration	180	D 1761
Gardner Impact	in-lbs	103	D 5420
Charpy Impact (@23°C)	ft-lbs	4.5	D 256
THERMAL			
Coefficient of Linear Expansion	in/in/°F	3.2 x 10-5	D 696
Burning Rate	in/min	No burn when flame removed	D 635
Flame Spread Index	--	25	E 84
Heat Deflection Temp 264 psi	°F	150	D 648
Oil Canning (@140°F)	°F	Passed	D 648

D. PVC Trimboard:
1. Size:
   a. Nominal Width: As required per Construction Drawings.
   b. Nominal Thickness: 5/4 inch (1 inch actual size)
   c. Length: 20 feet
2. Finish:
   a. Traditional – smooth

E. PVC Sheet Board:
1. Size:
   a. Width x Length: 4 foot x 8 foot
   b. Thickness: 1 inch
2. Finish:
   a. Traditional – smooth

F. PVC Exterior Cornerboard:
1. Size:
   a. Nominal Corner Width: 4 inches
   b. Nominal Thickness: 5/4 inch (1inch actual size)
   c. Length: 20 feet
2. Finish:
   a. Traditional – smooth

F. PVC Interior Cornerboard:

1. Size:
    a. Nominal Corner Width: As required.
    b. Nominal Thickness: 5/4 inch (1 inch actual size)
    c. Length: 20 feet
2. Finish:
    a. Traditional – smooth

G. PVC Window and Door Trim:
1. Size:
    a. Nominal Width: 4 inches
    b. Nominal Thickness: 5/4 inch (1 inch actual size)
    c. Length: 20 feet
2. Finish:
    a. Traditional – smooth

H. PVC Beadboard:
1. Size:
    a. Width: 3 1/2 inch
    b. Thickness: 5/8 inch
    c. Length: 18 feet
2. Finish:
    a. Traditional - smooth

2.02 ACCESSORY PRODUCTS

A. Fasteners:
• Fasstenmaster Cortex Hidden Fastening System with stainless steel TORX ttap fasteners and AZEK plugs. Plugs must be AZEK plugs, as each closed cell PVC manufacturer color differs from others). No square head fasteners.
• Nails, Staples, small brads and wire nails must not be used as fastening members.
• The fasteners should be long enough to penetrate the solid wood substrate a minimum of 1 1/2”.
• Use 2 fasteners per every framing member for trimboards applications. Trimboards 12” or wider, as well as sheets, will require additional fasteners.
• Fasteners must be installed no more than 2” from the end of each board.
• AZEK should be fastened into a flat, solid substrate. Fastening AZEK into hollow or uneven areas must be avoided.
• Pre-drilling is typically not required unless a large fastener is used or product is installed in low temperatures.
• 3/8” and 1/2” sheet product is not intended to be ripped into trim pieces. These profiles must be glued to a substrate and mechanically fastened.

B. Adhesives:
• Glue all AZEK to AZEK joints such as window surrounds, long fascia runs, etc. with AZEK Adhesive, a cellular pvc cement, to prevent joint separation.
• The glue joint should be secured with a fastener and/or fastened on each side of the joint to allow adequate bonding time.

• AZEK Adhesive has a working time of 10 minutes and will be fully cured in 24 hours.
• If standard pvc cements are used, keep in mind these products typically cure quickly which will result in limited working time and may reduce adhesive strength.
• Surfaces to be glued should be smooth, clean and in complete contact with each other.
• To bond AZEK to other substrates, various adhesives may be used. Consult adhesive manufacturer to determine suitability.

C. Sealants:
• Use urethane, polyurethane or acrylic based sealants without silicone. Page 3 of 4

2.03 FINISHES

A. AZEK products do not require paint for protection, but may be painted to achieve a custom color.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Manufacturers instructions:
• Comply with manufacturer's product catalog installation instructions and product technical bulletin instructions.

B. Cutting:
• AZEK products can be cut using the same tools used to cut lumber.
• Carbide tipped blades designed to cut wood work well. Avoid fine tooth metal cutting blades.
• Rough edges from cutting may be caused by excessive friction, poor board support, or worn or improper tooling.

C. Drilling
• AZEK products can be drilled using the same tools used to drill lumber.
• Drilling AZEK products is similar to drilling a hardwood. Care should be taken to avoid frictional heat buildup.
• Use standard woodworking drills. Do not use drills made for normal rigid pvc.
• Periodic removal of AZEK shavings from the drill hole may be necessary.

D. Milling
• AZEK products can be milled using standard milling machines used to mill lumber.
• Relief Angle 20° to 30°
• Cutting speed to be optimized with the number of knives and feed rate.

E. Routing
• AZEK products can be routed using standard router bits and the same tools used to rout lumber.
• Carbide tipped router bits are recommended.

F. Edge Finishing
- Edges can be finished by sanding, grinding or filing with traditional woodworking tools.

G. Nail Location
- Use 2 fasteners per every framing member for trimboard applications.
- Trimboards over 12” or wider, as well as sheets, will require additional fasteners.
- Fasteners must be installed no more than 2” from the end of each board.

H. Thermal Expansion and Contraction
- AZEK products expand and contract with changes in temperature.
- Properly fastening AZEK material along its entire length will minimize expansion and contraction.
- When properly fastened, allow for 1/8” per 18 foot of AZEK product for expansion and contraction.
- Joints between pieces of AZEK should be glued to eliminate joint separation. When gaps are glued on a long run of AZEK, allow expansion and contraction at ends of the run.

I. Joints for Long Runs
- Use scarf joints with two fasteners on each side instead of butt joints

END OF SECTION 066000

SECTION 066300 – PLASTIC RAILING

PART 1 GENERAL

1.02 Summary

A. This section includes the following:
    1. Polyvinyl chloride (PVC) handrail components.
    2. Polyvinyl chloride Post Wraps
    3. Brackets

1.03 Definitions

A. Handrails
B. Post Wraps
C. Brackets

1.04 Submittals

A. Product Data: In the form of manufacturer’s technical data, specifications, and installations for handrails and accessories.
B. Shop Drawings showing handrail design.

1.05 Quality Assurance

A. Installer Qualifications: Engage an experienced installer who has at least three years experience and has completed at least five PVC railing projects with same material and of similar scope to that indicated for this project with a successful construction record of in-service performance.
B. Single-Source Responsibility: Obtain PVC handrail accessories, fittings and fastenings, from a single source.

1.06 Project Conditions

A. Field Measurements: Verify layout information for handrail shown on the drawings. Verify dimensions by field measurements.

1.07 Warranty

A. Manufacturer's Warranty: 20 year non-prorated limited warranty applies to commercial applications.

PART 2 PRODUCTS

2.01 Handrail Materials

A. General: Provide PVC handrail materials recognized to be of type indicated and tested to show compliance with indicated performances, and local building codes.
B. Available Manufacturer: Subject to compliance with requirements, manufacturers offering products that may be incorporated in the work include or an approved equal manufacturer:

    1. Certainteed Evernew
    2. Fairway Grandview

2.02 Polyvinyl Chloride (PVC) Handrail Components

A. General: Handrails and accessories shall be of high impact, Ultra Violet (U.V.) resistant, rigid PVC, and shall comply with ASTM D 1784, Class 14344B.
    1. Height: 36” per Building Code.
    2. Color: White
B. Handails: One piece extruded, of lengths indicated not pre-routed to receive balusters.
C. Post Caps: Molded, one piece.
D. Post Wrap with decorative base.
E. Accessories: Manufacturers’ standard and other accessories as required.

2.03 Miscellaneous Materials

A. Fasteners: Stainless steel or to be concealed or colored heads to match. Provide sizes as recommended by manufacturer.
B. Brackets: Provide stainless steel bracket for wall mount.

PART 3 EXECUTION

3.01 Installation, General

A. Install handrail in locations shown in compliance with manufacturer’s written instructions. During installation, PVC components shall be carefully handled and stored to avoid contact with abrasive surfaces. Install components in sequence as recommended by railing manufacturer.

3.02 Handrail Installation.

A. Support & Post Brackets: Install and space as per manufacturer recommendations and to meet Building Code requirements.

3.03 Adjusting and Cleaning

A. Remove all traces of dirt and soiled areas.

3.04 Demonstration

A. Instruct the owner's personnel on proper maintenance of handrail components.

END OF SECTION 066300

SECTION 072500 - WEATHER BARRIER

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Sheet applied weather barrier and related accessories for wall air/moisture barrier system.

1.2 REFERENCES

A. The American Association of Textile Chemists and Colorists (AATCC) 127 - Water Resistance: Hydrostatic Pressure Test.

B. American Society for Testing and Materials (ASTM) E-96 - Standard Test Methods for Water Vapor Transmission of Materials.

C. American Society for Testing and Materials (ASTM) D1117 - Standard Guide for Evaluating Nonwoven Fabrics.

D. American Society for Testing and Materials (ASTM) D3330 - Standard Test Method for Peel Adhesion of Pressure-Sensitive Tape1.

E. American Society for Testing and Materials (ASTM) D3759 - Standard Test Method for Tensile Strength and Elongation of Pressure-Sensitive Tapes.

F. PSTC-1 - Peel Adhesion of Single Coated Pressure-Sensitive Tapes at 180 Degree Angle.

G. TAPPI T-460 - Porosity - Gurley.

1.3 SYSTEM DESCRIPTION

A. The airtight components and secondary moisture protection of the building enclosure and the joints, junctures and transitions between materials, products, and assemblies forming the air-tightness and moisture barrier of the building enclosure are called "the air/moisture barrier system".

B. Air Barrier Penetrations: All penetrations of the air/moisture barrier and paths of air infiltration / exfiltration through the air/moisture barrier system shall be made air-tight.

C. Moisture Barrier Penetrations: All penetrations of the air/moisture barrier and paths of water migration through the air/moisture barrier system shall be made water shedding.

1.4 SUBMITTALS

A. Submit under provisions of Section 01300.

B. Product Data: Manufacturer's data sheets on each product to be used, including:
1. Preparation instructions and recommendations.

2. Storage and handling requirements and recommendations.
3. Installation methods.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: Minimum of 2 years experience with installation of similar products.

B. Mock-Up: Provide a mock-up for evaluation of surface preparation and sealing techniques and application workmanship.
1. Finish areas designated by Architect.
2. Do not proceed with remaining work until workmanship is approved by Architect.
3. Repair mock-up area as required to produce acceptable work.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.

B. Do not store in direct sunlight. Weather barrier shall be stored in a covered area. Do not expose to building site chemicals.

C. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.7 PROJECT CONDITIONS

A. Anticipate environmental conditions and schedule installation when conditions are within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.8 WARRANTY

A. Product Warranty: Limited product warranty against manufacturing defects.
1. HardieWrap Weather Barrier and related products for 10 years.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: James Hardie Building Products, Inc., which is located at: 26300 La Alameda Suite 400 ; Mission Viejo, CA 92691; Toll Free Tel: 866-274-3464; Tel: 949-367-4980; Fax: 949-367-4981; Email: request info (info@jameshardie.com); Web: www.jameshardiecommercial.com

B. Requests for approval of equal substitutions will be considered in accordance with provisions of Section 01600.

2.2 WEATHER BARRIER SYSTEM

A. Moisture Air Barrier Sheet:
1. Product: HardieWrap Weather Barrier as manufactured by James Hardie Building Systems.

2. Composition: Non-woven, non-perforated polyolefin.
3. Film: MicroTech Coating with micropores to balance water holdout and breathability.
4. Thickness: 11 mil (0.28 mm).
5. UV Stability: Up to 180 days.
6. Water Holdout (AATCC127): 128 inches (3250 mm).
7. Breathability/Water Vapor Permeance (ÅSTM E-96A): 15 perms.
8. Air Resistance (TAPPI T-460): >1800 sec/100 cc.
9. Tear Strength (ÅSTM D1117): 15 to 18 lb (6.8 to 8.2 kg).
10. Basis Weight: 19.4 lbs/1000 sf (9.5 kgs/100 sm).
11. Sizes: 3 feet by 195 feet (914 mm by 59.4 m), 9 feet by 100 feet (2743 mm by 30.5 m), 9 feet by 150 feet (2743 mm by 45.7 m), 10 feet by 100 feet (3048 mm by 30.5 m), 10 feet by 150 feet (3048 mm by 45.7 m).

B. Self-adhering Flashing: Designed for peel and stick application.
1. Product: HardieWrap Flashing as manufactured by James Hardie Building Systems.
2. Composition: Butyl rubber adhesive non-woven polyolefin backing; coated Kraft paper release.
3. Total Thickness: 25 mil (0.64 mm).
4. UV Stability: Up to 180 days.
5. Application Temperature: 30 degree F to 180 degree F (-1 degree C to 82 degree C).
6. Operating Temperature: -30 degree F to 200 degree F (-34 degree C to 93 degree C).
7. Packaging: Individually shrink-wrapped.
8. Roll Weight: 4 inch (102 mm) = 4.6 lb (2 kg)/roll, 6 inches (152 mm) = 6.9 lb (3 kg) /roll, 9 inches (229 mm) = 9.9 lb (4.5 kg)/roll.
9. Provide Width for Application Required: 4 inches by 100 feet (102 mm by 30.5 m) (2x4 construction), 6 inches by 100 feet (152 mm by 30.5 m) (2x4 construction), 9 inches by 100 feet (229 mm by 30.5) (2x6 construction).

C. Flexible Flashing:
1. Product: HardieWrap Flex Flashing as manufactured by James Hardie Building Systems.
2. Composition: Butyl rubber adhesive; creped cross-laminated polyolefin backing; polyethylene film release.
3. Total Thickness: 60 mil (1.5 mm).
4. Tensile Strength (ÅSTM D3759): 18 lb/inch (3.2kg/cm).
5. UV Stability: Up to 180 days.
6. Water Vapor Transfer Rate (ÅSTM E96-94): <.2g/100 square inches/24hrs.
7. Application Temperature: 30 degree F to 180 degree F (-1 degree C to 82 degree C).
8. Operating Temperature: -30 degree F to 200 degree F (-34 degree C to 93 degree C).
9. Packaging: Each roll is packed in a convenient dispenser box
10. Roll Weight: 6 inches (152 mm) = 22.2 lb (10kg)/roll, 9 inches (229 mm) = 33.3 lb (15 kg)/roll.
11. Provide Width for Application Required: 6 inches by 75 feet (152 mm by 23.9 m) (2x4 construction), 9 inches by 75 feet (229 mm by 23.9) (2x6 construction).

D. Seam Tape:
1. HardieWrap Seam Tape as manufactured by James Hardie Building Systems.
2. Composition: Polypropylene film coated with acrylic adhesive Total Thickness: 3.0 mil (.08 mm).
3. Adhesion Peel to HardieWrap (PSTC-1): 22 oz/inch (25 N/100 mm).
4. Tensile Strength (ÅSTM D3759): 32 lb/in (.58 kg/mm).
5. Elongation: 136 percent.
6. UV Stability: Up to 90 days.
7. Application Temperature: 30 degree F to 180 degree F (-1 degree C to 82 degree C).
8. Operating Temperature: -30 degree F to 200 degree F (-34 degree C to 93 degree C).
9. Packaging: Individually shrink-wrapped.
10. Roll Weight: 1 lb(0.5 kg)/roll.
11. Roll Size: 1-7/8 inches (43 mm) by 165 feet (50 m).

2.3 DRAINAGE MATERIAL

A. Drainage Material: Product comprises of ¼" thick closed-cell extruded polystyrene (XPS) thermoformed with contoured drainage channels on both sides. Product shall maintain a continuous open space between water-resistive barrier and exterior cladding to create a drainage plane and shall be used under **siding**. Fasten with corrosion resistant fastener (roofing nail or screw type) with metal or plastic washer as recommended by manufacturer for condition.

1. Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a.Kingspan Insulation, LLC.
1)Greenguard DC14 Drainage Mat

PART 2 EXECUTION

2.1 EXAMINATION

A. Do not begin installation until substrates have been properly prepared.

B. If framing preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

2.2 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

C. Weather barrier shall be installed before window and door installation. Do not install on saturated sheathing. Weather barrier can become slippery and should not be

used in any application where it may be walked on.

D. Weather barrier shall be installed on vertical wall applications only.

E. Manufacturer warrants weather barrier sheet only when covered within 180 days of its installation.

2.3 INSTALLATION

A. Moisture Air Barrier Sheet:
1. Weather barrier shall be installed before window and door installation. Do not install on saturated sheathing. Weather barrier can become slippery and should not be used in any application where it may be walked on.
2. Begin by affixing weather barrier extending at least 6 inches (152 mm) around a building corner. Unroll horizontally (with print side facing out) around the building covering rough window and door openings.
3. Fasten to studs or nailable sheathing material with galvanized construction grade staples or roofing nails a maximum of 18 inches (457 mm) in the vertical and horizontal direction.
4. Attach weather barrier so that it is taut and flat. The vertical overlap shall have a minimum of 6 inches (152 mm) and the vertical seam shall be taped.
5. Assure that the bottom edge of the weather barrier extends over the sill plate and foundation interface by at least 1 inch (25 mm).
6. Overlap upper layers of weather barrier (in shingle lap fashion) by a minimum of 6 inches below the horizontal edge, and tape the horizontal seam line.
7. At roof to wall intersection (or wall to deck), affix wrap to the wall such that it overlaps any step flashing already in place on the wall by at least 2 inches (51 mm).

B. Flexible Flashing:
1. Windows and Doors: Weather barrier is not designed nor guaranteed as a flashing material to prevent moisture or air from intruding behind weather barrier. Verify that flashing has previously been installed around all windows and door openings. Install flexible flashing per manufacturer's instructions.
   A. Use the inverted "Y" cut method at rough window and door openings. Do not place fasteners within 9 inches (229 mm) of the rough opening, door or window heads. This area shall not be fastened to allow for proper head flashing installation. At the top corners of the rough opening, cut the weather barrier at 45 degree to extend 9 inches (229 mm) past the joint.
   B. Fold the top flap up and out of the way and fasten temporarily.
   C. Fold the remaining three flaps in through the opening fastening them inside the opening with staples.
2. Rough Electrical and Plumbing Penetrations: Seal with a double layer of flashing. Install the top flashing piece over the bottom flashing piece overlapping flashing layers to cover flashing cut-out necessary for placement around penetration.

C. Drainage Material:

1. Install drainage material over building wrap and flashing to comply with manufacturer’s written instructions.

D. Repairs: For minor punctures or tears, less than 3 inches (76 mm), cover and completely seal with seam tape. For larger holes, greater than 3 inches (76 mm), use slit flashing technique.

A. Slit flashing requires making a horizontal slit above the damaged area and placing a cut piece of weather barrier into the slit, covering the damaged area. Tape the perimeter of the patched area.

2.4 PROTECTION

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION - 072500

SECTION 074630 - FIBER CEMENT MOUNTING BLOCKS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Fiber cement mounting blocks and trim fabrications for siding penetrations and detailing.

1.2 SUBMITTALS

A. Submit under provisions of Section 01300.

B. Product Data: Manufacturer's data sheets on each product to be used, including:
   1. Preparation instructions and recommendations.
   2. Storage and handling requirements and recommendations.
   3. Installation methods.

C. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.

D. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) square, representing actual product, color, and patterns.

1.3 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.

1.4 PROJECT CONDITIONS

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

1.5 WARRANTY

A. Material Warranty: Manufacturer's standard Limited Lifetime warranty. Refer to manufacturer's website for full text of warranty.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: SturdiMount - The Tapco Group, which is located at: 29797 Beck Rd.; Wixom, MI 48393; Toll Free Tel: 800-521-8486; Fax: 888-459-3647; Email: wayne_Sanderson@tapcoint.com; Web: www.thetapcogroup.com/brands/sturdimount

B. Substitutions: Not permitted.

2.2 MATERIALS

A. Fiber Cement Fabrications: Universal 4 Mount as manufactured by SturdiMount.
   1. Material: Fiber cement, 5/4 inch trim.
   2. Application: Dryer vents, 3 5/8 inch (92 mm) and 4 1/4 inch (108 mm) porch lights, and miscellaneous applications.
   3. Size: 8-1/2 inches by 11 inches (216 mm by 279 mm).
   4. Color shall be as follows:
      a. At Hardie Shingle Siding Locations: Cobble Stone.
      b. At Hardie Lap Siding Locations: Monterey Taupe.

B. Fiber Cement Fabrications: Split Mount as manufactured by SturdiMount.
   1. Material: Fiber cement, 5/4 inch trim.
   2. Application: Hose bibs, gas lines, HVAC drip lines, insecticide ports, and miscellaneous applications.
   3. Size: 6 inches by 8-1/2 inches (152 mm by 216 mm).
   4. Color shall be as follows:
      a. At Hardie Shingle Siding Locations: Cobble Stone.
      b. At Hardie Lap siding Locations: Monterey Taupe.

C. Fiber Cement Fabrications: Receptacle Mount as manufactured by SturdiMount.
   1. Material: Fiber cement, 5/4 inch trim.
   2. Application: Receptacle outlet, and miscellaneous applications.
   3. Size: 6 inches by 8-1/2 inches (152 mm by 216 mm).
   4. Color shall be as follows:
      a. At Hardie Shingle Siding Locations: Cobble Stone.
      b. At Hardie Lap Siding Locations: Monterey Taupe.

D. Fiber Cement Fabrications: Oversized Mount as manufactured by SturdiMount.
   1. Material: Fiber cement, 5/4 inch trim.
   2. Application: 3 5/8 inch (92 mm) and 4 1/4 inch (108 mm) coach lights, and miscellaneous applications.
   3. Size: 8-1/2 inches by 15 inches (216 mm by 381 mm).
   4. Color shall be as follows:
      a. At Hardie Shingle Siding Locations: Cobble Stone.
      b. At Hardie Lap Siding Locations: Monterey Taupe.

2.3 ACCESSORIES

A. Parts and Installation Products: As required for a complete installation.
   1. ABS plastic flange.
   2. Stainless steel staples.
   3. Stainless steel roofing nails, 2-1/2 inches (64 mm) long.
   4. Stainless steel brad nails, 2 inches (51 mm) long.
   5. Caulk/Sealant.
   6. Trim coil.

PART 3 EXECUTION

3.1 EXAMINATION

A. Do not begin installation until substrates have been properly prepared.

B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 INSTALLATION

A. Universal, Oversized and Receptacle Mounts: Install in accordance with manufacturer's recommendations and as follows:
   1. Place desired mount over the proper application needed. Align and level mount parallel with siding to be installed. Nail the top three and side two flange holes with 2-1/2 inches (64 mm) stainless steel roofing nails. Leave the bottom three flange nailing holes un-nailed.
   2. Cut trim coil at least 2 inches (51 mm) wider than mount flange.
   3. Slide trim coil under bottom part of plastic flange at least 2 inches (51 mm) above flange nailing holes. Position trim coil directly below and in between siding. Nail 2-1/2 inches (64 mm) stainless steel roofing nails through the remaining bottom three flange holes.

B. Split Mounts: Install in accordance with manufacturer's recommendations and as follows:
   1. Detach bottom half of block from plastic flange by placing finger through 1 inch (25 mm) hole and then pulling down and out until block is detached. Remove remaining glue pad from the face of the plastic flange.
   2. Feed water spigot or other application through the rectangular flange hole. Slide bottom half of block back up until tight. Face nail with 2 inch (51 mm) stainless steel brad nails. Do not caulk 22.5 inches (64 mm) weather cut edge.

3.4 PROTECTION

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION 074630

SECTION 074646 - FIBER CEMENT SIDING

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Factory-finished fiber cement lap siding, shingle, soffits and accessories; James Hardie Engineered for Climate Siding.

1.2 REFERENCES

A. ASTM C1186 - Standard Specification for Flat Fiber-Cement Sheets

B. ASTM D3359 - Standard Test Method for Measuring Adhesion by Tape Test, Tool and Tape.

C. ASTM E136 - Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750 degrees C.

1.3 SUBMITTALS

A. Submit under provisions of Section 01300.

B. Product Data: Manufacturer's data sheets on each product to be used, including:
1. Preparation instructions and recommendations.
2. Storage and handling requirements and recommendations.
3. Installation methods.

C. Shop Drawings: Provide detailed drawings of atypical non-standard applications of cementitious siding materials which are outside the scope of the standard details and specifications provided by the manufacturer.

D. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.

E. Verification Samples: For each finish product specified, two samples, minimum size 4 by 6 inches (100 by 150 mm), representing actual product, color, and patterns.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: Minimum of 2 years experience with installation of similar products.

B. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
1. Finish areas designated by Architect.
2. Do not proceed with remaining work until workmanship, color, and sheen are approved by Architect.
3. Refinish mock-up area as required to produce acceptable work.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.

B. Store siding on edge or lay flat on a smooth level surface. Protect edges and corners from chipping. Store sheets under cover and keep dry prior to installing.

C. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.6 PROJECT CONDITIONS

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

1.7 WARRANTY

A. Product Warranty: Limited, non-pro-rated product warranty.
1. HardiePlank lap siding for 30 years.
2. HardieSoffit panels for 30 years.
3. HardieShingle siding for 30 years.

B. Finish Warranty: Limited product warranty against manufacturing finish defects.
1. When used for its intended purpose, properly installed and maintained according to James Hardie's published installation instructions, James Hardie's ColorPlus finish with ColorPlus Technology, for a period of 15 years from the date of purchase: will not peel; will not crack; and will not chip. Finish warranty includes the coverage for labor and material.

C. Workmanship Warranty: Application limited warranty for 2 years.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: James Hardie Building Products, Inc., which is located at: 26300 La Alameda Suite 400 ; Mission Viejo, CA 92691; Toll Free Tel: 866-274-3464; Tel: 949-367-4980; Fax: 949-367-4981; Email: request info (info@jameshardie.com); Web: www.jameshardiecommercial.com

B. Substitutions: Not permitted.

2.2 SIDING

A. HardiePlank HZ5 lap siding, HardiPanel HZ5 vertical siding, HardieSoffit HZ5 panels and HardieShingle HZ5 siding requirement for Materials:
1. Fiber-cement Siding - complies with ASTM C 1186 Type A Grade II.
2. Fiber-cement Siding - complies with ASTM E 136 as a noncombustible material.
3. Fiber-cement Siding - complies with ≈STM E 84 Flame Spread Index = 0, Smoke Developed Index = 5.
4. CAL-FIRE, Fire Engineering Division Building Materials Listing - Wildland Urban Interface (WUI) Listed Product.
5. National Evaluation Report No. NER 405 (BOCA, ICBO, SBCCI, IBC, IRC).

6. City of Los Angeles, Research Report No. 24862.
7. Miami Dade County, Florida Notice of Acceptance 07-0418.04.
8. US Department of Housing and Urban Development Materials Release 1263d.
9. California DSA PA-019.
10. City of New York M EA 223-93-M.
11. Florida State Product Approval FL889.
12. Texas Department of Insurance Product Evaluation EC-23.

B. Lap Siding: HardiePlank HZ5 Lap siding with a sloped top, beveled drip edge and nailing line as manufactured by James Hardie Building Products, Inc.
   1. Type: Select Cedarmill 8-1/4 inches (210 mm) with 7 inches (178 mm) exposure.

C. Shingle Siding: HardieShingle HZ5 siding as manufactured by James Hardie Building Products, Inc.
   1. Type: HardieShingle Straight-Edge Notched Panel 48 inches (1219 mm) wide by 16 inches (406mm) high with 7 inches (178 mm) exposure.
   2. Type: HardieShingle Staggered-Edge Notched Panel 48 inches (1219 mm) wide by 16 inches (406mm) high with 7 inches (178 mm) exposure.
   3. Type: HardieShingle Half Round Notched Panel 48 inches (1219 mm) wide by 19 inches (483mm) high with 7 inches (178 mm) exposure.

D. Soffit Panels: HardieSoffit soffit panel, factory sealed on 5 sides as manufactured by James Hardie Building Products, Inc.
   1. Type: Smooth non-vented, 12 inches (305 mm) by 12 feet (3658 mm
   2. Type: Smooth non-vented, 24 inches (610 mm) by 8 feet (2438 mm).
   3. Type: Smooth vented, provides 5 square inches (32.3 sq.cm) of net free ventilation per linear foot, 12 inches (305 mm) by 12 feet (3658 mm).
   4. Type: Smooth vented, provides 5 square inches (32.3 sq.cm) of net free ventilation per linear foot, 124 inches (610 mm) by 8 feet (2438 mm).
   5. Thickness: 1/4 inch (6 mm).

2.3 FASTENERS

A. Wood Framing Fasteners:
   1. Wood Framing: Stainless steel fasteners.

2.4 SEALANT

A. Use an Elastomeric Joint Sealant complying with ASTM C920 Grade NS, Class 25 or higher or a Latex Joint Sealant complying with ASTM C834.
   1. Sealant must be applied in accordance with the sealant manufacturer's written instructions.
   2. Note – OSI Quad as well as some other sealant manufacturers do not allow tooling.

2.5 FINISHES

A. Factory Finish:
   1. Product: ColorPlus Technology by James Hardie.
   2. Definition: Factory applied finish; defined as a finish applied in the same

facility and company that manufactures the siding substrate.

3. Process:
   a. Factory applied finish by fiber cement manufacturer in a controlled environment within the fiber cement manufacturer's own facility utilizing a multi-coat, heat cured finish within one manufacturing process.
   b. Each finish color must have documented color match to delta E of 0.5 or better between product lines, manufacturing lots or production runs as measured by photospectrometer and verified by third party.
4. Protection: Factory applied finish protection such as plastic laminate that is removed once siding is installed
5. Accessories: Complete finishing system includes pre-packaged touch-up kit provided by fiber cement manufacturer. Provide quantities as recommended by manufacturer.

B. Factory Finish Color for Soffit and Siding Colors:
   1. Soffit Panels: Arctic White JH10-20.
   2. Shingle Siding: Cobble Stone JH40-10.
   3. Lap Siding: Monterey Taupe JH40-20.

PART 3 EXECUTION

3.1 EXAMINATION

A. Do not begin installation until substrates have been properly prepared.

B. If framing preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

C. Nominal 2 inch by 4 inch (51 m by 102 mm) wood framing selected for minimal shrinkage and complying with local building codes, including the use of water-resistive barriers or vapor barriers where required. Minimum 1-1/2 inches (38 mm) face and straight, true, of uniform dimensions and properly aligned.
   1. Install water-resistive barriers and claddings to dry surfaces.
   2. Repair any punctures or tears in the water-resistive barrier prior to the installation of the siding.
   3. Protect siding from other trades.

3.2 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

C. Install a water-resistive barrier is required in accordance with local building code requirements.

D. The water-resistive barrier must be appropriately installed with penetration and junction flashing in accordance with local building code requirements.

E. Install Engineered for ClimateTM HardieWrapTM weather barrier in accordance

with local building code requirements.

F. Use HardieWrapTM Seam Tape and joint and laps.

G. Install HardieWrapTM flashing, and HardieWrapTM Flex Flashing

3.3 INSTALLATION - HARDIEPLANK LAP SIDING

A. Install materials in strict accordance with manufacturer's installation instructions.

B. Starting: Install a minimum 1/4 inch (6 mm) thick lath starter strip at the bottom course of the wall. Apply planks horizontally with minimum 1-1/4 inches (32 mm) wide laps at the top. The bottom edge of the first plank overlaps the starter strip.

C. Allow minimum vertical clearance between the edge of siding and any other material in strict accordance with the manufacturer's installation instructions.

D. Align vertical joints of the planks over framing members.

E. Maintain clearance between siding and adjacent finished grade.

F. Locate splices at least one stud cavity away from window and door openings.

G. Wind Resistance: Where a specified level of wind resistance is required Hardieplank lap siding is installed to framing members and secured with fasteners described in Table No. 2 in National Evaluation Service Report No. NER-405.

H. Locate splices at least 12 inches (305 mm) away from window and door openings.

3.4 INSTALLATION - HARDIE SHINGLESIDE CLADDING

A. Install materials in strict accordance with manufacturer's installation instructions.

B. Substrate: Install a minimum 7/16 inch (11 mm) thick OSB wall sheathing or equivalent braced walls complying with applicable building codes.

C. Starting: Install a minimum 1/4 inch (6 mm) thick lath starter strip at the bottom course of the wall.

D. Maintain clearance between siding and adjacent finished grade.

E. Apply starter course of 10 inches (254 mm) shingles or 9-1/2 inches (241 mm) lap siding overlapping the starter strip.

F. Apply subsequent courses horizontally with a minimum 10 inch overlap at the top and a minimum 2 inch (51 mm) side lap. The bottom edge of the first two courses overlaps the starter strip.

G. Fasten between 1/2 inch (13 mm) and 1 inch (25 mm) in from the side edge and between 8-1/2 inches (216 mm) and 9 inches (229 mm) up from the shingle bottom edge.

H. Allow minimum vertical clearance between the edge of siding and any other material in strict accordance with the manufacturer's installation instructions.

I. Ensure vertical joints of overlapping shingle course do not align.

J. Wind Resistance: Where a specified level of wind resistance is required, Hardie Shingle siding is installed to substrate and secured with a minimum two fasteners described in Table No. 6, 7 and 8 in National Evaluation Service Report No. NER-405.

3.5 CUT EDGE TREATMENT

A. Paint all field cut edges using the ColorPlus Technology edge coater of same color as cut material.

3.6 JOINT TREATMENT

A. Provide Joint Flashing at siding joints as recommended by James Hardie.

3.7 PROTECTION

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION 074646

SECTION 076200 - SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Formed roof-drainage sheet metal fabrications.
   2. Formed wall sheet metal fabrications.

1.2 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.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. General: Sheet metal flashing and trim assemblies 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" and SMACNA's "Architectural Sheet Metal Manual"** requirements for dimensions and profiles shown unless more stringent requirements are indicated.

C. SPRI Wind Design Standard: Manufacture and install **roof edge flashings** tested according to SPRI ES-1 and capable of resisting the design pressure.

D. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes.

2.2 SHEET METALS

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

B. Aluminum Sheet: ASTM B 209 (ASTM B 209M), alloy as standard with manufacturer for finish required, with temper as required to suit forming operations and performance required.

   1. Exposed Coil-Coated Finish:

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

2. Color:**As selected from manufacturer's full range**.

2.3 MISCELLANEOUS MATERIALS

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

1. General: Blind fasteners or self-drilling screws, gasketed, with hex-washer head.

a. Exposed Fasteners: Heads matching color of sheet metal using plastic caps or factory-applied coating. Provide metal-backed EPDM or PVC sealing washers under heads of exposed fasteners bearing on weather side of metal.
b. Blind Fasteners: High-strength stainless-steel rivets suitable for metal being fastened.
c. Spikes and Ferrules: Same material as gutter; with spike with ferrule matching internal gutter width.

2. Fasteners for Aluminum Sheet: Series 300 stainless steel.

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 (13 mm) wide and 1/8 inch (3 mm) thick.

D. Elastomeric Sealant: ASTM C 920, elastomeric **silicone** polymer sealant; of type, grade, class, and use classifications required to seal joints in sheet metal flashing and trim and remain watertight.

E. Butyl Sealant: ASTM C 1311, single-component, solvent-release butyl rubber sealant; polyisobutylene plasticized; heavy bodied for hooked-type expansion joints with limited movement.

F. Epoxy Seam Sealer: Two-part, noncorrosive, aluminum seam-cementing compound, recommended by aluminum manufacturer for exterior nonmoving joints, including riveted joints.

G. Bituminous Coating: Cold-applied asphalt emulsion according to ASTM D 1187.

H. Asphalt Roofing Cement: ASTM D 4586, asbestos free, of consistency required for application.

2.4 FABRICATION, GENERAL

A. General: Custom fabricate sheet metal flashing and trim to comply with details shown and recommendations in cited sheet metal standard that apply to design, dimensions, geometry, metal thickness, and other characteristics of item required. Fabricate sheet metal flashing and trim in shop to greatest extent possible.

1. Obtain field measurements for accurate fit before shop fabrication.
2. 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.
3. Conceal fasteners and expansion provisions where possible. Do not use exposed fasteners on faces exposed to view.

B. 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 (25 mm) deep, filled with butyl sealant concealed within joints.
2. Use lapped expansion joints only where indicated on Drawings.

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

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

E. Fabricate cleats and attachment devices of sizes as recommended by cited sheet metal standard for application, but not less than thickness of metal being secured.

F. Seams: Fabricate nonmoving seams with flat-lock seams. Tin edges to be seamed, form seams, and solder.

G. Seams: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with elastomeric sealant unless otherwise recommended by sealant manufacturer for intended use. **Rivet joints where necessary for strength.**

H. Seams for Aluminum: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with epoxy seam sealer.**Rivet joints where necessary for strength.**

2.5 ROOF-DRAINAGE SHEET METAL FABRICATIONS

A. Hanging Ogee Style Gutters: Fabricate to cross section required, complete with end pieces, outlet tubes, and other accessories as required. Fabricate in minimum 96-inch- (2400-mm-) long sections. Furnish flat-stock gutter brackets and gutter spacers and straps fabricated from same metal as gutters, of size recommended by cited sheet metal standard but with thickness not less than twice the gutter thickness. Fabricate expansion joints, expansion-joint covers, and gutter accessories from same metal as gutters. **Shop fabricate interior and exterior corners.**

1. Fabricate from the Following Materials:

a. Aluminum: **0.040 inch (1.0 mm) thick**

B. Downspouts: Fabricate corrugated **rectangular** downspouts to dimensions indicated, complete with mitered elbows. Furnish with metal hangers from **same material as downspouts and anchors**. **Shop fabricate elbows.**

1. Hanger Style: Straps
2. Fabricate from the following materials:

C. Splash block at all downspouts.

2.6 ROOF SHEET METAL FABRICATIONS

A. Drip Edges: Fabricate from the following materials:
1. Aluminum: **0.032 inch (0.81 mm)** thick.

2.7 WALL SHEET METAL FABRICATIONS

A. Opening Flashings in Frame Construction: Fabricate head, sill, **jamb,** and similar flashings to extend 4 inches (100 mm) beyond wall openings. Form head and sill flashing with 2-inch- (50-mm-) high, end dams. Fabricate from the following materials:
1. Aluminum: **0.032 inch (0.81 mm)** thick.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. General: Anchor sheet metal flashing and trim and other components of the Work securely in place, with provisions for thermal and structural movement. Use fasteners, solder, protective coatings, separators, sealants, and other miscellaneous items as required to complete sheet metal flashing and trim system.

1. Install sheet metal flashing and trim true to line, levels, and slopes. Provide uniform, neat seams with minimum exposure of solder, welds, and sealant.
2. Install sheet metal flashing and trim to fit substrates and to result in watertight performance. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.
3. Space cleats not more than 12 inches (300 mm) apart. Attach each cleat with at least two fasteners. Bend tabs over fasteners.
4. Install exposed sheet metal flashing and trim with limited oil canning, and free of buckling and tool marks.
5. Torch cutting of sheet metal flashing and trim is not permitted.

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 and stainless-steel** 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. Space movement joints at maximum of **10 feet (3 m)** with no joints within 24 inches (600 mm) of corner or intersection.

1. Form expansion joints of intermeshing hooked flanges, not less than 1 inch (25 mm) deep, filled with sealant concealed within joints.
2. Use lapped expansion joints only where indicated on Drawings.

D. Fasteners: Use stainless steel fastener sizes that penetrate **wood blocking or sheathing not less than 1-1/4 inches (32 mm) for nails and not less than 3/4 inch (19 mm) for wood screws. 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. Prepare joints and apply sealants to comply with requirements of sealant manufacturer

G. Rivets: Rivet joints in uncoated aluminum where necessary for strength.

3.2 ROOF-DRAINAGE SYSTEM INSTALLATION

A. General: Install sheet metal roof-drainage items to produce complete roof-drainage system according to cited sheet metal standard unless otherwise indicated. Coordinate installation of roof perimeter flashing with installation of roof-drainage system.

B. Hanging Gutters: Join sections with **riveted and soldered joint**. Provide for thermal expansion. Attach gutters at eave or fascia to firmly anchor them in position. Provide end closures and seal watertight with sealant. Slope to downspouts.

1. Install gutter with expansion joints at locations indicated, but not exceeding, **50 feet (15.24 m)** apart. Install expansion-joint caps.

C. Downspouts: Join sections with 1-1/2-inch (38-mm) telescoping joints. Provide hangers with fasteners designed to hold downspouts securely to walls. Locate hangers at top and bottom and at approximately 60 inches (1500 mm) o.c.

3.3 ROOF FLASHING INSTALLATION

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

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

B. Roof Edge Flashing: Anchor to resist uplift and outward forces according to recommendations in cited sheet metal standard unless otherwise indicated. Interlock bottom edge of roof edge flashing with continuous cleat anchored to substrate.

3.4 WALL FLASHING INSTALLATION

A. General: Install sheet metal wall flashing to intercept and exclude penetrating moisture according to 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 (100 mm) beyond wall openings.

3.5 CLEANING AND PROTECTION

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

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

C. Clean off excess sealants.

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

END OF SECTION 076200

SECTION 079200 - JOINT SEALANTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Silicone joint sealants.
2. Mildew-resistant joint sealants.
3. Latex joint sealants.

1.2 ACTION SUBMITTALS

A. Product Data: For each joint-sealant product.

B. Samples: For each kind and color of joint sealant required.

PART 2 - PRODUCTS

2.1 JOINT SEALANTS, GENERAL

A. Colors of Exposed Joint Sealants: **As selected from manufacturer's full range**.

2.2 SILICONE JOINT SEALANTS

A. Silicone, S, NS, 25, NT: Single-component, nonsag, plus 25 percent and minus 25 percent movement capability, nontraffic-use, neutral-curing silicone joint sealant; ASTM C 920, Type S, Grade NS, Class 25, Use NT.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. Dow Corning Corporation.
b. GE Construction Sealants; Momentive Performance Materials Inc.
c. Pecora Corporation.
d. Tremco.

2.3 MILDEW-RESISTANT JOINT SEALANTS

A. Mildew-Resistant Joint Sealants: Formulated for prolonged exposure to humidity with fungicide to prevent mold and mildew growth.

B. Acrylic Latex: Acrylic latex or siliconized acrylic latex, ASTM C 834, Type OP, Grade NF.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. Pecora Corporation.
b. Tremco Incorporated.

2.4 JOINT-SEALANT BACKING

A. Cylindrical Sealant Backings: ASTM C 1330, **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.

B. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer.

2.5 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.

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

PART 3 - EXECUTION

3.1 PREPARATION

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

B. Joint Priming: Prime joint substrates where recommended by joint-sealant manufacturer or as indicated by preconstruction joint-sealant-substrate tests or prior experience.

C. Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces.

3.2 INSTALLATION OF JOINT SEALANTS

A. General: Comply with ASTM C 1193 and joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.

B. 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.

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

D. 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.

E. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants to form smooth, uniform beads of configuration indicated. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.

1. Provide concave joint profile per Figure 8A in ASTM C 1193 unless otherwise indicated.

END OF SECTION 079200

SECTION 081469 – STORM DOORS

PART 1- GENERAL

1.1 SUMMARY

A. Section Includes
   1. Full Glass Venting Storm Door

1.2 SUBMITTALS

A. Product Data: Submit manufacturer's product data and installation guides.

1.3 QUALITY ASSURANCE

A. Installer Qualifications: Utilize an installer having demonstrated experience on projects of similar size and complexity.

B. Products are built to meet performance requirements specified in ANSI/AAMA 1102.7.

C. Extruded aluminum parts are painted to meet appearance and durability standards specified in AAMA 2603, except where noted.

D. Steel hardware and components are coated for corrosion resistance in accordance with AAMA 907.

E. Products are supplied in a protective carton using the manufacturer's standard packaging method.

1.4 WARRANTY

A. Manufacturer's Warranty: Submit, manufacturer's standard limited warranty document. Manufacturer's limited warranty is in addition to, and not a limitation of, other rights owner may have under contract documents.

Part 2 – PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer:

   1. Andersen Corporation

      a. 3000 Series Full Glass Self Storing Anytime Venting

B. Substitutions: Not permitted.

2.2 MATERIALS

A. Door Frame; 1 ½" thick aluminum frame with reinforced corners.
   1. Core Material: Pine particle board with a nominal thickness of 0.6875
   2. Cladding Material: Aluminum skin with a nominal thickness of 0.020" (post paint).
   3. Color: Color as selected by Owner's representative from manufacturer's full range of standard colors.
   4. Sealant: Applied to bottom of door and bottom of window opening and 4 inches up the sides of the door and window opening.
   5. Kick Panel: Embossed aluminum panel with a nominal thickness of 0.020" (post paint).
   6. Window Insert: Extruded 6063 T-5 aluminum frame mounted to door frame using aluminum retainers and painted mounting screws.
   7. Lock case mounting slot is predrilled by the manufacturer.

B. Z-bars
   1. Z-bar Material: Extruded 6063 T-5 aluminum with a nominal wall thickness of 0.045".
   2. Hinge Material: Extruded 6063 T-5 aluminum with a nominal wall thickness of 0.045".
   3. Hinges: Four butt-type hinges preinstalled by the manufacturer in the hinge side z-bar using zinc coated steel hinge pin assemblies and self lubricating celcon bushings.
   4. Mounting holes, deadbolt and latch slots are predrilled by the manufacturer.
   5. Weather Stripping: Weather resistant nylon pile is preinstalled in the z-bar profiles in accordance with AAMA 701.

C. Glazing
   1. Glass: 1/8" face thickness tempered safety glass in compliance with CPSC 16 CFR 1201.
   2. Glass Finish: Clear
   3. Ventilating Unit: Extruded 6063 T-5 aluminum window frame with zinc die cast corner keys and window latches.
   4. Stationary Unit: Extruded aluminum window frame with zinc die cast corner keys and window latches.
   5. Window Surround: Polyvinyl chloride (PVC) glazing applied to the entire edge of each glass panel.

D. Insect Screen
   1. Screen: 18 x 16 mesh charcoal fiberglass cloth

2. Motor: Retractable roll screen and motor are preinstalled in the top of the window insert by the manufacturer.
3. Roll screen motor assembly is field replaceable.
4. Retention: Screen is retained on both sides by PVC screen tracks.

E. Hardware and Accessories
1. Handle Set: Traditional style handle.
2. Handle Set Finish: As selected by Owner's Representative from manufacturer's full range of standard finishes.
3. Lock Case: Mortised style lock case with keyed lock and deadbolt constructed of corrosion resistant materials.
4. Sweep: Adjustable aluminum sweep with anodized finish in accordance with AAMA 611.
5. Adjustable Standard Closer: Painted to match door finish.
6. Mounting Hardware: All necessary mounting and installation hardware is s upplied.

2.3 PRODUCT PERFORMANCE

A. Structural
1. Door frame and components are built to meet the AAMA 1102.7 uniform load test requirement when tested in accordance with ASTM E330
2. Door frame and components are built to meet the AAMA 1102.7 rack and sag test requirements specified.
3. Door frame and components are built to meet the AAMA 1102.7 concentrated load test requirement when tested in accordance with ASTM E987.

B. Environmental
1. Product is built to meet the AAMA 1102.7 water drainage specification when tested in accordance with ASTM E331
2. Product is built to meet the AAMA 1102.7 environmental cycles specification when tested in accordance with ASTM D1183 and ASTM C297

PART 3– EXECUTION

3.1 EXAMINATION

A. Site Conditions
1. Measure the existing openings for compliance with the manufacturer's installation requirements.

2. Select storm door sizes to fit within the existing openings according to the manufacturer's door opening size chart.
3. Any rework of the existing openings necessary to meet manufacturer's requirements shall be completed prior to storm door installation.

b. Do not proceed with installation of units until all unacceptable conditions are corrected.

3.2 INSTALLATION

A. Install storm doors in accordance with the manufacturer's installation instructions.

3.3 ADJUSTING AND CLEANING

A. Adjust installed products for proper operation in accordance with the manufacturer's instructions

B. Clean installed products using cleaning material and methods specifically recommended by the manufacturer's instructions.

END OF SECTION 081469

DIVISION 081613 - FIBERGLASS ENTRY DOORS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Fiberglass Entry Doors

1.2 REFERENCES

A. National Fenestration Rating Council
   1. NFRC 100 – Procedure for Determining Fenestration Product U-Factors.
   2. NFRC 200 – Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance (VT) at Normal Incidence.
   3. NFRC 400 – Procedure for Determining Fenestration Product Air Leakage.

1.3 PERFORMANCE REQUIREMENTS

A. Door Unit Air Leakage, NFRC 400, 1.57 psf (25 mph): 0.50 cfm per square foot of frame or less.

B. Door Unit Water Penetration: No water penetration through door unit when tested in accordance with ASTM E 331or ASTM E 547 with water applied at rate of 5 gallons per hour per square foot at 0 psf.

C. Doors shall have a minimum/maximum U-Value of 0.33.

D. Doors shall qualify for Energy Star Rating.

1.4 SUBMITTALS

B. Product Data: Submit door manufacturer current product literature, including installation instructions.

C. Shop Drawings: Submit manufacturer's shop drawings, indicating dimensions, construction, component connections, anchorage methods and locations, accessories, hardware locations, and installation details.

1.5 QUALITY ASSURANCE

A. Quality Assurance Submittals:
   1. Provide documentation for specified performance as required.
   2. Manufacturers’ installation instructions.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Delivery: Deliver materials to site undamaged with labels clearly identifying manufacturer, product name, and installation instructions

B. Storage: Store materials in an upright position, off ground, under cover, and protected from weather, direct sunlight, and construction activities.

C. Handling: protect materials and finish during handling and installation to prevent damage.

1.7 WARRANTY

A. Therma-Tru® standard limited warranty for fiberglass Therma-Tru® Door Product and genuine Therma-Tru® components, including rot-resistant frames and mullions sourced from Therma-Tru used in commercial and multi-residential projects will be free from material and workmanship defects for a period of three years subject to certain limitations and restrictions.

PART 2 PRODUCTS

2.1 MANUFACTURER

A. Basis of design:
Therma-Tru Corp.
1750 Indian Wood Circle
Maumee, OH 43537
(419) 891-7400
(800) 843-7628
www.thermatru.com

B. Substitutions: Not permitted

2.2 FIBERGLASS ENTRY DOORS

A. Fiberglass Entry Doors: All fiberglass doors manufactured by Therma-Tru®. Specification is for complete entry systems with components manufactured by Therma-Tru® and assembled by independent fabricators.

1. Select Smooth Star

2. Construction:

a. Smooth Star:
1/16-inch minimum thickness, proprietary fiberglass-reinforced thermoset composite, surface lightly textured. Door edges are machinable kiln-dried pine, primed, lock edge reinforced with engineered lumber core, lockset area reinforced with solid blocking for hardware backup. Door bottom edge is moisture- and decay-resistant composite. Core is foamed-in-place polyurethane, density 1.9 pcf minimum.

3. Door Style:

c. Smooth-Star®
1. Enter Style Number: S100 (size as indicated on Drawings).

B. Frames: Provided and assembled by third party fabricators to exacting specifications from Therma-Tru to help maximize system performance. Therma-Tru® rot-resistant frames and mullions sourced from Therma-Tru.
   1. Milled from 5/4 kiln-dried material with profiled ½" stop and 6 degree sill gain prep.
   2. Jamb Width Standard 4 9/16".
   3. Rot Resistant – frames, mullions, and brickmould sourced through Therma-Tru.

C. Sills
   1. Coastal

2.3 HARDWARE

A. Hinges: Steel, 4 x 4 x 0.098 inches finished to match hardware, plated screws to match.

   1. Finish: US32D stainless steel.

B. Locking Hardware:
   1. Multi-point lock system includes stainless steel face plate.

2.4 INSTALLATION ACCESSORIES

A. Sill pan

B. Corner seal pad

C. Rain deflector

D. Rain Guard

PART 3 EXECUTION

3.1 EXAMINATION

A. Examine areas to receive doors. Notify Architect in writing any unacceptable conditions that would adversely affect installation or subsequent performance of the product. Do not proceed with installation until unsatisfactory conditions are corrected.

3.2 INSTALLATION

A. Install fiberglass doors in full compliance with Therma-Tru® written instructions and approved shop drawings.

B. Maintain alignment and compatibility with adjacent work.

3.3 FINISHING

A. Finish in compliance with Therma-Tru® written recommendations.

3.4 Protection

A. Protect installed products until completion of project.
B. Touch-up, repair or replace damaged products prior to Substantial Completion in accordance with Therma-Tru written recommendations.

END OF SECTION - 081613

SECTION 099113 - EXTERIOR PAINTING

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes surface preparation and the application of paint systems on **exterior substrates. The following exterior substrates:**
   1. Fiberglass.
   2. Wood.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product. Include preparation requirements and application instructions.

B. Samples: For each type of paint system and each color and gloss of topcoat.

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. Dulux (formerly ICI Paints); a brand of AkzoNobel.
   3. PPG Architectural Finishes, Inc.
   4. Sherwin-Williams Company (The).

B. Products: Subject to compliance with requirements, **available products that may be incorporated into the Work include, but are not limited to products** listed in the Exterior Painting Schedule for the paint category indicated. Paint Schedule based on paints by The Sherwin-Williams Company.

2.2 PAINT, GENERAL

A. 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.

B. Colors: **As selected from manufacturer's full range**.

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 for 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.

3.3 APPLICATION

A. Apply paints according to manufacturer's written instructions and recommendations.

B. 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. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, and leave in an undamaged condition.

B. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.5 EXTERIOR PAINTING SCHEDULE (based on The Sherwin-Williams Company paints)

A. Wood Substrates:

1. Prime Coat (1 coat): Multi-Purpose Latex Primer/Sealer

2. Finish Coat (2 coats): Duration Exterior Acrylic Latex, Semi-Gloss

B. Fiberglass Substrates:

1. Prime Coat (1 coat): Multi-Purpose Latex Primer/Sealer

2. Finish Coat (2 coats): Duration Exterior Acrylic Latex, Semi-Gloss

C. Metal Substrates:

1. Prime Coat (1 coat): Pro-Cryl Universal Acrylic Primer

2. Finish Coat (2 coats): DTM Acrylic Coating

END OF SECTION 099113