NEGEN ASSOCIATES
Architecture | Interior Design | Planning

700 41st Avenue North
St. Cloud, Minnesota 56303
320.251.3304

www.negenarchitects.com

Specification Manual For:

ST. CLOUD HRA NORTHWAY TOWNHOME B EXTERIOR RENOVATION

2401 – 2445 15TH Street North
St. Cloud, MN 56303

July 8, 2024

SECTION 000101 - PROJECT TITLE PAGE

Project Name/Location
St. Cloud HRA Northway Townhome B Exterior Renovation
2401 – 2445 15th Street North
St. Cloud, MN 56303

Owner
St. Cloud HRA
1225 W. Saint Germain St.
St. Cloud, MN 56301

Owner's Representative
Paul Soenneker
St. Cloud HRA
(320) 202-3147 Telephone

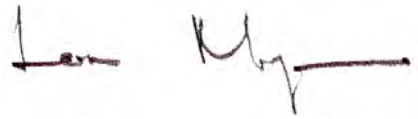
Architect
Lon Negen, AIA, CID, LEED AP
Negen and Associates
700 41st Avenue North
St. Cloud, MN 56303
(320) 251-3304 Telephone
lon@negenarchitects.com

END OF SECTION 000101

SECTION 000102 - CERTIFICATIONS

Negen and Associates:

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the laws of the State of Minnesota.



Lon D. Negen, AIA, CIP, LEED AP

Date: 07/08/24 MN Registration #: 41402

END OF SECTION 000102

SECTION 000103 – TABLE OF CONTENTS

DIVISION 32 - EXTERIOR IMPROVEMENTS

(None)

END OF SECTION 000103

SECTION 001113 - ADVERTISEMENT FOR BIDS

PROJECT IDENTIFICATION: St. Cloud HRA Northway Townhome B Exterior Renovation, 2401 – 2445 15th St. No., St. Cloud, MN 56303.

TYPE OF BIDS: Single Prime Lump Sum bids will be received by St. Cloud HRA in accordance with the Bidding Documents prepared by Negen and Associates.

PROJECT SCOPE: Exterior renovation of the St. Cloud HRA Northway Townhome B, 12-unit complex including removal and disposal of all existing exterior finishes (except roofing), and installation of new siding and trims, windows, exterior doors, garage doors, and exterior light fixtures. Minor interior work to add wood window casing at new windows.

PROCUREMENT OF DOCUMENTS: Digital bidding documents, including Drawings, Specification Manual, and Addenda, may be obtained electronically from the following:

Negen and Associates, St. Cloud, MN, (320) 251-3304, or email: lisa@negenarchitects.com
Minnesota Builders Exchange, Minneapolis, MN, (612) 381-2620, www.mbex.org

Printed sets may be purchased from Negen and Associates for $75.00 (non-refundable).

PRE-BID MEETING: A non-mandatory pre-bid meeting for interested Bidders will be held on **Monday, July 15, 2024, at 9:00a.m.,** at the townhome location.

BID SUBMISSION: Bids shall be submitted on the Bid Form provided in the Bidding Documents and include all Bid Form supplements/attachments indicated. Refer to Section 004393 “Bid Submittal Checklist” for requirements.

BID DATE / TIME: Bids must be received on or before **Thursday, August 8, 2024, at 2:00p.m. CST**.

DELIVERY AND OPENING OF BID: Sealed bids will be received at St. Cloud HRA, 1225 W. Saint Germain Street, St. Cloud, MN 56301 on or before the bid date/time, in accordance with Section 002113 “Instructions to Bidders”. Faxed or electronic bids will not be accepted. Bids will be publicly opened and read aloud at that time at the St. Cloud HRA office located at 1225 W. Saint Germain Street, St. Cloud, MN 56301.

TIME OF COMPLETION AND LIQUIDATED DAMAGES: Successful bidder shall begin the Work on as stated on the Notice to Proceed and be substantially complete in 90 days. Work is subject to liquidated damages.

BID SECURITY: All bids must be accompanied by a Bid Bond or Certified Check in the amount of 5.0% of the Base Bid amount, in accordance with Section 002113 “Instructions to Bidders”.

BONDING REQUIREMENTS: If awarded, the successful Bidder shall be required to furnish both Performance and Payment Bonds, in accordance with Section 002113 “Instructions to Bidders”.

SALES AND USE TAX: Bids shall include all applicable sales and use taxes

WAGE DETERMINATION REQUIREMENTS: Prevailing wage requirements do not apply.

RESPONSIBLE CONTRACTOR REQUIREMENTS: Bidder shall verify compliance with minimum requirements of Minnesota Statute § 16C.285 to be eligible for this Contract. Refer to Section 002400 “Responsible Contractor Requirements”.

CONSIDERATION OF BIDS: The Owner shall have the right to reject any and all bids, accept any bid, waive informalities in bids submitted, and waive minor discrepancies in bidding procedures, as it deems to be in its own best interest. No bid may be withdrawn for a period of **sixty (60)** calendar days after the scheduled closing time for the receipt of bids without consent of the Owner.

CONTACT INFORMATION: Direct communications regarding the Drawings, Specifications or bidding procedure to:

Negen and Associates, 320-251-3304, email: lisa@negenarchitects.com.

END OF SECTION 001113

Negen and Associates, 320-251-3304, email: lisa@negenarchitects.com.

END OF SECTION 001113

AIA® Document A701® – 2018

Instructions to Bidders

for the following Project:
(Name, location, and detailed description)

St. Cloud HRA Northway Townhome B Exterior Renovation
2401-2445 15th St. No.
St. Cloud, MN 56303

THE OWNER:
(Name, legal status, address, and other information)

St. Cloud HRA
1225 W. St. Germain St.
St. Cloud, MN 56301

THE ARCHITECT:
(Name, legal status, address, and other information)

Negen and Associates
700 41st Avenue North
St. Cloud, MN 56303
(320) 251-3304

TABLE OF ARTICLES

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

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

FEDERAL, STATE, AND LOCAL LAWS MAY IMPOSE REQUIREMENTS ON PUBLIC PROCUREMENT CONTRACTS. CONSULT LOCAL AUTHORITIES OR AN ATTORNEY TO VERIFY REQUIREMENTS APPLICABLE TO THIS PROCUREMENT BEFORE COMPLETING THIS FORM.

It is intended that AIA Document G612™–2017, Owner's Instructions to the Architect, Parts A and B will be completed prior to using this document.

ARTICLE 1 DEFINITIONS

§ 1.1 Bidding Documents include the Bidding Requirements and the proposed Contract Documents. The Bidding Requirements consist of the Advertisement or Invitation to Bid, Instructions to Bidders, Supplementary Instructions to Bidders, the bid form, and any other bidding forms. The proposed Contract Documents consist of the unexecuted form of Agreement between the Owner and Contractor and that Agreement's Exhibits, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, all Addenda, and all other documents enumerated in Article 8 of these Instructions.

§ 1.2 Definitions set forth in the General Conditions of the Contract for Construction, or in other Proposed Contract Documents apply to the Bidding Documents.

§ 1.3 Addenda are written or graphic instruments issued by the Architect, which, by additions, deletions, clarifications, or corrections, modify or interpret the Bidding Documents.

§ 1.4 A Bid is a complete and properly executed proposal to do the Work for the sums stipulated therein, submitted in accordance with the Bidding Documents.

§ 1.5 The Base Bid is the sum stated in the Bid for which the Bidder offers to perform the Work described in the Bidding Documents, to which Work may be added or deleted by sums stated in Alternate Bids.

§ 1.6 An Alternate Bid (or Alternate) is an amount stated in the Bid to be added to or deducted from, or that does not change, the Base Bid if the corresponding change in the Work, as described in the Bidding Documents, is accepted.

§ 1.7 A Unit Price is an amount stated in the Bid as a price per unit of measurement for materials, equipment, or services, or a portion of the Work, as described in the Bidding Documents.

§ 1.8 A Bidder is a person or entity who submits a Bid and who meets the requirements set forth in the Bidding Documents.

§ 1.9 A Sub-bidder is a person or entity who submits a bid to a Bidder for materials, equipment, or labor for a portion of the Work.

ARTICLE 2 BIDDER'S REPRESENTATIONS

§ 2.1 By submitting a Bid, The Bidder represents that:

§ 2.1.1 The Bidder has read and understands the Bidding Documents;

§ 2.1.2 The Bidder understands how the Bidding Documents relate to other portions of the Project, if any, being bid concurrently or presently under construction;

§ 2.1.3 The Bid complies with the Bidding Documents;

§ 2.1.4 The Bidder has visited the site, become familiar with local conditions under which the Work is to be performed, and has correlated the Bidder's observations with the requirements of the proposed Contract Documents;

§ 2.1.5 The Bidder has investigated all required fees, permits, and regulatory requirements of authorities having jurisdiction and has properly included in the submitted bid the cost of such fees, permits, and requirements not otherwise indicated as provided by Owner.

§ 2.1.6 The Bid is based upon the materials, equipment, and systems required by the Bidding Documents without exception;

§ 2.1.7 The Bidder has read and understands the provisions for liquidated damages, if any, set forth in the form of Agreement between the Owner and Contractor.

§ 2.1.8 The Bidder is a properly licensed Contractor according to the laws and regulations of the State where the Work is located, and meets qualifications indicated in the Procurement and Contracting Documents.

§ 2.1.9 The Bidder has incorporated into the Bid adequate sums for work performed by installers whose qualifications meet those indicated in the Procurement and Contracting Documents.

§ 2.2 RESPONSIBLE CONTRACTOR REQUIREMENTS

§ 2.2.1 Minnesota law (Minnesota Statutes 16C.285) requires all Contractors and Subcontractors bidding on public work in Minnesota, whose bid is $50,000 or more, to meet the minimum Responsible Contractor Requirements. Refer to Section 002400 "Responsible Contractor Requirements" in the Procurement and Contracting Requirements Division.

ARTICLE 3 BIDDING DOCUMENTS

§ 3.1 Distribution

§ 3.1.1 Bidders may obtain complete sets of the Bidding Documents from the issuing office designated in the Advertisement or Invitation to Bid, in the number and for the deposit sum, if any, stated therein.
(Paragraphs deleted)

§ 3.1.2 Bidding Documents will not be issued directly to Sub-bidders unless specifically offered in the Advertisement or Invitation to Bid, or in supplementary instructions to bidders.

§ 3.1.3 Bidders shall use complete sets of Bidding Documents in preparing Bids. Neither the Owner, the Architect, **nor the consulting Engineers** assumes responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents. **No partial sets will be issued.**

(Paragraph deleted)
§ 3.1.4 The Owner and Architect may make available on the above terms for the purpose of obtaining Bids on the Work. No license or grant of use is conferred by issuance of copies of the Bidding Documents.

§ 3.2 Modification or Interpretation of Bidding Documents

§ 3.2.1 The Bidder shall carefully study the Bidding Documents, shall examine the site and local conditions, and shall notify the Architect of errors, inconsistencies, or ambiguities discovered and request clarification or interpretation pursuant to Section 3.2.2.

§ 3.2.2 Requests for clarification or interpretation of the Bidding Documents shall be submitted by the Bidder in writing and shall be received by the Architect at least seven days prior to the date for receipt of Bids.
(Indicate how, such as by email, website, host site/platform, paper copy, or other method Bidders shall submit requests for clarification and interpretation.)

Requests shall be emailed to the Architect.

§ 3.2.3 Modifications and interpretations of the Bidding Documents shall be made by Addendum. Modifications and interpretations of the Bidding Documents made in any other manner shall not be binding, and Bidders shall not rely upon them.

§ 3.3 SUBSTITUTIONS

§ 3.3.1 The materials, products, and equipment described in the Bidding Documents establish a standard of required function, dimension, appearance, and quality to be met by any proposed substitution.

§ 3.3.1.1 Bidders are required to request approval of qualifying substitute materials and equipment when the Specifications, Schedules, or Drawings list materials or equipment by product, model or manufacturer name.

§ 3.3.2 No substitution will be considered prior to receipt of Bids unless a written request for approval has been received by the Architect at least **seven** days prior to the date for receipt of Bids. **Requests shall be submitted on the 'Substitution Request Form' provided in the Bidding Documents and submitted to the Architect in strict accordance with Section 012500 – Substitution Procedures. Requests sent to anyone other than the Architect, shall not be considered in compliance.**

§ 3.3.2.1 The burden of proof of the merit of the proposed substitution is upon the proposer. The Architect's decision of approval or disapproval of a proposed substitution shall be final.

(Paragraphs deleted)

§ 3.3.3 If the Architect approves a proposed substitution prior to receipt of Bids, such approval shall be set forth in an Addendum. Bidders shall not rely upon approvals made in any other manner.

§ 3.3.4 After the Contract has been executed, the Owner and Architect will consider requests for the substitution of specified products, materials, equipment, and methods of construction, only under the conditions set forth in Section 012500 – Substitution Procedures.

(Paragraph deleted)

§ 3.3.5 In submission of a substitution request to material, product, or equipment specified, each Bidder shall include in their Bid, any changes required in the Work, and changes to Contract Time and Contract Sum/Price to accommodate such substitutions. A later claim by the Bidder for an addition to the Contract Time or Contract Sum/Price because of changes in Work necessitated by use of substitutions shall not be considered.

§ 3.3.6 Architect's approval of a substitute during bidding does not relieve Contractor of the responsibility to provide a compliant product that meets the Specifications in the Contract Documents. Approval given is subject to final approval of shop drawing(s).

§ 3.4 ADDENDA

§ 3.4.1 Addenda will be transmitted to Bidders known by the issuing office to have received complete Bidding Documents.

(Paragraphs deleted)

§ 3.4.2 Addenda will be available where Bidding Documents are on file.

§ 3.4.3 Addenda will be issued no later than three (3) business days prior to the date for receipt of Bids, as required or at the discretion of the Architect.

§ 3.4.4 Each Bidder shall ascertain prior to submitting a Bid that the Bidder has received all Addenda issued, and the Bidder shall acknowledge their receipt in the Bid.

§ 3.4.4.1 Owner may elect to waive the requirement for acknowledging receipt of 3.4.4 Addenda as follows:

1) **3.4.4.1.1 Information received as part of the Bid indicates that the Bid, as submitted, reflects modifications to the Procurement and Contracting Documents included in an unacknowledged Addendum.**
2) **3.4.4.1.2 Modifications to the Procurement and Contracting Documents in an unacknowledged Addendum do not, in the opinion of the Owner, affect the Contract Sum or Contract Price.**

ARTICLE 4 BIDDING PROCEDURES

§ 4.1 PREPARATION OF BIDS

§ 4.1.1 Bids shall be submitted on the forms included with the Bidding Documents unless otherwise indicated.

§ 4.1.2 All blanks on the bid form shall be legibly executed. Paper bid forms shall be executed in a non-erasable medium.

§ 4.1.3 Sums shall be expressed in both words and numbers, unless noted otherwise on the bid form. In case of discrepancy, the amount entered in words shall govern.

§ 4.1.4 Edits to entries made on paper bid forms must be initialed by the signer of the Bid.

§ 4.1.5 All required bid supplement forms shall be completed and submitted with the Bid Form.

§ 4.1.6 Where two or more Bids for designated portions of the Work have been requested, the Bidder may, without forfeiture of the bid security, state the Bidder's refusal to accept award of less than the combination of Bids stipulated by the Bidder. The Bidder shall neither make additional stipulations on the bid form nor qualify the Bid in any other manner.

§ 4.1.7 Each copy of the Bid shall state the legal name and legal status of the Bidder. As part of the documentation submitted with the Bid, The Bidder shall provide evidence of its legal authority to perform the Work in the jurisdiction where the Project is located. Each copy of the Bid shall be signed by the person or persons legally authorized to bind the Bidder to a contract. A Bid by a corporation shall further name the state of incorporation and have the corporate seal affixed. A Bid submitted by an agent shall have a current power of attorney attached certifying the agent's authority to bind the Bidder.

(Paragraph deleted)

§ 4.1.8 The Bid shall include unit prices when called for by the Procurement and Contracting Documents. Owner may elect to consider unit prices in the determination of award. Unit prices will be incorporated into the Contract.

§ 4.1.9 Owner may elect to disqualify a bid due to failure to submit a bid in the form requested, failure to bid requested alternates or unit prices, failure to complete entries in all blanks in the Bid Form, or inclusion by the Bidder of any alternates, conditions, limitations or provisions not called for.

§ 4.1.10 Bids shall include all applicable sales and use taxes. Contractors may be required to show the Owner the sales and use taxes paid by them if requested. Reimbursement of sales and use taxes, if any, shall be applied for by Owner for the sole benefit of Owner.

§ 4.2 BID SECURITY

§ 4.2.1 Each Bid shall be accompanied by the following bid security:
(Insert the form and amount of bid security.)

All bids must be accompanied by a Bid bond or Certified Check payable to: "St. Cloud HRA" in the amount of five percent (5.0%) of the total amount of the bid.

§ 4.2.2 The Bidder pledges to enter into a Contract with the Owner on the terms stated in the Bid and shall, if required, furnish bonds covering the faithful performance of the Contract and payment of all obligations arising thereunder. Should the Bidder refuse to enter into such Contract or fail to furnish such bonds if required, the amount of the bid security shall be forfeited to the Owner as liquidated damages, not as a penalty. In the event the Owner fails to comply with Section 6.2, the amount of the bid security shall not be forfeited to the Owner.

§ 4.2.3 If a surety bond is required as bid security, it shall be written on AIA Document A310™, Bid Bond, unless otherwise provided in the Bidding Documents. the attorney-in-fact who executes the bond on behalf of the surety shall affix to the bond a certified and current copy of an acceptable power of attorney. The Bidder shall provide surety bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

§ 4.2.4 The Owner will have the right to retain the bid security of Bidders to whom an award is being considered until (a) the Contract has been executed and bonds, if required, have been furnished; (b) the specified time has elapsed so that Bids may be withdrawn; or (c) all Bids have been rejected. However, if no Contract has been awarded or a Bidder has not been notified of the acceptance of its Bid, a Bidder may, beginning 60 days after the opening of Bids, withdraw its Bid and request the return of its bid security.

§ 4.3 SUBMISSION OF BIDS

§ 4.3.1

(Paragraphs deleted)

Paper copies of the Bid, the bid security, and any other documents required to be submitted with the Bid shall be enclosed in a sealed opaque envelope. The envelope shall be addressed to the party receiving the Bids and shall be identified with the Project name, the Bidder's name and address, and, if applicable, the designated portion of the Work for which the Bid is submitted. If the Bid is sent by mail, the sealed envelope shall be enclosed in a separate mailing envelope with the notation "SEALED BID ENCLOSED" on the face thereof.

§ 4.3.2 Bids shall be submitted by the date and time and at the place indicated in the invitation to bid. Bids submitted after the date and time for receipt of Bids, or at an incorrect place, will not be accepted.

§ 4.3.3 The Bidder shall assume full responsibility for timely delivery at the location designated for receipt of Bids.

§ 4.3.4 A Bid submitted by any method other than as provided in this Section 4.3 will not be accepted.

(Paragraph deleted)

§ 4.4 MODIFICATION OR WITHDRAWL OF BID

§ 4.4.1 Prior to the date and time designated for receipt of Bids, a Bidder may submit a new Bid to replace a Bid previously submitted, or withdraw its Bid entirely, by notice to the party designated to receive the Bids. Such notice shall be received and duly recorded by the receiving party on or before the date and time set for receipt of Bids. The receiving party shall verify that replaced or withdrawn Bids are removed from the other submitted Bids and not considered. Notice of submission of a replacement Bid or withdrawal of a Bid shall be worded so as not to reveal the amount of the original Bid.

§ 4.4.2 Withdrawn Bids may be resubmitted up to the date and time designated for the receipt of Bids in the same format as that established in Section 4.3, provided they fully conform with these Instructions to Bidders. Bid security shall be in an amount sufficient for the Bid as resubmitted.

§ 4.4.3 After the date and time designated for receipt of Bids, a Bidder who discovers that it made a clerical error in its Bid shall notify the Architect of such error within two days, or pursuant to a timeframe specified by the law of the jurisdiction where the Project is located, requesting withdrawal of its Bid. Upon providing evidence of such error to the reasonable satisfaction of the Architect, the Bid shall be withdrawn and not resubmitted. If a Bid is withdrawn pursuant to this Section 4.4.3, the bid security will be attended to as follows:
(State the terms and conditions, such as Bid rank, for returning or retaining the bid security.)

ARTICLE 5 CONSIDERATION OF BIDS

§ 5.1 OPENING OF BIDS

If stipulated in an Advertisement or Invitation to Bid, or when otherwise required by law, Bids properly identified and received within the specified time limits will be publicly opened and read aloud. A summary of the Bids may be made available to Bidders.

§ 5.1.2 Bid information will not be released for a period of one week after bid opening. This is a period of time required to compile and evaluate bids to verify that all bids are valid and qualified. Bid award information will be made available to all Bidders in unless publication of the information is required to be withheld by the Owner.

§ 5.2 REJECTION OF BIDS

The Owner shall have the right to reject any or all Bids. A Bid not accompanied by a required bid security or by other data required by the Bidding Documents, or is in any way incomplete or irregular, is subject to rejection.

§ 5.2.1 Owner reserves the right to reject a bid based on Owner and Architect's evaluation of qualification information submitted following opening of Bids. Owner's evaluation of the Bidder's qualifications may include: status of licensure and record of compliance with licensing requirements, record of quality of completed work, record of project completion and ability to complete, record of financial management including financial resources available to complete Project and record of timely payment of obligations, record of project site management including compliance with requirements of authorities having jurisdiction, record of and number of current claims and disputes and the status of their resolution and qualifications of the Bidder's proposed Project staff and proposed subcontractors.

§ 5.3 ACCEPTANCE OF BID (AWARD)

§ 5.3.1 It is the intent of the Owner to award a Contract to the lowest qualified Bidder provided the Bid has been submitted in accordance with the requirements of the Bidding Documents and does not exceed the funds available. The Owner shall have the right to waive informalities and irregularities in a Bid received and to accept the Bid which, in the Owner's judgment, is in the Owner's own best interests.

§ 5.3.2 The Owner shall have the right to accept Alternates in any order or combination, unless otherwise specifically provided in the Bidding Documents, and to determine the low Bidder on the basis of the sum of the Base Bid and Alternates accepted.

ARTICLE 6 POST-BID INFORMATION

§ 6.1 CONTRACTOR'S QUALIFICATION STATEMENT

Bidders to whom award of a Contract is under consideration may be required to submit to the Architect, upon request and within the timeframe specified by the Architect, a properly executed AIA Document A305™, Contractor's Qualification Statement, unless such a Statement has been previously required and submitted for this Bid.

§ 6.2 OWNER'S FINANCIAL CAPABILITY

A Bidder to whom award of a Contract is under consideration may request in writing, fourteen days prior to the expiration of the time for withdrawal of Bids, that the Owner furnish to the Bidder reasonable evidence that financial arrangements have been made to fulfill the Owner's obligations under the Contract. The Owner shall then furnish such reasonable evidence to the Bidder no later than seven days prior to the expiration of the time for withdrawal of Bids. Unless such reasonable evidence is furnished within the allotted time, the Bidder will not be required to execute the Agreement between the Owner and Contractor.

§ 6.3 SUBMITTALS

§ 6.3.1 After notification of selection for the award of the Contract, The Bidder shall, as soon as practicable or as stipulated in the Bidding Documents, submit in writing to the Owner through the Architect:

.1 a designation of the Work to be performed with the Bidder's own forces;

.2 names of the principal products and systems proposed for the Work and the manufacturers and suppliers of each; and

.3 names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for the principal portions of the Work.

§ 6.3.2 The Bidder will be required to establish to the satisfaction of the Architect, **[the General Contractor]**, and Owner, the reliability and responsibility of **any Subcontractors** performing the Work described in the Bidding Documents.

§ 6.3.3 Prior to the execution of the Contract, the Architect [or General Contractor] will notify the Bidder if either the Owner or Architect, after due investigation, has reasonable objection to a person or entity proposed by the Bidder, and refuses in writing to accept such person or entity. The Bidder may, at their option, (1) withdraw the Bid; (2) submit an acceptable substitute Subcontractor at no change in cost; or (3) submit an acceptable substitute Subcontractor with an adjustment in their bid price to cover the difference in cost occasioned by such substitution. In the event of either withdrawal or disqualification, bid security will not be forfeited.

§ 6.3.4 Subcontractors and other persons and organizations proposed by the Bidder and accepted by the Owner, [the General Contractor], and the Architect must be used on the work for which they were proposed and accepted and shall not be changed except with the written approval of the Owner, [the General Contractor], and the Architect.

ARTICLE 7 PERFORMANCE BOND AND PAYMENT BOND

§ 7.1 BOND REQUIREMENTS

§ 7.1.1 Bidder shall furnish bonds covering the faithful performance of the Contract and payment of all obligations arising thereunder. Bonds may be secured through Bidder's usual sources.

§ 7.1.2 If awarded the Contract, the Bidder (except material only suppliers) shall be required to furnish a performance bond and a labor and material payment bond, each written for the full amount (100%) of the Contract Sum. Bidders awarded labor and material contracts will be required to provide bonding for all contracted portions of the Work. The cost of such bonds shall be added to the Bid in determining the Contract Sum.

(Paragraphs deleted)

§ 7.2 TIME OF DELIVERY AND FORM OF BONDS

§ 7.2.1 The Bidder shall deliver the required bonds to the Owner not later than three days following the date of execution of the Contract. If the Work is to be commenced prior thereto in response to a letter of intent, the Bidder shall, prior to commencement of the Work, submit evidence satisfactory to the Owner that such bonds will be furnished and delivered in accordance with this Section 7.2.1.

§ 7.2.2 Unless otherwise provided, the bonds shall be written on AIA Document A312, Performance Bond and Payment Bond.

§ 7.2.3 The bonds shall be dated on or after the date of the Contract.

§ 7.2.4 The Bidder shall require the attorney-in-fact who executes the required bonds on behalf of the surety to affix to the bond a certified and current copy of the power of attorney.

ARTICLE 8 ENUMERATION OF THE PROPOSED CONTRACT DOCUMENTS

§ 8.1 Copies of the proposed Contract Documents have been made available to the Bidder and consist of the following documents:

.1 AIA Document

(Paragraphs deleted)

A201™–2017, General Conditions of the Contract for Construction, unless otherwise stated below.

(Insert the complete AIA Document number, including year, and Document title.)

ARTICLE 9 EXECUTION OF THE CONTRACT

§ 9.1 CONTRACT EXECUTION REQUIREMENTS

§ 9.1.1 Subsequent to the Notice of Intent to Award, and within [10] days after the prescribed Form of Agreement is presented to the Awardee for signature, the Awardee shall execute and deliver the Agreement to Owner through [Architect] [Construction Manager], in such number of counterparts as Owner may require.

§ 9.1.2 Owner may deem as a default the failure of the Awardee to execute the Contract and to supply the required bonds when the Agreement is presented for signature within the period of time allowed.

§ 9.1.3 Unless otherwise indicated in the Procurement and Contracting Documents or the executed Agreement, the date of commencement of the Work shall be the date of the executed Agreement [or the date that the Bidder is obligated to deliver the executed Agreement and required bonds to Owner].

(Table deleted)

(Table deleted)

(Paragraph deleted)

*(Paragraphs deleted)***§ 9.1.4 In the event of a default, Owner may declare the amount of the Bid security forfeited and elect to either award the Contract to the next responsible bidder or re-advertise for bids.**

SECTION 002300 – SUBSTITUTION REQUEST FORM

1.1 SUBSTITUTION REQUEST FORM

A. The Substitution Request Form shall be made part of these Contract Documents. A copy of the document is included herein.

B. Related Sections:

1. Section 012500 “Substitution Procedures”, for procedures and requirements for requesting acceptance of products, materials, equipment, and methods of construction that differ from that which is specified in the Construction Documents. Section includes requirements for substitution requests both prior to Bid submittal and after Contract award.

END OF SECTION 002300

SECTION 002300 – SUBSTITUTION REQUEST FORM

Project: St. Cloud HRA Northway Townhome B Exterior Renovation

Date: _____ **To:** Negen and Associates **Email:** lisa@negenarchitects.com

See Section 012500 "Substitution Procedures" for substitution request requirements.

SPECIFIED ITEM DESCRIPTION

Specification Section: _____ Page/Article: _____

Product Name: _____

Manufacturer: _____ Model/System: _____

Description: _____

PROPOSED SUBSTITUTION

Product Name: _____

Manufacturer: _____ Model/System: _____

Description: _____

Differences between proposed substitution and specified product:

_____

_____

_____

Savings to Owner for accepting substitution? *(check one)*: ☐ Yes $_____ ☐ No ☐ Don't Know

Proposed substitution changes Contract Time: ☐ No ☐ Yes; *explain*:_____

Proposed substitution affects other parts of Work: ☐ No ☐ Yes; *explain*:_____

SUPPORTING DATA

Attach the following data for consideration of the substitution:

- ☐ Point-by-point comparative data to specified product.
- ☐ Drawings and Product Data specifically related to the proposed substitution, with applicable data clearly identified.
- ☐ Specification Section that has been edited specifically for this product and/or Project.
- ☐ Performance and test data adequate for evaluation of the request.
- ☐ Warranty information; including a comparison to the specified product.

***The Undersigned certifies**:*

- *Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.*
- *Proposed substitution does not affect dimensions or functional clearances shown on the Drawings.*
- *Warranty for proposed substitution will be comparable or better than specified product.*
- *Maintenance service and source of replacement parts for proposed substitution, as applicable, are locally available.*
- *Cost data submitted is complete. Claims for additional costs related to accepted substitution, which may subsequently become apparent, are to be waived.*
- *Signee will pay for changes to building design, engineering design, detailing, and construction costs related to the substitution.*
- *Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.*

- *Coordination, installation, and changes in the Work as necessary for accepted substitution will be complete in all respects.*

Submitted by:_____

Signed by: _____

Firm Name: _____

Address: _____

Telephone:_____ **Email:** _____

A/E's REVIEW AND ACTION

☐ **Substitution Approved.**
☐ **Substitution Approved as Noted.**
☐ **Substitution Rejected. Use specified product.**
☐ **Substitution request received late or incomplete/unclear. Use specified product.**
☐ **No substitutions allowed.**

The approval given is subject to final approval of shop drawings and conformance to the intent of the Construction Documents.

Signed by: **Date:**

SECTION 004113 - BID FORM

BID PROPOSAL FOR: **St. Cloud HRA Northway Townhome B Exterior Renovation**
2401-2445 15th Street North
St. Cloud, MN 56301

BID TO: St. Cloud HRA
1225 W. Saint Germain St.
St. Cloud, MN 56303

BIDDER: _____
(Company Name)

The undersigned Bidder, having carefully examined the Procurement and Contracting Requirements, Conditions of the Contract, Drawings, Specifications, and all subsequent Addenda, as prepared by Negen and Associates and their consultants, and being familiar with all requirements and conditions affecting the Work, hereby agrees to furnish all material, labor, equipment and services, including all scheduled allowances, necessary to complete the construction of the above-named project, according to the requirements of the Procurement and Contracting Documents.

BASE BID*:

_____***Dollars*** **($_____)**

**Base Bid may be modified by amounts indicated on attached 004323 "Alternates Form".*

ACKNOWLEDGEMENT OF ADDENDA
The undersigned Bidder acknowledges receipt of and use of the following Addenda in the preparation of this Bid:

Addendum No. _____, dated _____
Addendum No. _____, dated _____
Addendum No. _____, dated _____

BID SUPPLEMENTS
The following bid supplements are a part of this Bid Form and are attached hereto:

004313 "Bid Security"
004323 "Alternates Form"
004324 "Responsible Contractor Verification Form"
004325 "HUD Section 3 Business Self-Certification"

TIME OF COMPLETION
If awarded this Contract, the undersigned agrees to commence the Work of the Contract Documents on a date specified by the Architect and shall fully complete the Work within ninety (90) consecutive calendar days.

BID ACCEPTANCE
The successful bidder shall furnish signed contract agreements, certificate of insurance, W-9 form, listing of subcontractors/suppliers, and schedule of values within ten (10) days of receipt of contract and/or notification of acceptance of this bid. Failure to adhere to this requirement may result in the rejection of the Contractor's bid.

The undersigned Bidder acknowledges the Owner's right to accept any bid, reject any or all bids, or waive any informalities or irregularities in bidding.

EXECUTION OF PROPOSAL

The entity signing this proposal is fully authorized to sign on behalf of the named company and to fully bind the named company to all of the conditions and provisions of the Contract. This proposal shall remain valid and not be withdrawn for **sixty (60)** calendar days after the Bid due date.

Submitted this _____ day of _____ 2024

_____
Business Name

_____
Address

(_____)_____ _____
Telephone *Email*

BY: _____
Signature

_____
Printed Name

_____
Title

END OF SECTION 004113

SECTION 004313 – BID SUPPLEMENT - BID SECURITY

1.1 BID SECURITY

A. All bids must be accompanied by a Bid Bond or Certified Check in accordance with Section 002113 “Instructions to Bidders”.

1.2 BID BOND FORM

A. AIA Document “A310 Bid Bond” is the recommended form for a bid bond, and shall be submitted as a supplement to the Bid Form.

END OF SECTION 004313

SECTION 004323 – BID SUPPLEMENT - ALTERNATES FORM

1.1 BID INFORMATION

A. Bidder: _____.

B. Project Name: St. Cloud HRA Northway Townhome B Exterior Renovation.

1.2 BID FORM SUPPLEMENT

A. This form is required to be attached as a supplement to the Bid Form.

B. The undersigned Bidder proposes the amount(s) below for the Alternate(s) scheduled in Section 012300 “Alternates”. Alternates that are accepted by the Owner shall be added to or deducted from the Contract Sum. Amounts listed for each Alternate include costs of related coordination, modification, or adjustment.

C. If the Alternate does not affect the Contract Sum, the Bidder shall indicate "NO CHANGE."

D. If the Alternate does not affect the Work of this Contract, the Bidder shall indicate "NOT APPLICABLE."

E. The Bidder shall be responsible for determining from the Contract Documents the effects of each Alternate on the Contract Time and the Contract Sum.

F. Owner reserves the right to accept or reject any Alternate, in any order, and to award or amend the Contract accordingly within 60 days of the Notice of Award unless otherwise indicated in the Contract Documents.

G. Acceptance or non-acceptance of any Alternates by the Owner shall have no effect on the Contract Time unless the Bidder indicates on the "Schedule of Alternates" Article below that a Contract Time change will be required.

1.3 SCHEDULE OF ALTERNATES

A. **Alternate No. 1:** Provide an alternate bid amount for Fiberglass Windows and Patio Doors, per Section 085413, in lieu of vinyl windows and doors.

Add____ Deduct____ No Change____, to/from bid amount to provide fiberglass windows and patio doors in lieu of vinyl windows and patio doors in the amount of:

_____dollars ($_____).

1.4 SUBMISSION OF BID SUPPLEMENT

Submitted this _____ day of _____, 2024

By: _____
Signature

_____
Printed Name *Title*

END OF SECTION 004323

RESPONSIBLE CONTRACTOR VERIFICATION OF COMPLIANCE
St. Cloud Housing and Redevelopment Authority

The purpose of this document is to certify contractor compliance with Minnesota Statutes, Section 16C.285, subdivision 3. Covered contractors must sign the certification below and if subcontractors will be used under the contract, must comply with subdivision 7 requirements as to subcontractors.

Responsible Contractor, Minimum Criteria. "Responsible Contractor" means a contractor that conforms to the responsibility requirements in the solicitation document for its portion of the work on the project and verifies that it meets the minimum criteria set forth below. Each contractor or subcontractor shall obtain from all subcontractors with which it will have a direct contractual relationship a signed statement under oath by an owner or officer verifying that they meet all of the minimum criteria in subdivision 3 prior to execution of a construction contract with each subcontractor.

1. The Contractor:

   i. is in compliance with workers' compensation and unemployment insurance requirements;
   ii. is in compliance with the Department of Revenue and the Department of Employment and Economic Development registration requirements if it has employees;
   iii. has a valid federal tax identification number or a valid Social Security number if an individual; and
   iv. has filed a certificate of authority to transact business in Minnesota with the secretary of state if a foreign corporation or cooperative.

2. The contractor or related entity is in compliance with and, during the three-year period before submitting verification, has not violated section 177.24, 177.25, 177.41 to 177.44, 181.03, 181.101, 181.13, 181.14, or 181.722, and has not violated United States Code, title 29, sections 201 to 219, or United States Code, title 40, section 3141 to 3148. For purposes of this clause, a violation occurs when a contractor or related entity:

   i. repeatedly fails to pay statutorily required wages or penalties on one or more separate projects for a total underpayment of $25,000 or more within the three-year period, provided that a failure to pay is "repeated" only if it involves two or more separate and distinct occurrences of underpayment during the three-year period;
   ii. has been issued an order to comply by the commissioner of labor and industry that has become final;
   iii. has been issued at least two determination letters within the three-year period by the Department of Transportation finding an underpayment by the contractor or related entity to its own employees;
   iv. has been found by the commissioner of labor and industry to have repeatedly or willfully violated any of the sections referenced in this clause pursuant to section 177.27;
   v. has been issued a ruling or findings of underpayment by the administrator of the Wage and Hour Division of the United States Department of Labor that have become final or have been upheld by an administrative law judge or the Administrative Review Board; or
   vi. has been determined to have violated Minn. Stat. §§ 181.03 (prohibited wage practices and retaliation), 181.101 (payment of wages) or 609.52, subd. 2 (19) (criminal wage theft)
   vii. has been found liable for underpayment of wages or penalties or misrepresenting a construction worker as an independent contractor in an action brought in a court having jurisdiction.

   Provided that, if the contractor or related entity contests a determination of underpayment by the Department of Transportation in a contested case proceeding, a violation does not occur until the contested case proceeding has concluded with a determination that the contractor or related entity underpaid wages or penalties;*

3. The contractor or related entity is in compliance with and, during the three-year period before submitting the verification, has not violated section 181.723 or chapter 326B. For purposes of this clause, a violation occurs when a contractor or related entity has been issued a final administrative or licensing order;*

4. The contractor or related entity has not, more than twice during the three-year period before submitting the verification, had a certificate of compliance under section 363A.36 revoked or suspended based on the provisions of section 363A.36, with the revocation or suspension becoming final because it was upheld by the Office of Administrative Hearings or was not appealed to the office;*

5. The contractor or related entity has not received a final determination assessing a monetary sanction from the Department of Administration or Transportation for failure to meet targeted group business, disadvantaged business enterprise, or veteran-owned business goals, due to a lack of good faith effort, more than once during the three-year period before submitting the verification; and*

6. The contractor or related entity is not currently suspended or debarred by the federal government or the state of Minnesota or any of its departments, commissions, agencies, or political subdivisions that have authority to debar a contractor.

*Any violations, suspensions, revocations, or sanctions, as defined in clauses 2 to 5 occurring prior to July 1, 2014, shall not be considered in determining whether a contractor or related entity meets the minimum criteria.

Certification

By signing this document, I am certifying that I am an owner or officer of the contractor and am verifying under oath that:

1. **Contractor is in compliance with Minnesota Statutes, Section 16C.285,**
2. **That contractor has in place, and will continue maintain, records required to be kept by an employer and those records will either be kept at the place where employees are working or kept in a manner that allows the employer to comply with the commissioner's demand within 72 hours (section 177.30)**
3. **Contractor has carefully reviewed the 2019 revisions to Chapter 181 (employee wage protections) including section 181.101 (wages—how often paid) and section 16C.285 subdivision 3 (responsible contractor), section 177.30 (maintenance of records) and is in full compliance with the amended statutes**
4. **I have included Attachment A-1, and**
5. **if contractor is awarded a contract, I or another owner or officer will also submit a HRA subcontractor compliance form prior to execution of the contract (applicable to prime contractors only). If subcontractors are subsequently added to the project Contractor must file a supplemental subcontractor compliance form.**

Contractor Company Name	Date
Authorized Signature of Owner or Officer	Printed Name
Title	

ATTACHMENT A-1:FIRST-TIER SUBCONTRACTOR LIST
(Initial List)

SUBMIT WITH CONTRACTOR SOLICITATION RESPONSE

Minnesota Statutes, Section 16C.285, subdivision 5. A prime contractor or subcontractor shall include in its verification of compliance . . . a list of all of its first-tier subcontractors that it intends to retain for work on the project.

NAMES OF FIRST TIER SUBCONTRACTORS (Legal name of company as registered with the Secretary of State)	**Company Address**	**Work To Be Performed**

Section 3 Business Self-Certification Form

Business Name: _____

Contact Name: _____ **Title:** _____

Address: _____ **City:** _____ **State:** _____ **Zip:** _____

Phone: _____ **Email:** _____

Does your business qualify as a Section 3 Business based on the definition in 24 CFR Part 75.5?

_____ YES **_____ NO**

If **YES**, check the box below under which subcategory you qualify:

A Business Concern meeting at least one of the following criteria, documented within the last six-month period:

1. _____ It is at least 51 percent owned and controlled by low- or very low-income persons (see the annual limit established by HUD)
2. _____ Over 75 percent of the labor hours performed for the business over the prior 3 month period are performed by Section 3 Workers (See 24 CFR Part 75.5 and 75.11 for definition of a Section 3 Worker)
3. _____ It is a business at least 51 percent or more owned and controlled by current public housing residents or residents who currently live in Section 8-assisted housing.

If awarded the contract, the contractor will be responsible for providing documentation of their Section 3 status. Documentation can include, but is not limited to:

1. Proof of business ownership.
2. Three months of payroll review to establish the 75 percent rule.
3. Lease or proof of residency in public housing or Section 8-assisted housing.

By submitting this form, my business certifies that the statements and information contained on this form are true and accurate, and meet the HUD Section 3 business self-certification eligibility requirements in accordance with 24 CFR Part 75. I further understand that a Section 3 business is not entitled to a contract simply by being listed in the Section 3 Business Registry database. Section 3 Business Concerns are not exempt from meeting the specifications of the contract or other Section 3 requirements and obligations. Information that is misrepresented on this form will be grounds for terminating Section 3 certification.

_____ _____

Signature Date

Section 3 Worker:

(1) Any worker who currently fits or when hired within the past five years fit at least one of the following categories, as documented:

(i) The worker's income for the previous or annualized calendar year is below the income limit established by HUD ***(2024 limit $54,800.00)***

(ii) The worker is employed by a Section 3 business concern.

(iii) The worker is a YouthBuild participant.

(2) The status of a Section 3 worker shall not be negatively affected by a prior arrest or conviction.

(3) Nothing in this part shall be construed to require the employment of someone who meets this definition of a Section 3 worker. Section 3 workers are not exempt from meeting the qualifications of the position to be filled.

Targeted Section 3 Worker:

(1) A worker employed by a Section 3 business concern; or

(2) A worker who currently fits or when hired fit at least one of the following categories, as documented within the past five years:

(i) A resident of public housing or Section 8-assisted housing;

(ii) A resident of other public housing projects or Section 8-assisted housing managed by the PHA that is providing the assistance; or

(iii) A YouthBuild participant.

SECTION 004393 - BID SUBMITTAL CHECKLIST

1.1 BIDDER'S CHECKLIST

A. In an effort to assist the Bidder in properly completing all documentation required, the following checklist is provided for the Bidder's convenience. The Bidder is solely responsible for verifying compliance with bid submittal requirements.

☐	Used the Bid Form provided in the Specification Manual (Section 004113)
☐	Prepared the Bid Form in accordance with A701-1997 “Instructions to Bidders” (Section 022113)
☐	Indicated on the Bid Form the Addenda received.
	Attached all applicable Bid Supplements:
	☐ Bid Security (Section 004313)
	☐ Alternates Form (Section 004323)
	☐ Responsible Contractor Verification Form (Section 004324)
	☐ HUD Section 3 Business Self-Certification Form (Section 004325)
☐	Sealed Bid envelope shows name and address of the Bidder.
☐	Sealed Bid envelope shows name of Project being bid.
☐	Sealed Bid envelope shows time and day of Bid Opening.
☐	Verified Bidder can provide Certificates of Insurance in the amounts indicated (Section 007100)
☐	Verified Bidder can provide Performance Bond and Payment Bond if awarded (Section 007100)

END OF SECTION 004393

ST. CLOUD HOUSING & REDEVELOPMENT AUTHORITY
CONSTRUCTION AGREEMENT

This CONTRACT AGREEMENT ("Contract") is made on _____, by and between **the St. Cloud Housing & Redevelopment Authority** ("HRA") located at 1225 West St. Germain Street; St. Cloud, MN 56301 and _____. ("Contractor") located at _____.

A. Contractor wishes to enter into the following Contract with the HRA to furnish labor and materials to the complete _____ project located at _____ ("Project"), prepared by St. Cloud Housing and Redevelopment Authority. This Contract includes, by reference, all terms and conditions, and all other documents listed in this Contract and modifications issued after execution of this Contract.

B. The HRA has made available to Contractor all of the Project Documents, and Contractor has agreed to be responsible for obtaining copies pertinent to its work; and

C. The Project Documents have been carefully examined by Contractor, his agents and representatives. Contractor agrees the Project Documents are complete and accurate as to all work to be performed by the Contractor. Contractor assumes all responsibility for any part of the Project Documents that are incomplete or inaccurate.

I.
TERMS AND CONDITIONS RELATING TO CONTRACTOR

1. Contractor shall furnish all labor, material, skill and equipment necessary or required to perform all the work for the Project as follows:

Contractor to provide labor and materials as shown in the Project Documents. Contract price shall be (including all taxes and permit fees): **$_____**

Subject to Part II of this Agreement, Contractor shall be paid as follows: Within 30 days of completion, or for stored materials

2. Contractor shall pay for all materials, labor and equipment used in, or in connection with the performance of this Contract when such bills or claims become due and to indemnify and hold harmless the Project and the HRA from all claims and mechanic's liens and to furnish satisfactory evidence to the HRA, when and if required that the Contractor has complied with the above requirements.

3. Contractor shall begin work within **30** calendar days after being notified, in writing, by the HRA that the Project is ready. Contractor further agrees that except for delays totally caused by the HRA, the Contractor will complete the work of this Contract Agreement within **120** days of notice to proceed.

Contractor agrees that time is of the essence in all matters involving this Contract. Contractor further agrees it is not possible for the HRA to determine all damages the HRA would suffer or incur as a result of any delay by the Contractor in completion of the Project. Contractor and the HRA agree that **$125 per day**, as liquidated damages, and not a penalty, is fair and reasonable compensation to the HRA for any delays in completion of the Contractor's work on the Project.

4. Contractor agrees to proceed with the work in an orderly and reasonable sequence and to abide by the HRA's decision as to the allotment of all storage and working space of the Project.

5. Contractor agrees that no extension of time for performance of this Contract shall be recognized or permitted without the HRA's written consent.

6. Contractor agrees to indemnify and hold harmless the HRA, the HRA's agents and representatives, Architects, the HRA's lender and all other contractors and/or subcontractors from any and all losses or damage (including without limiting the generality of the foregoing, attorneys' fees and disbursements paid or incurred by the HRA to enforce the provisions of this paragraph) occasioned by the failure of Contractor to carry out the provisions of this Contract.

7. Contractor agrees to provide a Performance Bond prior to the beginning of work for all contracts of $175,000 or greater.

8. Contractor agrees to obtain worker's compensation insurance as is required by law. Contractor further agrees to obtain comprehensive general liability and property damage insurance to protect the Contractor and the HRA against claims for bodily injury or death or for damage to property occurring upon, in or about the Project, with limits in amounts at least equal to those specified below:

Risk Insurance	$1,000,000.00 Aggregate
Bodily Injury Liability	$1,000,000.00 Each Person
General Liabilities Including Automobiles	$2,000,000.00 Aggregate
Property Damage Liability	$1,000,000.00 Aggregate
Worker's Compensation	As required by law

The Contractor shall also carry employer's liability coverage with minimum limits are as follows:

- $500,000 – Bodily Injury by Disease per employee
- $500,000 – Bodily Injury by Disease aggregate
- $500,000 – Bodily Injury by Accident

Any and all insurance shall be issued by an "A" rated insurance company or companies. Contractor agrees to furnish the HRA with satisfactory evidence that he has complied with this paragraph. Contractor further agrees to obtain and furnish the HRA with an undertaking by the insurance company issuing each such policy that such policy will not be canceled except after thirty (30) days written notice to the HRA of its intention to do so.

Contractor agrees to assume the entire responsibility and liability for all damages or injury to any and all individuals, whether employees or otherwise and to all property, including the HRA's property arising out of, resulting from, or in a manner connected with the performance of the work provided for in this Contract or occurring or resulting from the use by Contractor, his agents or employees of materials, equipment, instrumentality's or other property, whether the same is owned by the HRA, Contractor or third parties, and Contractor agrees to indemnify and save harmless the HRA, his agents and employees from any and all such claims, including, without limiting the generality of the foregoing claims for which the HRA may be, or may be claimed to be liable and attorneys' fees and disbursements paid or incurred to enforce the provisions of this paragraph.

All insurance required to be carried by Contractor shall name the HRA and the HRA's lender as additional insurers.

9. Contractor agrees to accept responsibility for all damage caused by Contractor to clean and repair all surfaces soiled or damaged by Contractor, and to protect the work performed by Contractor. If any dispute arises between Contractor and another Contractor and/or subcontractor as to which is responsible for any time of damage, the dispute shall be submitted to the HRA for decision and the HRA's determination as to responsibility shall be final and binding.

10. Contractor is solely responsible for initiating, maintaining and supervising all safety precautions and measures in connection with the performance of this Contract and agrees to take all safety precautions with respect to his work and shall comply with all applicable laws, ordinances, rules and regulations and lawful orders of any public or governmental authority for the safety of persons or property.

11. Contractor agrees not to assign or sublet any or all of this Contract and not to assign any money due or to become due there under without first obtaining prior written consent of the HRA. Contractor further agrees to supply the HRA with a list of all individuals or businesses it intends to subcontract work to or from whom it will obtain materials or equipment. Such list is attached hereto as Exhibit B and incorporated herein by reference, to which the HRA hereby consents.

12. Contractor agrees to furnish such shop drawings or samples as may be required by the HRA or Architect.

13. Contractor agrees not to employ any person who would be unacceptable to the HRA. Contractor further agrees to remove any such person if the HRA reasonably objects to his continued employment on this project.

14. Contractor agrees that the HRA, or his authorized representatives, shall have the right to order, in writing, the elimination or addition of any part of parts of work or materials as omitted from or added to this Contract by Architect and/or the HRA. Fair adjustments shall be made in the contract price for such omitted or added work or materials. No extra work shall be allowed or changes made by Contractor, or paid for by the HRA, unless and until authorized by the HRA, in writing, before the work and/or changes are begun. Contractor agrees to sign attached Exhibit A to this Contract and waives all claims for additions or changes unless the HRA has signed a written Change Order.

Contractor further agrees to give notice to the HRA of all claims for extras, for requests of extensions of time and for damages for delays or otherwise, promptly and in accordance with the General Contract. Contractor acknowledges and agrees that any change orders for extras must be consented to in writing by the HRA. Further, Contractor understands that only **Louise Reis, Executive Director** may sign Change Orders on the HRA's behalf.

15. Contractor agrees, as required by Minnesota law, to obtain and furnish to the HRA and to maintain in effect during the life of this Contract, or, if requested to do so by the HRA where not otherwise required by law, performance and/or payment bonds from a surety or sureties in the form and with sureties acceptable to the HRA in an amount equal to the contract price. All bond premiums will be paid by the Contractor.

16. Contractor guarantees its work against any and all defects in material or workmanship for a period of two years from the later of the date of final payment or the date the Certificate of Occupancy is issued by the building authority for the Project. Contractor hereby assigns all vendor warranties given by each equipment or parts manufacturer to the HRA.

17. In the event Contractor fails to correct, replace and/or repair faulty or defective work performed and/or materials furnished under this Contract, or shall fail to complete or diligently proceed with its work under this Contract within the time herein provided for, the HRA, upon three days notice in writing to Contractor shall have the right to correct, replace and/or re-execute such faulty or defective work, or to take over the work to be provided pursuant to this Contract and complete the same either through its own employees or through a contractor or subcontractor of its choice, and to charge the costs thereof to Contractor including compensation for the Architect's services against the sums owed under this Contract or to pursue any and all other remedies provided by law.

18. Contractor agrees that in case of default on the part of Contractor under the terms of this Contract, the material and equipment of Contractor shall be left at the Project for use by

the HRA in completing the work covered by this Contract. The HRA shall be obligated to pay the Contractor for all such material and equipment.

19. Contractor agrees to obtain, at its cost, all permits, all licenses, all plan approval, all inspections and all other governmental approvals relating to this work on the Project and to comply with all federal, state, county, and municipal laws, codes and regulations and to pay all costs and expenses incurred in connection with such compliance, to pay all fees and taxes, including sales and use taxes, and also pay all taxes imposed by any state or federal law for any employment insurance, pensions, retirement funds or any similar purpose, and to furnish all necessary reports and information to the appropriate federal, state and municipal agencies, with respect to all of the foregoing, the same as though Contractor was in fact the HRA and to hold the HRA and any other Contractor and/or subcontractor harmless from any and all losses or damage occasioned by the failure of Contractor to comply with the terms of this paragraph.

20. Contractor agrees to pay all royalties, license and permit fees to defend all suits or claims for infringement of any patent rights involved in the work of Contractor under this Contract and to save the HRA and other Contractors harmless from loss, costs or expense on account of such use or infringement by Contractor.

21. If any part of Contractor's work depends, for proper execution, upon the work of the HRA, any other Contractor, Contractor shall inspect and promptly report to the HRA any apparent discrepancies or defects in such work that renders it unsuitable for use on the Project. Failure of Contractor to inspect and report shall constitute an acceptance of the work of the HRA, other Contractors.

22. Contractor shall provide complete invoices, receipts and executed lien waivers in the form required by the HRA. Request for payment will be deemed accepted by the HRA on the date the HRA determines, in its sole judgment, that the HRA has all the information required to process the payment. The HRA will pay each such properly submitted invoice on a net-30 basis.

23. In all cases, Contractor agrees to perform all work in accordance with and to otherwise abide in all respects with all applicable federal, state and local laws, rules and ordinances.

24. Contractor is responsible for removing all their debris from the site at the expense of the contractor, and pay for any costs associated with fees for dumpster or landfill costs.

25. For all construction contracts awarded in excess of $2,000 when required by Federal Grant Program legislation, both parties hereby agree to comply with the Davis-Bacon Act (40 U.S.C. 276a to 276a-7) as supplemented in Department of Labor Regulations (29 CFR Part 5).

26. Contractor responsible for MN Statute 471.425 subd. 4a regarding payments to

subcontractors.

27. Contractor responsible for 24 CFR part 75; Section 3 clause. This is a section 3 contract.

A. The work to be performed under this contract is subject to the requirements of section 3 of the Housing and Urban Development Act of 1968, as amended, 12 U.S.C. 1701u (section 3). The purpose of section 3 is to ensure that economic opportunities, most importantly employment, generated by certain HUD financial assistance shall be directed to low and very low-income persons, particularly those who are recipients of government assistance for housing or residence for housing or residents of the community in which the Federal assistance is spent.

B. The parties to this contract agree to comply with HUD's regulations in 24 CFR part 75, which implemented section 3. As evidenced by their execution of this contract, the parties to this contact certify that they are under no contractual or other impediment that would prevent them from complying with the part 75 regulations.

C. The contractor agrees to send to each labor organization or representative of workers with which the contractor has a collective bargaining agreement or other understanding, if any, a notice advising the labor organization or workers' representative of the contractor's commitments under this section 3 clause, and will post copies of the notice in conspicuous places at the work site where both employees and applicants for training and employment positions can see the notice. The notice shall describe the section 3 prioritization requirements and shall state the minimum percentages of labor hour requirements established in the Benchmark Notice (FR-6085-N-04)

D. The contractor agrees to include this section 3 clause in every subcontract subject to compliance with regulations in 24 CFR part 75, and agrees to take appropriate action, as provided in an applicable provision of the subcontract or in this section 3 clause, upon a finding that the subcontractor is in violation of the regulations in 24 CFR part 75. The contractor will not subcontract with any subcontractor where the contractor has notice or knowledge that the subcontractor has been found in violation of the regulations in 24 CFR part 75.

E. The contractor will certify that any vacant employment positions, including training positions, that are filled (1) after the contractor is selected but before the contract is executed, and (2) with persons other than those to whom the regulations of 24 CFR part 75 require employment opportunities to be directed, were not filled to circumvent the contractor's obligations under 24 CFR part 75.

F. Noncompliance with HUD's regulations in 24 CFR part 75 may result in sanctions, termination of this contract for default, and debarment or suspension from future HUD assisted contracts.

G. Contracts, subcontracts, grants, or subgrants subject to Section 7(b) of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 5307(b) or subject to tribal preference requirements as authorized under 101(k) of the Native American Housing Assistance and Self-Determination Act (25 U.S.C 4111(k) must provide preferences in employment, training, and business opportunities to Indians and Indian organizations, and are therefore not subject to the requirements of 24 CFR Part 75.

II.
TERMS AND CONDITIONS RELATING TO THE HRA

28. The HRA agrees to employ Contractor to do the work described in Paragraph 1 hereof subject to the terms and conditions of this Contract.

29. The HRA agrees to pay Contractor the full amount, less retainage and other hold backs, owed upon faithful, prompt and complete performance of the Contractor's work to be performed under this Contract and the HRA's written acceptance of the work.

30. The HRA will release checks for Contractor's accepted invoices once a month for completed work, less a maximum 5% retainage and other hold backs.

31. Final payment, including all retention, shall become due and payable within thirty days after acceptance of the entire project and all work has been accepted by the HRA. The HRA may also condition final payment upon receipt of Mechanic's Lien Waivers or other proof that all subcontractors and material supplies have been or will be paid in full.

32. Final payment and all other payments to Contractor are conditioned upon the HRA receiving any and all documents reasonably required by the HRA to assure Contractor's compliance with all federal, state and local laws, rules and ordinances.

III.
MISCELLANEOUS PROVISIONS

33. Any and all disputes relating to, or arising out of this Contract, or arising in anyway out of the Project, shall be submitted to binding arbitration before a single arbitrator appointed by the American Arbitration Association. Such arbitration shall be conducted under the Construction Industry Arbitration Rules of the American Arbitration Association and the arbitration hearing shall take place in St. Cloud, Minnesota. The discovery rules set forth in the Minnesota Rules of Civil Procedure shall apply to the arbitration and the parties shall be allowed to conduct discovery according to those Rules. The arbitrator shall have the power to decide any discovery disputes. The prevailing party, as determined by the arbitrator, shall be awarded the arbitration fees it incurred, its reasonable attorney's fees, costs, and expert witness fees incurred in connection with the arbitration. Prior to filing an arbitration claim, the parties agree to mediate their disputes in St. Cloud, Minnesota, with a mediator selected by the HRA, after consultation with the Contractor. Each side shall pay one-half of the costs of the mediator.

34. This Contract shall not be modified except in writing signed by both the HRA and Subcontractor.

35. This Contract shall be construed and governed by the laws and remedies of Minnesota.

36. Exhibits:

The following noted documents are placed under each of the noted appendix and are a part of this contract:

A. Exhibit A: Specific documentation pertaining to Section 3 that pertains to this contract.

B. Exhibit B: Business Guaranty

C. Exhibit C: Extras, Changes Orders and Waiver

D. Exhibit D: Verification of Sub-Contractors and Suppliers

E. Exhibit E: Scope of Services, as agreed upon by the HRA and the contractor;

F. Exhibit F: Responsible Contractor Certification

G. Included by reference is any document or clause issued as a part of IFB that the HRA may choose to include at any time during the performance of this contract or any options exercised thereto by the HRA. Further, any document that may be referenced herein that has not been listed above is hereby incorporated herein by reference, and a copy of each such document is available from the HRA upon written request for such from the contractor.

Please note that, in the case of any discrepancy between this contract and any of the above noted exhibits, the requirement(s) detailed within the body of this contract shall take first precedence, then the requirement(s) detailed within each exhibit shall take precedence in the order that they are listed above (meaning, the requirement(s) detailed within the lower listed item may not overrule any requirement(s) detailed within a higher listed item).

ST. CLOUD HOUSING AND
REDEVELOPMENT AUTHORITY

By_____
Its: Executive Director

CONTRACTOR:

_____

By_____
Its: _____

ARE YOU A CORPORATION? _____
PLEASE PROVIDE ONE OF THE FOLLOWING:

FEDERAL ID # _____
OR SOCIAL SECURITY # _____

EXHIBIT A

Section 3

EXHIBIT B

BUSINESS GUARANTY

_____ hereby guaranty all obligations of the Contractor/HRA under
Company Name

this contract and agree to arbitrate and mediate all disputes as provided in the Contract.

_____

EXHIBIT C

Extras, Change Orders and Waiver

TO: All Contractors and Suppliers

RE: Extras, Change Orders and Waiver

Any and all additional work which deviates from the original contract price shall be at your own risk unless authorized in writing by the HRA prior to said work occurring.

Any and all changes must be documented by a written change order signed by the HRA/Representative. Other employees of the HRA do not have express, implied or apparent authority to authorize additional work for the HRA. Verbal agreements or orders shall not constitute authorization and any work done pursuant to a verbal agreement or order shall be at your peril. This notice also constitutes your written waiver of any benefits conferred under a claim based on a quasi contract if and when work occurs pursuant to a verbal agreement or order.

THE ST. CLOUD HOUSING AND REDEVELOPMENT AUTHORITY

By_____
Its: Executive Director
1225 West St. Germain Street
(320) 252-0880
(320) 252-0889 Fax

CONTRACTOR:
_____

By_____
Its: _____
_____
_____

EXHIBIT D

VERIFICATION OF SUB-SUBCONTRACTORS AND SUPPLIERS

Please list all of your subcontractors and/or suppliers you anticipate using for the Project on this form and return to the HRA at least 10 days prior to commencing your work. This form must be returned to us before your first pay request will be processed and it must be updated before all other pay requests are processed.

If you will not be using any subcontractors or suppliers, please state that on this form, sign the bottom and return it to the HRA.

I, the undersigned, hereby certify and swear that the following list of subcontractors and or suppliers is complete, including any and all suppliers of labor and material to and for the Project.

Firm	Amount	Contact Person/Phone
Firm	Amount	Contact Person/Phone
Firm	Amount	Contact Person/Phone
Firm	Amount	Contact Person/Phone

Firm

By_____
(Print Name)

Its_____
(Print Title)

EXHIBIT E

Scope of Services

EXHIBIT F

Responsible Contractor Certification

SECTION 011000 - SUMMARY

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Work covered by Contract Documents.
2. Contractor’s use of site and premises.
3. Coordination with occupants.
4. Work restrictions.
5. Specification and drawing conventions.

B. Related Sections:

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

1.2 WORK COVERED BY CONTRACT DOCUMENTS

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

1. Exterior renovation of the St. Cloud HRA Northway Townhome B, 12-unit complex including removal and disposal of all existing exterior finishes (except roofing), and installation of new siding and trims, windows, exterior doors, garage doors, and exterior light fixtures. Minor interior work to add wood window casing at new windows.

B. Type of Contract.

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

1.3 CONTRACTOR’S USE OF SITE AND PREMISES

A. Limits on 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, parking garages, loading areas, and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.

a. Schedule deliveries to minimize use of driveways and entrances by construction operations.
b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

B. 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.

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

1.4 COORDINATION WITH OCCUPANTS

A. Tenants will occupy building during entire construction period. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner and tenant usage. Perform the Work so as not to interfere with Owner's and tenant's day-to-day operations. Maintain existing exits unless otherwise indicated.

1. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, 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. Comply with restrictions on construction operations.

1. Comply with limitations on use of public streets, rights of way, and with other requirements of authorities having jurisdiction.

B. On-Site Work Hours: Limit work in the existing building to normal business working hours as indicated by the Owner.

C. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after providing temporary utility services according to requirements indicated:

1. Notify Architect not less than two days in advance of proposed utility interruptions.

D. Noise, Vibration, and Odors: Coordinate operations that may result in high levels of noise and vibration, odors, or other disruption to Owner occupancy with Owner.

1. Notify Architect not less than two days in advance of proposed disruptive operations.

E. Nonsmoking Building: Smoking is not permitted within the building or within 25 feet of entrances, operable windows, or outdoor-air intakes.

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 and scheduled on Drawings.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011000

SECTION 012300 - ALTERNATES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for alternates.

B. Related Sections:

1. Section 004323 "Bid Supplement - Alternates Form" for required form to be completed and submitted with Bid Form.

1.2 DEFINITIONS

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

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

1.3 PROCEDURES

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

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

B. Notification: Immediately following award of the Contract, notify each party involved, in writing, of the status of each alternate. Indicate if alternates have been accepted, rejected, or deferred for later consideration. Include a complete description of negotiated revisions to alternates.

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

D. Schedule: A schedule of alternates is included at the end of this Section. Specification Sections referenced in schedule contain requirements for materials necessary to achieve the work described under each alternate.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF ALTERNATES

A. Alternate No. 1: Windows and Patio Doors.

1. Alternate: Provide a bid alternate for fiberglass windows and patio doors per Section 085413, in lieu of vinyl windows and patio doors.

END OF SECTION 012300

SECTION 012500 - SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for substitution requests prior to Bid submittal and after Contract award.

B. Related Sections:

1. Section 002113 “A701-1997 Instructions to Bidders”.
2. Section 002300 “Substitution Request Form”.
3. Section 007100 “A207-2017 General Conditions of the Contract”.
4. Section 016000 "Product Requirements" for comparable product request submittals.

1.2 DEFINITIONS

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

1. Substitutions for Cause: Changes proposed by Contractor that are required due to changed Project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms.
2. Substitutions for Convenience: Changes proposed by Contractor or Owner that are not required in order to meet other Project requirements but may offer advantage to Contractor or Owner.

1.3 REQUIREMENTS

A. The materials, products and equipment described in the Bidding and/or Construction Documents establish a standard of required function, dimension, appearance and quality to be met by any proposed substitution.

B. Requests for substitution are required for approval of qualifying substitute materials and equipment when the Specifications, Schedules, or Drawings list materials or equipment by product, model or manufacturer name.

C. Requests shall be submitted on the Substitution Request Form provided in the Specification Manual and provided to the Architect in strict accordance with this Section 012500. Requests sent to the Owner, Engineer(s), or parties other than the Architect, shall be considered non-compliant.

D. Substitutions will not be considered where specifically prohibited by the Specifications, Schedules, or Drawings.

E. The burden of proof of the merit of the proposed substitution is upon the proposer. The Architect’s decision of approval or disapproval of a proposed substitution shall be final.

F. Architect’s approval of a substitute during the Bidding Phase does not relieve the Contractor of the responsibility to provide a compliant product that meets the Specifications in the Contract Documents. Approval is given subject to final approval of shop drawings.

G. A later claim by the Contractor for an addition to the Contract Sum or Contract Time, due to a rejected substitution that results in a return to the specified product, shall not be considered.

1.4 SUBSTITUTION REQUESTS PRIOR TO BID SUBMITTAL

A. Substitution Requests: Substitution requests will be considered prior to the receipt of Bids if received by the Architect at least seven (7) days prior to the Bid due date, and include the properly completed form and supporting data. Requests received late or incomplete will not be considered.

B. Substitution Request Form: Requests must be submitted on the Substitution Request Form included in the Specification Manual, Section 002300. The completed Substitution Request Form with supporting data attachments are accepted electronically by the Architect at the email address indicated on the form. Electronic submission is preferred, however, paper copies delivered via postal service is also acceptable.

C. Engineering Review: Substitution requests for products, materials, equipment or methods of construction that require review by a consulting Engineer shall be submitted to the Architect in accordance with this Section 012500. The Architect will forward the request to the Engineer for review as required.

D. Supporting Data: Show compliance with requirements for substitutions by submitting a completed Substitution Request Form and the following, as applicable:

1. Statement indicating why specified product or fabrication or installation method cannot be provided, if applicable.
2. 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.
3. 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, color or finish, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
4. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
5. Samples, where applicable or requested.
6. Certificates and qualification data, where applicable or requested.
7. List of similar installations for completed projects with project names and addresses as well as names and addresses of architects and owners, if requested.
8. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
9. Research reports evidencing compliance with building code in effect for Project.
10. 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.
11. Cost information, including a proposal of change, if any, in the Contract Sum.
12. 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.
13. 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.

E. 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 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.

a. Forms of Acceptance: Official notification will be by Addendum to the Contract Documents. Bidders shall not rely upon approvals made in any other manner.
b. The product specified must be bid if the Architect does not issue a decision on use of a proposed substitution within time allocated.

1.5 SUBSTITUTIONS AFTER CONTRACT AWARD

A. Substitutions for Cause: Submit requests for substitution immediately on discovery of need for change, but not later than 15 days prior to time required for preparation and review of related submittals.

1. Architect will review Contractor's request for substitutions that are required due to changed Project conditions, such as unavailability of specified product, regulatory changes, or unavailability of required warranty terms. The substitution must satisfy the following conditions:

a. Requested substitution is consistent with the Contract Documents and will produce results specified.
b. Substitution does not increase the cost to the Owner.
c. Substitution request is fully documented and properly submitted to Architect.
d. Requested substitution will not adversely affect Contractor's construction schedule.
e. Requested substitution has received necessary approvals of authorities having jurisdiction.
f. Requested substitution is compatible with other portions of the Work.
g. Requested substitution has been coordinated with other portions of the Work.
h. Requested substitution provides specified warranty.
i. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

2. Accepted products, materials and equipment are submitted for review to the Architect through the Contractor in accordance with Section 013300 “Submittal Procedures”.
3. Architect will review substitute products for performance, appearance, color, finish, size and suitability for inclusion in the Work. If a substitute product is not accepted, the Contractor must submit another product by an accepted manufacturer.
4. If a substitute product is accepted, Contractor shall coordinate any necessary changes in other related Work and pay for these changes. Contractor to reimburse the Owner for the cost of architectural or engineering services, if any, required to incorporate substitute products into the Work.
5. Form of Acceptance: Architect will issue a Change Order document authorizing the Contractor to provide the substitute product.

B. Substitutions for Contractor’s convenience are not allowed, unless there is significant monetary advantage to the Owner. Substitutions must also satisfy the conditions and requirements stated for Substitutions for Cause, and are submitted to the Architect for review with the Owner.

PART 2 - EXECUTION (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012500

SECTION 012600 - CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

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

B. Types of modification documents include the following:

1. Requests for Information (RFI)
2. Architectural Supplemental Instructions (ASI)
3. Proposal Requests (PR)
4. Change Orders (CO)
5. Construction Change Directive (CCD)

C. Related Sections:

1. Section 007100 “A201-2017 General Conditions of the Contract”, Article 7 “Changes in the Work” for methods of determining cost or credit and Contractor mark-up.

1.2 REQUEST FOR INFORMATION (RFI)

A. Contractor shall submit a request for information (RFI) to the Architect when seeking information or clarifications of the Contract Documents.

B. Refer to Section 013100 “Project Management and Coordination for RFI procedures.

1.3 ARCHITECT’S SUPPLEMENTAL INSTRUCTIONS (ASI)

A. Architect will issue supplemental instructions (ASI) directly to the Contractor 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."

B. Contractor to proceed with the Work change indicated or notify the Architect within 10 days of receipt of the ASI if it will result in a cost change. The Contractor shall submit an itemized quotation for the change to the Architect in the form of a Proposal Request, and is not authorized to proceed with the work without an approved Change Order.

1.4 PROPOSAL REQUESTS (PR)

A. Owner-Initiated Proposal Requests: Architect will issue a detailed description of Owner-requested changes that may require adjustment to the Contract Sum or the Contract Time (PR). 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 time specified in 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. Indicate the allowable percent for profit and overhead in accordance with A201-2017 “General Conditions of the Contract”.
e. 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.

3. Formal acceptance: Architect will issue the AIA Document A701-2017 “Change Order” authorizing the Contractor to proceed with the Work change.

B. Contractor-Initiated Work Change Proposals: If latent or changed conditions require modifications to the Work, the Contractor shall submit a request for information (RFI) to the Architect in accordance with Section 013100 “Project Management and Coordination”.

1. If Architect’s action on RFIs would result in a change to the Contract Time or the Contract Sum, the Contractor will be directed to submit a Change Proposal request to the Architect.

2. Include the following in the Work Change Proposal request:

a. 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.
b. 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.
c. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
d. Include costs of labor and supervision directly attributable to the change.
e. Indicate the allowable percent for profit and overhead in accordance with A201-2017 “General Conditions of the Contract”.
f. 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.
g. Comply with requirements in Section 012500 "Substitution Procedures" if the proposed change requires substitution of one product or system for product or system specified.

3. Formal acceptance: Architect will issue the AIA Document A701-2017 “Change Order” authorizing the Contractor to proceed with the Work change.

1.5 CHANGE ORDERS (CO)

A. A Change Order is a document prepared by the Architect and signed by the Owner, Contractor, and Architect stating their acceptance of a Proposal Request, or agreement upon all of the following:

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

B. Changes in the Project scope of work affecting the project cost or time can be made only through a Change Order document issued by the Architect. AIA Document A701-2017 “Change Order” shall be the formal Change Order document.

C. Methods and requirements used in determining adjustments to the Contract Sum due to changes in the Work shall be in accordance with A201-2017 “General Conditions of the Contract”.

D. Change Orders will be processed at increments determined by the Architect throughout the construction schedule.

1.6 CONSTRUCTION CHANGE DIRECTIVE (CCD)

A. In the event the Owner and Contractor have not reached an agreement on how a proposed or required change in the Work will affect the Contract Sum or Contract Time, and the Project could be delayed or otherwise impacted if the change is not expeditiously implemented, Architect will prepare a Construction Change Directive (CCD), using AIA Document G714-2017 “Construction Change Directive”.

B. The Construction Change Directive (CCD) signed by the Architect and the Owner, instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order. Contractor’s signature of agreement on the CCD is not required for the directive to be valid and Work to commence.

C. 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.

D. Contractor to maintain detailed records on a time and material basis of the work required by the Construction Change Directive.

E. Within 15 days after completion of Work change, Contractor shall submit itemized accounting and supporting data to the Architect to substantiate cost and time adjustments to the Contract. Architect will determine allowable cost of such work as provided in A201-2017 “General Conditions of the Contract”.

F. A Change Order document will be issued for an approved Contract modification.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012600

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. Subcontractor list submittal.
2. General coordination procedures.
3. Coordination drawings.
4. Requests for Information (RFIs).
5. Digital data files.
6. Project meetings.

B. Related Sections:

1. Section 007100 “A201-2017 General Conditions of the Contract” for subcontractor approval requirements.
2. Section 011200 "Multiple Contract Summary" for a description of the division of work among separate contracts and responsibility for coordination activities not in this Section.
3. Section 017300 "Execution" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.

1.2 SUBCONTRACTOR LIST

A. The Contractor, as soon as practical after award of the Contract, shall submit to the Architect and Owner for review a list of the Subcontractors who are to perform work or furnish materials or equipment for the Work.

1. 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. Include the following information in tabular form:

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

B. Proposed Subcontractor list shall be reviewed by the Architect and Owner in accordance with A201-2017 “General Conditions of the Contract”, Article 5.

1.3 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. 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.
8. Startup and adjustment of systems.

1.4 COORDINATION DRAWINGS

A. Coordination Drawings, General: Prepare coordination drawings according to requirements in individual Sections and additionally where installation is not completely indicated 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 of architectural, structural, civil, mechanical, and electrical systems.
   b. Indicate dimensions shown on the Drawings. Specifically note dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternative sketches to Architect indicating proposed resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the Contract.

B. Coordination Drawing Organization: Organize coordination drawings as follows:

1. Floor Plans and Reflected Ceiling Plans: Show architectural and structural elements, and mechanical, plumbing, fire protection, fire alarm, and electrical Work. Show locations of visible ceiling-mounted devices relative to acoustical ceiling grid. Supplement plan drawings with section drawings where required to adequately represent the Work.
2. Plenum Space: Indicate subframing for support of ceiling and wall systems, mechanical and electrical equipment, and related Work. Locate components within plenums to accommodate layout of light fixtures and other components indicated on Drawings. Indicate areas of conflict between light fixtures and other components.
3. Mechanical Rooms: Provide coordination drawings for mechanical rooms showing plans and elevations of mechanical, plumbing, fire-protection, fire-alarm, and electrical equipment.
4. Structural Penetrations: Indicate penetrations and openings required for all disciplines.
5. Slab Edge and Embedded Items: Indicate slab edge locations and sizes and locations of embedded items for metal fabrications, sleeves, anchor bolts, bearing plates, angles, door floor closers, slab depressions for floor finishes, curbs and housekeeping pads, and similar items.
6. 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.

1.5 REQUEST FOR INFORMATION (RFI)

A. General: Immediately on discovery of the need for additional information, clarification, or interpretation of the Contract Documents, Contractor shall prepare and submit a Request for Information (RFI) to the Architect in the form specified.

1. RFIs submitted by persons or entities other than the Contractor, will not be accepted by the Architect.
2. RFIs shall be submitted electronically to the Architect via email or Contractor's project management software.
3. Contractor to coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.

B. RFI Forms: AIA Document G716 "Request for Information", or other similar document that can be submitted electronically.

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

1. Project name.
2. Date submitted.
3. Requested reply 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 suggested resolution 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.

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 Contractor-generated RFIs will be returned without action:

a. Requests for approval of submittals.
b. Requests for approval of substitutions.
c. Requests for approval of Contractor's means and methods.
d. Requests for coordination information already indicated in the Contract Documents.
e. Requests for adjustments in the Contract Time or the Contract Sum.
f. Requests for interpretation of Architect's actions on submittals.
g. 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 7 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 monthly. 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 returned without action or withdrawn.
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.
2. Identification of related Field Order, Work Change Directive, and Proposal Request, as appropriate.

1.6 DIGITAL DATA FILES

A. Digital data files of Architect's CAD drawings will be provided by Architect for Contractor's use during construction.

1. Digital data files may be used by Contractor in preparing coordination drawings, Shop Drawings, and Project record Drawings.
2. Architect makes no representations as to the accuracy or completeness of digital data files as they relate to Contract Drawings.
3. Architect shall execute a data licensing agreement to the Contractor. This agreement must be signed and returned before the drawings are released.

    a. Requests for digital files are only accepted from the Contractor or Owner. Subcontractors and suppliers must make their request through the Contractor.

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: 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, and their consultants; 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. Phasing.

c. Critical work sequencing and long-lead items.
d. Designation of key personnel and their duties.
e. Lines of communication.
f. Use of web-based Project software.
g. Procedures for processing field decisions and Change Orders.
h. Procedures for RFIs.
i. Procedures for testing and inspecting.
j. Procedures for processing Applications for Payment.
k. Distribution of the Contract Documents.
l. Submittal procedures.
m. Preparation of record documents.
n. Use of the premises and existing building.
o. Work restrictions.
p. Working hours.
q. Owner's occupancy requirements.
r. Responsibility for temporary facilities and controls.
s. Procedures for moisture and mold control.
t. Procedures for disruptions and shutdowns.
u. Construction waste management and recycling.
v. Parking availability.
w. Office, work, and storage areas.
x. Equipment deliveries and priorities.
y. First aid.
z. Security.
aa. 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 required by other sections and when required for 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 requirements.
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 at monthly intervals.

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.
3. Construction reports.

B. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction project. Activities included in a construction schedule consume time and resources.

1. Critical Activity: An activity on the critical path that must start and finish on the planned early start and finish times.
2. Predecessor Activity: An activity that precedes another activity in the network.
3. Successor Activity: An activity that follows another activity in the network.

C. CPM: Critical path method, which is a method of planning and scheduling a construction project where activities are arranged based on activity relationships. Network calculations determine when activities can be performed and the critical path of Project.

D. Critical Path: The longest connected chain of interdependent activities through the network schedule that establishes the minimum overall Project duration and contains no float.

E. Float: The measure of leeway in starting and completing an activity.

1. Float time is not for the exclusive use or benefit of either Owner or Contractor, but is a jointly owned, expiring Project resource available to both parties as needed to meet schedule milestones and Contract completion date.

1.2 INFORMATIONAL SUBMITTALS

A. Format for Submittals: Submit required submittals in the following format:

1. Working electronic copy of schedule file, where indicated.
2. PDF file.

B. Startup Network Diagram: Of size required to display entire network for entire construction period. Show logic ties for activities.

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

1. Submit a working digital copy of schedule, using construction scheduling software and labeled to comply with requirements for submittals.

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

E. Daily Construction Reports: Submit at monthly intervals.

F. 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, 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.

1.4 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

A. Time Frame: Extend schedule from date established for the Notice to Proceed to date of final completion.

1. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.

B. Activities: Treat each floor or separate area as a separate numbered activity for each main element of the Work. Comply with the following:

1. Activity Duration: Define activities so no activity is longer than 20 days, unless specifically allowed by Architect.
2. Procurement Activities: Include procurement process activities for the following long lead items and major items, requiring a cycle of more than 60 days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.
3. Submittal Review Time: Include review and resubmittal times indicated in Section 013300 "Submittal Procedures" in schedule. Coordinate submittal review times in Contractor's construction schedule with submittal schedule.
4. Startup and Testing Time: Include no fewer than 15 days for startup and testing.
5. Substantial Completion: Indicate completion in advance of date established for Substantial Completion, and allow time for Architect's administrative procedures necessary for certification of Substantial Completion.
6. Punch List and Final Completion: Include not more than 30 days for completion of punch list items and final completion.

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

1. Phasing: Arrange list of activities on schedule by phase.
2. Owner-Furnished Products: Include a separate activity for each product. Include delivery date indicated in Section 011000 “Summary”. Delivery dates indicated stipulate the earliest possible delivery date.
3. Work Restrictions: Show the effect of the following items on the schedule:

a. Coordination with existing construction.
b. Limitations of continued occupancies.
c. Uninterruptible services.
d. Partial occupancy before Substantial Completion.
e. Use of premises restrictions.
f. Provisions for future construction.
g. Seasonal variations.
h. Environmental control.

4. Work Stages: Indicate important stages of construction for each major portion of the Work.

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. Summarize the following issues:

1. Unresolved issues.
2. Unanswered Requests for Information.
3. Rejected or unreturned submittals.
4. Notations on returned submittals.
5. Pending modifications affecting the Work and Contract Time.

1.5 CPM (CRITICAL PATH METHOD) SCHEDULE REQUIREMENTS

A. General: Prepare network diagrams using AON (activity-on-node) format.

B. Startup Network Diagram: Submit diagram within 14 days of date established for the Notice to Proceed. Outline significant construction activities for the first 90 days of construction. Include skeleton diagram for the remainder of the Work and a cash requirement prediction based on indicated activities.

C. CPM Schedule: Prepare Contractor's construction schedule using a time-scaled CPM network analysis diagram for the Work.

1. Develop network diagram in sufficient time to submit CPM schedule so it can be accepted for use no later than 30 days after date established for the Notice to Proceed.

a. Failure to include any work item required for performance of this Contract shall not excuse Contractor from completing all work within applicable completion dates.

2. Establish procedures for monitoring and updating CPM schedule and for reporting progress. Coordinate procedures with progress meeting and payment request dates.
3. Use "one workday" as the unit of time for individual activities. Indicate nonworking days and holidays incorporated into the schedule to coordinate with the Contract Time.

D. CPM Schedule Preparation: Prepare a list of all activities required to complete the Work. Using the startup network diagram, prepare a skeleton network to identify probable critical paths.

1. Activities: Indicate the estimated time duration, sequence requirements, and relationship of each activity in relation to other activities. Include estimated time frames for the following activities:

a. Preparation and processing of submittals.
b. Mobilization and demobilization.
c. Purchase of materials.
d. Delivery.
e. Fabrication.
f. Utility interruptions.
g. Installation.
h. Work by Owner that may affect or be affected by Contractor's activities.
i. Testing and inspection.
j. Punch list and final completion.
k. Activities occurring following final completion.

2. Critical Path Activities: Identify critical path activities, including those for interim completion dates. Scheduled start and completion dates shall be consistent with Contract milestone dates.

3. Processing: Process data to produce output data on a computer-drawn, time-scaled network. Revise data, reorganize activity sequences, and reproduce as often as necessary to produce the CPM schedule within the limitations of the Contract Time.
4. Format: Mark the critical path. Locate the critical path near center of network; locate paths with most float near the edges.

    a. Sub-networks on separate sheets are permissible for activities clearly off the critical path.

E. Contract Modifications: For each proposed contract modification and concurrent with its submission, prepare a time-impact analysis using a network fragment to demonstrate the effect of the proposed change on the overall project schedule.

F. Initial Issue of Schedule: Prepare initial network diagram from a sorted activity list indicating straight "early start-total float." Identify critical activities. Prepare tabulated reports showing the following:

1. Contractor or subcontractor and the Work or activity.
2. Description of activity.
3. Main events of activity.
4. Immediate preceding and succeeding activities.
5. Early and late start dates.
6. Early and late finish dates.
7. Activity duration in workdays.
8. Total float or slack time.
9. Average size of workforce.
10. Dollar value of activity (coordinated with the schedule of values).

1.6 CONSTRUCTION SCHEDULE UPDATING

A. At monthly intervals, update schedule to reflect actual construction progress and activities. Issue schedule one week before each regularly scheduled progress meeting.

B. 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.

C. 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.

D. As the Work progresses, indicate final completion percentage for each activity.

E. Recovery Schedule: When periodic update indicates the Work is 14 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. Indicate changes to working hours, working days, crew sizes, equipment required to achieve compliance, and date by which recovery will be accomplished.

F. 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.

1.7 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. Testing and inspection.
8. Accidents.
9. Meetings and significant decisions.
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 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not used)

END OF SECTION 013200

SECTION 013233 - PHOTOGRAPHIC DOCUMENTATION

PART 1 - GENERAL

1.1 SUMMARY

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

1. Preconstruction photographs.
2. Periodic construction photographs.
3. Final completion construction photographs.

B. Related Sections:

1. Section 017700 "Closeout Procedures" for submitting photographic documentation as Project Record Documents at Project closeout.

1.2 INFORMATIONAL SUBMITTALS

A. Key Plan: Submit key plan of Project site and building with notation of vantage points marked for location and direction of each photograph. Indicate elevation or story of construction. Include same information as corresponding photographic documentation.

B. Digital Photographs:

1. Submit photos electronically and include copy of key plan indicating each photograph's location and direction.
2. Identification: Provide the following information with each image description in file metadata tag:

a. Name of Project.
b. Name and contact information for photographer.
c. Date photograph was taken.
d. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.

1.3 QUALITY ASSURANCE

A. Photographer Qualifications: An individual who has experience as a photographer of construction projects for not less than three years.

1.4 FORMATS AND MEDIA

A. Digital Images: Provide images in JPG format, at an image resolution of not less than 2048x1536 pixels.

1.5 CONSTRUCTION PHOTOGRAPHS

A. General: Take photographs with maximum depth of field, and in focus, to clearly show the Work. Photographs with blurry or out-of-focus areas will not be accepted.

1. Maintain key plan with each set of construction photographs that identifies each photographic location.

B. Preconstruction Photographs: Before starting construction, take photographs of Project site and surrounding properties, including existing items to remain during construction, from different vantage points, as directed by Architect.

1. Flag construction limits before taking construction photographs.
2. Take 20 photographs to show existing conditions adjacent to property before starting the Work.
3. Take 20 photographs of existing buildings either on or adjoining property to accurately record physical conditions at start of construction.
4. Take additional photographs as required to record settlement or cracking of adjacent structures, pavements, and improvements.

C. Periodic Construction Photographs: Take 20 photographs monthly, coinciding with the cutoff date associated with each Application for Payment. Select vantage points to show status of construction and progress since last photographs were taken.

D. Final Completion Construction Photographs: Take 20 color photographs after date of Substantial Completion for submission as Project Record Documents. Architect will inform photographer of desired vantage points.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013233

SECTION 013300 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Submittal schedule requirements.
2. Administrative and procedural requirements for product submittals and shop drawings.

B. Related Sections:

1. Section 012900 "Payment Procedures", for Application for Payment and Schedule of Values submittal procedures.
2. Section 013100 "Project Management and Coordination", for coordination drawing submittal procedures.
3. Section 013200 "Construction Progress Documentation", for Construction Schedule submittal procedures.
4. Section 014000 "Quality Requirements", for Testing and Inspection Report submittals.
5. Section 017700 "Closeout Procedures", for closeout submittals and maintenance material submittal procedures.
6. Section 017823 "Operation and Maintenance Data", for maintenance data submittals.

1.2 DEFINITIONS

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

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

1.3 SUBMITTAL SCHEDULE

A. Submittal Schedule: Submit a list of product data and shop drawing submittals to the Architect prior to construction start, arranged in chronological order by dates required by construction schedule.

1. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates.
2. Include additional time required for making corrections or revisions to submittals noted by Architect and additional time for handling and reviewing submittals required by those corrections.

1.4 SUBMITTAL FORMATS

A. Transmittal: Each submittal shall include the following information on a transmittal or cover sheet:

1. Project name.
2. Date.
3. Name of Architect.

4. Name of Contractor/Construction Manager.
5. Name of firm or entity that prepared submittal.
6. Names of subcontractor, manufacturer, and supplier.
7. Category and type of submittal.
8. Submittal purpose and description.
9. Number and title of Specification Section, with alphanumeric suffix for resubmittals.
10. Drawing number and detail references, as appropriate.
11. Indication of full or partial submittal.
12. Location(s) where product is to be installed, as appropriate.
13. Signature of transmitter.
14. Space for Architect/Engineer remarks and review stamp on cover page or transmittal.
15. Contractor stamp indicating General Contractor's review of submittal prior to submitting.

B. Submittal Format: Electronic (PDF) submittals are preferred.

1. PDF Submittals: Prepare submittals as a single PDF package, with a transmittal cover sheet that includes all submittal information indicated in paragraph 1.4A.
2. Paper Submittals: Paper submittals complying with all requirements will be accepted when electronic submittal is not feasible.

C. Submittals for Web-Based Project Software: Prepare submittals as PDF files, or other format indicated by Project software website.

D. Submittals may be rejected for non-compliance with formatting or submission requirements.

1.5 SUBMITTAL PROCEDURES

A. Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.

B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.

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

C. Processing Time: Allow time for submittal review, including time for resubmittals. Time for review shall commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.

1. Initial Review: Allow 15 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
2. Resubmittal Review: Allow 15 days for review of each resubmittal.

D. Resubmittals: Make resubmittals in same format as initial submittal. Clearly indicate submission is a resubmittal or revision to initial submittal.

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

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

1.6 SUBMITTAL REQUIREMENTS

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

1. Mark each submittal to show which products and options are applicable.
2. Include the following information, as applicable:

a. Manufacturer's catalog cuts.
b. Manufacturer's product specifications that have been edited to be Project-specific.
c. Standard color charts (pdf or photocopies not acceptable), or color chips.
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.

3. For equipment, include the following in addition to the above, as applicable:

a. Wiring diagrams that show factory-installed wiring.
b. Printed performance curves.
c. Operational range diagrams.
d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.

4. If information must be specially prepared for submittal because standard published data are unsuitable for use, submit as Shop Drawings, not as Product Data.

5. Submit Product Data before Shop Drawings, and before or concurrent with Samples.

B. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.

1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:

a. Identification of products.
b. Schedules.
c. Compliance with specified standards.
d. Notation of coordination requirements.
e. Notation of dimensions established by field measurement.
f. Relationship and attachment to adjoining construction clearly indicated.
g. Seal and signature of professional engineer if specified.

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

3. Options and Selections: Clearly identify on the submittal where there are options requiring selection by Architect.

4. The Contractor, not the Architect, is responsible to verify dimensions, quantities and details on the shop drawings to be correlated with job conditions.

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

1. Send samples that contain multiple, related components such as accessories together in one submittal package, including a paper transmittal with all required information.
2. Identification: Attach label on unexposed side of Samples that includes the following:

    a. Project name and submittal number.
    b. Product name and name of manufacturer.
    c. Sample source.
    d. Number and title of applicable Specification Section.

3. Samples for Initial Selection: Submit manufacturer's color charts showing the full range of colors, textures, and patterns available.

    a. Number of Samples: Submit to Architect, one full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return transmittal with options selected.

4. 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.

    a. Samples for verification include, but are not limited to, the following:

        1) Partial sections of manufactured or fabricated components.
        2) Small cuts or containers of materials.
        3) Complete units of repetitively used materials.
        4) Swatches showing color, texture, and pattern.
        5) Color range sets.
        6) Components used for independent testing and inspection.

    b. Number of Samples: Submit two sets of samples. Architect will retain one sample sets; remainder will be returned. Mark up and retain one returned sample set as a project record sample.

        1) 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.

5. Disposition: Maintain sets of approved samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.

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

D. Informational Submittals: Submit informational submittals as indicated in the Specification Section:

1. Product Schedule: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location.
2. 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.

3. 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.
4. 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.
5. 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.
6. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
7. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
8. 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.
9. 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.
10. 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.
11. Schedule of Tests and Inspections: Comply with requirements specified in Section 014000 "Quality Requirements."
12. 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.
13. 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.
14. 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.
15. 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.

1.7 DELEGATED-DESIGN SERVICES

A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.

1. If criteria indicated are insufficient to perform services or certification required, submit a written request for additional information to Architect.

B. Delegated-Design Services Certification: In addition to Shop Drawings, Product Data, and other required submittals, submit one paper copy of certificate, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.

1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

1.8 CONTRACTOR'S REVIEW

A. Action Submittals and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.

B. Contractor's Approval: Indicate Contractor's approval for each submittal with a uniform approval stamp. Include name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

1. Architect will not review submittals received from Contractor that do not have Contractor's review and approval.

1.9 ARCHITECT'S REVIEW

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

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

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

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

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

F. Architect’s review is only for general conformance with the Contract Documents. Corrections or comments made on the shop drawings by the Architect do not relieve the Contractor from compliance with the requirements of the drawings and specifications.

G. Contractor is responsible for dimensions, quantities, and details to be correlated with job conditions. Contractor shall coordinate with work of other trades.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013300

SECTION 014000 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for quality assurance and quality control, including testing and inspections.

1.2 DEFINITIONS

A. Experienced: When used with an entity or individual, "experienced", unless otherwise further described, means having successfully completed a minimum of five previous projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

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

C. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, assembly, and similar operations.

1. Use of trade-specific terminology in referring to a trade or entity does not require that certain construction activities be performed by accredited or unionized individuals, or that requirements specified apply exclusively to specific trade(s).

D. Mockups: Full-size physical assemblies that are constructed on-site either as freestanding temporary built elements or as part of permanent construction. Mockups are constructed to verify selections made under Sample submittals; to demonstrate aesthetic effects and qualities of materials and execution; to review coordination, testing, or operation; to show interface between dissimilar materials; and to demonstrate compliance with specified installation tolerances. Mockups are not Samples. Unless otherwise indicated, approved mockups establish the standard by which the Work will be judged.

1. Laboratory Mockups: Full-size physical assemblies constructed and tested at testing facility to verify performance characteristics.
2. Integrated Exterior Mockups: Mockups of the exterior envelope constructed on-site as freestanding temporary built elements or as part of permanent construction, consisting of multiple products, assemblies, and subassemblies.
3. Room Mockups: Mockups of typical interior spaces complete with wall, floor, and ceiling finishes; doors; windows; millwork; casework; specialties; furnishings and equipment; and lighting.

E. Preconstruction Testing: Tests and inspections performed specifically for Project before products and materials are incorporated into the Work, to verify performance or compliance with specified criteria.

F. Product Tests: Tests and inspections that are performed by a nationally recognized testing laboratory (NRTL) according to 29 CFR 1910.7, by a testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program (NVLAP), or by a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with specified requirements.

G. Source Quality-Control Tests: Tests and inspections that are performed at the source; for example, plant, mill, factory, or shop.

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

I. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.

J. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Contractor's quality-control services do not include contract administration activities performed by Architect.

1.3 TESTING AND INSPECTION SERVICES

A. Testing and inspection services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.

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

1.4 DELEGATED-DESIGN SERVICES

A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.

1.5 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.

1.6 ACTION SUBMITTALS

A. Delegated-Design Services Submittal: In addition to Shop Drawings, Product Data, and other required submittals, submit a statement signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional, indicating that the products and systems are in compliance with performance and design criteria indicated. Include list of codes, loads, and other factors used in performing these services.

1.7 INFORMATIONAL SUBMITTALS

A. Contractor's Statement of Responsibility: When required by authorities having jurisdiction, submit copy of written statement of responsibility sent to authorities having jurisdiction before starting work on the following systems:

1. Seismic-force-resisting system, designated seismic system, or component listed in the designated seismic system quality-assurance plan prepared by Architect.
2. Main wind-force-resisting system or a wind-resisting component listed in the wind-force-resisting system quality-assurance plan prepared by Architect.

B. 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.

1.8 REPORTS AND DOCUMENTS

A. Test and Inspection Reports: Prepare and submit certified written reports specified in other Sections. Include the following:

1. Date of issue.
2. Project title and number.
3. Name, address, telephone number, and email address of testing agency.
4. Dates and locations of samples and tests or inspections.
5. Names of individuals making tests and inspections.
6. Description of the Work and test and inspection method.
7. Identification of product and Specification Section.
8. Complete test or inspection data.
9. Test and inspection results and an interpretation of test results.
10. Record of temperature and weather conditions at time of sample taking and testing and inspection.
11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
12. Name and signature of laboratory inspector.
13. Recommendations on retesting and reinspecting.

B. Manufacturer's Technical Representative’s Field Reports: Prepare written information documenting tests and inspections specified in other Sections. Include the following:

1. Statement on condition of substrates and their acceptability for installation of product.
2. Statement that products at Project site comply with requirements.
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.

1.9 QUALITY ASSURANCE

A. General: Qualifications paragraphs in this article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.

B. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units. As applicable, procure products from manufacturers able to meet qualification requirements, warranty requirements, and technical or factory-authorized service representative requirements.

C. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

D. Installer Qualifications: A firm or individual experienced in installing, erecting, applying, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.

E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar in material, design, and extent to those indicated for this Project.

F. Specialists: Certain Specification Sections require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.

1. Requirements of authorities having jurisdiction shall supersede requirements for specialists.

G. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspection indicated, as documented according to ASTM E 329; and with additional qualifications specified in individual Sections; and, where required by authorities having jurisdiction, that is acceptable to authorities.

H. Manufacturer's Technical Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

I. 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 and assemblies, mockups and laboratory mockups and 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.
b. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations.

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.

K. Laboratory Mockups: Comply with requirements of preconstruction testing and those specified in individual Specification Sections.

1.10 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 inspection 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, whether specified or not, to verify that the Work complies with requirements.

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 inspection 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 inspection 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. Retesting/Re-inspecting: 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.

D. Testing Agency Responsibilities: Cooperate with Architect and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.

1. Notify Architect and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
2. Determine the locations from which test samples will be taken and in which in-situ tests are conducted.
3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
6. Do not perform any duties of Contractor.

E. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Section 013300 "Submittal Procedures."

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.

1.11 SPECIAL TESTS AND INSPECTIONS

A. Special Tests and Inspections: Engage a qualified testing agency to conduct special tests and inspections required by authorities having jurisdiction as the responsibility of Owner, as indicated in the Statement of Special Inspections, 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 re-inspecting corrected work.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 TEST AND INSPECTION LOG

A. Test and Inspection Log: Prepare a record of tests and inspections. Include the following:

1. Date test or inspection was conducted.
2. Description of the Work tested or inspected.
3. Date test or inspection results were transmitted to Architect.
4. Identification of testing agency or special inspector conducting test or inspection.

B. Maintain log at Project site. Post changes and revisions as they occur. Provide access to test and inspection log for Architect's reference during normal working hours.

3.2 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. Comply with the Contract Document requirements for cutting and patching in Section 017300 "Execution."

B. Protect construction exposed by or for quality-control service activities.

C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 014000

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.

B. Related Requirements:

1. Section 011000 "Summary" for work restrictions and limitations on utility interruptions.

1.2 USE CHARGES

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

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

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

1.3 INFORMATIONAL SUBMITTALS

A. Site Utilization Plan: Show temporary facilities, temporary utility lines and connections, staging areas, construction site entrances, vehicle circulation, and parking areas for construction personnel.

B. Project Identification and Temporary Signs: Show fabrication and installation details, including plans, elevations, details, layouts, typestyles, graphic elements, and message content.

C. Fire-Safety Program: Show compliance with requirements of NFPA 241 and authorities having jurisdiction. Indicate Contractor personnel responsible for management of fire-prevention program.

D. Moisture-and Mold-Protection Plan: Describe procedures and controls for protecting materials and construction from water absorption, damage, and mold.

E. Dust- and HVAC-Control Plan: Submit coordination drawing and narrative that indicates the dust- and HVAC-control measures proposed for use, proposed locations, and proposed time frame for their operation. Include the following:

1. Locations of dust-control partitions at each phase of work.
2. HVAC system isolation schematic drawing.
3. Location of proposed air-filtration system discharge.
4. Waste-handling procedures.
5. Other dust-control measures.

1.4 QUALITY ASSURANCE

A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.

B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

C. Accessible Temporary Egress: Comply with applicable provisions in the United States Access Board's ADA-ABA Accessibility Guidelines and ICC/ANSI A117.1.

1.5 PROJECT CONDITIONS

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

PART 2 - PRODUCTS

2.1 TEMPORARY FACILITIES

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

B. Project meetings specified in other Division 01 Sections. Keep office clean and orderly.

2.2 EQUIPMENT

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

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. Relocate and modify facilities as required by progress of the Work.

1. Locate facilities to limit site disturbance as specified in Section 011000 “Summary.”

B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 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. Water Service: Connect to Owner's existing water service facilities. Clean and maintain water service facilities in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.

C. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking water for use of construction personnel. Comply with requirements of authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.

D. Isolation of Work Areas in Occupied Facilities: Prevent dust, fumes, and odors from entering occupied areas.

E. Electric Power Service: Provide electric power service and distribution system of sufficient size, capacity, and power characteristics required for construction operations.

1. Connect temporary service to Owner’s existing power source, as directed by Owner.

3.3 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 of building lines that is noncombustible according to ASTM E 136. Comply with NFPA 241.
2. Maintain support facilities until Architect schedules Substantial Completion inspection. Remove before Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.
3. Maintain access for fire-fighting equipment and access to fire hydrants.

B. Parking: Use designated areas of Owner's existing parking areas, or provide temporary offsite for construction personnel, as required.
1. Remove snow and ice as required to minimize accumulations.

C. Project Signs: Provide Project signs as indicated. Unauthorized signs are not permitted.

1. Identification Signs: Provide Project identification signs as indicated on Drawings.
2. Temporary Signs: Provide other signs as indicated and as required to inform public and individuals seeking entrance to Project.

a. Provide temporary, directional signs for construction personnel and visitors.

3. Maintain and touch up signs so they are legible at all times.

D. Waste Disposal Facilities: Comply with requirements specified in Section 017419 "Construction Waste Management and Disposal."

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

1. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

A. Protection of Existing Facilities: Protect existing vegetation, equipment, structures, utilities, and other improvements at Project site and on adjacent properties, except those indicated to be removed or altered. Repair damage to existing facilities.

1. Where access to adjacent properties is required in order to affect protection of existing facilities, obtain written permission from adjacent property owner to access property for that purpose.

B. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.

C. Tree and Plant Protection: Install temporary fencing located as indicated or outside the drip line of trees to protect vegetation from damage from construction operations. Protect tree root systems from damage, flooding, and erosion.

D. Pest Control: Engage pest-control service to recommend practices to minimize attraction and harboring of rodents, roaches, and other pests and to perform extermination and control procedures at regular intervals so Project will be free of pests and their residues at Substantial Completion. Perform control operations lawfully, using materials approved by authorities having jurisdiction.

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

F. Temporary Egress: Maintain temporary egress from existing occupied facilities as indicated and as required by authorities having jurisdiction.

G. 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. Where heating or cooling is needed and permanent enclosure is incomplete, insulate temporary enclosures.

H. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241; manage fire-prevention program.

1. Prohibit smoking in construction areas. Comply with additional limits on smoking specified in other Sections.
2. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.
3. Develop and supervise an overall fire-prevention and -protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.
4. Provide temporary standpipes and hoses for fire protection. Hang hoses with a warning sign stating that hoses are for fire-protection purposes only and are not to be removed. Match hose size with outlet size and equip with suitable nozzles.

3.5 MOISTURE AND MOLD CONTROL

A. Contractor's Moisture-Protection Plan: Describe delivery, handling, storage, installation, and protection provisions for materials subject to water absorption or water damage.

1. Indicate procedures for discarding water-damaged materials, protocols for mitigating water intrusion into completed Work, and replacing water-damaged Work.
2. Indicate sequencing of work that requires water, such as sprayed fire-resistive materials, plastering, and terrazzo grinding, and describe plans for dealing with water from these operations. Show procedures for verifying that wet construction has dried sufficiently to permit installation of finish materials.
3. Indicate methods to be used to avoid trapping water in finished work.

B. Exposed Construction Period: Before installation of weather barriers, when materials are subject to wetting and exposure and to airborne mold spores, protect as follows:

1. Protect porous materials from water damage.
2. Protect stored and installed material from flowing or standing water.
3. Keep porous and organic materials from coming into prolonged contact with concrete.
4. Remove standing water from decks.
5. Keep deck openings covered or dammed.

C. Partially Enclosed Construction Period: After installation of weather barriers but before full enclosure and conditioning of building, when installed materials are still subject to infiltration of moisture and ambient mold spores, protect as follows:

1. Do not load or install drywall or other porous materials or components, or items with high organic content, into partially enclosed building.
2. Keep interior spaces reasonably clean and protected from water damage.
3. Periodically collect and remove waste containing cellulose or other organic matter.
4. Discard or replace water-damaged material.
5. Do not install material that is wet.
6. Discard and replace stored or installed material that begins to grow mold.
7. Perform work in a sequence that allows wet materials adequate time to dry before enclosing the material in gypsum board or other interior finishes.

3.6 OPERATION, TERMINATION, AND REMOVAL

A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.

B. Maintenance: Maintain facilities in good operating condition until removal.

1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.

C. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.

D. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.

1. Materials and facilities that constitute temporary facilities are property of Contractor. Owner reserves right to take possession of Project identification signs.
2. At Substantial Completion, repair, renovate, and clean permanent facilities used during construction period. Comply with final cleaning requirements specified in Section 017700 "Closeout Procedures."

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 Sections:

1. Section 012500 "Substitution Procedures" for substitution requests for comparable products.
2. Section 013300 “Submittal Procedures” for action submittals of specified products.

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 by Architect to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.

B. Basis-of-Design Product Specification: A specification in which a single manufacturer's product is named and accompanied by the words "basis-of-design product," including make or model number or other designation.

1. In addition to the basis-of-design product description, product attributes and characteristics may be listed to establish the significant qualities related to type, function, in-service performance, and physical properties, weight, dimension, durability, visual characteristics, and other special features and requirements for purposes of evaluating comparable products of additional manufacturers named in the specification.

C. Subject to Compliance with Requirements: Where the phrase "Subject to compliance with requirements" introduces a product selection procedure in an individual Specification Section, provide products qualified under the specified product procedure.

1. In the event that a named product or product by a named manufacturer does not meet the other requirements of the specifications, select another named product or product from another named manufacturer that does meet the requirements of the specifications; submit a comparable product request or substitution request, if applicable.

1.3 ACTION SUBMITTALS

A. Comparable Product (Substitution) Request Submittal: Submit a request for consideration of each comparable product in accordance with Section 012500 “Substitution Procedures”. Identify basis-of-design product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

1. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within seven days of receipt of a comparable product request. Architect will notify Contractor of approval or rejection of proposed comparable product request within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.

a. Use product specified if Architect does not issue a decision on use of a comparable product request within time allocated.

B. Basis-of-Design or Named Product 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. See other Sections for specific content requirements and particular requirements for submitting special warranties.

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

A. General Product Requirements: Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, are new at time of installation.

1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
3. Owner reserves the right to limit selection to products with warranties meeting requirements of the Contract Documents.
4. Where products are accompanied by the term "as selected," Architect will make selection.
5. Descriptive, performance, and reference standard requirements in the Specifications establish salient characteristics of products.

B. Product Selection Procedures:

1. Sole Product: Where Specifications name a single manufacturer and product, provide the named product that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.

2. Sole Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.

3. Limited List of Products: Where Specifications include a list of names of both manufacturers and products, provide one of the products listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered unless otherwise indicated.

4. Limited List of Manufacturers: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements. Comparable

products or substitutions for Contractor's convenience will not be considered unless otherwise indicated.

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.

    a. For approval of products by unnamed manufacturers, comply with requirements in Section 012500 “Substitution Procedures” for substitutions for convenience.

C. Visual Matching Specification: Where Specifications require "match Architect's sample", provide a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches.

1. If no product available within specified category matches and complies with other specified requirements, comply with requirements in Section 012500 "Substitution Procedures" for proposal of product.

D. Visual Selection Specification: Where Specifications include the phrase "as selected by Architect from manufacturer's full range" or similar phrase, select a product that complies with requirements. Architect will select color, gloss, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

2.2 COMPARABLE PRODUCTS

A. Conditions for Consideration of Comparable Products: In accordance with Section 012500 “Substitution Procedures”, Architect may consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Architect may return requests without action, except to record noncompliance with these requirements:

1. Evidence that proposed product does not require revisions to the Contract Documents, that it is consistent with the Contract Documents, will produce the indicated results, and is compatible with other portions of the Work.
2. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant product qualities include attributes such as type, function, in-service performance and physical properties, weight, dimension, durability, visual characteristics, and other specific features and requirements.
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. Construction layout.
2. Field engineering and surveying.
3. Installation of the Work.
4. Cutting and patching.
5. Coordination of Owner's portion of the Work.
6. Progress cleaning.
7. Starting and adjusting.
8. Protection of installed construction.
9. Correction of the Work.

B. Related Sections:

1. Section 011000 "Summary" for coordination of Owner's portion of the Work, and limits on use of Project site.
2. Section 017700 "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, replacing defective work, and final cleaning.
3. Section 024119 "Selective Demolition" for demolition and removal of selected portions of the building.

1.2 DEFINITIONS

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

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

1.3 INFORMATIONAL SUBMITTALS

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

B. Certified Surveys: Submit two copies signed by land surveyor.

1.4 CLOSEOUT SUBMITTALS

A. Final Property Survey: Submit two copies showing the Work performed and record survey data.

1.5 QUALITY ASSURANCE

A. Land Surveyor Qualifications: A professional land surveyor who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing land-surveying services of the kind indicated.

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

1. Structural Elements: When cutting and patching structural elements, or when encountering the need for cutting and patching of elements whose structural function is no known, notify Architect of locations and details of cutting and await directions from Architect before proceeding. Shore, brace, and support structural elements during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection

2. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety.

3. Other Construction Elements: Do not cut and patch other construction elements or components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety.

4. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

C. Manufacturer's Installation Instructions: Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of products and equipment.

PART 2 - PRODUCTS

2.1 MATERIALS

A. 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.

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

PART 3 - EXECUTION

3.1 EXAMINATION

A. Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities, mechanical and electrical systems, and other construction affecting the Work.

1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, gas service piping, and water-service piping; underground electrical services, and other utilities.
2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.

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 or Owner 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 CONSTRUCTION LAYOUT

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

B. Engage a land surveyor experienced in laying out the Work using the following accepted surveying practices:

1. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.
2. Establish limits on use of Project site.
3. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
4. Inform installers of lines and levels to which they must comply.
5. Check the location, level and plumb, of every major element as the Work progresses.
6. Notify Architect when deviations from required lines and levels exceed allowable tolerances.
7. Close site surveys with an error of closure equal to or less than the standard established by authorities having jurisdiction.

C. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and rim and invert elevations.

D. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.

E. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by Architect.

3.4 FIELD ENGINEERING

A. Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.

1. Do not change or relocate existing benchmarks or control points without prior written approval of Architect or Construction Manager. Report lost or destroyed permanent benchmarks or control points promptly. Report the need to relocate permanent benchmarks or control points to Architect and Construction Manager before proceeding.
2. Replace lost or destroyed permanent benchmarks and control points promptly. Base replacements on the original survey control points.

B. Benchmarks: Establish and maintain a minimum of two permanent benchmarks on Project site, referenced to data established by survey control points. Comply with authorities having jurisdiction for type and size of benchmark.

1. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.
2. Where the actual location or elevation of layout points cannot be marked, provide temporary reference points sufficient to locate the Work.
3. Remove temporary reference points when no longer needed. Restore marked construction to its original condition.

C. Certified Survey: On completion of foundation walls, major site improvements, and other work requiring field-engineering services, prepare a certified survey showing dimensions, locations, angles, and elevations of construction and sitework.

D. Final Property Survey: If required, engage a land surveyor or professional engineer to prepare a final property survey showing significant features (real property) for Project. Include on the survey a

certification, signed by land surveyor or professional engineer, that principal metes, bounds, lines, and levels of Project are accurately positioned as shown on the survey.

1. Show boundary lines, monuments, streets, site improvements and utilities, existing improvements and significant vegetation, adjoining properties, acreage, grade contours, and the distance and bearing from a site corner to a legal point.

3.5 INSTALLATION

A. Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.

1. Make vertical work plumb and make horizontal work level.
2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
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 satisfactory results as judged by Architect. Maintain conditions required for product performance until Substantial Completion.

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

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

F. Tools and Equipment: Select tools or equipment that minimize production of excessive noise levels.

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

H. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions.

1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
2. Allow for building movement, including thermal expansion and contraction.
3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

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

J. Remove and replace damaged, defective, or non-confirming Work.

3.6 CUTTING AND PATCHING

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

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

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

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

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

E. Adjacent Occupied Areas: Where interference with use of adjoining areas or interruption of free passage to adjoining areas is unavoidable, coordinate cutting and patching according to requirements in Section 011000 “Summary”.

F. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to prevent interruption to occupied areas.

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

1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
4. Excavating and Backfilling: Comply with requirements in applicable Sections where required by cutting and patching operations.
5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
6. Proceed with patching after construction operations requiring cutting are complete.

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

1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.
2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.

    a. Clean piping, conduit, and similar features before applying paint or other finishing materials.

3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of

uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.

a. Where patching occurs in a painted surface, prepare substrate and apply primer and intermediate paint coats appropriate for substrate over the patch, and apply final paint coat over entire unbroken surface containing the patch, corner to corner of wall and edge to edge of ceiling. Provide additional coats until patch blends with adjacent surfaces.

4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition and ensures thermal and moisture integrity of building enclosure.

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

3.7 COORDINATION OF OWNER'S PORTION OF THE WORK

A. Site Access: Provide access to Project site for Owner's construction personnel and Owner's separate contractors.

1. Provide temporary facilities required for Owner-furnished, Contractor-installed products.
2. Refer to Section 011000 "Summary" for other requirements for Owner-furnished, Contractor-installed products

B. Coordination: Coordinate construction and operations of the Work with work performed by Owner's construction personnel.

1. Construction Schedule: Inform Owner of Contractor's preferred construction schedule for Owner's portion of the Work. Adjust construction schedule based on a mutually agreeable timetable. Notify Owner if changes to schedule are required due to differences in actual construction progress.

3.8 PROGRESS CLEANING

A. Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.

1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F.
3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
4. Coordinate progress cleaning for joint-use areas where Contractor and other contractors are working concurrently.

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

C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.

1. Remove liquid spills promptly.
2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.

D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If

specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.

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

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

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

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

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

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

3.9 STARTING AND ADJUSTING

A. Coordinate startup and adjusting of equipment and operating components.

B. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.

C. Adjust equipment for proper operation. Adjust operating components for proper operation without binding.

D. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

E. Manufacturer's Field Service: Comply with qualification requirements in Section 014000 "Quality Requirements."

3.10 PROTECTION OF INSTALLED CONSTRUCTION

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

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

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

3.11 CORRECTION OF THE WORK

A. Repair or remove and replace damaged, defective, or nonconforming Work. Restore damaged substrates and finishes.

1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.

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

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

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

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

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

END OF SECTION 017300

SECTION 017419 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 - GENERAL

1.1 SUMMARY

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

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

1.2 DEFINITIONS

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

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

C. Disposal: Removal of demolition or construction waste and subsequent salvage, sale, recycling, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.

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

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

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

1.3 ACTION SUBMITTALS

A. Waste Management Plan: Submit plan within 10 days of date established for commencement of the Work.

1.4 INFORMATIONAL SUBMITTALS

A. Waste Reduction Calculations: Before request for Substantial Completion, submit calculated end-of-Project rates for salvage, recycling, and disposal as a percentage of total waste generated by the Work.

B. Records of Donations: Indicate receipt and acceptance of salvageable waste donated to individuals and organizations. Indicate whether organization is tax exempt.

C. Records of Sales: Indicate receipt and acceptance of salvageable waste sold to individuals and organizations. Indicate whether organization is tax exempt.

D. Recycling and Processing Facility Records: Indicate receipt and acceptance of recyclable waste by recycling and processing facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.

E. Landfill and Incinerator Disposal Records: Indicate receipt and acceptance of waste by landfills and incinerator facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.

1.5 QUALITY ASSURANCE

A. Waste Management Conference: Conduct conference at Project site to comply with requirements in Section 013100 "Project Management and Coordination."

1.6 WASTE MANAGEMENT PLAN

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

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

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

1. Salvaged Materials for Reuse: For materials that will be salvaged and reused in this Project, describe methods for preparing salvaged materials before incorporation into the Work.
2. Salvaged Materials for Sale: For materials that will be sold to individuals and organizations, include list of their names, addresses, and telephone numbers.
3. Salvaged Materials for Donation: For materials that will be donated to individuals and organizations, include list of their names, addresses, and telephone numbers.
4. Recycled Materials: Include list of local receivers and processors and type of recycled materials each will accept. Include names, addresses, and telephone numbers.
5. Disposed Materials: Indicate how and where materials will be disposed of. Include name, address, and telephone number of each landfill and incinerator facility.
6. Handling and Transportation Procedures: Include method that will be used for separating recyclable waste including sizes of containers, container labeling, and designated location where materials separation will be performed.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 PLAN IMPLEMENTATION

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

B. Waste Management Coordinator: Engage a waste management coordinator to be responsible for implementing, monitoring, and reporting status of waste management work plan.

C. Training: Distribute waste management plan to all workers, subcontractors, and suppliers when they first begin work on-site. Review plan procedures and locations established for salvage, recycling, and disposal.

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

1. Designate and label specific areas on Project site necessary for separating materials that are to be salvaged, recycled, reused, donated, and sold.
2. Comply with Section 015000 "Temporary Facilities and Controls" for controlling dust and dirt, environmental protection, and noise control.

3.2 SALVAGING DEMOLITION WASTE

A. Salvaged Items for Reuse in the Work:

1. Clean salvaged items.
2. Pack or crate items after cleaning. Identify contents of containers.
3. Store items in a secure area until installation.
4. Protect items from damage during transport and storage.
5. Install salvaged items to comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make items functional for use indicated.

B. Salvaged Items for Owner's Use:

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

3.3 RECYCLING DEMOLITION AND CONSTRUCTION WASTE

A. General:

1. Provide containers to recycle paper and beverage containers used by on-site workers.
2. Prepare and maintain recyclable waste materials according to recycling or reuse facility requirements. Maintain materials free of dirt, adhesives, solvents, petroleum contamination, and other substances deleterious to the recycling process.
3. Separate recyclable waste from other waste materials, trash, and debris. Separate recyclable waste by type at Project site to the maximum extent practical according to approved construction waste management plan
4. Provide appropriately marked containers or bins for controlling recyclable waste until removed from Project site. Include list of acceptable and unacceptable materials at each container and bin.
5. Inspect containers and bins for contamination and remove contaminated materials if found.
6. Remove recyclable waste from Owner's property and transport to recycling receiver or processor as often as required to prevent overfilling bins.

B. Asphalt Paving: Break up and transport paving to asphalt-recycling facility.

C. Concrete: Remove reinforcement and other metals from concrete and sort with other metals.

D. Masonry: Remove metal reinforcement, anchors, and ties from masonry and sort with other metals.

1. Clean and stack undamaged, whole masonry units on wood pallets.

E. Wood Materials: Sort and stack members according to size, type, and length. Separate lumber, engineered wood products, panel products, and treated wood materials.

F. Metals: Separate metals by type.

1. Structural Steel: Stack members according to size, type of member, and length.

2. Remove and dispose of bolts, nuts, washers, and other rough hardware.

G. Asphalt Shingle Roofing: Separate organic and glass-fiber asphalt shingles and felts. Remove and dispose of nails, staples, and accessories.

H. Gypsum Board: Stack large clean pieces on wood pallets or in container and store in a dry location. Remove edge trim and sort with other metals. Remove and dispose of fasteners.

I. Acoustical Ceiling Panels and Tile: Stack large clean pieces on wood pallets and store in a dry location.

J. Metal Suspension System: Separate metal members including trim, and other metals from acoustical panels and tile and sort with other metals.

K. Carpet: Remove debris, trash, and adhesive. Roll or bundle material securely and store in a clean dry container until removal by recycling agency.

L. Piping: Reduce piping to straight lengths and store by material and size. Separate supports, hangers, valves, sprinklers, and other components by material and size.

M. Conduit: Reduce conduit to straight lengths and store by material and size.

N. Lamps: Separate lamps by type and store according to requirements in 40 CFR 273.

O. Packaging:

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

P. Paint: Seal containers and store by type.

3.4 DISPOSAL OF WASTE

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

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

B. Burning: Do not burn waste materials.

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

END OF SECTION 017419

SECTION 017700 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

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

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

B. Related Sections:

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

1.2 ACTION SUBMITTALS

A. Product Data: For each type of cleaning agent.

B. Contractor's List of Incomplete Items: Initial submittal at Substantial Completion.

C. Certified List of Incomplete Items: Final submittal at Final Completion.

1.3 CLOSEOUT SUBMITTALS

A. Certificates of Release: From authorities having jurisdiction.

B. Certificate of Insurance: For continuing coverage.

C. Field Report: For pest control inspection.

1.4 SUBSTANTIAL COMPLETION PROCEDURES

A. Contractor's List of Incomplete Items (Punch List): Prepare and submit a list of items to be completed and corrected (Contractor's punch list) following a walk through inspection with the Owner and Architect. Contractor may be required to indicate 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.

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, damage or settlement surveys, property surveys, 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 Architect. Label with manufacturer's name and model number.
5. Submit testing, adjusting, and balancing records.
6. 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. Indicate items below that are incomplete at time of request.

1. Advise Owner of pending insurance changeover requirements.
2. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
3. Complete startup and testing of systems and equipment.
4. Perform preventive maintenance on equipment used prior to Substantial Completion.
5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems per Section 017900 "Demonstration and Training."
6. Advise Owner of changeover in utility service.
7. Participate with Owner in conducting inspection and walkthrough with local emergency responders.
8. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
9. Complete final cleaning requirements.
10. Touch up paint 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 and tests. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect that must be completed or corrected before certificate will be issued.

1.5 FINAL COMPLETION PROCEDURES

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

1. 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.

B. Inspection: Submit a written request for final inspection to determine acceptance – a minimum of 10 days prior to date the Work will be completed and ready for final inspection and tests. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will accept the final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.

1.6 LIST OF INCOMPLETE ITEMS (CONTRACTOR'S 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 or similar.

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 to Architect.

1.7 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 are indicated to commence on dates other than date of Substantial Completion, or when delay in submittal of warranties might limit Owner's rights under warranty.

B. Organize warranty documents into an orderly sequence based on the table of contents of 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 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.
4. Warranty Electronic File: Scan warranties and bonds and assemble complete warranty and bond submittal package into a single indexed electronic PDF file with links enabling navigation to each item. Provide bookmarked table of contents at beginning of document.

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. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
    b. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
    c. Remove tools, construction equipment, machinery, and surplus material from Project site.
    d. Remove snow and ice to provide safe access to building.
    e. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
    f. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
    g. Sweep concrete floors broom clean in unoccupied spaces.
    h. Vacuum carpet and similar soft surfaces, removing debris and excess nap; clean according to manufacturer's recommendations if visible soil or stains remain.
    i. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials. Polish mirrors and glass, taking care not to scratch surfaces.
    j. Remove labels that are not permanent.
    k. Wipe surfaces of mechanical and electrical equipment, elevator equipment, and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
    l. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
    m. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
    n. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency.
    o. Leave Project clean and ready for occupancy.

C. Pest Control: Comply with pest control requirements in Section 015000 "Temporary Facilities and Controls." Prepare written report.

D. Construction Waste Disposal: Comply with waste disposal requirements in Section 017419 “Construction Waste Management and Disposal.”

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.

END OF SECTION 017700

SECTION 017823 - OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 SUMMARY

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

1. Emergency manuals.
2. Systems and equipment operation manuals.
3. Systems and equipment maintenance manuals.
4. Product maintenance manuals.

1.2 CLOSEOUT SUBMITTALS

A. Submit operation and maintenance manuals indicated. Provide content for each manual as specified in individual Specification Sections and as reviewed and approved at the time of Section submittals. Submit manual content formatted and organized as required by this Section.

1. Architect to determine manual format (electronic or paper) and number of copies required.
2. Where applicable, clarify and update manual content to correspond to revisions and field conditions.
3. Submit each manual in final form prior to requesting inspection for Substantial Completion and at least 15 days before commencing demonstration and training.
4. Architect will comment on whether content of operation and maintenance submittals is acceptable prior to Final Completion.

B. Comply with Section 017700 “Closeout Procedures” for schedule for submitting operation and maintenance documentation.

1.3 FORMAT OF MANUALS, GENERAL

A. Manuals, Electronic Files: Submit manuals in the form of a multiple file composite PDF, for each manual type required.

1. Electronic Files: Use electronic files prepared by manufacturer where available. Where scanning of paper documents is required, configure scanned file for minimum readable file size.
2. File Names: Name document files to correspond to system, subsystem, and equipment names used in manual directory and table of contents. Group documents for each system and subsystem into individual composite bookmarked files, then create composite manual, so that resulting bookmarks reflect the system, subsystem, and equipment names in a readily navigated file tree. Configure electronic manual to display bookmark panel on opening file.

B. Manuals, Paper Copy: Submit manuals in the form of hardcopy, bound and labeled volumes. Architect to determine number of complete manuals, or sets of manuals, to provide.

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 paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.
2. 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.

C. Organization of Manuals: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain the following materials, in the order listed:

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

D. 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 Construction Manager.
7. Name and contact information for Architect.
8. Name and contact information for Commissioning Authority.
9. Names and contact information for major consultants to the Architect that designed the systems contained in the manuals.
10. Cross-reference to related systems in other operation and maintenance manuals.

E. 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.

F. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.

G. Identification: In the documentation directory and in each operation and maintenance manual, identify each system, subsystem, and piece of equipment with same designation used in the Contract Documents. If no designation exists, assign a designation according to ASHRAE Guideline 4, "Preparation of Operating and Maintenance Documentation for Building Systems."

1.4 EMERGENCY MANUALS

A. Emergency Manual: Assemble a complete set of emergency information indicating procedures for use by emergency personnel and by Owner's operating personnel for types of emergencies indicated.

B. Content: Organize manual into a separate section for each of the following:

1. Type of emergency.
2. Emergency instructions.
3. Emergency procedures.

C. Type of Emergency: Where applicable for each type of emergency indicated below, include instructions and procedures for each system, subsystem, piece of equipment, and component:

1. Fire.
2. Flood.
3. Gas leak.

4. Water leak.
5. Power failure.
6. Water outage.
7. System, subsystem, or equipment failure.
8. Chemical release or spill.

D. Emergency Instructions: Describe and explain warnings, trouble indications, error messages, and similar codes and signals. Include responsibilities of Owner's operating personnel for notification of Installer, supplier, and manufacturer to maintain warranties.

E. Emergency Procedures: Include the following, as applicable:

1. Instructions on stopping.
2. Shutdown instructions for each type of emergency.
3. Operating instructions for conditions outside normal operating limits.
4. Required sequences for electric or electronic systems.
5. Special operating instructions and procedures.

1.5 SYSTEMS AND EQUIPMENT OPERATION MANUALS

A. Systems and Equipment Operation Manual: Assemble a complete set of data indicating operation of each system, subsystem, and piece of equipment not part of a system. Include information required for daily operation and management, operating standards, and routine and special operating procedures.

B. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and the following information:

1. System, subsystem, and equipment descriptions. Use designations for systems and equipment indicated on Contract Documents.
2. Performance and design criteria if Contractor has delegated design responsibility.
3. Operating standards.
4. Operating procedures.
5. Operating logs.
6. Wiring diagrams.
7. Control diagrams.
8. Piped system diagrams.
9. Precautions against improper use.
10. License requirements including inspection and renewal dates.

C. Descriptions: Include the following:

1. Product name and model number. Use designations for products indicated on Contract Documents.
2. Manufacturer's name.
3. Equipment identification with serial number of each component.
4. Equipment function.
5. Operating characteristics.
6. Limiting conditions.
7. Performance curves.
8. Engineering data and tests.
9. Complete nomenclature and number of replacement parts.

D. Operating Procedures: Include the following, as applicable:

1. Startup procedures.
2. Equipment or system break-in procedures.
3. Routine and normal operating instructions.

4. Regulation and control procedures.
5. Instructions on stopping.
6. Normal shutdown instructions.
7. Seasonal and weekend operating instructions.
8. Required sequences for electric or electronic systems.
9. Special operating instructions and procedures.

E. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.

F. Piped Systems: Diagram piping as installed, and identify color-coding where required for identification.

1.6 SYSTEMS AND EQUIPMENT MAINTENANCE MANUALS

A. Systems and Equipment Maintenance Manuals: Assemble a complete set of data indicating maintenance of each system, subsystem, and piece of equipment not part of a system. Include manufacturers' maintenance documentation, preventive maintenance procedures and frequency, repair procedures, wiring and systems diagrams, lists of spare parts, and warranty information.

B. Content: For each system, subsystem, and piece of equipment not part of a system, include source information, manufacturers' maintenance documentation, maintenance procedures, maintenance and service schedules, spare parts list and source information, maintenance service contracts, warranties and bonds, as described below.

C. Manufacturers' Maintenance Documentation: Include the following information for each component part or piece of equipment:

1. Standard maintenance instructions and bulletins; 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.

    a. Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper operation and maintenance of equipment or systems.

2. Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement, and assembly.
3. Identification and nomenclature of parts and components.
4. List of items recommended to be stocked as spare parts.

D. Maintenance Procedures: Include the following information and items that detail essential maintenance procedures:

1. Test and inspection instructions.
2. Troubleshooting guide.
3. Precautions against improper maintenance.
4. Disassembly; component removal, repair, and replacement; and reassembly instructions.
5. Aligning, adjusting, and checking instructions.
6. Demonstration and training video recording, if available.

E. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.

F. Spare Parts List and Source Information: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.

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

1. Include procedures to follow and required notifications for warranty claims.

H. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in record Drawings to ensure correct illustration of completed installation.

1.7 PRODUCT MAINTENANCE MANUALS

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. 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.

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.

1. Include procedures to follow and required notifications for warranty claims.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

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.

B. Related Sections:

1. Section 017823 "Operation and Maintenance Data" for operation and maintenance manual requirements.

1.2 CLOSEOUT SUBMITTALS

A. Record Drawings: Submit one paper copy of marked-up record drawings.

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.

1. Where record Product Data are required as part of operation and maintenance manuals, submit duplicate marked-up Product Data as a component of manual.

D. Record Digital Files: If requested, record drawings, specifications and product data may be submitted as digital files. Submit as annotated PDF files.

1.3 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. Accurately record information in an acceptable drawing technique.
c. Record data as soon as possible after obtaining it.
d. Record and check the markup before enclosing concealed installations.
e. Cross-reference record prints to corresponding photographic documentation.

2. Content: Types of items requiring marking include, but are not limited to, the following:

a. Dimensional changes to Drawings.
b. Revisions to details shown on Drawings.
c. Depths of foundations.
d. Locations and depths of underground utilities.
e. Revisions to routing of piping and conduits.
f. Revisions to electrical circuitry.
g. Actual equipment locations.
h. Duct size and routing.
i. Locations of concealed internal utilities.
j. Changes made by Change Order or Work Change Directive.
k. Changes made following Architect's written orders.
l. Details not on the original Contract Drawings.
m. Field records for variable and concealed conditions.
n. Record information on the Work that is shown only schematically.

3. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.
4. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
5. Mark important additional information that was either shown schematically or omitted from original Drawings.
6. Note 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 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.

1.4 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. For each principal product, indicate whether record Product Data has been submitted in operation and maintenance manuals instead of submitted as record Product Data.
5. Note related Change Orders, record Product Data, and record Drawings where applicable.

B. Format: Submit record Specifications as paper copy.

1.5 RECORD PRODUCT DATA

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. 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.

C. Format: Submit record Product Data as paper copy.

1. Include record Product Data directory organized by Specification Section number and title.

1.6 MAINTENANCE OF RECORD DOCUMENTS

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

PART 2 - PRODUCTS

PART 3 - EXECUTION

END OF SECTION 017839

SECTION 017900 - DEMONSTRATION AND TRAINING

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for instructing Owner's personnel, including the following:

1. Instruction in operation and maintenance of systems, subsystems, and equipment.
2. Demonstration and training video recordings.

1.2 INFORMATIONAL SUBMITTALS

A. Instruction Program: Submit outline of instructional program for demonstration and training, including a list of training modules and a schedule of proposed dates, times, length of instruction time, and instructors' names for each training module. Include learning objective and outline for each training module.

1. Indicate proposed training modules using manufacturer-produced demonstration and training video recordings for systems, equipment, and products in lieu of video recording of live instructional module.

1.3 CLOSEOUT SUBMITTALS

A. Demonstration and Training Video Recordings (if applicable): Submit two copies within seven days of end of each training module.

1. At completion of training, submit complete training manual(s) for Owner's use prepared in same format required for operation and maintenance manuals specified in Section 017823 “Operation and Maintenance Data.”

1.4 QUALITY ASSURANCE

A. Facilitator Qualifications: A firm or individual experienced in training or educating maintenance personnel in a training program similar in content and extent to that indicated for this Project, and whose work has resulted in training or education with a record of successful learning performance.

B. Instructor Qualifications: A factory-authorized service representative, complying with requirements in Section 014000 "Quality Requirements," experienced in operation and maintenance procedures and training.

C. Pre-instruction Conference: Conduct conference at Project site to comply with requirements in Section 013100 "Project Management and Coordination."

1.5 COORDINATION

A. Coordinate instruction schedule with Owner's operations. Adjust schedule as required to minimize disrupting Owner's operations and to ensure availability of Owner's personnel.

B. Coordinate content of training modules with content of approved emergency, operation, and maintenance manuals. Do not submit instruction program until operation and maintenance data have been reviewed and approved by Architect.

1.6 INSTRUCTION PROGRAM

A. Program Structure: Develop an instruction program that includes individual training modules for each system and for equipment not part of a system, as required by individual Specification Sections.

B. Training Modules: Develop a learning objective and teaching outline for each module. Include a description of specific skills and knowledge that participant is expected to master. For each module, include instruction for the following as applicable to the system, equipment, or component:

1. Basis of System Design, Operational Requirements, and Criteria: Include the following:

    a. System, subsystem, and equipment descriptions.
    b. Performance and design criteria if Contractor is delegated design responsibility.
    c. Operating standards.
    d. Regulatory requirements.
    e. Equipment function.
    f. Operating characteristics.
    g. Limiting conditions.
    h. Performance curves.

2. Documentation: Review the following items in detail:

    a. Emergency manuals.
    b. Systems and equipment operation manuals.
    c. Systems and equipment maintenance manuals.
    d. Product maintenance manuals.
    e. Project record documents.
    f. Identification systems.
    g. Warranties and bonds.
    h. Maintenance service agreements and similar continuing commitments.

3. Emergencies: Include the following, as applicable:

    a. Instructions on meaning of warnings, trouble indications, and error messages.
    b. Instructions on stopping.
    c. Shutdown instructions for each type of emergency.
    d. Operating instructions for conditions outside of normal operating limits.
    e. Sequences for electric or electronic systems.
    f. Special operating instructions and procedures.

4. Operations: Include the following, as applicable:

    a. Startup procedures.
    b. Equipment or system break-in procedures.
    c. Routine and normal operating instructions.
    d. Regulation and control procedures.
    e. Control sequences.
    f. Safety procedures.
    g. Instructions on stopping.
    h. Normal shutdown instructions.
    i. Operating procedures for emergencies.
    j. Operating procedures for system, subsystem, or equipment failure.
    k. Seasonal and weekend operating instructions.

l. Required sequences for electric or electronic systems.
m. Special operating instructions and procedures.

5. Adjustments: Include the following:

a. Alignments.
b. Checking adjustments.
c. Noise and vibration adjustments.
d. Economy and efficiency adjustments.

6. Troubleshooting: Include the following:

a. Diagnostic instructions.
b. Test and inspection procedures.

7. Maintenance: Include the following:

a. Inspection procedures.
b. Types of cleaning agents to be used and methods of cleaning.
c. List of cleaning agents and methods of cleaning detrimental to product.
d. Procedures for routine cleaning.
e. Procedures for preventive maintenance.
f. Procedures for routine maintenance.
g. Instruction on use of special tools.

8. Repairs: Include the following:

a. Diagnosis instructions.
b. Repair instructions.
c. Disassembly; component removal, repair, and replacement; and reassembly instructions.
d. Instructions for identifying parts and components.
e. Review of spare parts needed for operation and maintenance.

1.7 PREPARATION

A. Assemble educational materials necessary for instruction, including documentation and training module. Assemble training modules into a training manual organized in coordination with requirements in Section 017823 "Operation and Maintenance Data."

B. Set up instructional equipment at instruction location.

1.8 INSTRUCTION

A. Facilitator: Engage a qualified facilitator to prepare instruction program and training modules, to coordinate instructors, and to coordinate between Contractor and Owner for number of participants, instruction times, and location.

B. Engage qualified instructors to instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.

C. Scheduling: Provide instruction at mutually agreed on times. For equipment that requires seasonal operation, provide similar instruction at start of each season.

1. Schedule training with Owner, through Architect, with at least seven days' advance notice.

D. Training Location and Reference Material: Conduct training on-site in the completed and fully operational facility using the actual equipment in-place. Conduct training using final operation and maintenance data submittals.

E. Evaluation: At conclusion of each training module, assess and document each participant's mastery of module by use of a performance-based test.

1.9 DEMONSTRATION AND TRAINING VIDEO RECORDINGS

A. General: Engage a qualified commercial videographer to record demonstration and training video recordings. Record each training module separately. Include classroom instructions and demonstrations, board diagrams, and other visual aids, but not student practice.

1. At beginning of each training module, record each chart containing learning objective and lesson outline.

B. Digital Video Recordings: Provide high-resolution, digital video produced by a digital cameral capable of recording in full HD mode.

C. Preproduced Video Recordings: Provide video recordings used as a component of training modules in same format as recordings of live training.

PART 2 - PRODUCTS

PART 3 - EXECUTION

END OF SECTION 017900

SECTION 024119 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Demolition and removal of selected portions of building exterior finishes.
2. Salvage of existing items to be reused.

1.2 MATERIALS OWNERSHIP

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

B. Historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items of interest or value to Owner that may be uncovered during demolition remain the property of Owner.

1. Carefully salvage in a manner to prevent damage and promptly return to Owner.

1.3 PREINSTALLATION MEETINGS

A. Predemolition Conference: Conduct conference at Project site.

1.4 INFORMATIONAL SUBMITTALS

A. Schedule of selective demolition activities with starting and ending dates for each activity.

B. Predemolition photographs or video.

C. Statement of Refrigerant Recovery: Signed by refrigerant recovery technician.

1.5 CLOSEOUT SUBMITTALS

A. Inventory of items that have been removed and salvaged.

1.6 QUALITY ASSURANCE

A. Refrigerant Recovery Technician Qualifications: Certified by an EPA-approved certification program.

1.7 FIELD CONDITIONS

A. Buildings will be occupied by residents during construction operations. Conduct selective demolition in a manner that is the least disruptive to occupants.

B. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.

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

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

1. Hazardous materials will be removed by Owner before start of the Work.
2. 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.

F. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.

1. Maintain fire-protection facilities in service during selective demolition operations.

G. Arrange selective demolition schedule so as not to interfere with Owner's operations.

1.8 WARRANTY

A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials and using approved contractors so as not to void existing warranties.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

B. Standards: Comply with ANSI/ASSP A10.6 and NFPA 241.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that utilities have been disconnected and capped before starting selective demolition operations.

B. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Architect.

C. Perform an engineering survey of condition of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during selective building demolition operations.

D. Survey of Existing Conditions: Record existing conditions by use of preconstruction photographs.

1. Comply with requirements specified in Section 013233 "Photographic Documentation."

E. Inventory and record the condition of items to be removed and salvaged.

3.2 PREPARATION

A. Refrigerant: Before starting demolition, remove refrigerant from mechanical equipment according to 40 CFR 82 and regulations of authorities having jurisdiction.

3.3 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

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

3.4 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. Temporary Shoring: Design, provide, and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.

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

3.5 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. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations. Maintain fire watch during and after flame-cutting operations.
4. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
5. Dispose of demolished items and materials promptly. Comply with requirements in Section 017419 "Construction Waste Management and Disposal."

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. Extent of Demolition: Provide demolition and removal of the following items, or as required to complete the Work:

1. Remove all existing steel siding, fascia, soffits and trims. Original wood siding underneath is to remain unless directed otherwise.
2. Remove all existing gutters and downspouts.
3. Remove all existing windows and doors, including entry doors, patio doors, and garage doors.
4. Remove all existing exterior light fixtures.
5. Remove all existing decking; structure to remain.
6. Demo trash enclosure fence to extent necessary for renovation as indicated on the Drawings.

D. Removed and Reinstalled Items:

1. Existing door hardware for entry doors shall be removed and reinstalled in new doors (latches and locks).
2. Clean and repair items to functional condition adequate for intended reuse.
3. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.

E. 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.

3.6 CLEANING

A. Remove demolition waste materials from Project site and recycle or dispose of them according to Section 017419 "Construction Waste Management and Disposal."

1. Do not allow demolished materials to accumulate on-site.
2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
3. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
4. Comply with requirements specified in Section 017419 "Construction Waste Management and Disposal."

B. Burning: Do not burn demolished materials.

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

END OF SECTION 024119

SECTION 061053 – MISCELLANEOUS ROUGH CARPENTRY

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Framing with dimension lumber.
2. Wood blocking, furring, and nailers.
3. Plywood panels.

1.2 INFORMATIONAL SUBMITTALS

A. Material Certificates: For dimension lumber specified to comply with minimum allowable unit stresses. Indicate species and grade selected for each use and design values approved by the ALSC Board of Review.

B. Evaluation Reports: For the following, from ICC-ES:

1. Preservative-treated wood.
2. Fire-retardant-treated wood.
3. Power-driven fasteners.

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. For exposed lumber indicated to receive a stained or natural finish, mark grade stamp on end or back of each piece or omit grade stamp and provide certificates of grade compliance issued by grading agency.
3. Dress lumber, S4S, unless otherwise indicated.

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

C. Engineered Wood Products: Acceptable to authorities having jurisdiction and for which current model code research or evaluation reports exist that show compliance with building code in effect for Project.

1. Allowable design stresses 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.

2.2 PRESERVATIVE TREATMENT

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

1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium.

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 and furring attached directly to the interior of below-grade exterior masonry or concrete walls.
4. Wood framing members that are less than 18 inches above the ground in crawlspaces or unexcavated areas.
5. Wood floor plates that are installed over concrete slabs-on-grade.

2.3 FIRE-RETARDANT-TREATMENT

A. General: Where fire-retardant-treated materials are indicated materials shall comply with requirements in this article, that are acceptable to authorities having jurisdiction, and with fire-test-response characteristics specified as determined by testing identical products per test method indicated by a qualified testing agency.

B. Fire-Retardant-Treated Lumber and Plywood by Pressure Process: Products with a flame spread index of 25 or less when tested according to ASTM E84, and with no evidence of significant progressive combustion when the test is extended an additional 20 minutes, and with the flame front not extending more than 10.5 feet beyond the centerline of the burners at any time during the test.

1. Exterior Type: Treated materials shall comply with requirements specified above for fire-retardant-treated lumber and plywood by pressure process after being subjected to accelerated weathering according to ASTM D2898. Use for exterior locations and where indicated.
2. Interior Type A: Treated materials shall have a moisture content of 28 percent or less when tested according to ASTM D3201 at 92 percent relative humidity. Use where exterior type is not indicated.

C. Kiln-dry lumber after treatment to maximum moisture content of 19 percent.

D. Identify fire-retardant-treated wood with appropriate classification marking of qualified testing agency.

E. Application: Treat items indicated on Drawings.

2.4 DIMENSION LUMBER FRAMING

A. Construction or No. 2 grade of any of the following species:

1. Hem-fir (north); NLGA.
2. Southern pine; SPIB.

3. Douglas fir-larch; WCLIB or WWPA.
4. Southern pine or mixed southern pine; SPIB.
5. Spruce-pine-fir; NLGA.
6. Douglas fir-south; WWPA.
7. Hem-fir; WCLIB or WWPA.
8. Douglas fir-larch (north); NLGA.
9. Spruce-pine-fir (south); NeLMA, WCLIB, or WWPA.

B. Exposed Framing: Hand select material for uniformity of appearance and freedom from characteristics, on exposed surfaces and edges, that would impair finish appearance, including decay, honeycomb, knot-holes, shake, splits, torn grain, and wane.

2.5 MISCELLANEOUS LUMBER

A. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction.

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; 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.

2.6 PLYWOOD PANELS

A. Plywood, DOC PS 1, Exposure 1, C-D Plugged, in thickness indicated or, if not indicated, not less than 1/2-inch nominal thickness.

2.7 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 with hot-dip zinc coating complying with ASTM A153/A153M.

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

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 to other construction; scribe and cope as needed for accurate fit. Locate furring, nailers, blocking, grounds, and similar supports to comply with requirements for attaching other construction.

C. Install plywood panels by fastening to studs; coordinate locations with utilities requiring backing panels. Install fire-retardant-treated plywood backing panels with classification marking of testing agency exposed to view.

D. Do not splice structural members between supports unless otherwise indicated.

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

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

1. Table 2304.9.1, "Fastening Schedule," in ICC's International Building Code (IBC).
2. 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.
3. ICC-ES evaluation report for fastener.

3.2 PROTECTION

A. Protect wood that has been treated with inorganic boron (SBX) from weather. If, despite protection, inorganic boron-treated wood becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.

END OF SECTION 061053

SECTION 064023 - INTERIOR ARCHITECTURAL WOODWORK

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Interior wood trim.

B. Related Sections:

1. Section 099100 “Painting”, for shop painting of interior architectural woodwork.

1.2 ACTION SUBMITTALS

A. Shop Drawings:

1. Include the following:

a. Dimensioned plans, elevations, and sections.
b. Attachment details.

B. Samples: For each exposed product and for each shop-applied color and finish specified.

1.3 QUALITY ASSURANCE

A. Fabricator Qualifications: Company specializing in fabricating wood trim finish work with a minimum of 3 years of experience, and complying with AWI’s Quality Certification standards.

B. Installer Qualifications: Company specializing in installing wood trim finish work with a minimum of 3 years of experience, and complying with AWI’s Quality Certification standards.

C. Mockups: If required, build mockups to verify selections made under sample submittals, to demonstrate aesthetic effects, and to set quality standards for materials and execution.

1. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Owner specifically approves such deviations by Change Order.

PART 2 - PRODUCTS

2.1 ARCHITECTURAL WOODWORK, GENERAL

A. Quality Standard: Unless otherwise indicated, comply with the “Architectural Woodwork Standards” for grades of interior architectural woodwork indicated for construction, finishes, installation, and other requirements.

2.2 INTERIOR STANDING AND RUNNING TRIM

A. Architectural Woodwork Standards Grade: Custom.

B. Hardwood Lumber:

1. Species: [**Red oak**] [**White oak**] [**White ash**] [**Hickory**] <**Insert species**>.
2. Cut: [**Plain sliced/plain sawn**] [**Rift cut/rift sawn**] [**Quarter cut/quarter sawn**].
3. Finger Jointing: Not allowed.

C. Softwood Lumber:

1. Species: [**Eastern white pine**] [**Western white pine**] [**Douglas fir**] <**Insert species**>.
2. Cut: [**Plain sawn**] <**Insert cut**>.
3. Finger Jointing: Not allowed.

D. Moulding Patterns: MMPA, “WM/Series Wood Moulding Patterns”.

1. Casing Pattern: WM412 11/16” x 3-1/2”; or similar to match existing.
2. Finish: Painted.

2.3 MATERIALS

A. Materials, General: Provide materials that comply with requirements of referenced quality standard for each quality grade specified unless otherwise indicated.

B. Wood Moisture Content: 5 to 10 percent.

C. Fasteners: Nails, screws, and other anchoring devices of type, size, material, and finish required for application indicated to provide secure attachment, concealed where possible.

D. Glue: Aliphatic-resin, polyurethane, or resorcinol wood glue recommended by manufacturer for general carpentry use.

E. Multipurpose Construction Adhesive: Formulation complying with ASTM D 3498 that is recommended for indicated use by adhesive manufacturer.

2.4 FABRICATION

A. Fabricate interior architectural woodwork to dimensions, profiles, and details indicated.

1. Ease edges of solid wood members 1/16 inch unless otherwise indicated.

B. Complete fabrication, including assembly, to maximum extent possible before shipment to Project site.

1. Disassemble components only as necessary for shipment and installation.
2. Where necessary for fitting at site, provide allowance for scribing, trimming, and fitting.

2.5 SHOP FINISHING

A. Preparations for Finishing: Comply with the “Architectural Woodwork Standards” for sanding, filling countersunk fasteners, sealing concealed surfaces, and similar preparations for finishing interior architectural woodwork, as applicable to each unit of work.

B. Finish interior architectural woodwork as indicated on Drawings at fabrication shop. Defer only final touchup and cleaning until after installation.

PART 3 - EXECUTION

3.1 PREPARATION

A. Before installation, condition interior architectural woodwork to humidity conditions in installation areas for a minimum of 24 hours unless longer conditioning is recommended by manufacturer.

3.2 INSTALLATION

A. Standing and Running Trim:

1. Install trim with minimum number of joints as is practical, using full-length pieces from maximum lengths of lumber available.

    a. Do not use pieces less than 24 inches long, except where necessary.
    b. Stagger joints in adjacent and related standing and running trim.
    c. Miter at outside corners, and cope at inside corners to produce tight-fitting joints with full-surface contact throughout length of joint.
    d. Use scarf joints for end-to-end joints.
    e. Plane backs of casings to provide uniform thickness across joints where necessary for alignment.
    f. Install without splitting; drill pilot holes before fastening where necessary to prevent splitting.
    g. Fasten to prevent movement or warping.
    h. Countersink fastener heads on exposed carpentry work and fill holes.

END OF SECTION 064023

SECTION 067300 – COMPOSITE DECKING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Composite decking.

1.2 REFERENCES

A. ASTM International (ASTM):

1. ASTM D1037: Water Absorption of Plastics.
2. ASTM D1761: Mechanical Fasteners in Wood.
3. ASTM D1413: Test method for Wood Preservatives by Laboratory Soil-block Cultures.
4. ASTM D7031: Standard Guide for Evaluating Mechanical and Physical Properties of Wood-Plastic Composite Products, ASTM International.
5. ASTM D7032: Standard Specification for Establishing Performance Ratings for Wood-Plastic Composite Deck Boards and Guardrail Systems (Guards or Handrails).
6. ASTM E84: Test Method for Surface Burning Characteristics of Building Materials, ASTM International.

1.3 SUBMITTALS

A. Product Data: Manufacturer's data sheets on each product to be used.

B. Shop Drawings: Provide plans and details which include layout, spacing, and sizes of decking.

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, representing actual product color, size, and finish.

1.4 QUALITY ASSURANCE

A. Manufacturer Qualifications: Minimum 5 year experience manufacturing similar products.

B. Installer Qualifications: Minimum 2 year experience installing similar products.

C. Mock-Up: As requested by the Architect, provide a mock-up for evaluation of surface preparation techniques and application workmanship.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver and store products in manufacturer's unopened packaging bearing the brand name and manufacturer's identification until ready for installation.

B. Store products on a flat and level surface.

C. Do not stack decking more than 12 bundles.

D. Keep material covered using the provided bundle cover until time of installation.

E. Handle materials to avoid damage.

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 recommended limits.

1.7 WARRANTY

A. Provide manufacturer’s warranty against rot, decay, splitting, checking, splintering, fungal damage, and termite damage for a period of 25 years for a residential installation and 10 years for a commercial installation. In addition, provide the Fade and Stain Warranty against food staining and fading beyond 5 Delta E (CIE units) for a period of 25 years for a residential installation and 10 years for a commercial installation.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Structural Performance:

1. Deck: Uniform Load - 100lbf/sq.ft.
2. Tread of Stairs: Concentrated Load: 750 lbf on area of 4 sq. in., and 1/8 inch maximum deflection at a concentrated load of 300 lbf.

B. Fire-Surface Burning Characteristics per ASTM E-84.

2.2 COMPOSITE DECKING

A. Basis of Design Product: Trex Transcend®, Lineage decking boards as manufactured by Trex Railing and Decking; 160 Exeter Dr., Winchester, VA 22603. Tel: (540) 542-6300. Web: www.trex.com; or approved equal.

B. Material Description: Composite Decking consisting of recycled Linear Low Density Polyethylene (LLDPE) and recycled wood. The product is extruded into shapes and sizes as follows:

1. Actual Width: 0.94 inch x 5.5 inches.
2. Available Lengths: 16 feet and 20 feet.
3. Profile: Square Edge.
4. Color: As selected from manufacturer’s standard colors.

C. Accessory Trims and Hardware:

1. Provide trims or other accessories by decking manufacturer as required for a complete installation.
2. Refer to manufacturer for recommended composite screws.

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. Install in accordance with manufacturer's instructions, approved submittals, and in proper relationship with adjacent construction.

B. Cut, drill, and rout using carbide tipped blades.

C. Do not use composite wood material for structural applications.

3.5 CLEANING

A. Cleaning as required by manufacturer for warranty compliance.

3.7 PROTECTION

A. Protect installed products until completion of project.

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

END OF SECTION 067300

SECTION 072500 – AIR INFILTRATION BARRIERS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Building wrap.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

1.3 WARRANTY

A. Manufacturer's Product and Labor Warranty: Manufacturer agrees to repair or replace weather barrier product that fails in materials within specified warranty period, including removal and replacement of affected construction up to manufacturer's limits.

1. Warranty Period: 10 years from date of purchase.

PART 2 - PRODUCTS

2.1 AIR INFILTRATION BARRIER

A. Commercial Building Wrap: ASTM E2357 passed ABBA (Air Barrier Association of America) evaluated air barrier assembly; with flame-spread and smoke-developed indexes of less than 25 and 450, respectively, when tested according to ASTM E84; UV stabilized; and acceptable to authorities having jurisdiction.

1. Basis of Design Product: Subject to compliance with requirements, provide DuPont™; Tyvek® CommercialWrap®, or approved equal.

B. WEATHER BARRIER ACCESSORIES

1. Building Wrap Tape: Pressure-sensitive plastic tape recommended by weather barrier manufacturer for sealing joints and penetrations in commercial building wrap.

a. Basis-of-Design Product: Subject to compliance with requirements, provide DuPont™; Tyvek® Tape, or approved equal.

2. Fasteners with Self-Gasketing Washers: Commercial building wrap manufacturer's recommended pneumatically or hand-applied fasteners with high-density polyethylene cap washers, with UV inhibitors.

a. Basis-of-Design Product: Subject to compliance with requirements, provide DuPont™; Tyvek® Wrap Caps, or approved equal.

3. Primer for Flashings: Synthetic rubber-based product; spray applied. Strengthen adhesive bond at low temperature applications between weather products such as self-adhered flashing products, commercial building wraps, and common building sheathing materials.

PART 3 - EXECUTION

3.1 AIR INFILTRATION BARRIER INSTALLATION

A. Building Wrap: Comply with manufacturer's written instructions and warranty requirements.

1. Seal seams, edges, fasteners, and penetrations with tape.
2. Extend into jambs of openings and seal corners with tape.

END OF SECTION 072500

SECTION 074213 – ALUMINUM COMPOSITE MATERIAL WALL PANELS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Aluminum composite material (ACM) panels at trash enclosure.

1.2 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.3 ACTION SUBMITTALS

A. Product Data: Manufacturer's panel product data.

B. Shop Drawings:

1. Include thickness, dimensions, details of edge conditions, joints, panel profiles, corners, anchorages, attachment assembly, trim, flashings, closures, accessories, and special details.
2. Accessories: Include details of flashing, trim, and anchorage.

C. Samples for Selection: Provide manufacturer's sample chips for selection of panel color.

D. Samples for Verification: Provide sample of each type of panel indicated with selected factory-applied color finish.

1.4 WARRANTY

A. Panel Integrity Warranty: Manufacturer agrees to repair or replace components of panels that fail in materials or workmanship within specified warranty period.

1. Warranty Period: 10 years from date of Substantial Completion.

B. Panel Finish Warranty: Manufacturer agrees to repair finish or replace panels that show evidence of deterioration of factory-applied finishes within specified warranty period.

1. Finish Warranty Period: 20 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 ALUMINUM COMPOSITE MATERIAL WALL PANELS (ACM)8

A. Basis of Design Product: Mapes Non-Insulated Veneer Panels as manufactured by Mapes Architectural Panels, LLC, Lincoln, NE; or approved equal.

B. Panel Composition: Aluminum Composite Material: Two sheets of aluminum sandwiching a solid core of extruded thermoplastic material formed in a continuous process. The core and skin materials shall be laminated together.

1. Aluminum Face Sheets: 0.020 inches (0.5mm) thick; or manufacturer's standard thickness.
2. Core: Solid Plastic (ABS), 4mm thick.
3. Panel Thickness: 0.25 inches.
4. Panel Texture: Smooth.
5. Panel Finish: Standard Kynar finish on exterior face.

a. Color: As selected by Architect from manufacturer's full range.

2.2 ACCESSORIES

A. Bottom Edge Trim: Mapes Two Piece Cap, with weep created by installer.

B. Panel Connector Trim: If required, use Mapes One Piece Divider.

C. Panel Sealants: ASTM C920; elastomeric polyurethane or silicone sealant; of type, grade, class, and use classifications required to seal joints in panels and remain weathertight; and as recommended in writing by panel manufacturer.

D. Multipurpose Construction Adhesive: As recommended by panel manufacturer.

2.3 FABRICATION

A. Fabricate and finish panels at the factory, by panel manufacturer's standard procedures and processes, as necessary to fulfill indicated panel performance requirements.

1. Fabricate panels to dimensions indicated on Drawings.
2. Formed panel lines, breaks, and angles to be sharp and straight, with surfaces free from warp or buckle.
3. Fabricate panels with sharply cut edges and no displacement of face sheet or protrusion of core.

PART 3 - EXECUTION

3.1 INSTALLATION ALUMINUM COMPOSITE MATERIAL WALL PANELS

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

B. Install panels in accordance with system manufacturer's written instructions in orientation, sizes, and locations indicated on Drawings. Install panels perpendicular to supports unless otherwise indicated. Anchor panels securely in place, with provisions for thermal and structural movement.

C. Attachment Assembly: Install subframing, furring, and other panel support members and anchorages in accordance with manufacturer's installation instructions.

D. Flashing and Trim: Comply with performance requirements, manufacturer's written installation instructions, and SMACNA's "Architectural Sheet Metal Manual." Provide concealed fasteners where possible and set units true to line and level as indicated. Install work with laps, joints, and seams that are permanently watertight.

E. Remove temporary protective coverings and strippable films as panels are installed unless otherwise indicated in manufacturer's written installation instructions. On completion of installation, clean finished surfaces as recommended by panel manufacturer. Maintain in a clean condition during construction.

END OF SECTION 074213

SECTION 074600 – SIDING, SOFFIT AND FASCIA

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:

1. Steel siding, soffit and fascia systems.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

B. Shop Drawings:

1. Show layout, methods of attachment, provisions for movement, flashing, trim, edge and field conditions, interface with adjacent materials, locations of cutouts or special shapes, existing construction, and details.
2. Submit overall layout of panels with small scale details, and large scale details of edge conditions, joints, fastener and sealant placement, flashings, penetrations, and special conditions.
3. Distinguish between factory and field assembled work.

C. Samples: One of each type of siding and soffit, full panel width by 12 inches long.

1.3 INFORMATIONAL SUBMITTALS

A. Product certificates.

B. Research/evaluation reports.

C. Warranty: Sample of product warranty.

1.4 CLOSEOUT SUBMITTALS

A. Maintenance and cleaning instructions.

B. Warranty.

1.5 ADDITIONAL MAINTENANCE MATERIAL

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Furnish full lengths of siding and soffit including related accessories, in a quantity equal to 2 percent of amount installed.

1.6 QUALITY ASSURANCE

A. Source Limitations: Obtain each type, color, texture, and pattern of siding, soffit and fascia, including related accessories, from a single source and manufacturer.

1.7 WARRANTY

A. Lifetime, non-prorated, transferrable warranty in which manufacturer agrees to repair or replace siding, soffit and fascia, that fails in materials or workmanship within specified warranty period.

1. Siding Warranty Period: 50 years from date of Substantial Completion, including 35-year fade protection.

B. Provide installers 2-year installation warranty against water penetration and weather tightness.

PART 2 - PRODUCTS

2.1 STEEL SIDING

A. Pre-formed steel siding fabricated from galvanized steel coil complying with ASTM A653, with both sides zinc-coated by the continuous hot dipped galvanizing method and finish system specified below. Product shall be formed at the factory with a nailing flange to interlock securely with successive courses.

B. Basis of Design Product: Steel-Kore® Steel Siding as manufactured by EDCO Products; or approved equal.

C. Horizontal Siding:

1. Pattern: 8-inch exposure in plain, double 4-inch lap style.
2. Texture: Wood grain.
3. Material: 28 gauge, G60 galvanized steel, 0.015” base metal thickness.
4. Finish: ENTEX® finish, or manufacturer’s standard Kynar PVDF coating.

a. Color: As selected by Architect from manufacturer's full range of industry colors.

D. Vertical Siding:

1. Pattern: 12-inch exposure in vertical board and batten style.
2. Texture: Wood grain.
3. Material: 28 gauge, G60 galvanized steel, 0.015” base metal thickness.
4. Finish: ENTEX® finish, or manufacturer’s standard Kynar PVDF coating.

a. Color: As selected by Architect from manufacturer's full range of industry colors.

2.2 ALUMINUM SOFFITS

A. Provide metal soffit panels designed to be installed by lapping and interconnecting side edges of adjacent panels and mechanically attaching through panel to supports using concealed fasteners in the side laps. Include accessories required for weathertight installation.

B. Basis of Design Product: Aluma-Kore® Center-Vent Quad Soffit as manufactured by EDCO Products; or approved equal.

1. Perforated panels formed with vertical panel edges and a flat pan between panel edges; with a V-groove joint between panels.
2. Material: Coil-coated aluminum sheet, ASTM B209, alloy as standard with manufacturer, with temper as required to suit forming operations and structural performance required.

    a. Thickness: 0.019 inch.
    b. Surface: Smooth, flat finish.
    c. Concealed Finish: White or light-colored acrylic or polyester backer finish.
    d. Exterior Finish: ENTEX® finish; or manufacturer's standard two-coat fluoropolymer.
    e. Exposed Color: As selected by Architect from manufacturer's full range.

3. Panel Coverage: 16 inches.

2.3 STEEL FASCIA

A. Basis of Design Product: : Steel Coil Stock as manufactured by EDCO Products; or approved equal.

1. Thickness: 30 ga. steel.
2. Surface: Smooth, flat finish.
3. Concealed Finish: White.
4. Exposed Finish: ENTEX® finish; or manufacturer's standard .
5. Exposed Color: As selected by Architect from Manufacturer's full range.

2.4 ACCESSORIES

A. Siding Accessories: Provide starter strips, edge trim, outside and inside corner caps, and other items as recommended by siding manufacturer for building configuration.

B. Soffit Accessories: Provide channels, drip edges, miter corners, fascia corners, and other items as recommended by soffit manufacturer for complete installation.

C. Flashing: Provide flashing complying with Section 076200 "Sheet Metal Flashing and Trim" at window and door heads and where indicated.

1. Finish for Flashing: Same as steel siding; or as selected.

D. Fasteners:

1. For fastening to wood, use siding nails of sufficient length to penetrate a minimum of 1 inch into substrate.
2. For fastening to metal, use ribbed bugle-head screws of sufficient length to penetrate a minimum of 1/4 inch, or three screw-threads, into substrate.
3. For fastening aluminum, use aluminum fasteners. Where fasteners will be exposed to view, use prefinished aluminum fasteners in color to match item being fastened.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates for compliance with requirements for installation tolerances and other conditions affecting performance of siding and related accessories.

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

3.2 INSTALLATION

A. Comply with siding manufacturer's written installation instructions applicable to products and applications indicated unless more stringent requirements apply.

1. Do not install damaged components.
2. Center nails in elongated nailing slots without binding siding to allow for thermal movement.

B. Install steel siding and related accessories according to AAMA 1406-86.

1. Install fasteners no more than 24 inches o.c.

C. On-Site Fabrication: Subject to compliance with requirements of this Section, metal panels may be fabricated on-site using UL-certified, portable roll-forming equipment if panels are of same profile and warranted by manufacturer to be equal to factory-formed panels. Fabricate according to equipment manufacturer's written instructions and to comply with details shown.

D. Install joint sealants as specified in Section 079200 "Joint Sealants" and to produce weathertight installation.

E. Where siding will contact dissimilar metals, protect against galvanic action by painting contact surfaces with primer or by applying sealant or tape or installing nonconductive spacers as recommended by manufacturer for this purpose.

F. Soffit Panels: Fasten metal panels to supports with fasteners at each lapped joint at location and spacing recommended by manufacturer.

1. Apply panels and associated items true to line for neat and weathertight enclosure.
2. Provide metal-backed washers under heads of exposed fasteners bearing on weather side of metal panels.
3. Locate and space exposed fasteners in uniform vertical and horizontal alignment. Use proper tools to obtain controlled uniform compression for positive seal without rupture of washer.
4. Install screw fasteners with power tools having controlled torque adjusted to compress washer tightly without damage to washer, screw threads, or panels. Install screws in predrilled holes.
5. Apply a continuous ribbon of sealant or tape to seal lapped joints of metal panels, using sealant or tape as recommend by manufacturer on side laps of nesting-type panels and elsewhere as needed to make panels watertight.
6. Provide sealant or tape between panels and protruding equipment, vents, and accessories.
7. At panel splices, nest panels with minimum 6-inch end lap, sealed with sealant and fastened together by interlocking clamping plates.

3.3 ADJUSTING AND CLEANING

A. Remove damaged, improperly installed, or otherwise defective materials and replace with new materials complying with specified requirements.

B. Clean finished surfaces according to manufacturer's written instructions and maintain in a clean condition during construction.

END OF SECTION 074600

SECTION 076200 - SHEET METAL FABRICATIONS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Sheet metal flashings and trim.
2. Formed roof drainage fabrications (gutters, downspouts).

1.2 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.3 ACTION SUBMITTALS

A. Product Data: Submit manufacturer's product data sheets for the following:

1. Metal sheet and coil materials.
2. Underlayment materials.
3. Elastomeric sealant.
4. Butyl sealant.
5. Epoxy seam sealer.

B. Shop Drawings: For sheet metal fabrications, provide the following:

1. Include plans, elevations, sections, and attachment details.
2. Detail fabrication and installation layouts, expansion-joint locations, and keyed details. Distinguish between shop- and field-assembled Work.
3. Include identification of material, thickness, weight, and finish for each item and location in Project.
4. Include details for forming, including profiles, shapes, seams, and dimensions.
5. Include details for joining, supporting, and securing, including layout and spacing of fasteners, cleats, clips, and other attachments. Include pattern of seams.
6. Include details of termination points and assemblies.
7. Include details of special conditions.
8. Include details of connections to adjoining work.

C. Samples: For each exposed product in each color and texture specified.

1.4 INFORMATIONAL SUBMITTALS

A. Product Certificates: For each type of coping and roof edge flashing that is ANSI/SPRI/FM 4435/ES-1 tested.

B. Evaluation Reports: For copings and roof edge flashing from ICC-ES showing compliance with ANSI/SPRI/FM 4435/ES-1.

C. Sample warranty.

1.5 CLOSEOUT SUBMITTALS

A. Maintenance data.

B. Special warranty.

1.6 QUALITY ASSURANCE

A. Fabricator Qualifications: Employs skilled workers who custom fabricate sheet metal flashing and trim like that required for this Project and whose products have a record of successful in-service performance.

1. For copings and roof edge flashings that are ANSI/SPRI/FM 4435/ES-1 tested, shop shall be listed as able to fabricate required details as tested and approved.

1.7 WARRANTY

A. Special Warranty on Finishes: Manufacturer agrees to repair finish or replace sheet metal flashing and trim that shows evidence of deterioration of factory-applied finishes within specified warranty period.

1. Exposed Panel Finish: Deterioration includes, but is not limited to, the following:

a. Color fading more than 5 Delta units when tested in accordance with ASTM D2244.
b. Chalking in excess of a No. 8 rating when tested in accordance with ASTM D4214.
c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.

2. Finish Warranty Period: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

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

B. Sheet Metal Standard for Flashing and Trim: Comply with NRCA's "The NRCA Roofing Manual: Architectural Metal Flashing, Condensation and Air Leakage Control, and Reroofing" requirements for dimensions and profiles shown unless more stringent requirements are indicated.

C. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes to prevent buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

1. Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces.

2.2 MATERIALS

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

B. Steel Sheet: ASTM A653, zinc-coated (galvanized) sheet steel, G90 coating designation, structural quality. Thickness and finish as indicated.

2.3 MISCELLANEOUS MATERIALS

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

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

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

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

2. Fasteners for Aluminum-Zinc Alloy-Coated Steel Sheet: Series 300 stainless steel or hot-dip galvanized steel in accordance with ASTM A153/A153M or ASTM F2329.

C. Elastomeric Sealant: ASTM C920, elastomeric polyurethane polymer sealant; of type, grade, class, and use classifications required to seal joints in sheet metal flashing and trim and remain watertight.

D. Butyl Sealant: ASTM C1311, single-component, solvent-release butyl rubber sealant; polyisobutylene plasticized; heavy bodied for hooked-type expansion joints with limited movement.

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

2.4 FABRICATION, GENERAL

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

B. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.

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

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. Form seams and seal with elastomeric sealant unless otherwise recommended by sealant manufacturer for intended use.

2.5 SHEET METAL FLASHINGS AND TRIMS

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

1. Fabricate sheet metal flashing and trim in shop to greatest extent possible.
2. Fabricate sheet metal flashing and trim in thickness or weight needed to comply with performance requirements, but not less than that specified for each application and metal.
3. Verify shapes and dimensions of surfaces to be covered and obtain field measurements for accurate fit before shop fabrication.
4. Form sheet metal flashing and trim to fit substrates without excessive oil canning, buckling, and tool marks; true to line, levels, and slopes; and with exposed edges folded back to form hems.
5. Conceal fasteners and expansion provisions where possible. Do not use exposed fasteners on faces exposed to view.
6. Fabrication Tolerances: Fabricate sheet metal flashing and trim that is capable of installation to a tolerance of 1/4 inch in 20 feet on slope and location lines indicated on Drawings, and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.

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

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

8. Exposed Finish: As indicated.

9. Concealed Finish: Pretreat with manufacturer's standard white or light-colored acrylic or polyester backer finish, consisting of prime coat and wash coat with minimum total dry film thickness of 0.5 mil.

2.6 FORMED ROOF-DRAINAGE FABRICATIONS

A. Hanging Gutters:

1. Fabricate to cross section required, complete with end pieces, outlet tubes, and other accessories as required. Fabricate in minimum 96-inch 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 and expansion joint covers from same metal as gutters. Shop-fabricate interior and exterior corners.

2. Basis of Design Product: Formed gutters as manufactured by EDCO Products; or approved equal.

    a. Profile: Standard K-style.
    b. Size: 5 inch.
    c. Material: 24 gauge, zinc-coated (galvanized) steel; 0.028 inch thick.
    d. Finish: ENTEX® finish, or manufacturer’s standard Kynar PVDF coating Kynar 500/Hylar 5000, 70% PVDF coating.
    e. Color: As selected by the Architect from manufacturer’s available colors.

B. Downspouts and Elbows:

1. Basis of Design Product: Steel Elbows and Steel Downspouts as manufactured by EDCO Products; or approved equal.

a. Style: 3" x 4", Rectangular.
b. Material: 28 gauge, zinc-coated (galvanized) steel, 0.028 inch thick.
c. Furnish with metal hangers from same material as downspouts and anchors.
d. Finish: ENTEX® finish, or manufacturer's standard Kynar PVDF coating Kynar 500/Hylar 5000, 70% PVDF coating.
e. Color: As selected by the Architect from manufacturer's available colors.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

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

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

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 with no joints within 24 inches of corner or intersection.

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

D. Fasteners: Use fastener sizes that penetrate wood blocking or sheathing not less than 1-1/4 inches for nails and not less than 3/4 inch for wood screws.

E. Conceal fasteners and expansion provisions where possible in exposed work and locate to minimize possibility of leakage. Cover and seal fasteners and anchors as required for a tight installation.

F. Seal joints as required for watertight construction.

1. Use sealant-filled joints unless otherwise indicated.

a. Embed hooked flanges of joint members not less than 1 inch into sealant.
b. Form joints to completely conceal sealant.
c. When ambient temperature at time of installation is between 40 and 70 deg F, set joint members for 50 percent movement each way.
d. Adjust setting proportionately for installation at higher ambient temperatures.

1) Do not install sealant-type joints at temperatures below 40 deg F.

2. Prepare joints and apply sealants to comply with requirements in Section 079200 "Joint Sealants."

3.2 INSTALLATION OF ROOF DRAINAGE SYSTEM

A. Install sheet metal roof-drainage items to produce complete roof-drainage system in accordance with manufacturer's instructions and cited sheet metal standard unless otherwise indicated.

B. Hanging Gutters:

1. Join sections with joints sealed with sealant.
2. Provide for thermal expansion.
3. Attach gutters at eave or fascia to firmly anchor them in position.
4. Provide end closures and seal watertight with sealant.
5. Slope to downspouts.
6. Install gutter with expansion joints at locations indicated, but not exceeding, 50 feet apart. Install expansion-joint caps.

C. Downspouts:

1. Join sections with 1-1/2-inch telescoping joints.
2. Provide hangers with fasteners designed to hold downspouts securely to walls.
3. Locate hangers at top and bottom and at approximately 60 inches o.c.
4. Provide elbows at base of downspout to direct water away from building.
5. Connect downspouts to underground drainage system.

D. Expansion-Joint Covers: Install expansion-joint covers at locations and of configuration indicated on Drawings. Lap joints minimum of 4 inches in direction of water flow.

3.3 INSTALLATION TOLERANCES

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

3.4 CLEANING AND PROTECTION

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

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

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.

E. Replace sheet metal flashing and trim that have been damaged or that have deteriorated beyond successful repair by finish touchup or similar minor repair procedures, as determined by Architect.

END OF SECTION 076200

SECTION 079200 - JOINT SEALANTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Silicone joint sealants.
2. Urethane joint sealants.
3. Mildew-resistant joint sealants.
4. Preformed joint sealants.
5. Acoustical joint sealants.
6. Joint sealant backings.

1.2 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.3 ACTION SUBMITTALS

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

B. Samples: Manufacturer's color charts consisting of strips of cured sealants showing the full range of colors available for each product exposed to view.

C. Joint-Sealant Schedule: Include the following information:

1. Joint-sealant application, joint location, and designation.
2. Joint-sealant manufacturer and product name.
3. Joint-sealant formulation.
4. Joint-sealant color.

1.4 INFORMATIONAL SUBMITTALS

A. Field-adhesion-test reports: For each sealant application tested.

B. Sample warranties.

1.5 CLOSEOUT SUBMITTALS

A. Warranty Documentation: Manufacturer and Installer special warranties.

1.6 QUALITY ASSURANCE

A. Testing Agency Qualifications: Qualified according to ASTM C1021 to conduct the testing indicated.

B. Installer Qualifications: Installer who is trained and approved by manufacturer for installation of product required for this Project.

1.7 WARRANTY

A. Special Installer's Warranty: Installer agrees to repair or replace joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.

1. Warranty Period: Two years from date of Substantial Completion.

B. Special Manufacturer's Warranty: Manufacturer agrees to furnish joint sealants to repair or replace those joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.

1. Warranty Period: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 JOINT SEALANTS, GENERAL

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

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

2.2 SILICONE JOINT SEALANTS

A. Silicone, S, NS, 50, NT: Single-component, nonsag, plus 50 percent and minus 50 percent movement capability, nontraffic-use, neutral-curing silicone joint sealant; ASTM C920, Type S, Grade NS, Class 50, Use NT.

2.3 URETHANE JOINT SEALANTS

A. Urethane, S, NS, 100/50, T, NT: Single-component, nonsag, plus 100 percent and minus 50 percent movement capability, traffic- and nontraffic-use, urethane joint sealant; ASTM C920, Type S, Grade NS, Class 100/50, Uses T and NT.

2.4 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 C834, Type OP, Grade NF.

2.5 PREFORMED JOINT SEALANTS

A. Preformed Foam Joint Sealant: Manufacturer's standard preformed, precompressed, open-cell foam sealant manufactured from urethane foam with minimum density of 10 lb/cu. ft. and impregnated with a nondrying, water-repellent agent. Factory produce in precompressed sizes in roll or stick form to fit joint

widths indicated; coated on one side with a pressure-sensitive adhesive and covered with protective wrapping.

2.6 ACOUSTICAL JOINT SEALANTS

A. Acoustical Joint Sealant: Manufacturer's standard nonsag, paintable, nonstaining latex sealant complying with ASTM C834. Product effectively reduces airborne sound transmission through perimeter joints and openings in building construction as demonstrated by testing representative assemblies according to ASTM E90.

2.7 JOINT-SEALANT BACKING

A. Backer Rod: ASTM C1330, Cylindrical sealant backing, 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.

2.8 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 and the following requirements:

1. Remove laitance and form-release agents from concrete.
2. Clean nonporous joint substrate surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion.

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

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

3.2 INSTALLATION OF JOINT SEALANTS

A. General: Comply with ASTM C1193 and joint-sealant manufacturer's written installation instructions for products and applications indicated unless more stringent requirements apply.

B. Install backer rod to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.

1. Do not leave gaps between ends of sealant backings.
2. Do not stretch, twist, puncture, or tear sealant backings.
3. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.

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 C1193 unless otherwise indicated.

3.3 FIELD QUALITY CONTROL

A. Field-Adhesion Testing: Field test joint-sealant adhesion to joint substrates as follows:

1. Test Method: Test joint sealants according to ASTM C1193 Method A, Field-Applied Sealant Joint Hand Pull Tab, or ASTM C1521 Method A, Tail Test Procedure.

B. Evaluation of Field-Adhesion-Test Results: Sealants not evidencing adhesive failure from testing or noncompliance with other indicated requirements will be considered satisfactory. Remove sealants that fail to adhere to joint substrates during testing or to comply with other requirements. Retest failed applications until test results prove sealants comply with indicated requirements.

3.4 JOINT-SEALANT SCHEDULE

A. Joint-Sealant Application: Exterior joints in horizontal traffic surfaces.

1. Joint Locations:

a. Control and expansion joints in brick pavers.
b. Isolation and contraction joints in cast-in-place concrete slabs.
c. Joints between plant-precast architectural concrete paving units.
d. Joints in stone paving units, including steps.
e. Tile control and expansion joints.
f. Joints between different materials listed above.

g. Other joints as indicated.

2. Joint Sealant: Urethane.
3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.

B. Joint-Sealant Application: Exterior joints in vertical surfaces and horizontal nontraffic surfaces.

1. Joint Locations:

a. Construction joints in cast-in-place concrete.
b. Joints between plant-precast architectural concrete units.
c. Control and expansion joints in unit masonry.
d. Joints in dimension stone cladding.
e. Joints in glass unit masonry assemblies.
f. Joints in exterior insulation and finish systems.
g. Joints between metal panels.
h. Joints between different materials listed above.
i. Perimeter joints between materials listed above and frames of doors windows and louvers.
j. Control and expansion joints in ceilings and other overhead surfaces.
k. Other joints as indicated.

2. Joint Sealant: Urethane.
3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.

C. Joint-Sealant Application: Interior joints in horizontal traffic surfaces.

1. Joint Locations:

a. Isolation joints in cast-in-place concrete slabs.
b. Control and expansion joints in stone flooring.
c. Control and expansion joints in brick flooring.
d. Control and expansion joints in tile flooring.
e. Other joints as indicated.

2. Joint Sealant: Silicone.
3. Joint Sealant: Urethane.
4. Joint Sealant: Preformed foam.
5. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.

D. Joint-Sealant Application: Interior joints in vertical surfaces and horizontal nontraffic surfaces.

1. Joint Locations:

a. Control and expansion joints on exposed interior surfaces of exterior walls.
b. Perimeter joints of exterior openings where indicated.
c. Tile control and expansion joints.
d. Vertical joints on exposed surfaces of interior unit masonry concrete walls and partitions.
e. Joints on underside of plant-precast structural concrete beams and planks.
f. Perimeter joints between interior wall surfaces and frames of interior doors windows and elevator entrances.
g. Other joints as indicated.

2. Joint Sealant: Latex.
3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.

E. Joint-Sealant Application: Mildew-resistant interior joints in vertical surfaces and horizontal nontraffic surfaces.

1. Joint Sealant Location:

    a. Joints between plumbing fixtures and adjoining walls, floors, and counters.
    b. Tile control and expansion joints where indicated.
    c. Other joints as indicated.

2. Joint Sealant: Silicone.
3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.

F. Joint-Sealant Application: Interior acoustical joints in vertical surfaces and horizontal nontraffic surfaces.

1. Joint Location:

    a. Acoustical joints where indicated.
    b. Other joints as indicated.

2. Joint Sealant: Acoustical.
3. Joint-Sealant Color: As selected by Architect from manufacturer's full range.

END OF SECTION 079200

SECTION 081423 – ENTRY DOORS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:

1. Steel entry doors.
2. Metal storm doors.

1.2 REFERENCES

A. ASTM International (ASTM):

1. ASTM E283 - Standard Test Method for Determining Rate of Air Leakage Through Exterior Doors Under Specified Pressure Differences Across the Specimen.
2. ASTM E330 - Standard Test Method for Structural Performance of Exterior Doors by Uniform Static Pressure Difference.
3. ASTM E331 - Standard Test Method for Water Penetration of Exterior Doors by Uniform Static Air Pressure Difference.

B. National Fire Protection Association (NFPA):

1. NFPA 252 - Standard Methods of Fire Tests of Doors Assemblies.

C. Underwriters Laboratories, Inc. (UL)

1. UL 10B - Standard for Fire Test of Door Assemblies.
2. UL 10C - Standard for positive Pressure Fire Tests of Doors Assemblies.

1.3 SUBMITTALS

A. 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.

B. Shop Drawings: Submit shop drawings indicating details of construction, flashings and relationship with adjacent construction.

C. Verification Samples: For each factory-finished product specified, two samples, minimum size 6 in square, representing actual finishes.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: Minimum 2 years installing similar assemblies.

B. Certifications: NAMI certification label indicating assemblies meet the design requirements.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver, store and handle materials and products in strict compliance with manufacturer's instructions and recommendations and industry standards.

B. Deliver and store assembly materials and components in manufacturer's original, unopened, undamaged containers with identification labels intact.

1. Protect from damage and exposure to direct sunlight during storage.
2. Store in a dry, well-ventilated area off the floor.
3. During storage, do not remove paper or cardboard placed between products for shipment.
4. Store in a humidity and temperature controlled facility. Recommended conditions: 30 to 50 percent relative humidity and 50 to 90 degrees F (10 to 32 degrees C).

1.6 PROJECT CONDITIONS

A. Maintain environmental conditions; temperature, humidity, and ventilation, within limits recommended by manufacturer for optimum results. Install only in vertical walls and when conditions are dry. Do not install products under environmental conditions outside manufacturer's recommended limits.

1.7 WARRANTY

A. Manufacturer's Standard Warranty: Assemblies will be free from defects in materials and workmanship from the date of manufacture for the time periods indicated below:

1. Door Slab: 10 Years.
2. Factory Prefinish: 10 Years.

1.8 STEEL ENTRY DOORS

A. Basis of Design Product: Contours® Steel Doors as manufactured by JELD-WEN Inc.; or approved equal.

1. Door Design: 6-panel Ovolo, smooth.
2. Thickness: 1-3/4 inch.
3. Skins: Galvanized steel, 0.0195 inches.
4. Core: Custom-fitted Polystyrene.
5. LVL stiles and rails.
6. Steel bottom rail.
7. 12 inch lock block.
8. Finish: Factory prefinish; color as selected from manufacturer’s full range.
9. Hardware: Prep door for Owner supplied lockset.

B. Pre-Hung Frames: Frames to be provided by steel door manufacturer.

1. Frame Style: Single Door.
2. Jamb: Primed Pine, Rabbeted.

a. Width: As selected to fit existing opening.

3. Casing: Brickmould.
4. Swing: Inswing.
5. Hinges: Solid brass concealed-bearing,
6. Sills: Aluminum.

1.9 STORM DOORS

A. Basis of Design Product: Prescott Reversa Screen Highview Storm Door as manufactured by Larson®; or approved equal.

1. Door Design: 1-1/4 inch thick extruded aluminum surrounded by heavy-duty weatherstrip. Rigid steel kick panel.
2. Built-in reversible screen allowing for top or bottom ventilation.
3. Color-matched lever handleset with inside lock.
4. Adjustable speed closer color-matched to the door.

PART 2 - EXECUTION

2.1 EXAMINATION

A. Inspect rough openings for compliance with door manufacturer recommendations. Verify rough opening conditions are within recommended tolerances.

2.2 INSTALLATION OF STEEL ENTRY DOORS

A. Install doors in accordance with manufacturer's installation guidelines and recommendations.

B. Install Jamb Assembly:

1. Caulk sill along outside edge and 1/2 in (13 mm) in from edge of subfloor.
2. Shim hinge then latch side jambs straight. Inspect jamb for square, level and plumb.
3. Verify door opens freely and weatherstrip meets door evenly.
4. Verify door sweep contacts threshold evenly.

C. Provide insulation in wall cavity around rough opening of door.

D. Caulk outside perimeter of door unit between brickmold and wall face, along front side of threshold, and between jamb sides and threshold.

2.3 INSTALLATION OF STORM DOORS

A. Install doors in accordance with manufacturer's installation guidelines and recommendations.

2.4 PROTECTION

A. Protect installed doors from damage.

END OF SECTION 081423

SECTION 083613 - SECTIONAL DOORS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:

1. Non-insulated garage doors.
2. Electric door openers.

B. Related Requirements:

1. Section 055000 "Sheet Metal Fabrications" for miscellaneous steel supports.

1.2 ACTION SUBMITTALS

A. Product Data: For each type and size of sectional door, electric opener and accessory.

B. Shop Drawings: Indicate plans and elevations including opening dimensions and required tolerances, connection details, anchorage spacing, hardware locations, and installation details.

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

D. Performance Standards: Provide test data validating the following:

1. Door Section: Gloss retention, fade resistance, FDA compliance, cold crack performance, load to rebound, dent resistance impact.
2. Drive Train: Spring cycle life, track, hinges, rollers, cable assembly, cable strength.
3. Door Assembly: Thermal performance, deflection, wind load.

E. Delegated-Design Submittal: For sectional doors indicated to comply with performance requirements and design criteria, include analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

1.3 INFORMATIONAL SUBMITTALS

A. Sample warranties.

1.4 CLOSEOUT SUBMITTALS

A. Operation and maintenance data.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: Contractor that employs installers and supervisors who are trained and approved by manufacturer for both installation and maintenance of units required for this Project.

B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

C. Standard for Sectional Doors: Fabricate sectional doors to comply with current ANSI/DASMA 102 standards.

D. Single-Source Responsibility: Provide doors, tracks, motors, and accessories from one manufacturer for each type of door. Provide secondary components from source acceptable to manufacturer of primary components.

1.6 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace components of sectional doors that fail in materials or workmanship within specified warranty period.

1. Warranty Period: From date of Substantial Completion.

a. 10-year panel delamination.
b. 1-year door.
c. 3-year/20,000 cycle door and operator system.

B. Special Finish Warranty: Manufacturer agrees to repair or replace components that show evidence of deterioration of factory-applied finishes within specified warranty period.

1. Warranty Period: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. General Performance: Sectional doors shall comply with performance requirements specified without failure due to defective manufacture, fabrication, installation, or other defects in construction and without requiring temporary installation of reinforcing components.

B. Structural Performance: Capable of withstanding the design wind loads.

1. Design Wind Load: Uniform pressure (velocity pressure) of 20 lbf/sq. ft., acting inward and outward.
2. Testing: According to ASTM E330 or DASMA 108 for garage doors and complying with ANSI/DASMA 108 acceptance criteria.

C. Air Infiltration: Maximum rate not more than indicated when tested according to ASTM E283 or ANSI/DASMA 105.

D. Windborne-Debris Impact Resistance: Provide sectional door glazed openings that pass ASTM E1886 Large Missile Test and cyclic-pressure tests in accordance with ASTM E1996 for Wind Zone 2, or that pass ANSI/DASMA 115.

2.2 NON-INSULATED GARAGE DOORS

A. Basis-of-Design Product: Model Series 24 by Midland™ Garage Door Mfg Co., 6775 Shady Oak Rd., Eden Prairie, MN 55344, 800-521-0047, www.midlandgaragedoor.com; or approved equal.

B. Panel Assembly: Steel, non-insulated garage door.

1. Style: Raised Panel/Pan.
2. Panel Thickness: 2 inches.
3. Exterior Steel: 24 gauge.
4. Exterior Surface: Pebble texture.
5. End Stiles: 16 gauge steel with thermal break.
6. Operator: Electric.
7. Panel Color: As selected from manufacturer's full range of colors.

C. Torsion Spring: Counterbalance mechanism complying with ASTM A229/A229M; sized to weight of the door, with a helically wound, oil tempered torsion spring mounted on a steel shaft; cable drum of diecast aluminum with high strength galvanized aircraft cable.

1. Standard cycle spring: 10,000 cycles.

D. Thermal Values: R-value of 7; U-value of 0.38.

E. Air Infiltration: 0.28 cfm/ft^2 at 15 mph.

F. Windows: None.

G. Hardware: Heavy-duty, galvanized-steel hinges. Nylon rollers with steel ball bearings in case-hardened races.

H. Locking Devices: None.

I. Weatherstripping:

1. U-shape astragal on aluminum retainer at bottom of door.

J. Track: Galvanized steel track as recommended by manufacturer to suit loading required and clearances available. Provide complete system including brackets, bracing and reinforcement to ensure rigid support of ball-bearing roller guides.

1. Type: Standard lift.

2.3 ELECTRIC DOOR OPERATOR

A. Basis of Design Product: Model 8160 as manufactured by LiftMaster®; or approved equal.

1. Description: 1/2 HP, 120V AC, Chain Drive, with built-in wifi, T-rail system, 1 x 100w light, and obstruction detection sensor system.

2. Operator Controls:

a. 3-button remote control
b. Multi-function control panel.
c. Wireless keyless entry.

3. Emergency Manual Operation: Equip electrically powered door with capability for emergency manual operation. Design manual mechanism so required force for door operation does not exceed 25 lbf.

B. Push/Pull Handles: Equip door with galvanized-steel lifting handle on interior side.

2.4 INSTALLATION

A. Install sectional doors, track, and operating equipment complete with necessary hardware, anchors, inserts, hangers, and equipment supports; according to manufacturer's written instructions and as specified.

B. Provide sway bracing, diagonal bracing, and reinforcement as required for rigid installation of track and door-operating equipment.

C. Install door controls in compliance with regulatory requirements for accessibility.

D. Adjust hardware and moving parts to function smoothly so that doors operate easily, free of warp, twist, or distortion.

E. Touch-up Painting: Immediately after welding galvanized materials, clean welds and abraded galvanized surfaces and repair galvanizing to comply with ASTM A780/A780M.

2.5 DEMONSTRATION

A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain sectional doors.

END OF SECTION 083613

SECTION 085313 - VINYL WINDOWS AND PATIO DOORS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Vinyl windows with operating hardware and insect screens.
2. Vinyl patio doors with operating hardware and insect screens.

B. Related Sections:

1. 012300 “Alternates”, for alternate bidding requirements for this Section.
2. 079200 “Joint Sealants”, for perimeter sealant at windows and doors.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: Include plans, elevations, sections, hardware, accessories, insect screens, operational clearances, and details of installation, including anchor, flashing, and sealant installation.

C. Product Schedule: For vinyl windows. Use same designations indicated on Drawings.

1.3 INFORMATIONAL SUBMITTALS

A. Product test reports.

B. Sample warranties.

1.4 QUALITY ASSURANCE

A. Manufacturer Qualifications: A manufacturer capable of fabricating vinyl windows and doors that meet or exceed performance requirements indicated and of documenting this performance by test reports and calculations.

B. Installer Qualifications: An installer acceptable to vinyl window and door manufacturer for installation of units required for this Project.

1.5 WARRANTY

A. Manufacturer's Warranty: Manufacturer agrees to repair or replace vinyl windows and doors that fail in materials or workmanship within specified warranty period.

1. Warranty Period:

a. Windows and Doors: Minimum 10 years from date of Substantial Completion.
b. Glazing Units: 20 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Product Standard: AAMA/WDMA/CSA 101/I.S.2/A440 Voluntary Specifications for Aluminum, Vinyl (PVC) and Wood Windows and Glass Doors; American Architectural Manufacturers Association.

2.2 VINYL WINDOWS

A. Basis of Design Product: Thermo-Fit Series, Northern Excellence HSHG LoE™ 180/Argon Energy Star® compliant double insulated windows, as manufactured by Thermo-Tech; or approved equal.

B. Operating Types: As indicated on Drawings.

C. Frames and Sashes: Impact-resistant, UV-stabilized PVC complying with AMA/ WDMA/ CSA 101/I.S.2/A440.

1. Finish: Integral color, as selected from manufacturer's full range.

D. Insulating-Glass Units: ASTM E 2190.

1. Glass: ASTM C1036, Type 1, Class 1, q3.

a. Tint: Clear.
b. Kind: Fully tempered where indicated on Drawings.

2. Lites: Two.
3. Filling: Fill space between glass lites with argon.
4. LoE™ Coating: Sputtered on third surface.

E. Glazing System: Manufacturer's standard factory-glazing system that produces weathertight seal.

F. Horizontal-Sliding Window Hardware:

1. Manufacturer's standard corrosion-resistant material sized to accommodate sash weight and dimensions.
2. Sill Cap/Track: Designed to comply with performance requirements indicated and to drain to the exterior.
3. Locks and Latches: Operated from the inside only.
4. Roller Assemblies: Low-friction design.
5. Color and Finish: As selected from manufacturer's full range.

G. Weather Stripping: Provide full-perimeter weather stripping for each operable sash unless otherwise indicated.

H. Fasteners: Noncorrosive and compatible with window members, trim, hardware, anchors, and other components.

1. Exposed Fasteners: Do not use exposed fasteners to the greatest extent possible. For application of hardware, use fasteners that match finish hardware being fastened.

2.3 VINYL PATIO DOORS

A. Basis of Design Product: Grand Openings Series, Slim Line Style, High-Performance LoE™ 272/Argon Energy Star® compliant double insulated patio doors, as manufactured by Thermo-Tech; or approved equal.

B. Operating Types: As indicated on Drawings.

C. Frames and Sashes: Fusion-welded , UV-stabilized PVC complying with AMA/ WDMA/ CSA 101/I.S.2/A440.

1. Finish: Integral color, as selected from manufacturer's full range.

D. Insulating-Glass Units: ASTM E 2190.

1. Glass: ASTM C1036, Type 1, Class 1, q3.

a. Tint: Clear.
b. Kind: Fully tempered where indicated on Drawings.

2. Lites: Two.
3. Filling: Fill space between glass lites with argon.
4. LoE™ Coating: Sputtered on third surface.

E. Glazing System: Manufacturer's standard factory-glazing system that produces weathertight seal.

F. Patio Door Hardware: Manufacturer's standard corrosion-resistant material sized to accommodate sash weight and dimensions.

1. Track and Rollers: Heavy-duty plated steel adjustable tandem roller assembly on a raised stainless steel monorail track system.
2. Threshold: Manufacturer's standard aluminum threshold.
3. Operating Hardware: Multi-point locking system with standard pull handles.
4. Color and Finish: As selected from manufacturer's full range.

G. Weather Stripping: Provide full-perimeter weather stripping for each operable sash unless otherwise indicated.

H. Fasteners: Noncorrosive and compatible with window members, trim, hardware, anchors, and other components.

1. Exposed Fasteners: Do not use exposed fasteners to the greatest extent possible. For application of hardware, use fasteners that match finish hardware being fastened.

2.4 INSECT SCREENS

A. Provide manufacturer's standard insect screens for windows and doors for each operable exterior sash. Screen wickets are not permitted.

1. Type and Location: Full, outside sashes.
2. Frame Color: Match windows and doors.
3. Mesh Color: Manufacturer's standard.

2.5 ACCESSORIES

A. Provide vinyl wrap material from window manufacturer for finishing of all extension jambs. Color to match window frames.

2.6 FABRICATION

A. Fabricate vinyl windows and patio doors in sizes indicated. Include a complete system for assembling components and anchoring windows.

B. Glaze vinyl windows and patio doors in the factory.

C. Weatherstrip each operable sash to provide weathertight installation.

D. Provide mullions and cover plates, compatible with window units, complete with anchors for support to structure and installation of window units. Allow for erection tolerances and provide for movement of window units due to thermal expansion and building deflections. Provide mullions and cover plates capable of withstanding design wind loads of window units. Provide manufacturer's standard finish to match window units.

E. Mount hardware through double walls of vinyl extrusions or provide corrosion-resistant reinforcement.

F. Complete fabrication, assembly, finishing, hardware application, and other work in the factory to greatest extent possible. Disassemble components only as necessary for shipment and installation. Allow for scribing, trimming, and fitting at Project site.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Comply with manufacturer's written instructions for installing windows and doors, hardware, accessories, and other components. For installation procedures and requirements not addressed in manufacturer's written instructions, comply with installation requirements in ASTM E 2112.

B. Install windows and doors level, plumb, square, true to line, without distortion, anchored securely in place to structural support, and in proper relation to wall flashing and other adjacent construction to produce weathertight construction.

C. Adjust operating sashes and hardware for a tight fit at contact points and weather stripping for smooth operation and weathertight closure.

D. Clean exposed surfaces immediately after installing windows and doors. Remove excess sealants, glazing materials, dirt, and other substances.

E. Remove and replace sashes if glass has been broken, chipped, cracked, abraded, or damaged during construction period.

END OF SECTION 085313

SECTION 085413 - FIBERGLASS WINDOWS AND PATIO DOORS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Fiberglass composite windows with operating hardware and insect screens.
2. Fiberglass composite patio doors with operating hardware and insect screens.

B. Related Sections:

1. 012300 “Alternates”, for alternate bidding requirements for this Section.
2. 079200 “Joint Sealants” for perimeter sealant at windows and doors.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: Include plans, elevations, sections, hardware, accessories, insect screens, operational clearances, and details of installation, including anchor, flashing, and sealant installation.

C. Product Schedule: For vinyl windows. Use same designations indicated on Drawings.

1.3 INFORMATIONAL SUBMITTALS

A. Product Test Reports.

B. Sample Warranties.

1.4 QUALITY ASSURANCE

A. Manufacturer Qualifications: A manufacturer capable of fabricating fiberglass windows that meet or exceed performance requirements indicated and of documenting this performance by test reports and calculations.

B. Installer Qualifications: An installer acceptable to fiberglass window manufacturer for installation of units required for this Project.

1.5 WARRANTY

A. Manufacturer's Warranty: Manufacturer agrees to repair or replace fiberglass windows that fail in materials or workmanship within specified warranty period.

1. Warranty Period:

a. Windows and Doors: Minimum 10 years from date of Substantial Completion.
b. Glazing Units: 20 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Product Standard: Comply with AAMA/WDMA/CSA 101/I.S.2/A440 for definitions and minimum standards of performance, materials, components, accessories, and fabrication unless more stringent requirements are indicated.

1. Window Certification: WDMA certified with label attached to each window.

B. Thermal Transmittance: NFRC 100 maximum whole-window U-factor of 0.35 Btu/sq. ft. x h x deg F.

C. Solar Heat-Gain Coefficient (SHGC): NFRC 200 maximum whole-window SHGC of 0.40.

2.2 FIBERGLASS WINDOWS

A. Bidding Requirements: This Section is to be bid as an Alternate to vinyl windows and doors. Refer to Section 012300 “Alternates”.

B. Basis of Design Product: 100 Series Fibrex®, Energy Star® compliant double insulated windows, as manufactured by Andersen Windows and Doors; or approved equal.

C. Operating Types: As indicated on Drawings.

D. Frames and Sashes: Pultruded fiberglass complying with AAMA/WDMA/CSA 101/I.S.2/A440 and with exposed exterior fiberglass surfaces finished with manufacturer's standard enamel coating complying with AAMA 613 or AAMA 623.

1. Exterior Color: As selected by Architect from manufacturer's full range.
2. Interior Finish: Matching exterior color and finish.

E. Insulating-Glass Units: ASTM E2190.

1. Glass: ASTM C1036, Type 1, Class 1, q3.

a. Tint: Clear.
b. Kind: Fully tempered where indicated on Drawings.

2. Lites: Two.
3. Filling: Fill space between glass lites with argon.
4. Low-E Coating: Sputtered on second or third surface.

F. Glazing System: Manufacturer's standard factory-glazing system that produces weathertight seal.

G. Horizontal-Sliding Window Hardware:

1. Sill Cap/Track: Manufacturer's standard of dimensions and profile indicated; designed to comply with performance requirements indicated and to drain to the exterior.
2. Locks and Latches: Operated from the inside only.
3. Roller Assemblies: Low-friction design.
4. Exposed Hardware Color and Finish: As selected by Architect from manufacturer's full range.

H. Weather Stripping: Provide full-perimeter weather stripping for each operable sash unless otherwise indicated.

I. Fasteners: Noncorrosive and compatible with window members, trim, hardware, anchors, and other components.

1. Exposed Fasteners: Do not use exposed fasteners to greatest extent possible. For application of hardware, use fasteners that match finish hardware being fastened.

2.3 FIBERGLASS PATIO DOORS

A. Bidding Requirements: This Section is to be bid as an Alternate to vinyl windows and doors. Refer to Section 012300 “Alternates”.

B. Basis of Design Product: 100 Series Fibrex®, Energy Star® compliant double insulated patio doors, as manufactured by Andersen Windows and Doors; or approved equal.

C. Operating Types: As indicated on Drawings.

D. Frames and Sashes: Pultruded fiberglass complying with AAMA/WDMA/CSA 101/I.S.2/A440 and with exposed exterior fiberglass surfaces finished with manufacturer's standard enamel coating complying with AAMA 613 or AAMA 623.

1. Exterior Color: As selected by Architect from manufacturer's full range.
2. Interior Finish: Matching exterior color and finish.

E. Insulating-Glass Units: ASTM E2190.

1. Glass: ASTM C1036, Type 1, Class 1, q3.

a. Tint: Clear.
b. Kind: Fully tempered where indicated on Drawings.

2. Lites: Two.
3. Filling: Fill space between glass lites with argon.
4. Low-E Coating: Sputtered on second or third surface.

F. Glazing System: Manufacturer's standard factory-glazing system that produces weathertight seal.

G. Patio Door Hardware: Manufacturer's standard corrosion-resistant material sized to accommodate sash weight and dimensions.

1. Track and Rollers: Heavy-duty plated steel adjustable tandem roller assembly on a raised stainless steel monorail track system.
2. Threshold: Manufacturer’s standard aluminum threshold.
3. Operating Hardware: Multi-point locking system with standard pull handles.
4. Color and Finish: As selected from manufacturer's full range.

H. Weather Stripping: Provide full-perimeter weather stripping for each operable sash unless otherwise indicated.

I. Fasteners: Noncorrosive and compatible with window members, trim, hardware, anchors, and other components.

1. Exposed Fasteners: Do not use exposed fasteners to the greatest extent possible. For application of hardware, use fasteners that match finish hardware being fastened.

2.4 INSECT SCREENS

A. Provide manufacturer's standard insect screens for windows and doors for each operable exterior sash. Screen wickets are not permitted.

1. Type and Location: Full, outside sashes.
2. Frame Color: Match windows and doors.
3. Mesh Color: Manufacturer's standard.

2.5 ACCESSORIES

A. Provide wrap material from window manufacturer for finishing of all extension jambs. Color to match window frames.

2.6 FABRICATION

A. Fabricate fiberglass windows and doors in sizes indicated. Include a complete system for installing and anchoring windows.

B. Glaze fiberglass windows and doors in the factory.

C. Weatherstrip each operable sash to provide weathertight installation.

D. Provide mullions and cover plates, matching window units, complete with anchors for support to structure and installation of window units. Allow for erection tolerances and provide for movement of window units due to thermal expansion and building deflections. Provide mullions and cover plates capable of withstanding design wind loads of window units.

E. Complete fabrication, assembly, finishing, hardware application, and other work in the factory to greatest extent possible. Disassemble components only as necessary for shipment and installation. Allow for scribing, trimming, and fitting at Project site.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Comply with manufacturer's written instructions for installing windows and doors, hardware, accessories, and other components. For installation procedures and requirements not addressed in manufacturer's written instructions, comply with installation requirements in ASTM E2112.

B. Install windows and doors level, plumb, square, true to line, without distortion, anchored securely in place to structural support, and in proper relation to wall flashing and other adjacent construction to produce weathertight construction.

C. Adjust operating sashes and hardware for a tight fit at contact points and weather stripping for smooth operation and weathertight closure.

D. Clean exposed surfaces immediately after installing windows and doors. Remove excess sealants, glazing materials, dirt, and other substances.

E. Remove and replace sashes if glass has been broken, chipped, cracked, abraded, or damaged during construction period.

END OF SECTION 085413

SECTION 099100 - PAINTING

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes surface preparation and the application of paint systems on specified substrates.

B. Related Sections:

1. Section 064023 “Interior Architectural Woodwork”, for surface preparation and the application of paint on interior wood substrates.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Samples for Verification: For each type of paint system and in each color and gloss of topcoat.

1. Submit Samples on rigid backing, 8 inches square.
2. Label each coat of each Sample.
3. Label each Sample for location and application area.

1.3 QUALITY ASSURANCE

A. Mockups: Apply mockups of each paint system indicated and each color and finish selected to verify preliminary selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.

1.4 CLOSEOUT SUBMITTALS

A. Maintenance Data: Paint manufacturer’s written maintenance instructions including product data pages, material safety data sheets, care and cleaning instructions, touch-up procedures.

1.5 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Paint: 5 percent, but not less than 1 gallon of each material and color applied.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Delivery and Handling: Deliver products to Project site in an undamaged condition in manufacturer's original sealed containers, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.

B. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F.

1.7 FIELD CONDITIONS

A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F.

B. Do not apply paints when relative humidity exceeds 85 percent; at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Basis-of-Design Products: Subject to compliance with requirements, provide Sherwin-Williams or Benjamin Moore products as indicated in the following Painting Schedule.

B. Source Limitations: Obtain paint materials from single source from single listed manufacturer.

2.2 PAINT PRODUCTS, 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. Gloss and Sheen Levels:

1. Gloss and sheen levels of all painted surfaces shall be as noted on the Painting Schedule.
2. Refer to MPI Painting Manual for gloss and sheen level definitions and requirements.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify suitability of substrates, including surface conditions and compatibility, with existing finishes and primers.

B. Proceed with coating application only after unsatisfactory conditions have been corrected; application of coating indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Comply with manufacturer's written instructions and recommendations applicable to substrates and paint systems indicated.

B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.

C. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.

3.3 APPLICATION

A. Apply paints according to manufacturer's written instructions.

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.

C. Painting coats specified are intended to cover surfaces satisfactorily when applied at proper consistency and in accordance with manufacturer’s recommendations. Apply a minimum of four coats of paint where deep or bright colors are used to achieve satisfactory results.

3.4 CLEANING AND PROTECTION

A. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.

B. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.

C. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.5 INTERIOR PAINTING SCHEDULE

A. Color: “HRA White”. Owner to provide information on paint product used at facility. .

B. Wood Substrates:

1. Latex System:

a. Prime Coat: Primer sealer, latex, for interior wood, 1 coat.

1) Sherwin-Williams, PrepRite ProBlock Primer Sealer, B51-620 Series.
2) Benjamin Moore, Fresh Start Multi-Purpose Latex N023.

b. Topcoat: Latex, interior, 2 coats.

1) Sherwin-Williams, ProMar 200 Zero VOC Latex B-Series.
2) Benjamin Moore, Ultra-Spec 500 Interior Latex.
3) Sheen: Match existing.

END OF SECTION 099100

SECTION 101419 - DIMENSIONAL LETTER SIGNAGE

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Cutout metal house numbers.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: For signs.

1. Show sign mounting heights.
2. Show typestyles, and layout for each sign.

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

1.3 INFORMATIONAL SUBMITTALS

A. Sample warranty.

1.4 CLOSEOUT SUBMITTALS

A. Maintenance data.

1.5 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace components of signs that fail in materials or workmanship within specified warranty period.

1. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 DIMENSIONAL CHARACTERS

A. Cutout Characters: Characters with uniform faces; square-cut, smooth edges; precisely formed lines and profiles; and as follows:

1. Character Material: Steel or Brass.
2. Character Height: As indicated on the Drawings.
3. Thickness: Manufacturer's standard for size of character.
4. Finishes: Rust resistant baked enamel or powder-coated finish.

a. Color: As selected from available options.

B. Mounting: Through fasteners matching sign finish, installed in predrilled holes.

2.2 ACCESSORIES

A. Fasteners:

1. For exterior exposure, furnish stainless-steel or hot-dip galvanized screws finished to match fastened metal.

2.3 FABRICATION

A. General: Provide manufacturer's standard sign assemblies according to requirements indicated.

1. Mill joints to a tight, hairline fit. Form assemblies and joints exposed to weather to resist water penetration and retention.
2. Provide welds and brazes behind finished surfaces without distorting or discoloring exposed side.
3. Clean exposed welded and brazed connections of flux, and dress exposed and contact surfaces.

PART 3 - EXECUTION

3.1 INSTALLATION OF DIMENSIONAL CHARACTERS

A. General: Install signs using mounting methods indicated and according to manufacturer's written instructions.

1. Install signs level, plumb, true to line, and at locations and heights indicated, with sign surfaces free of distortion and other defects in appearance.
2. Before installation, verify that sign surfaces are clean and free of materials or debris that would impair installation.
3. Corrosion Protection: Coat concealed surfaces of exterior aluminum in contact with grout, concrete, masonry, wood, or dissimilar metals, with a heavy coat of bituminous paint.

B. Mounting Methods:

1. Through Fasteners: Drill holes in substrate using predrilled holes in sign as template. Countersink holes in sign if required. Place sign in position and flush to surface. Install through fasteners and tighten.

C. Remove temporary protective coverings and strippable films as signs are installed.

END OF SECTION 101419

SECTION 260000 – ELECTRICAL REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Exterior light fixtures.

1.2 ACTION SUBMITTALS

A. Product Data: Submit for each type of product and fixture provided.

B. Electrical contractor shall be responsible to submit required documents to local and state authorities for permitting.

1.3 ELECTRICAL REQUIREMENTS

A. Contractor to include all costs for required electrical plan reviews and permits associated with this work in the proposal.

B. Provide complete electrical systems for this project/building that conform to all applicable codes, local ordinances and state statutes, and in accordance with the Drawings and Specifications.

C. Demolition: Electrical contractor is responsible to remove and dispose off all existing electrical fixtures, wiring, etc., that are required to be removed or relocated as part of the demolition work.

D. The Electrical contractor shall verify all dimensions and conditions, and shall coordinate installation of equipment to avoid conflict with structure, ceiling heights, other trades, etc.

E. No work shall begin, nor shall the Electrical contractor order any materials, until the drawings, specifications and product submittals have been reviewed by the Architect, Construction Manager, and Code Officials having jurisdiction.

PART 2 - PRODUCTS

2.1 LIGHT FIXTURE SCHEDULE

A. Basis of Design: Halo Outdoor, FE Series Entry Light, LED, Model FE12S40FD/GLM-x, as manufactured by Cooper Lighting Solutions; or approved equal.

1. L1: Dusk-to-dawn photocell.
2. L2: Motion sensor; disable interior switch and provide cover plate.
3. L3: Motion sensor.
4. L4: Motion sensor.

PART 3 - EXECUTION *(Not Used)*

END OF SECTION 260000