PROJECT MANUAL

Menominee County ISD
Central Elementary Roof Restoration

Menominee, MI 49858

U.P. ENGINEERS & ARCHITECTS, INC.
1701 DUNLAP AVENUE, SUITE B
MARINETTE, WI 54143

UPEA Project No. M385-04227 (RR)

April 25, 2025

DOCUMENT 00 01 10

TABLE OF CONTENTS

END OF SECTION

SECTION 00 11 13

ADVERTISEMENT FOR BIDS

Project:	Central Elementary Roof Restoration 1800 18th Avenue, Menominee, MI 49858
Owner:	Menominee County ISD 1201 41st Avenue, Menominee, MI 49858, 906-863-5665
Architect/Engineer:	U.P. Engineers & Architects, Inc. 1701 Dunlap Avenue, Suite B, Marinette, WI 54143, 715-732-4188
Date:	April 25, 2025

Bids will be accepted under seal for the roof reconstruction at the Central Elementary School.

Bids will be received at the office of the Architect/Engineer at address above or by email at bmarklein@upea.com, until 1:00 PM local time on May 16, 2025, at which time and place the Bids will be officially opened and read aloud. Bids not received by the indicated time will not be opened.

Project Description: Replacement of the roof membrane, flashings, sealants, and other related weatherizing components as well as the select repair or replacement of water damaged material as described in this package.

An Optional Pre-bid Meeting will be held for Bidders at 9:00 AM local time on May 2, 2025, at the project location, 1800 18th Avenue, Menominee, MI 49858.

Bid Documents for the Project may be obtained by contacting U.P. Engineers & Architects, Inc., information listed above. Documents are available in either paper form or as PDF documents, with a non-refundable fee as follows: Paper: $50 PDF: $0

Documents will also be available for viewing at the office of the Architect/Engineer and at the following Builders Exchanges: Builders Exchange of Michigan, Builders Exchange of Wisconsin, Iron Mountain-Kingsford Builders Exchange, Delta Chamber of Commerce.

Bidders are required to provide a Bid Bond according to the requirements in Section 00 21 13 - Instructions to Bidders. Bidders are required to submit qualifications to the approval of the Architect and Owner with their bid.

Submit your Bid on the Bid Form provided. Bidders are required to complete Bid Form 00 41 13. Refer to other Bidding requirements described in Section 00 21 13.

Your Bid will be required to be submitted under a condition of irrevocability for a period of 30 days after submission.

Owner reserves the right to waive irregularities and to accept or reject any or all Bids.

Steve Martin, Superintendent

END OF SECTION

SECTION 00 21 13

INSTRUCTIONS TO BIDDERS

1.1 SUMMARY

A. Document Includes:

1. Instructions to Bidders.
2. Site examination.
3. Prebid conference.
4. Substitutions.
5. Bid security.

B. Related Documents:

1. Document 00 11 13 – Advertisement to Bid.
2. Document 00 31 00 - Available Project Information.
3. Document 00 41 13 - Bid Form - Stipulated Sum.
4. Document 00 43 00 - Procurement Form Supplements.
5. Section 01 10 00 - Summary.
6. Section 01 60 00 - Product Requirements.

1.2 INSTRUCTIONS TO BIDDERS

A. These Instructions to Bidders amend or supplement other provisions of Bidding Documents and Contract Documents.

1.3 SITE EXAMINATION

A. Examine Project Site before submitting Bid.

B. A visit to Project Site has been arranged for Bidders at 9:00 AM local time on May 2, 2025 at the project location.

C. If necessary, contact Owner at following address and telephone number to arrange date and time to visit Project Site:

1. Email Address: stevemartin@mc-isd.org
2. Telephone: 906-863-5665, ext. 1013

1.4 PREBID MEETING

A. A prebid meeting is scheduled for 9:00 AM local time on May 2, 2025, at the project location, 1800 18th Ave. Menominee, MI 49858.

B. General Contract and/or major subcontract Bidders are encouraged but not required to attend.

C. Representatives of Architect and Owner will attend.

D. Information relevant to Bidding Documents will be issued by Addendum.

1.5 SUBSTITUTIONS

A. Where Bidding Documents stipulate products, substitution requests will be considered by Architect and Owner up to 7 days before receipt of Bids. Substitutions that have not been approved by addenda to all bidders will not be accepted.

B. With each substitution request, provide sufficient information for Architect to determine acceptability of proposed products; comply with substitution request submittal requirements as specified in Section 01 60 00 - Product Requirements, including use of Substitution Request Form.

1.6 BID SECURITY

A. Bids shall be accompanied by Bid security as follows:

1. Bid bond of a sum no less than 10 percent of the Bid Sum on standard surety company form.

1.7 CONTRACT TIME

A. Perform Work within time indicated in Document Section 01 10 00 - Summary.

B. Bidder, in submitting an offer, accepts Contract Time period stated for performing Work.

C. Time is of Essence:

1. Owner requires Work of this Contract be substantially complete by August 20, 2025.
2. Consideration will be given to time of completion when reviewing submitted Bids.

END OF SECTION

SECTION 00 31 00

AVAILABLE PROJECT INFORMATION

1.1 SUMMARY

A. Available Project information has been furnished by Owner to Architect for use in designing this Project.

1. Each Bidder shall be fully familiar with available Project information, which has been prepared for Owner by separate consultants.
2. Available Project information is offered solely for reference and shall not be considered part of Contract Documents.
3. Data contained in Documents prepared by Owner's separate consultants is believed to be reliable; however, Owner and Architect do not guarantee their accuracy or completeness.
4. In preparing their Bids, Bidders shall consider and evaluate data contained in available Project information as well as Contract Documents prepared by Architect.

B. Related Documents:

1. Document 00 21 13 - Instructions to Bidders: Site examination.

END OF DOCUMENT

SECTION 00 41 13

BID FORM - STIPULATED SUM (SINGLE-PRIME CONTRACT)

1.1 BID INFORMATION

A. To: Menominee County ISD

B. Project Title: Central Elementary Roof Restoration

C. Date: .....

D. Submitted by: .....

E. Company Name and Address: .....

1.2 OFFER

A. Having examined the Place of the Work and all matters referred to in the Instructions to Bidders and the Contract Documents prepared by the Architect for the above-referenced Project, we, the undersigned, hereby offer to enter into a Contract to perform the Work for the Prices of: ..... in lawful money of the United States of America.

B. We have included the Bid security as required by the Instructions to Bidders.

C. All applicable federal taxes are included and State of Michigan and City of Menominee taxes are included in the Prices.

1.3 ACCEPTANCE

A. This offer shall be open to acceptance and is irrevocable for 15 days from the Bid closing date.

B. If this Bid is accepted by the Owner within the time period stated above, we will:
   1. Furnish the required bonds within seven days of receipt of Notice of intent to Award.

C. If this Bid is accepted within the indicated time, and we fail to commence the Work or we fail to provide the required bonds, the Bid security shall be forfeited as damages to the Owner by reason of our failure, limited in amount to the lesser of the face value of the Bid security or the difference between this Bid and the Bid upon which Contract is signed.

D. In the event our Bid is not accepted within the time stated above, the required Bid security will be returned to the undersigned, according to the provisions of the Instructions to Bidders, unless a mutually satisfactory arrangement is made for its retention and validity for an extended period of time.

1.4 CONTRACT TIME

A. If this Bid is accepted, we will:
   1. Be substantially complete with work needed for owner occupancy by the 20th day of August 2025.
   2. Complete the Work by _____ day of _____ 2025.

1.5 CHANGES TO THE WORK

A. When the Architect establishes that the method of valuation for changes in the Work will be net cost plus a percentage fee according to General Conditions, our percentage fee shall be 15 percent overhead and profit on the net cost of our own Work, and 10 percent on the gross cost of Work performed by any Subcontractor.

B. On Work deleted from the Contract, our credit to the Owner shall be the Architect-approved net cost plus 50 percent of the overhead and profit percentage noted above.

1.6 ADDENDA

A. Following Addenda have been received, and the modifications to the Bid Documents noted below have been considered and all costs are included in the Bid Price.

   1. Addendum #_____, Dated _____

1.7 APPENDICES

A. Following documents are attached to and made a condition of the Bid:

   1. Bid security.
   2. Bidder's qualifications statement and supporting data.

1.8 SUBCONTRACTORS

A. Provide the name of the mechanical contractor to be responsible for roof top equipment:

   1. .....

1.9 BID FORM SIGNATURES

A. The Corporate Seal of ..... was hereunto affixed in the presence of:

   1. .....

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

END OF DOCUMENT

SUBSTITUTION REQUEST FORM

To: Menominee County ISD

Project Title: Central Elementary Roof Restoration

From:

Section No.	Drawing Reference	Specified Product	Proposed Substitution

Does the substitution affect dimensions shown on drawings?	Yes	No
Does the substitution affect other trades?	Yes	No
Does the substitution affect the appearance?	Yes	No
Does the substitution differ in the options available from that specified?	Yes	No
Does the manufacturer's guarantee differ from that specified?	Yes	No

If you indicated "Yes" to any of the items above, or if there are any other differences, attach a thorough explanation on company letterhead. If differences are not noted and acknowledged in writing by Architect, product must equal the specification requirements.

The proposed substitution was used within the last 24 months on the following project without failure:

Project Name_____

Location_____

Architect_____ Telephone_____

Owner_____ Telephone_____

The undersigned states that the function, appearance, and quality are equivalent to or superior to the specified item.

Submitted By:

Firm Name:

Address:

Phone:

Email:

For Architect/Engineer

- ☐ Accepted
- ☐ Accepted as Noted
- ☐ Rejected: not enough information
- ☐ Rejected: does not meet specifications
- ☐ Rejected: not received on time

By_____

Date_____

Remarks_____

AFFIDAVIT OF BIDDER

The undersigned, the owner or authorized officer of _____ (the "Bidder"), pursuant to the familial disclosure requirement provided in the Menominee County ISD (the "District") advertisement for construction bids, hereby represent and warrant, except as provided below, that no familial relationships exist between the owner(s) or any employee of District and any member of the Board of Education of the School District or the Superintendent of the School District.

List any Familial Relationships:

BIDDER:

_____

By: _____

Its: _____

STATE OF)

)ss.

COUNTY OF _____)

This instrument was acknowledged before me on the _____ day of _____, 20___, by _____.

_____

, Notary Public

_____ County, _____

My Commission Expires: _____

Acting in the County of: _____

AFFIDAVIT OF COMPLIANCE – IRAN ECONOMIC SANCTIONS ACT

MICHIGAN PUBLIC ACT NO. 517 OF 2012

The undersigned, the owner or authorized officer of _____ (the "Bidder"), pursuant to the compliance certification requirement provided in the Menominee County ISD (the "District") Advertisement for Bids, hereby certifies, represents and warrants that the Bidder (including its officers, directors and employees) is not an "Iran Linked Business" within the meaning of the Iran Economic Sanctions Act, Michigan Public Act No. 517 of 2012 (the "Act"), and that in the event Bidder is awarded a Contract as a result of the aforementioned Advertisement for Bids, the Bidder will not become an "Iran Linked Business" at any time during the course of performing under the Contract.

The Bidder further acknowledges that any person who is found to have submitted a false certification is responsible for a civil penalty of not more than $250,000.00 or 2 times the amount of the Contract or proposed Contract for which the false certification was made, whichever is greater, the cost of the School District's investigation, and reasonable attorney fees, in addition to the fine. Moreover, any person who submitted a false certification shall be ineligible to bid on an Advertisement for Bids for three (3) years from the date that it is determined that the person has submitted the false certification.

BIDDER:

_____
Name of Bidder

By: _____

Its: _____

STATE OF _____)

)ss.

COUNTY OF _____)

This instrument was acknowledged before me on the _____ day of _____, 20____, by _____.

_____

_____ , Notary Public

_____County, _____

My Commission Expires: _____

Acting in the County of: _____

SECTION 00 43 00

PROCUREMENT FORM SUPPLEMENTS

1.1 PROJECT INFORMATION

A. To: Menominee County ISD

B. Project Name: Central Elementary Roof Restoration

C. Date: .....

D. Submitted by: .....

E. According to Document 00 21 13 - Instructions to Bidders - AIA and Document 00 41 13- Bid Form - Stipulated Sum (Single-Prime Contract), we include the Appendices to Bid Form Supplements listed below.

1. The information provided shall be considered an integral part of the Bid Form.

1.2 BID FORM SUPPLEMENT SIGNATURES

A. The Corporate Seal of.....

B. (Bidder - print the full name of your firm) was hereunto affixed in the presence of .....

C. (Authorized signing officer and title)

D. (Seal) .....

E. (Authorized signing officer and title):

F. (Seal) .....

1.3 APPENDIX A - LIST OF SUBCONTRACTORS

A. The list of Subcontractors attached is an integral part of the Bid Form and is referenced in the Bid submitted by:

1. (Bidder) .....
2. To Menominee County ISD
3. Dated .....

1.4 APPENDIX B - LIST OF UNIT PRICES

A. The list of Unit Prices attached is an integral part of the Bid Form and is referenced in the Bid submitted by:

1. (Bidder) .....
2. To Menominee County ISD
3. Dated .....

END OF DOCUMENT

SECTION 00 52 13

AGREEMENT FORM - STIPULATED SUM

1.1 SUMMARY

A. Document Includes:

1. Agreement.

B. Related Documents:

1. Document 00 72 13 - General Conditions - Stipulated Sum.

1.2 AGREEMENT

A. Basis of Agreement between Owner and Contractor: AIA A101 - Standard Form of Agreement between Owner and Contractor where the basis of payment is a Stipulated Sum.

END OF DOCUMENT

SECTION 00 72 13

GENERAL CONDITIONS - STIPULATED SUM

1.1 SUMMARY

A. Document Includes:

1. General Conditions.

B. Related Documents:

1. Document 00 52 13 - Agreement Form - Stipulated Sum.

1.2 GENERAL CONDITIONS

A. General Conditions of the Contract: AIA A201 - General Conditions of the Contract.

END OF DOCUMENT

SECTION 01 10 00

SUMMARY

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Project information.
2. Contract description.
3. Contractor's use of Site and premises.
4. Work sequence.
5. Work restrictions.
6. Owner occupancy.
7. Permits.
8. Specification conventions.

B. Related Requirements:

1. Section 01 20 00 - Price and Payment Procedures.
2. Section 01 32 16 - Construction Progress Schedule: Digital project management procedures and web-based project management software package.
3. Section 01 50 00 - Temporary Facilities and Controls: Limitations and procedures governing temporary use of Owner's facilities.
4. Section 01 70 00 - Execution and Closeout Requirements.

1.2 PROJECT INFORMATION

A. Name: Central Elementary Roof Restoration.

1. Project Location: 1800 18th Avenue, Menominee, MI 49858

B. Owner: Menominee County ISD.

1. Owner's Representative: Steve Martin, Superintendent.

C. Project Architect/Engineer: U. P. Engineers & Architects, Inc.

1. Engineer’s Representative: Bill Marklein, Project Manager.

D. Web-Based Project Software: Project software will be used for purposes of managing communication and documents during the construction stage.

1. See Section 01 32 16 - Construction Progress Schedule for requirements for using web-based Project software.

1.3 CONTRACT DESCRIPTION

A. Work of the Project includes replacement of the existing roof membrane and related roof weatherization components to include minor alterations to penetrations and equipment support.

B. Perform Work of Contract under Stipulated Sum Contract with Owner according to Conditions of Contract.

1.4 CONTRACTOR'S USE OF SITE AND PREMISES

A. Restricted Use of Site: Contractor shall have limited use of Project Site for construction operations as indicated on Drawings by the Contract limits and as indicated by requirements of this Section.

B. Limits on Use of Site: Limit use of Project Site to areas within the Contract limits indicated. Do not disturb portions of Project Site beyond areas in which the Work is indicated.

C. Limits on Use of Site: Confine construction operations.

1. Limit use of Site and premises to allow:

    a. Owner occupancy.
    b. Use by the public.

2. Driveways, Walkways, and Entrances: Keep driveways, 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 for storage of materials.

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

D. Emergency Building Exits during Construction: Shall always remain clear.

E. Construction Operations: Limited to areas indicated on Drawings.

F. Time Restrictions for Performing Work: None.

G. Utility Outages and Shutdown:

1. Coordinate and schedule electrical and other utility outages with Owner.
2. Outages: Allow only at previously agreed upon times.
3. At least one week before scheduled outage, submit outage request plan to Architect and Owner itemizing dates, times, and duration of each requested outage.

H. Construction Plan: Before start of construction, submit a construction plan regarding access to Work, use of Site, and planned utility outages for acceptance by Owner. After acceptance of plan, construction operations shall comply with accepted plan unless deviations are accepted by Owner in writing.

1.5 WORK SEQUENCE

A. Construct Work in order to accommodate Owner's occupancy requirements during construction period. Coordinate construction schedule and operations with Architect/Engineer and Owner:

B. Construction Plan: Before start of construction, submit a construction plan regarding phasing of demolition and new Work for acceptance by Owner. After acceptance of plan, comply with accepted plan when coordinating construction sequencing unless deviations are accepted by Owner in writing.

1.6 WORK RESTRICTIONS

A. Comply with restrictions on construction operations.

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

B. On-Site Work Hours: Work hours may scheduled as needed to meet Project requirements.
1. Work inside Building: Requires Owner approval after substantial completion.
2. Hours for Utility Shutdowns: Requires Owner approval.

C. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless approval is provided in writing by Owner.

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

E. Smoking and Controlled Substance Restrictions: Use of alcoholic beverages, marijuana, and other controlled substances on Owner's property is not permitted.

1.7 OWNER OCCUPANCY

A. Schedule and substantially complete designated portions of the Work for occupancy before Substantial Completion of the entire Work.

1. Owner intends to have limited staff occupancy during the duration of construction. School operations are expected to begin August 26, 2025. There is anticipated interior and door/window renovations during the same duration as the roof renovation.
2. Owner's use and occupancy of designated areas before Final Completion of entire Project do not relieve Contractor of responsibility to maintain specified insurance coverages on a 100 percent basis until date of final payment.

B. Owner will occupy Site and Building during entire period of construction with minimal use prior to 8/20/2024.

C. Cooperate with Owner to minimize conflict and to facilitate Owner's operations.

D. Schedule Work to accommodate Owner occupancy.

1.8 PERMITS

A. Furnish all necessary permits for construction of Work.

1.9 SPECIFICATION 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. Text Color: Text used in the Specifications, including units of measure, manufacturer and product names, and other text may appear in multiple colors or underlined as part of a hyperlink; no emphasis is implied by text with these characteristics.
3. Hypertext: Text used in the Specifications may contain hyperlinks. Hyperlinks may allow for access to linked information that is not residing in the Specifications. Unless otherwise indicated, linked information is not part of the Contract Documents.

B. 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 scheduled on Drawings.
3. Keynoting: Materials and products are identified by reference keynotes referencing Specification Section numbers found in this Project Manual.

PART 2 - PRODUCTS - Not Used

PART 3 - EXECUTION - Not Used

END OF SECTION

SECTION 01 20 00

PRICE AND PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Schedule of Values.

B. Application for Payment.

C. Change procedures.

D. Defect assessment.

E. Unit prices.

F. Alternates.

1.2 SCHEDULE OF VALUES

A. Submit electronic file of schedule on Contractor's standard form or electronic media printout for review.

B. Submit Schedule of Values within 15 days after date of Owner-Contractor Agreement.

C. Revise schedule to list approved Change Orders with each Application for Payment.

1.3 APPLICATION FOR PAYMENT

A. Submit electronic file of each Application for Payment on Contractor's Application for Payment form.

B. Submit updated construction schedule with each Application for Payment.

C. Payment Period: Submit at intervals stipulated in the Agreement.

D. Submit submittals with transmittal letter as specified in Section 01 33 00 - Submittal Procedures.

E. Submit waivers as requested by Owner.

F. Substantiating Data: When Architect or Owner requires substantiating information, submit data justifying dollar amounts in question. Include the following with Application for Payment:
1. Affidavits attesting to off-Site stored products.

2. Construction Progress Schedule, revised and current as specified in Section 01 33 00 - Submittal Procedures.

1.4 CHANGE PROCEDURES

A. Submittals: Submit name of individual who is authorized to receive change documents and is responsible for informing others in Contractor's employ or Subcontractors of changes to the Work.

B. Carefully study and compare Contract Documents before proceeding with fabrication and installation of Work. Promptly advise Architect of any error, inconsistency, omission, or apparent discrepancy.

C. Requests for Interpretation (RFI) and Clarifications: Allot time in construction scheduling for liaison with Architect; establish procedures for handling queries and clarifications.

1. Use Contractor’s standardized form for RFIs.
2. Architect may respond with a direct answer on the Request for Interpretation form, Architect's Supplemental Instruction form, or Proposal Request (Change Order Request).

D. Architect will advise of minor changes in the Work not involving adjustment to Contract Price or Contract Time by issuing supplemental instructions on Architect's Supplemental Instruction form.

E. Architect may issue Proposal Request including a detailed description of proposed change with supplementary or revised Drawings and Specifications, a change in Contract Time for executing the change with the period of time during which the requested price will be considered valid. Contractor will prepare and submit estimate within 10 days.

F. Document requested substitutions according to Section 01 25 00 - Substitution Procedures.

G. Stipulated Price Change Order: Based on Proposal Request and Contractor's fixed price quotation or Contractor's request for Change Order as approved by Architect.

H. Construction Change Directive: Architect may issue directive, signed by Owner, instructing Contractor to proceed with change in the Work, for subsequent inclusion in a Change Order. Document will describe changes in the Work and designate method of determining any change in Contract Price or Contract Time. Promptly execute change.

I. Time and Material Change Order: Submit itemized account and supporting data after completion of change, within time limits indicated in Conditions of the Contract. Architect will determine change allowable in Contract Price and Contract Time as provided in Contract Documents.

J. Maintain detailed records of Work done on time and material basis. Provide full information required for evaluation of proposed changes and to substantiate costs for changes in the Work.

K. Document each quotation for change in Project Cost or Time with sufficient data to allow evaluation of quotation.

L. Execution of Change Orders: Architect will issue Change Orders for signatures of parties as provided in Conditions of the Contract.

M. Correlation of Contractor Submittals:

1. Promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as separate line item and adjust Contract Price.
2. Promptly revise Progress Schedules to reflect change in Contract Time, revise schedules to adjust times for other items of Work affected by the change, and resubmit.
3. Promptly enter changes in Record Documents.

1.5 DEFECT ASSESSMENT

A. Replace the Work, or portions of the Work, not conforming to specified requirements.

B. If, in the opinion of Architect, it is not practical to remove and replace the Work, Architect will direct appropriate remedy or adjust payment.

C. The defective Work may remain, but unit price will be reduced at discretion of Architect and Owner.

D. Defective Work will be partially repaired according to instructions of Architect, and unit price will be reduced at discretion of Architect and Owner.

E. Authority of Architect to assess defects and identify payment adjustments is final.

F. Nonpayment for Rejected Products: Payment will not be made for rejected products for any of the following reasons:

1. Products wasted or disposed of in a manner that is not acceptable.
2. Products determined as unacceptable before or after placement.
3. Products not completely unloaded from transporting vehicle.
4. Products placed beyond lines and levels of the required Work.
5. Products remaining on hand after completion of the Work.
6. Loading, hauling, and disposing of rejected products.

PART 2 - PRODUCTS - Not Used

PART 3 - EXECUTION - Not Used

END OF SECTION

SECTION 01 25 00

SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Quality assurance.

B. Product options.

C. Product substitution procedures.

1.2 QUALITY ASSURANCE

A. Contract is based on products and standards established in Contract Documents without consideration of proposed substitutions.

B. Products specified define standard of quality, type, function, dimension, appearance, and performance required.

C. Substitution Proposals: Permitted for specified products except where specified otherwise. Do not substitute products unless substitution has been accepted and approved in writing by Owner.

1.3 PRODUCT OPTIONS

A. See Section 01 60 00 - Product Requirements.

1.4 PRODUCT SUBSTITUTION PROCEDURES

A. Document 00 22 13 - Instructions to Bidders specifies time restrictions for submitting requests for substitutions during Bidding period.

B. Substitutions may be considered when a product becomes unavailable through no fault of Contractor.

C. Document each request with complete data, substantiating compliance of proposed substitution with Contract Documents, including:

1. Manufacturer's name and address, product, trade name, model, or catalog number, performance and test data, and reference standards.
2. Itemized point-by-point comparison of proposed substitution with specified product, listing variations in quality, performance, and other pertinent characteristics.
3. Reference to Article and Paragraph numbers in Specification Section.

4. Cost data comparing proposed substitution with specified product and amount of net change to Contract Sum.
5. Changes required in other Work.
6. Availability of maintenance service and source of replacement parts as applicable.
7. Certified test data to show compliance with performance characteristics specified.
8. Samples when applicable or requested.
9. Other information as necessary to assist Architect's evaluation.

D. A request constitutes a representation that Bidder or Contractor:

1. Has investigated proposed product and determined that it meets or exceeds quality level of specified product.
2. Will provide same warranty for substitution as for specified product.
3. Will coordinate installation and make changes to other Work that may be required for the Work to be complete with no additional cost to Owner.
4. Waives claims for additional costs or time extension that may subsequently become apparent.
5. Will coordinate installation of the accepted substitute, making such changes as may be required for the Work to be complete in all respects.
6. Will reimburse Owner and Architect for review or redesign services associated with reapproval by authorities having jurisdiction.

E. Substitutions will not be considered when they are indicated or implied on Shop Drawing or Product Data submittals without separate written request or when acceptance will require revision to Contract Documents.

F. Substitution Submittal Procedure:

1. Submit requests for substitutions on form with all required information clearly provided.
2. Submit electronic files of Request for Substitution for consideration. Limit each request to one proposed substitution.
3. Submit Shop Drawings, Product Data, and certified test results attesting to proposed product equivalence. Burden of proof is on proposer.
4. Architect will notify Contractor in writing of decision to accept or reject request.

1.5 INSTALLER SUBSTITUTION PROCEDURES

A. Architect will consider requests for substitutions only within 7 days after date of Owner-Contractor Agreement.

B. Document each request with:

1. Installer's qualifications.
2. Installer's experience in work similar to that specified.
3. Other information as necessary to assist Architect's evaluation.

C. Substitution Submittal Procedure:

1. Submit electronic files of Request for Substitution for consideration. Limit each request to one proposed substitution.

2. Architect will notify Contractor in writing of decision to accept or reject request.

PART 2 - PRODUCTS - Not Used

PART 3 - EXECUTION - Not Used

END OF SECTION

SECTION 01 30 00

ADMINISTRATIVE REQUIREMENTS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Coordination and Project conditions.

B. Preconstruction meeting.

C. Site mobilization meeting.

D. Progress meetings.

E. Preinstallation meetings.

F. Closeout meeting.

G. Alteration procedures.

1.2 COORDINATION AND PROJECT CONDITIONS

A. Coordinate scheduling, submittals, and Work of various Sections of Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements.

B. Verify that utility requirements and characteristics of operating equipment are compatible with building utilities. Coordinate Work of various Sections having interdependent responsibilities for installing, connecting to, and placing operating equipment in service.

C. Coordinate space requirements, supports, and installation of mechanical and electrical Work indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, and conduit as closely as practical; place runs parallel with lines of building. Use spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.

1. Coordination Drawings: Prepare as required to coordinate all portions of Work. Show relationship and integration of different construction elements that require coordination during fabrication or installation to fit in space provided or to function as intended. Indicate locations where space is limited for installation and access and where sequencing and coordination of installations are important.

D. Coordination Meetings: In addition to other meetings specified in this Section, hold coordination meetings with personnel and Subcontractors to ensure coordination of Work.

E. In finished areas, conceal pipes, ducts, and wiring within construction. Coordinate locations of fixtures and outlets with finish elements.

F. Coordinate completion and clean-up of Work of separate Sections in preparation for Substantial Completion and for portions of Work designated for Owner's partial occupancy.

G. After Owner's occupancy of premises, coordinate access to Site for correction of defective Work and Work not complying with Contract Documents, to minimize disruption of Owner's activities.

1.3 PRECONSTRUCTION MEETING

A. Architect will schedule and preside over meeting after Notice of Award.

B. Attendance Required: Architect, Owner, major Subcontractors, and Contractor.

C. Minimum Agenda:

1. Execution of Owner-Contractor Agreement.
2. Submission of executed bonds and insurance certificates.
3. Distribution of Contract Documents.
4. Submission of list of Subcontractors, list of products, schedule of values, and Progress Schedule.
5. Designation of personnel representing parties in Contract, and Architect.
6. Communication procedures.
7. Procedures and processing of requests for interpretations, field decisions, submittals, substitutions, Applications for Payments, proposal request, Change Orders, and Contract closeout procedures.
8. Scheduling.
9. Critical Work sequencing.

D. Contractor: Record minutes and distribute to participants within two days after meeting, to Architect, Owner, and those affected by decisions made.

1.4 SITE MOBILIZATION MEETING

A. Owner will schedule meeting at Project Site prior to Contractor occupancy.

B. Attendance Required: Architect, Owner, Contractor, Contractor's superintendent, and major Subcontractors.

C. Minimum Agenda:

1. Use of premises by Owner and Contractor.
2. Owner's requirements and occupancy.
3. Construction facilities and controls.
4. Temporary utilities provided by Owner.
5. Building layout.
6. Security and housekeeping procedures.
7. Schedules.
8. Procedures for testing.
9. Procedures for maintaining record documents.

10. Requirements for startup of equipment.
11. Inspection and acceptance of equipment put into service during construction period.

D. Contractor: Record minutes and distribute to participants within two days after meeting, to Architect, Owner, and those affected by decisions made.

1.5 PROGRESS MEETINGS

A. Schedule and administer meetings throughout progress of the Work at bi-weekly intervals.

B. Make arrangements for meetings, prepare agenda with copies for participants, and preside over meetings.

C. Attendance Required: Job superintendent, major Subcontractors and suppliers, and Architect, Owner, as appropriate to agenda topics for each meeting.

D. Minimum Agenda:

1. Review minutes of previous meetings.
2. Review of Work progress.
3. Field observations, problems, and decisions.
4. Identification of problems impeding planned progress.
5. Review of submittal schedule and status of submittals.
6. Review of off-Site fabrication and delivery schedules.
7. Maintenance of Progress Schedule.
8. Corrective measures to regain projected schedules.
9. Planned progress during succeeding work period.
10. Coordination of projected progress.
11. Maintenance of quality and work standards.
12. Effect of proposed changes on Progress Schedule and coordination.
13. Other business relating to Work.

E. Contractor: Record minutes and distribute to participants within two days after meeting, to Architect, Owner, and those affected by decisions made.

1.6 PREINSTALLATION MEETINGS

A. When required in individual Specification Sections, convene preinstallation meetings at Project Site before starting Work of specific Section.

B. Require attendance of parties directly affecting, or affected by, Work of specific Section.

C. Notify Architect seven days in advance of meeting date.

D. Prepare agenda and preside over meeting:

1. Review conditions of installation, preparation, and installation procedures.
2. Review coordination with related Work.

E. Record minutes and distribute to participants within two days after meeting, to Architect, Owner, and those affected by decisions made.

1.7 CLOSEOUT MEETING

A. Schedule Project closeout meeting with sufficient time to prepare for requesting Substantial Completion. Preside over meeting and be responsible for minutes.

B. Attendance Required: Contractor, major Subcontractors, Architect, Owner, and others appropriate to agenda.

C. Notify Architect seven days in advance of meeting date.

D. Minimum Agenda:

1. Start-up of facilities and systems.
2. Operations and maintenance manuals.
3. System demonstration and observation.
4. Operation and maintenance instructions for Owner's personnel.
5. Contractor's inspection of Work.
6. Contractor's preparation of an initial "punch list."
7. Procedure to request Architect inspection to determine date of Substantial Completion.
8. Completion time for correcting deficiencies.
9. Inspections by authorities having jurisdiction.
10. Certificate of Occupancy and transfer of insurance responsibilities.
11. Partial release of retainage.
12. Final cleaning.
13. Preparation for final inspection.
14. Closeout Submittals:

    a. Project record documents.
    b. Operating and maintenance documents.
    c. Operating and maintenance materials.
    d. Affidavits.

15. Final Application for Payment.
16. Contractor's demobilization of Site.
17. Maintenance.

E. Record minutes and distribute to participants within two days after meeting, to Architect, Owner, and those affected by decisions made.

PART 2 - PRODUCTS - Not Used

PART 3 - EXECUTION

3.1 ALTERATION PROCEDURES

A. Designated areas of existing facilities will be occupied for normal operations during progress of construction. Cooperate with Owner in scheduling operations to minimize conflict and to permit continuous usage.

1. Perform Work not to interfere with operations of occupied areas.
2. Keep utility and service outages to a minimum and perform only after written approval of Owner.
3. Clean Owner-occupied areas daily. Clean spillage, overspray, and heavy collection of dust in Owner-occupied areas immediately.

B. Materials: As specified in product Sections; match existing products with new and salvaged products for patching and extending Work.

C. Employ skilled and experienced installer to perform alteration and renovation Work.

D. Cut, move, or remove items as necessary for access to alterations and renovation Work. Replace and restore at completion. Comply with Section 01 70 00 - Execution and Closeout Requirements

E. Remove unsuitable material not marked for salvage, including rotted wood, corroded metals, and deteriorated masonry and concrete. Replace materials as specified for finished Work.

F. Remove debris and abandoned items from area and from concealed spaces.

G. Prepare surface and remove surface finishes to permit installation of new Work and finishes.

H. Close openings in exterior surfaces to protect existing Work from weather and extremes of temperature and humidity.

I. Remove, cut, and patch Work to minimize damage and to permit restoring products and finishes to specified condition.

J. Refinish existing visible surfaces to remain in renovated rooms and spaces, to specified condition for each material, with neat transition to adjacent finishes.

K. Where new Work abuts or aligns with existing Work, provide smooth and even transition. Patch Work to match existing adjacent Work in texture and appearance.

L. When finished surfaces are cut so that smooth transition with new Work is not possible, terminate existing surface along straight line at natural line of division and submit recommendation to Architect for review.

M. Where a change of plane of 1/4 inch or more occurs, submit recommendation for providing smooth transition to Architect for review.

N. Trim existing doors to clear new finish. Refinish trim to specified condition.

O. Patch or replace portions of existing surfaces that are damaged, lifted, discolored, or showing other imperfections.

P. Finish surfaces as specified in individual product Sections.

END OF SECTION

SECTION 01 32 16

CONSTRUCTION PROGRESS SCHEDULE

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Web-based project management software package.

B. Digital Project data licensing.

C. Submittals.

D. Quality assurance.

E. Format for network analysis schedules.

F. Schedules.

G. Review and evaluation.

H. Updating schedules.

I. Distribution.

1.2 PROJECT MANAGEMENT CORRESPONDENCE

A. Contractor is to establish and maintain records of Project communication and documentation until final completion. Records are to be available to the Owner and Architect upon request.

1. Records shall be established and maintained for at a minimum, the following features:

a. Compilation of Project data, including Contractor, Subcontractors, Architect, Architect's administrator, Owner, and other entities involved in Project. Include names of individuals and contact information.
b. Document workflow planning, allowing management of workflow among Project entities.
c. Create, log, track, and notify Project members of Project communications required in other Specification Sections, including, but not limited to, RFIs, submittals, minor changes in the Work, Construction Change Directives, and Change Orders.
d. Track status of each Project communication in real time, and log time and date when responses are provided.
e. Procedures for handling PDFs or similar file formats, allowing markups by each entity. Provide security features to lock markups against changes once submitted.
f. Process and track payment applications.
g. Process and track contract modifications.
h. Create and distribute meeting minutes.

i. Document management for Drawings, Specifications, and coordination drawings, including revision control.
j. Management of construction progress photographs.

1.3 DIGITAL PROJECT DATA LICENSING

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

B. Conditions for Use:

1. Digital data files may be used by Contractor in preparing coordination 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. Contractor shall execute a data licensing agreement in the form acceptable to Owner and Architect.

    a. Subcontractors and other parties granted access by Contractor to Architect's digital data files shall execute a data licensing agreement in the form of Agreement acceptable to Owner and Architect.
4. The following digital data files will be furnished for each appropriate discipline:

    a. Roof plans.

1.4 SUBMITTALS

A. Submit network schedules under transmittal letter form specified in Section 01 33 00 - Submittal Procedures.

B. Schedule Updates:

1. Overall percent complete, projected and actual.
2. Completion progress by listed activity and sub-activity, to within five days prior to submittal.
3. Changes in Work scope and activities modified since submittal.
4. Delays in submittals or resubmittals, deliveries, or Work.
5. Adjusted or modified sequences of Work.
6. Other identifiable changes.
7. Revised projections of progress and completion.

C. Narrative Progress Report:

1. Submit with each submission of Progress Schedule.
2. Summary of Work completed during the past period between reports.
3. Work planned during the next period.
4. Explanation of differences between summary of Work completed and Work planned in previously submitted report.

5. Current and anticipated delaying factors and estimated impact on other activities and completion milestones.
6. Corrective action taken or proposed.

1.5 QUALITY ASSURANCE

A. Scheduler: Contractor's personnel specializing in scheduling with two years' minimum experience in scheduling construction work of complexity comparable to the Project, and having use of computer facilities capable of delivering detailed graphic printout within 72 hours of request.

B. Contractor's Administrative Personnel: 2 years' minimum experience in using and monitoring schedules on comparable Projects.

1.6 SCHEDULES

A. Bar Chart Schedules

1. Format: Bar chart Schedule, to include at least:

    a. Identification and listing in chronological order of those activities reasonably required to complete the Work, including:

        1) Subcontract Work.
        2) Major equipment design, fabrication, factory testing, and delivery dates including required lead times.
        3) Move-in and other preliminary activities.
        4) Equipment and equipment system test and startup activities.
        5) Project closeout and cleanup.
        6) Work sequences, constraints, and milestones.

    b. Listings identified by Specification Section number.
    c. Identification of the following:

2. Horizontal time frame by month, week, and day.
3. Duration, early start, and completion for each activity and subactivity.
4. Critical activities and Project float.
5. Subschedules to further define critical portions of Work.

1.7 REVIEW AND EVALUATION

A. Participate in joint review and evaluation of schedules with Architect at each submittal.

B. Evaluate Project status to determine Work behind schedule and Work ahead of schedule.

C. After review, revise schedules incorporating results of review, and resubmit within 10 days.

1.8 UPDATING SCHEDULES

A. Maintain schedules to record actual start and finish dates of completed activities.

B. Indicate progress of each activity to date of revision, with projected completion date of each activity. Update schedules to depict current status of Work.

C. Identify activities modified since previous submittal, major changes in Work, and other identifiable changes.

D. Upon approval of a Change Order, include the change in the next schedule submittal.

E. Indicate changes required to maintain Date of Substantial Completion.

F. Prepare narrative report to define problem areas, anticipated delays, and impact on schedule. Report corrective action taken or proposed and its effect.

1.9 DISTRIBUTION

A. Following joint review, distribute copies of updated schedules to Contractor's Project site file, Subcontractors, suppliers, Architect, Owner, and other concerned parties.

B. Instruct recipients to promptly report, in writing, problems anticipated by projections shown in schedules.

PART 2 - PRODUCTS - Not Used

PART 3 - EXECUTION - Not Used

END OF SECTION

SECTION 01 33 00

SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Definitions.

B. Submittal procedures.

C. Construction progress schedules.

D. Proposed product list.

E. Product data.

F. Use of electronic CAD files of Project Drawings.

G. Shop Drawings.

H. Samples.

I. Other submittals.

J. Test reports.

K. Certificates.

L. Manufacturer's instructions.

M. Manufacturer's field reports.

N. Construction photographs.

O. Contractor review.

P. Architect review.

1.2 DEFINITIONS

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

B. Informational Submittals: Written and graphic information and physical Samples that do not require Architect responsive action. Submittals may be rejected for not complying with requirements.

1.3 SUBMITTAL PROCEDURES

A. Transmit each submittal with Architect-accepted form.

B. Sequentially number transmittal forms. Mark revised submittals with original number and sequential alphabetic suffix.

C. Identify: Project, Contractor, Subcontractor and supplier, pertinent Drawing and detail number, and Specification Section number appropriate to submittal.

D. Apply Contractor's stamp, signed or initialed, certifying that review, approval, verification of products required, field dimensions, adjacent construction Work, and coordination of information is according to requirements of the Work and Contract Documents.

E. Schedule submittals to expedite Project, and submit electronic submittals as PDF electronic files. Coordinate submission of related items.

F. For each submittal for review, allow 10 days.

G. Identify variations in Contract Documents and product or system limitations that may be detrimental to successful performance of completed Work.

H. Allow space on submittals for Contractor and Architect review stamps.

I. When revised for resubmission, identify changes made since previous submission.

J. Distribute copies of reviewed submittals as appropriate. Instruct parties to promptly report inability to comply with requirements.

K. Submittals not requested will not be recognized nor processed.

L. Incomplete Submittals: Architect will not review. Complete submittals for each item are required. Delays resulting from incomplete submittals are not the responsibility of Architect.

1.4 CONSTRUCTION PROGRESS SCHEDULES

A. Comply with Section 01 32 16 - Construction Progress Schedule

1.5 PROPOSED PRODUCT LIST

A. Within 15 days after date of Owner-Contractor Agreement, submit list of major products proposed for use, with name of manufacturer, trade name, and model number of each product.

B. For products specified only by reference standards, indicate manufacturer, trade name, model or catalog designation, and reference standards.

1.6 PRODUCT DATA

A. Product Data: Action Submittal: Submit to Architect for review for assessing conformance with information given and design concept expressed in Contract Documents.

B. Submit electronic submittals as PDF electronic files.

C. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.

D. Indicate product utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.

E. After review, produce copies and distribute according to "Submittal Procedures" Article and for record documents described in Section 01 70 00 - Execution and Closeout Requirements.

1.7 ELECTRONIC CAD FILES OF PROJECT DRAWINGS

A. Electronic CAD Files of Project Drawings: May only be used to expedite production of Coordination Drawings for the Project. Use for other Projects or purposes is not allowed.

B. Electronic CAD Files of Project Drawings: Distributed only under the following conditions:

1. Use of files is solely at receiver's risk. Architect does not warrant accuracy of files. Receiving files in electronic form does not relieve receiver of responsibilities for measurements, dimensions, and quantities set forth in Contract Documents. In the event of ambiguity, discrepancy, or conflict between information on electronic media and that in Contract Documents, notify Architect of discrepancy and use information in hard-copy Drawings and Specifications.
2. CAD files do not necessarily represent the latest Contract Documents, existing conditions, and as-built conditions. Receiver is responsible for determining and complying with these conditions and for incorporating addenda and modifications.
3. User is responsible for removing information and references to Contract Documents. Shop Drawings submitted with information associated with other trades or with references to Contract Documents will not be reviewed and will be immediately returned.
4. Receiver shall not hold Architect responsible for data or file clean-up required to make files usable, nor for error or malfunction in translation, interpretation, or use of this electronic information.
5. Receiver shall understand that there is no guarantee that computer viruses are not present in files or in electronic media.
6. Receiver shall not hold Architect responsible for such viruses or their consequences, and shall hold Architect harmless against costs, losses, or damage caused by presence of computer virus in files or media.

1.8 SHOP DRAWINGS

A. Shop Drawings: Action Submittal: Submit to Architect for assessing conformance with information given and design concept expressed in Contract Documents.

B. Indicate special utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.

C. When required by individual Specification Sections, provide Shop Drawings signed and sealed by a professional Engineer responsible for designing components shown on Shop Drawings.

1. Include signed and sealed calculations to support design.
2. Submit Shop Drawings and calculations in form suitable for submission to and approval by authorities having jurisdiction.
3. Make revisions and provide additional information when required by authorities having jurisdiction.

D. Submit electronic submittals as PDF electronic files.

E. After review, produce copies and distribute according to "Submittal Procedures" Article and for record documents described in Section 01 70 00 - Execution and Closeout Requirements.

1.9 SAMPLES

A. Samples: Action Submittal: Submit to Architect for assessing conformance with information given and design concept expressed in Contract Documents.

B. Samples for Selection as Specified in Product Sections:

1. Submit to Architect for aesthetic, color, and finish selection.
2. Submit Samples of finishes, textures, and patterns for Architect selection.

C. Submit Samples to illustrate functional and aesthetic characteristics of products, with integral parts and attachment devices. Coordinate Sample submittals for interfacing work.

D. Include identification on each Sample, with full Project information.

E. Submit number of Samples specified in individual Specification Sections; Architect will retain Samples.

F. Samples will not be used for testing purposes unless specifically stated in Specification Section.

G. After review, produce copies and distribute according to "Submittal Procedures" Article and for record documents described in Section 01 70 00 - Execution and Closeout Requirements.

1.10 OTHER SUBMITTALS

A. Closeout Submittals: Comply with Section 01 70 00 - Execution and Closeout Requirements.

B. Informational Submittal: Submit data for Architect’s knowledge as Contract administrator or for Owner.

C. Submit information for assessing conformance with information given and design concept expressed in Contract Documents.

1.11 TEST REPORTS

A. Informational Submittal: Submit reports for Architect's knowledge as Contract administrator or for Owner.

B. Submit test reports for information for assessing conformance with information given and design concept expressed in Contract Documents.

1.12 CERTIFICATES

A. Informational Submittal: Submit certification by manufacturer, installation/application Subcontractor, or Contractor to Architect, in quantities specified for Product Data.

B. Indicate material or product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.

C. Certificates may be recent or previous test results on material or product but must be acceptable to Architect.

1.13 MANUFACTURER'S INSTRUCTIONS

A. Informational Submittal: Submit manufacturer's installation instructions for Architect's knowledge as Contract administrator or for Owner.

B. Submit printed instructions for delivery, storage, assembly, installation, startup, adjusting, and finishing, to Architect in quantities specified for Product Data.

C. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.

1.14 MANUFACTURER'S FIELD REPORTS

A. Informational Submittal: Submit reports for Architect's knowledge as Contract administrator or for Owner.

B. Submit report within 48 hours of observation to Architect for information.

C. Submit reports for information for assessing conformance with information given and design concept expressed in Contract Documents.

1.15 CONSTRUCTION PHOTOGRAPHS

A. Provide photographs of Site and construction throughout progress of Work produced by an experienced person acceptable to Architect.

B. Each week submit photographs.

C. Photographs: Digital file type of acceptable quality to analyze the quality and progress of work.

D. Take Site photographs from different directions, overall Work area photographs indicating relative progress of the Work, and detailed images as needed to indicate specific conditions of the Work, 3 days maximum before submitting.

E. Take photographs as evidence of existing Project conditions.

F. Identify each image. Identify name of Project, orientation of view, date and time of view, subject matter of image, and any related project communication or documents.

G. Digital Images: Deliver complete set of digital image electronic files to Owner with Project record documents. Identify electronic media with date photographs were taken. Submit images uncropped.

1. Digital Images: Uncompressed format acceptable to Architect, produced by digital camera with minimum sensor size of 12.0 megapixels, and image resolution of not less than 4000 by 3000 pixels.
2. Date and Time: Include date and time in filename for each image.

1.16 CONTRACTOR REVIEW

A. Review for compliance with Contract Documents and approve submittals before transmitting to Architect.

B. Contractor: Responsible for:

1. Determination and verification of materials including manufacturer's catalog numbers.
2. Determination and verification of field measurements and field construction criteria.
3. Checking and coordinating information in submittal with requirements of Work and of Contract Documents.
4. Determination of accuracy and completeness of dimensions and quantities.
5. Confirmation and coordination of dimensions and field conditions at Site.
6. Construction means, techniques, sequences, and procedures.
7. Safety precautions.
8. Coordination and performance of Work of all trades.

C. Stamp, sign or initial, and date each submittal to certify compliance with requirements of Contract Documents.

D. Do not fabricate products or begin Work for which submittals are required until approved submittals have been received from Architect.

1.17 ARCHITECT REVIEW

A. Do not make "mass submittals" to Architect/Engineer. "Mass submittals" are defined as six or more submittals or items in one day or 15 or more submittals or items in one week. If "mass submittals" are received, Architect's review time stated above will be extended as necessary to perform proper review. Architect will review "mass submittals" based on priority determined by Architect.

B. Informational submittals and other similar data are for Architect's information, do not require Architect's responsive action, and will not be reviewed or returned with comment.

C. Submittals made by Contractor that are not required by Contract Documents may be returned without action.

D. Submittal approval does not authorize changes to Contract requirements unless accompanied by Change Order, Architect's Supplemental Instruction, or Construction Change Directive.

E. Owner may withhold monies due to Contractor to cover additional costs beyond the second submittal review.

PART 2 - PRODUCTS - Not Used

PART 3 - EXECUTION - Not Used

END OF SECTION

SECTION 01 40 00

QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Quality control.

B. Tolerances.

C. References.

D. Labeling.

E. Manufacturers' field services.

1.2 QUALITY CONTROL

A. Monitor quality control over suppliers, manufacturers, products, services, Site conditions, and workmanship, to produce Work of specified quality.

B. Comply with specified standards as the minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.

C. Perform Work using persons qualified to produce required and specified quality.

D. Products, materials, and equipment may be subject to inspection by Architect and Owner. Such inspections shall not relieve Contractor of complying with requirements of Contract Documents.

E. Supervise performance of Work in such manner and by such means to ensure that Work, whether completed or in progress, will not be subjected to harmful, dangerous, damaging, or otherwise deleterious exposure during construction period.

1.3 TOLERANCES

A. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.

B. Comply with manufacturers' recommended tolerances and tolerance requirements in reference standards. When such tolerances conflict with Contract Documents, request clarification from Architect before proceeding.

C. Adjust products to appropriate dimensions; position before securing products in place.

1.4 REFERENCES

A. For products or workmanship specified by association, trade, or other consensus standards, comply with requirements of standard except when more rigid requirements are specified or are required by applicable codes.

B. Conform to reference standard by date of issue current as of date of Contract Documents except where specific date is established by code.

C. Obtain copies of standards and maintain on Site when required by product Specification Sections.

D. When requirements of indicated reference standards conflict with Contract Documents, request clarification from Architect before proceeding.

E. Neither contractual relationships, duties, or responsibilities of parties in Contract nor those of Architect shall be altered from Contract Documents by mention or inference in reference documents.

1.5 LABELING

A. Attach label from agency approved by authorities having jurisdiction for products, assemblies, and systems required to be labeled by applicable code.

B. Label Information: Include manufacturer's or fabricator's identification, approved agency identification, and the following information, as applicable, on each label:

1. Model number.
2. Serial number.
3. Performance characteristics.

C. Manufacturer's Nameplates, Trademarks, Logos, and Other Identifying Marks on Products: Not allowed on surfaces exposed to view in public areas, interior or exterior.

1.6 MANUFACTURER'S FIELD SERVICES

A. When specified in individual Specification Sections, require material or product suppliers or manufacturers to provide qualified staff personnel to observe Site conditions, conditions of surfaces and installation, quality of workmanship, startup of equipment, testing, adjusting, and balancing of equipment as applicable, and to initiate instructions when necessary.

B. Submit qualifications of observer to Architect minimum 15 days in advance of required observations. Observer is subject to approval of Architect.

C. Report observations and Site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturer's written instructions.

D. Refer to Section 01 33 00 - Submittal Procedures, "Manufacturer's Field Reports" Article.

PART 2 - PRODUCTS - Not Used

PART 3 - EXECUTION - Not Used

END OF SECTION

SECTION 01 50 00

TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Temporary facilities.

B. Temporary Utilities:

C. Construction Facilities:

D. Temporary Controls:

1. Barriers.
2. Enclosures and fencing.
3. Security.
4. Dust control.
5. Pest and rodent control.
6. Pollution control.

E. Removal of utilities, facilities, and controls.

1.2 TEMPORARY FACILITIES

A. Contractor and each subcontractor provide the following items as necessary for execution of the Work including associated costs:
1. Cleaning during construction.
2. Construction aids.
3. Temporary fire protection, dust control, erosion and sediment control, water control, noise control, and other necessary temporary controls.
4. Temporary barriers, barricades, and similar devices as necessary for safety and protection of construction personnel and public.
5. Temporary provisions for protection of installed Work.

1.3 TEMPORARY ELECTRICITY

A. Owner will pay cost of energy used. Exercise measures to conserve energy. Use Owner's existing power service.

B. Provide temporary electric feeder from existing building electrical service at location as directed by Owner. Do not disrupt Owner's use of service.

C. Complement existing power service capacity and characteristics as required for construction operations.

D. Provide power outlets with branch wiring and distribution boxes located as required for construction operations. Provide suitable, flexible power cords as required for portable construction tools and equipment.

E. Provide main service disconnect and overcurrent protection at convenient location.

F. Permanent convenience receptacles shall not be used during construction.

1.4 TEMPORARY LIGHTING FOR CONSTRUCTION PURPOSES

A. Provide and maintain lighting for construction operations as needed.

B. Maintain lighting and provide routine repairs.

C. Permanent building lighting may be used during construction.

1.5 TEMPORARY HEATING

A. Existing heating systems may be used during construction.

B. Maintain minimum ambient temperature of 55 degrees F in areas where construction is in progress unless indicated otherwise in individual product Sections.

1.6 TEMPORARY COOLING

A. Existing cooling systems may be used during construction.

B. Maintain maximum ambient temperature of 80 degrees F in areas where construction is in progress unless indicated otherwise in individual product Sections.

1.7 TEMPORARY VENTILATION

A. Ventilate enclosed areas to achieve curing of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.

1.8 SANITARY FACILITIES

A. Existing designated facilities located at project site may be used during construction operations. Maintain a clean and sanitary condition daily.

B. At end of construction, return existing facilities used for construction operations to same or better condition as original condition.

1.9 FIELD OFFICES AND SHEDS

A. Do not use existing facilities for field offices or for storage without written Owner permission.

B. Locate field offices and sheds a minimum distance of 30 feet from existing structures.

C. Storage Areas and Sheds: Size to storage requirements for products of individual Sections, allowing for access and orderly provision for maintenance and inspection of products to suit requirements in Section 01 60 00 - Product Requirements.

D. Removal: At completion of Work remove buildings, foundations, utility services, and debris. Restore areas to same or better condition as original condition.

1.10 VEHICULAR ACCESS

A. Maintain unimpeded access for emergency vehicles. Maintain driveways with turning space between and around combustible materials.

B. Maintain access to fire hydrants and control valves free of obstructions.

C. Use designated and approved existing on-Site roads for construction traffic whenever possible.

1.11 PARKING

A. Use of designated areas of existing on-Site streets and driveways used for construction traffic is permitted.

B. Use of designated areas of existing parking facilities used by construction personnel is permitted.

C. Permanent Pavements and Parking Facilities:
1. Avoid traffic loading beyond paving design capacity. Tracked vehicles are not allowed.

D. Removal, Repair:

1. Remove temporary materials and construction at Substantial Completion.
2. Repair existing facilities damaged by use, to original condition.

1.12 PROGRESS CLEANING AND WASTE REMOVAL

A. Maintain areas free of waste materials, debris, and rubbish. Maintain Site in clean and orderly condition.

B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, before enclosing spaces.

C. Broom and vacuum clean interior areas before starting surface finishing, and continue cleaning to eliminate dust.

D. Collect and remove waste materials, debris, and rubbish from Site weekly and dispose of off-Site.

E. Open free-fall chutes are not permitted. Terminate closed chutes into appropriate containers with lids.

1.13 PROJECT IDENTIFICATION

A. No signs are allowed without Owner's permission except those required by law.

B. Removal: Remove signs, framing, supports, and foundations at completion of Project and restore area.

1.14 TRAFFIC REGULATION

A. Signs, Signals, and Devices:

1. Mounted Traffic Control and Informational Signs: As approved by authorities having jurisdiction.
2. Traffic Cones, Drums, and Lights: As approved by authorities having jurisdiction.
3. Flag Person Equipment: As required by authorities having jurisdiction.

B. Flag Persons: Provide trained and equipped flag persons to regulate traffic when construction operations or traffic encroach on public traffic lanes.

C. Flares and Lights: Use flares and lights during hours of low visibility to delineate traffic lanes and to guide traffic.

D. Haul Routes:

1. Consult with authorities having jurisdiction and establish public thoroughfares to be used for haul routes and Site access.

E. Removal:

1. Remove equipment and devices when no longer required.
2. Repair damage caused by installation.

1.15 FIRE-PREVENTION FACILITIES

A. Prohibit smoking within buildings.

B. Establish fire watch for cutting, welding, and other hazardous operations capable of starting fires. Maintain fire watch before, during, and after hazardous operations until threat of fire does not exist.

C. Portable Fire Extinguishers: NFPA 10; 10-pound capacity, 4A-60B: C UL rating.
1. Provide minimum of one fire extinguisher in every construction trailer and storage shed.
2. Provide minimum of one fire extinguisher on roof during roofing operations using heat-producing equipment.

1.16 BARRIERS

A. Provide barriers to prevent unauthorized entry to construction areas and to protect existing facilities and adjacent properties from damage from construction operations and demolition.

B. Provide barricades and covered walkways required by authorities having jurisdiction for public rights-of-way and for public access to existing building.

C. Protect non-owned vehicular traffic, stored materials, Site, and structures from damage.

1.17 ENCLOSURES AND FENCING

A. Construction: Commercial-grade chain-link fence.

B. Provide 6-foot-high fence around construction Site as needed; equip with vehicular and pedestrian gates with locks.

C. Exterior Enclosures:

1. Provide temporary weathertight closure of exterior openings to accommodate acceptable working conditions and protection for products, to allow for temporary heating and maintenance of required ambient temperatures identified in individual Specification Sections, and to prevent entry of unauthorized persons.
2. Provide temporary roofing as specified.

1.18 SECURITY

A. Restrictions:

1. Do not allow members of the public or media on Site except by written approval of Owner.

1.19 PEST AND RODENT CONTROL

A. Provide methods, means, and facilities to prevent pests and insects from damaging the Work or entering facility.

B. Provide methods, means, and facilities to prevent rodents from accessing or invading premises.

1.20 POLLUTION CONTROL

A. Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances and pollutants produced by construction operations.

B. Comply with pollution and environmental control requirements of authorities having jurisdiction.

1.21 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

A. Remove temporary utilities, equipment, facilities, and materials before Final Application for Payment inspection.

B. Clean and repair damage caused by installation or use of temporary Work.

C. Restore existing and permanent facilities used during construction to original condition. Restore permanent facilities used during construction to specified condition.

PART 2 - PRODUCTS - Not Used

PART 3 - EXECUTION - Not Used

END OF SECTION

SECTION 01 60 00

PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Products.

B. Product delivery requirements.

C. Product storage and handling requirements.

D. Product options.

1.2 PRODUCTS

A. At minimum, comply with specified requirements and reference standards.

B. Specified products define standard of quality, type, function, dimension, appearance, and performance required.

C. Furnish products of qualified manufacturers that are suitable for intended use. Furnish products of each type by single manufacturer unless specified otherwise. Confirm that manufacturer's production capacity can provide sufficient product, on time, to meet Project requirements.

D. Do not use materials and equipment removed from existing premises except as specifically permitted by Contract Documents.

E. Furnish interchangeable components from same manufacturer for components being replaced.

1.3 PRODUCT DELIVERY REQUIREMENTS

A. Transport and handle products according to manufacturer's instructions.

B. Promptly inspect shipments to ensure products comply with requirements, quantities are correct, and products are undamaged.

C. Provide equipment and personnel to handle products; use methods to prevent soiling, disfigurement, or damage.

1.4 PRODUCT STORAGE AND HANDLING REQUIREMENTS

A. Store and protect products according to manufacturer's instructions.

B. Store products with seals and labels intact and legible.

C. Store sensitive products in weathertight, climate-controlled enclosures in an environment suitable to product.

D. For exterior storage of fabricated products, place products on sloped supports aboveground.

E. Provide off-Site storage and protection when Site does not permit on-Site storage or protection.

F. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.

G. Provide equipment and personnel to store products; use methods to prevent soiling, disfigurement, or damage.

H. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

1.5 PRODUCT OPTIONS

A. Products Specified by Reference Standards or by Description Only: Products complying with specified reference standards or description.

B. Products Specified by Naming One or More Manufacturers: Products of one of manufacturers named and complying with Specifications; no options or substitutions allowed.

C. Products Specified by Naming One or More Manufacturers with Provision for Substitutions: Submit Request for Substitution for any manufacturer not named, according to Section 01 25 00 - Substitution Procedures.

PART 2 - PRODUCTS – Not Used

PART 3 - EXECUTION - Not Used

END OF SECTION

SECTION 01 70 00

EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Examination.

B. Preparation.

C. Execution.

D. Cutting and patching.

E. Protecting installed construction.

F. Starting of systems.

G. Demonstration and instruction.

H. Testing, adjusting, and balancing.

I. Closeout procedures.

J. Project record documents.

K. Operation and maintenance data.

L. Spare parts and maintenance products.

M. Product warranties and product bonds.

N. Final cleaning.

1.2 EXAMINATION

A. Verify that existing Site conditions and substrate surfaces are acceptable for subsequent Work. Beginning new Work means acceptance of existing conditions.

B. Verify that existing substrate is capable of structural support or attachment of new Work being applied or attached.

C. Examine and verify specific conditions described in individual Specification Sections.

D. Verify that utility services are available with correct characteristics and in correct locations.

1.3 PREPARATION

A. Clean substrate surfaces prior to applying next material or substance according to manufacturer's instructions.

B. Seal cracks or openings of substrate prior to applying next material or substance.

C. Apply manufacturer-required or -recommended substrate primer, sealer, or conditioner prior to applying new material or substance in contact or bond.

1.4 EXECUTION

A. Comply with manufacturer's installation instructions, performing each step in sequence. Maintain one set of manufacturer's installation instructions at Project Site during installation and until completion of construction.

B. When manufacturer's installation instructions conflict with Contract Documents, request clarification from Architect/Engineer before proceeding.

C. Verify that field measurements are as indicated on approved Shop Drawings or as instructed by manufacturer.

D. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, or disfigurement.

1. Secure Work true to line and level and within specified tolerances, or if not specified, industry-recognized tolerances.
2. Physically separate products in place and provide electrical insulation or protective coatings to prevent galvanic action or corrosion between dissimilar metals.
3. Exposed Joints: Provide uniform joint width and arrange to obtain best visual effect. Refer questionable visual effect choices to Architect/Engineer for final decision.

E. Allow for expansion of materials and building movement.

F. Climatic Conditions and Project Status: Install each unit of Work under conditions to ensure best possible results in coordination with entire Project.

1. Isolate each unit of Work from incompatible Work as necessary to prevent deterioration.
2. Coordinate enclosure of Work with required inspections and tests to minimize necessity of uncovering Work for those purposes.

G. Mounting Heights: Where not indicated, mount individual units of Work at industry-recognized standard mounting heights for particular application indicated.

1. Refer questionable mounting height choices to Architect/Engineer for final decision.
2. Elements Identified as Handicap Accessible: Comply with applicable codes and regulations.

H. Adjust operating products and equipment to ensure smooth and unhindered operation.

I. Clean and perform maintenance on installed Work as frequently as necessary through remainder of construction period. Lubricate operable components as recommended by manufacturer.

1.5 CUTTING AND PATCHING

A. Employ skilled and experienced Installers to perform cutting and patching.

B. Submit written request in advance of cutting or altering elements affecting the following:

1. Structural integrity of element.
2. Integrity of weather-exposed or moisture-resistant elements.
3. Efficiency, maintenance, or safety of element.
4. Visual qualities of sight-exposed elements.
5. Work of Owner or separate Contractor.

C. Execute cutting, fitting, and patching to complete Work and to accomplish the following:

1. Fit the several parts together, to integrate with other Work.
2. Uncover Work to install or correct ill-timed Work.
3. Remove and replace defective and nonconforming Work.
4. Remove samples of installed Work for testing.
5. Provide openings in elements of Work for penetrations of mechanical and electrical Work.

D. Execute Work by methods to avoid damage to other Work and to provide proper surfaces to receive patching and finishing.

E. Cut masonry and concrete materials using masonry saw or core drill.

F. Restore Work with new products according to requirements of Contract Documents.

G. Fit Work tight to pipes, sleeves, ducts, conduits, and other penetrations through surfaces.

H. Maintain integrity of wall, ceiling, or floor construction; completely seal voids.

I. At penetrations of fire-rated walls, partitions, ceiling, or floor construction, completely seal voids with fire-rated material to full thickness of penetrated element.

J. Refinish surfaces to match adjacent finishes. For continuous surfaces, refinish to nearest intersection; for assembly, refinish entire unit.

K. Identify the hazardous substances or conditions exposed during the Work to Architect for decision or remedy.

1.6 PROTECTING INSTALLED CONSTRUCTION

A. Protect installed Work and provide special protection where specified in individual Specification Sections.

B. Provide temporary and removable protection for installed products. Control activity in immediate Work area to prevent damage.

C. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.

D. Use durable sheet materials to protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects.

E. Prohibit traffic or storage upon waterproofed or roofed surfaces. When traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.

F. Prohibit traffic from landscaped areas.

1.7 STARTING OF SYSTEMS

A. Coordinate schedule for startup of various equipment and systems.

B. Notify Architect and Owner seven days prior to startup of each item.

C. Verify that each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, and for conditions that may cause damage.

D. Verify that tests, meter readings, and electrical characteristics agree with those required by equipment or system manufacturer.

E. Verify that wiring and support components for equipment are complete and tested.

F. Execute startup under supervision of manufacturer's representative or Contractors' personnel according to manufacturer's instructions.

G. When specified in individual Specification Sections, require manufacturer to provide authorized representative who will be present at Site to inspect, check, and approve equipment or system installation prior to startup and will supervise placing equipment or system in operation.

H. Submit a written report in accordance with Section 013300 - Submittal Procedures stating that equipment or system has been properly installed and is functioning correctly.

1.8 DEMONSTRATION AND INSTRUCTION

A. Demonstrate operation and maintenance of products to Owner's personnel prior to date of Substantial Completion.

1.9 TESTING, ADJUSTING, AND BALANCING

A. Owner will appoint, employ, and pay for services of independent firm to perform testing, adjusting, and balancing as needed.

1.10 CLOSEOUT PROCEDURES

A. Prerequisites to Substantial Completion: Complete following items before requesting Certification of Substantial Completion, either for entire Work or for portions of Work:
   1. Complete startup, of systems and equipment, demonstrations to Owner's operating and maintenance personnel as specified in compliance with this Section.
   2. Conduct inspection to establish basis for request that Work is substantially complete.
   3. Obtain and submit releases enabling Owner's occupancy of impacted spaces in the buidling and access to services and utilities. Include certificate of occupancy, operating certificates, or similar releases from authorities having jurisdiction or utility companies.

B. Substantial Completion Inspection:

   1. When Contractor considers Work to be substantially complete, submit to Architect:

      a. Written certificate that Work, or designated portion, is substantially complete.
      b. List of items to be completed or corrected (initial punch list).

   2. Within seven days after receipt of request for Substantial Completion, Architect will make inspection to determine whether Work or designated portion is substantially complete.
   3. Should Architect determine that Work is not substantially complete:

      a. Architect will promptly notify Contractor in writing, stating reasons for its opinion.
      b. Contractor shall remedy deficiencies in Work and send second written request for Substantial Completion to Architect.
      c. Architect will reinspect Work.
      d. Redo and Inspection of Deficient Work: Repeated until Work passes Architect inspection.

   4. After Work is substantially complete, Contractor shall:

      a. Allow Owner occupancy of Project under provisions stated in specifications.
      b. Complete Work listed for completion or correction within time period stipulated.

   5. Owner will occupy portions of building as specified in Section 011000 - Summary.

C. Prerequisites for Final Completion: Complete following items before requesting final acceptance and final payment.

   1. When Contractor considers Work to be complete, submit written certification that:

      a. Contract Documents have been reviewed.
      b. Work has been examined for compliance with Contract Documents.
      c. Work has been completed according to Contract Documents.
      d. Work is completed and ready for final inspection.

   2. Submittals: Submit following:
      a. Final payment request with final releases and supporting documentation not previously submitted and accepted. Include certificates of insurance for products and completed operations where required.

b. Specified warranties, workmanship bonds, maintenance agreements, and other similar documents.
c. Accounting statement for final changes to Contract Sum.
d. Contractor's affidavit of payment of debts and claims.
e. Contractor affidavit of release of liens.
f. Consent of surety to final payment.

3. Perform final cleaning for Contractor-soiled areas according to this Section.

D. Final Completion Inspection:

1. Within seven days after receipt of request for final inspection, Architect will make inspection to determine whether Work or designated portion is complete.
2. Should Architect consider Work to be incomplete or defective:

a. Architect will promptly notify Contractor in writing, listing incomplete or defective Work.
b. Contractor shall remedy stated deficiencies and send second written request to Architect that Work is complete.
c. Architect will reinspect Work.
d. Redo and Inspection of Deficient Work: Repeated until Work passes Architect inspection.

1.11 PROJECT RECORD DOCUMENTS

A. Maintain on Site one set of the following record documents; record actual revisions to the Work:

1. Drawings.
2. Specifications.
3. Addenda.
4. Change Orders and other modifications to the Contract.
5. Reviewed Shop Drawings, product data, and Samples.
6. Manufacturer's instruction for assembly, installation, and adjusting.

B. Ensure entries are complete and accurate, enabling future reference by Owner.

C. Store record documents separate from documents used for construction.

D. Record information concurrent with construction progress, not less than weekly.

E. Specifications: Legibly mark and record, at each product Section, description of actual products installed, including the following:

1. Manufacturer's name and product model and number.
2. Product substitutions or alternates used.
3. Changes made by Addenda, bulletin, Change Order, and modifications.

F. Record Drawings and Shop Drawings: Legibly mark each item to record actual construction as follows:

1. Include Contract modifications such as Addenda, supplementary instructions, change directives, field orders, minor changes in the Work, and change orders.
2. Include locations of concealed elements of the Work.
3. Identify and locate existing buried or concealed items encountered during Project.
4. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
5. Field changes of dimension and detail.
6. Details not on original Drawings.

G. Submit PDF electronic files of marked-up documents to Architect before Substantial Completion.

1.12 OPERATION AND MAINTENANCE DATA

A. Submit in PDF composite electronic indexed file.

1.13 SPARE PARTS AND MAINTENANCE PRODUCTS

A. Furnish spare parts, maintenance, and extra products in quantities specified in individual Specification Sections.

B. Deliver to Project Site and place in location as directed by Owner; obtain receipt prior to final payment.

1.14 PRODUCT WARRANTIES AND PRODUCT BONDS

A. Obtain warranties and bonds executed in duplicate by responsible Subcontractors, suppliers, and manufacturers within ten days after completion of applicable item of Work.

B. Execute and assemble transferable warranty documents and bonds from Subcontractors, suppliers, and manufacturers.

C. Verify documents are in proper form, contain full information, and are notarized.

D. Co-execute submittals when required.

E. Submit prior to final Application for Payment.

F. Time of Submittals:
1. Make submittals within ten days after date of Completion and prior to final Application for Payment.
2. For items of Work for which acceptance is delayed, submit within ten days after acceptance, listing date of acceptance as beginning of warranty or bond period.

1.15 FINAL CLEANING

A. Execute final cleaning prior to final Project assessment.

1. Employ experienced personnel or professional cleaning firm.

B. Clean equipment and fixtures used to sanitary condition with appropriate cleaning materials.

C. Replace filters of operating equipment.

D. Clean debris from roofs, gutters, downspouts, and drainage systems.

E. Clean Site; sweep paved areas, rake clean and run magnet over all landscaped surfaces.

F. Remove waste and surplus materials, rubbish, and construction facilities from Site.

PART 2 - PRODUCTS - Not Used

PART 3 - EXECUTION - Not Used

END OF SECTION

SECTION 07 01 50

MAINTENANCE OF MEMBRANE ROOFING

PART 1 GENERAL

1.1 SUMMARY

A. Section includes removal of existing roofing and OSB decking in preparation for new roof membrane system.

B. Related Sections:
1. Section 07 54 03 – Sheet Membrane Roofing - Fully Adhered.
2. Section 07 62 00 - Sheet Metal Flashing and Trim.

1.2 REFERENCES

A. ASTM International:
1. ASTM C208 - Standard Specification for Cellulosic Fiber Insulating Board.

1.3 SYSTEM DESCRIPTION

A. Entire Roof Area: Remove existing edge flashings, counter flashings, vent stack flashings, roofing membrane, and OSB decking.

1.4 SUBMITTALS

A. Section 01 33 00 - Submittal Procedures: Submittal procedures.

1.5 QUALIFICATIONS

A. Materials Removal Firm: same Company performing work of section 07 53 03.

1.6 ENVIRONMENTAL REQUIREMENTS

A. Section 01 60 00 - Product Requirements.

B. Do not remove existing roofing membrane when weather conditions threaten integrity of building contents or intended continued occupancy.

C. Maintain continuous temporary protection prior to and during installation of new roofing system to keep building weather tight.

1.7 SCHEDULING

A. Section 01 30 00 - Administrative Requirements: Coordination and project conditions.

B. Schedule Work to coincide with commencement of installation of new roofing system.

1.8 COORDINATION

A. Section 01 30 00 - Administrative Requirements: Coordination and project conditions.

B. Remove only existing roofing materials being replaced with new materials same day and as weather will permit.

C. Coordinate Work with other affected mechanical and electrical work associated with roof penetrations.

PART 2 PRODUCTS

2.1 COMPONENTS

A. Temporary Protection: Sheet polyethylene; furnish weights to retain sheeting in position.

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01 30 00 - Administrative Requirements: Coordination and project conditions.

B. Verify existing roof surface is clear and ready for work of this section.

3.2 PREPARATION

A. Sweep roof surface clean of loose matter.

B. Remove loose refuse and dispose off site.

3.3 EXISTING CONSTRUCTION

A. Remove metal counter flashings.

B. Remove roofing membrane, perimeter base flashings, flashings around roof protrusions.

C. Remove coverboard.

D. Verify number of layers of existing roof surface. Drawings indicate requirements for two (2) or more layers which requires removal to roof deck and proposed system installation.

E. If two (2) or more layers are present, remove roofing system to existing roof deck.

3.4 PROTECTION OF INSTALLED CONSTRUCTION

A. Section 01 70 00 - Execution and Closeout Requirements: Protecting installed construction.

B. Install temporary protective sheeting over uncovered deck surfaces.

C. Turn sheeting up and over parapets and curbing. Secure sheeting in position.

D. Provide for surface drainage from sheeting to existing drainage facilities.

E. Do not permit traffic over unprotected or repaired deck surface.

END OF SECTION

SECTION 07 54 03

SHEET MEMBRANE ROOFING - FULLY ADHERED

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Sheathing over metal deck surface and vapor retarder.
2. Insulation.
3. Base flashings.
4. Sheet membrane roofing.
5. Expansion joints.
6. Counterflashings.

B. Related Requirements:

1. Section 053123 - Steel Roof Decking
2. Section 061053 – Miscellaneous Rough Carpentry: Wood nailers.
3. Section 070150 – Maintenance of Membrane Roofing
4. Section 076200 - Sheet Metal Flashing and Trim: Counterflashing.
5. Section 221400 - Facility Storm Drainage: Roof drains.

1.2 REFERENCE STANDARDS

A. ASTM International:

1. ASTM C177 - Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus.
2. ASTM C578 - Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation.
3. ASTM C1177 - Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing.
4. ASTM C1371 - Standard Test Method for Determination of Emittance of Materials Near Room Temperature Using Portable Emissometers.
5. ASTM C1549 - Standard Test Method for Determination of Solar Reflectance Near Ambient Temperature Using a Portable Solar Reflectometer.
6. ASTM D412 - Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers-Tension.
7. ASTM D624 - Standard Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers.
8. ASTM D746 - Standard Test Method for Brittleness Temperature of Plastics and Elastomers by Impact.
9. ASTM D822 - Standard Practice for Filtered Open-Flame Carbon-Arc Exposures of Paint and Related Coatings.

10. ASTM D1004 - Standard Test Method for Tear Resistance (Graves Tear) of Plastic Film and Sheeting.
11. ASTM D4637 - Standard Specification for EPDM Sheet Used in Single-Ply Roof Membrane.
12. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
13. ASTM E96 - Standard Test Methods for Water Vapor Transmission of Materials.
14. ASTM E108 - Standard Test Methods for Fire Tests of Roof Coverings.
15. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials.
16. ASTM E408 - Standard Test Methods for Total Normal Emittance of Surfaces Using Inspection-Meter Techniques.
17. ASTM E903 - Standard Test Method for Solar Absorptance, Reflectance, and Transmittance of Materials Using Integrating Spheres.
18. ASTM E1980 - Standard Practice for Calculating Solar Reflectance Index of Horizontal and Low-Sloped Opaque Surfaces.

B. National Roofing Contractors Association:

1. NRCA - The NRCA Roofing and Waterproofing Manual.

C. Single Ply Roofing Institute:

1. SPRI ES-1 - Wind Design Standard for Edge Systems Used with Low Slope Roofing Systems.

D. UL:

1. UL - Fire Resistance Directory.
2. UL 790 - Standard Test Methods for Fire Tests of Roof Coverings.
3. UL 1256 - Fire Test of Roof Deck Constructions.
4. UL 1897 - Uplift Tests for Roof Covering Systems.

1.3 COORDINATION

A. Section 013000 – Administrative Requirements: Coordination and project conditions.

B. Coordinate Work of this Section with installation of associated roof penetrations and metal flashings, as Work of this section proceeds.

1.4 SYSTEM DESCRIPTION

A. Sheet Membrane Roofing System: One ply membrane system with insulation and adhesive applied membrane finish.

1.5 DESIGN REQUIREMENTS

A. Low Slope Membrane Roof Edge Securement: Conform to SPRI ES-1 for wind speeds determined from applicable code.

B. Vapor barrier, insulation, membrane, and adhesives from a single manufacturer, designed as a complete system, over an approved substrate, for a 30-year manufacturer warranty.

1.6 PREINSTALLATION MEETINGS

A. Convene minimum one week prior to commencing Work of this Section.

B. Review preparation and installation procedures and coordinating and scheduling of related Work.

1.7 SUBMITTALS

A. Section 013300 – Submittal Procedures: Submittal procedures.

B. Product Data: Submit characteristics of membrane materials, adhesives, seaming materials, flashing materials, insulation, vapor retarders, etc.

C. Shop Drawings: Indicate setting plan for tapered insulation, joint and termination detail conditions, conditions of interface with other materials. Indicated membrane layout and seam locations.

D. Samples: Submit (2) two, 6x6 inch in size illustrating insulation, adhesive, and membrane.

E. Manufacturer’s Installation Instructions: Submit special precautions required for seaming.

F. Manufacturer's Field Reports: Indicate procedures followed; ambient temperatures, humidity, wind velocity during application, and items requiring correction.
   1. Intermediate inspection and final inspection by manufacturer’s field inspector.
   2. Submit manufacturer’s report to Owner and Architect within 48 hours of inspection.

1.8 QUALITY ASSURANCE

A. Perform Work in accordance with NRCA Roofing and Waterproofing Manual.

B. Surface Burning Characteristics:
   1. Foam Insulation: Maximum 75/450 flame spread/smoke developed index when tested in accordance with ASTM E84.
   2. Apply label from agency approved by authority having jurisdiction to identify each roof assembly component.

C. Roof Maintenance and Service Agreement: Provide inspection and maintenance on two occasions within the first year: one after the spring melt and the second after one summer and prior to the next school year, as follows:
   1. Inspection shall be performed by the manufacturer’s authorized field inspector with observation by the Owner’s representative.
   2. Inspect the entire roof area for damage that may have resulted from foreign debris or human activity.
   3. Inspect entire membrane to verify there are no gaps or voids between the membrane and substrate.

4. Verify no lifting has occurred in the system, either from wind uplift, adhesive failure in the system, or other cause.
5. Remove debris that may have accumulated to ensure positive roof drainage and to avoid roof membrane damage.
6. Inspect and clean all roof drains, overflow drains, and scupper drains to ensure a free flow of rain water and snow melt.
7. Inspect field seams, roof curbs, and roof penetrations. Verify no voids have developed at seams.
8. Inspect sheet metal flashings and counter flashings at copings, gutters collector boxes, and downspouts.
9. Verify equipment access doors and covers are installed and secured.
10. Submit a written report to the building owner detailing the current roof condition, evidence of any roof abuse, and any problems that could potentially lead to future roof problems.

1.9 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum seven years' documented experience.

B. Applicator: Company specializing in performing Work of this Section with minimum seven years' documented experience, trained and approved by manufacturer.

1.10 PRE-INSTALLATION MEETINGS

A. General Contractor shall convene minimum one week prior to commencing Work of this section.

B. Review preparation and installation procedures and coordinating and scheduling required with related Work. Review roof system.

C. Require attendance of Owner’s representative, architect, roofing installer, and roofing manufacturer’s authorized representative.

1.11 DELIVERY, STORAGE, AND HANDLING

A. Section 016000 – Product Requirements: Requirements for transporting, handling, storing, and protecting products.

B. Inspection: Accept materials on Site in manufacturer's original packaging and inspect for damage.

C. Deliver products in manufacturer's original containers, dry, undamaged, and with seals and labels intact.

D. Store products in weather protected environment, clear of ground and moisture.

E. Protect foam insulation from direct exposure to sunlight.

1.12 ENVIRONMENTAL REQUIREMENTS

A. Section 016000 – Product Requirements: Environmental conditions affecting product on site.

B. Do not apply roofing membrane during inclement weather ambient temperatures below or above acceptable temperature range.

C. Do not apply roofing membrane to damp or frozen deck surface or when precipitation is expected or occurring.

D. Do not expose materials vulnerable to water or sun damage in quantities greater than can be weatherproofed during same day.

1.13 WARRANTY

A. Section 017000 – Execution and Closeout Requirements: Requirements for warranties.

B. Furnish 30 year manufacturer's warranty including coverage of materials and installation and damage resulting from failure to resist penetration of moisture.

PART 2 - PRODUCTS

2.1 DESCRIPTION

A. Sheet Membrane Roofing System: One-ply sheet membrane system with sheathing, vapor retarder, insulation, and adhesive-applied membrane.
   1. Manufacturers:
      a. Carlisle Roofing Systems.
      b. Holcim Elevate Rubbergard EPDM.
      c. Versico Roofing Systems.
      d. Duro-last Roofing Systems.

      e. Substitutions: Section 016000 - Product Requirements.

2.2 COMPONENTS

A. Membrane: ASTM D4637; Type I EPDM (or PVC equivalent); non-reinforced, .090 inch thick; conforming to the following criteria:

Properties	Test	Results
Tensile Strength	ASTM D412	1425 psi
Elongation	ASTM D412	450%
Hardness - Shore A	ASTM D-2240	62
Tear Strength	ASTM D624	200 lbf/in
Water Absorption	ASTM D-471	+1.73
Water Vapor Permeance (perms)	ASTM E96/E96M	+1.93
Low Temperature Brittleness	ASTM D746	-63 d F

B. Seaming Materials: As recommended by membrane manufacturer.

C. Insulation: ASTM C1289, Type II, Class I, faced rigid cellular polyisocyanurate roof insulation, with the following characteristics:
   1. Board Density: 2.0 lb/cu ft.
   2. Board Thickness: as required.
   3. Board Edges: square.
   4. Facing: glass reinforced mat facer, both sides.
   5. Long Term Thermal Resistance: R factor specified, as determined by ASTM C177.
   6. Compressive Strength: Minimum 20 psi.

D. Flexible Flashings: Same material as membrane.

E. Counterflashings: Aluminum metal, as specified in Section 076200.

F. Insulation Adhesive: two-component, low-rise polyurethane, similar to I.S.O.Stick Insulation Adhesive.

2.3 ACCESSORIES

A. Insulation Fasteners: Appropriate for purpose intended and approved by system manufacturer; length required for thickness of material with metal washers; length as required to secure insulation in place with minimum projection below structural deck allowed by system manufacturer.

B. Insulation Joint Tape: Asphalt treated glass fiber reinforced; 6 inches wide; self adhering.

C. Sealants: As recommended by membrane manufacturer.

D. Strip Reglet Devices: Galvanized steel; maximum possible lengths, with attachment flanges.

E. Walkway Pads: by roofing manufacturer. 8’ wide continuous where shown on drawings.

F. Stack Boots: Flexible boot and collar for pipe stacks through membrane.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Section 013000 - Administrative Requirements: Coordination and project conditions.

B. Verify surfaces and site conditions are ready to receive Work.

C. Verify deck is supported and secure.

D. Verify deck is clean and smooth, free of depressions, waves, or projections, properly sloped to drains, and suitable for installation of roof system.

E. Verify deck surfaces are dry and free of snow or ice.

F. Confirm dry deck by moisture meter with moisture content acceptable to roofing manufacturer.

G. Verify roof openings, curbs, pipes, sleeves, ducts, and vents through roof are solidly set, and cant strips and reglets are in place.

3.2 INSTALLATION

A. Insulation Application:
1. Ensure vapor retarder is clean and dry.
2. Mechanically fasten insulation to deck.
3. Apply adhesive to top surface of insulation. Embed second layer of insulation into adhesive, with joints staggered minimum 6 inch from joints of first layer.
4. Place two constant thickness layers with joints staggered and tapered thickness insulation layer to required slope pattern.
5. Minimum Total Insulation Thickness: as required to achieve minimum aged insulation R-Value specified.
6. Place boards perpendicular to deck flutes with edges over flute surface for bearing support.
7. Lay boards with edges in moderate contact without forcing. Cut insulation to fit neatly to perimeter blocking and around penetrations through roof.
8. Lay tapered boards for distance of 24 inches back from roof drains for positive drainage.
9. Apply no more insulation than can be covered with membrane in same day.
10. Tape joints of insulation.

B. Membrane Application:
1. Apply adhesive at manufacturer’s recommended rate.
2. Roll out membrane, free from air pockets, wrinkles, or tears. Firmly press sheet into place without stretching.
3. Bond sheet to substrate except those areas directly over or within 3 inches of control or expansion joint.
4. Overlap edges and ends and seal by contact tape, minimum 6 inches. Seal permanently waterproof.
5. Shingle joints on sloped substrate in direction of drainage. Apply joint tape and seal.
6. Extend membrane up cant strips minimum of 6 inches onto vertical surfaces.
7. Seal membrane around roof penetrations.

C. Flashings And Accessories:
1. Apply flexible flashings to seal membrane to vertical elements.
2. Coordinate installation of roof drains and related flashings.
3. Seal flashings and flanges of items penetrating membrane.
4. Install walkway pads.

3.3 FIELD QUALITY CONTROL

A. Section 014000 - Quality Requirements: Field inspecting, testing, adjusting, and balancing.

B. Require site attendance of roofing materials' manufacturer’s field inspector on a minimum of two occasions during installation of the Work and at final inspection. Reinspect as necessary to confirm that all repairs have been completed to specifications.

3.4 CLEANING

A. Section 017000 - Execution and Closeout Requirements: Final cleaning.

B. In areas where finished surfaces are soiled by Work of this section, consult manufacturer of surfaces for cleaning advice and conform to their documented instructions.

C. Repair or replace defaced or disfigured finishes caused by Work of this section.

3.5 PROTECTION OF INSTALLED CONSTRUCTION

A. Section 017000 - Execution and Closeout Requirements: Protecting installed construction.

B. Protect building surfaces against damage from roofing Work.

C. Where traffic must continue over finished roof membrane, protect surfaces.

END OF SECTION

SECTION 076200

SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
1. Flashings and counter flashings and fabricated sheet metal items.

1.2 REFERENCE STANDARDS

A. American Architectural Manufacturers Association:
1. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum.
2. AAMA 2603 - Voluntary Specification, Performance Requirements and Test Procedures for Pigmented Organic Coatings on Aluminum Extrusions and Panels.
3. AAMA 2604 - Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels.
4. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels.

B. ASTM International:
1. ASTM A240/A240M - Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications.
2. ASTM A625/A625M - Standard Specification for Tin Mill Products, Black Plate, Single-Reduced.
3. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
4. ASTM A755/A755M - Standard Specification for Steel Sheet, Metallic Coated by the Hot-Dip Process and Prepainted by the Coil-Coating Process for Exterior Exposed Building Products.
5. ASTM B101 - Standard Specification for Lead-Coated Copper Sheet and Strip for Building Construction.
6. ASTM B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
7. ASTM D226/D226M - Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing.
8. ASTM D4397 - Standard Specification for Polyethylene Sheeting for Construction, Industrial, and Agricultural Applications.
9. ASTM D4586/D4586M - Standard Specification for Asphalt Roof Cement, Asbestos-Free.

C. Federal Specification Unit:
1. FS TT-C-494 - Coating Compound, Bituminous, Solvent Type, Acid Resistant.

D. National Roofing Contractors Association:

1. NRCA - Construction Details Manual.

E. Sheet Metal and Air Conditioning Contractors' National Association:
1. SMACNA - Architectural Sheet Metal Manual.

1.3 SUBMITTALS

A. Section 013300 - Submittal Procedures: Requirements for submittals.

B. Product Data: Submit manufacturer information regarding components metal types, finishes, and characteristics.

C. Shop Drawings: Indicate material profile, jointing pattern, jointing details, fastening methods, flashings, terminations, and installation details.

D. Samples:
1. Submit one sample, illustrating typical profile, material and finish.
2. Submit two samples, 2 by 2 inches in size, illustrating metal finish color.
3. Submit qualifications for fabricator and installer.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Section 016000 – Product Requirements: Requirements for transporting, handling, storing, and protecting products.

B. Inspection: Accept materials on Site in manufacturer’s original packaging and inspect for damage.

C. Storage:
1. Store materials according to manufacturer instructions.
2. Stack material to prevent twisting, bending, and abrasion, and to provide ventilation.
3. Slope metal sheets to ensure drainage.

D. Protection:
1. Protect materials from moisture and dust by storing in clean, dry location remote from construction operations areas.
2. Prevent contact with materials that may cause discoloration or staining.
3. Provide additional protection according to manufacturer instructions.

PART 2 - PRODUCTS

2.1 SHEET METAL FLASHING AND TRIM

A. Manufacturers:
1. Metal-Era Inc..
2. Substitutions: As specified in Section 016000 - Product Requirements.

2.2 FABRICATION

A. Form section shapes as indicated on Drawings, accurate in size, square, and free from distortion or defects.

B. Fabricate cleats of same material as sheet metal, interlocking with sheet.

C. Form pieces in longest possible lengths.

D. Hem exposed edges on underside 1/2 inch.

E. Miter and seam corners.

F. Forming:
1. Form material with flat lock seams, except where otherwise indicated.
2. At moving joints, use sealed, lapped, bayonet-type, or interlocking hooked seams.

G. Corners:
1. Fabricate corners from one piece with minimum 18-inch long legs.
2. Seam for rigidity and seal with sealant.

H. Fabricate vertical faces with bottom edge formed outward 1/4 inch and hemmed to form drip.

I. Fabricate accessories in profile and size to suit gutters and downspouts, as follows:
1. Anchorage Devices: Comply with SMACNA requirements Type as recommended by fabricator.

J. Seal metal joints.

2.3 FINISHES

A. Fluoropolymer Coating:
1. Description: Multiple coats as specified for sheet metal system and thermally cured.
2. Comply with AAMA 2604.

B. Washcoat: Finish concealed side of metal sheets with washcoat compatible with finish system, as recommended by finish system manufacturer.

2.4 ACCESSORIES

A. Fasteners: Same material and finish as flashing metal, with soft neoprene washers.

B. Sealant: Type as specified in Section 079000 - Joint Protection.

C. Plastic Cement: Comply with ASTM D4586/D4586M, Type I.

D. Reglets:
1. Type: As shown on drawings.
2. Material: Galvanized steel.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Section 017000 - Execution and Closeout Requirements: Requirements for installation examination.

B. Verify that roof openings, curbs, pipes, sleeves, ducts, and vents through roof are solidly set, reglets are in place, and nailing strips have been located.

C. Verify that roofing termination and base flashings are in place, sealed, and secure.

3.2 PREPARATION

A. Install starter strips, edge strips, and cleats before starting installation of sheet metal flashing and trim.

B. Reglets:
   1. Install surface-mounted reglets to lines and levels as indicated on Drawings.
   2. Seal top of reglets with sealant.

C. Paint concealed metal surfaces with protective backing paint to minimum dry film thickness of 15 mils.

3.3 INSTALLATION

A. Insert flashings into reglets to form tight fit.

B. Secure flashings in place using concealed fasteners.

C. Apply plastic cement compound between metal flashings and felt flashings.

D. Fit flashings tight in place, and make corners square, surfaces true and straight in planes, and lines accurate to profiles.

E. Seal metal joints watertight.

END OF SECTION

SECTION 07 90 00

JOINT PROTECTION

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Sealants and joint backing.
   2. Accessories.

B. Related Requirements:
   1. Section 04 20 19 – Veneer Unit Masonry
   2. Section 072726 – Fluid-Applied Membrane Air Barriers: Sealants required in conjunction with air barriers.
   3. Section 078400 - Firestopping: Firestopping sealants.
   4. Section 088000 - Glazing: Glazing sealants and accessories.

1.2 REFERENCE STANDARDS

A. ASTM International:
   1. ASTM C834 - Standard Specification for Latex Sealants.
   2. ASTM C919 - Standard Practice for Use of Sealants in Acoustical Applications.
   3. ASTM C920 - Standard Specification for Elastomeric Joint Sealants.
   4. ASTM C1193 - Standard Guide for Use of Joint Sealants.
   5. ASTM D1056 - Standard Specification for Flexible Cellular Materials - Sponge or Expanded Rubber.
   6. ASTM D1667 - Standard Specification for Flexible Cellular Materials - Poly(Vinyl Chloride) Foam (Closed-Cell).
   7. ASTM D2628 - Standard Specification for Preformed Polychloroprene Elastomeric Joint Seals for Concrete Pavements.

B. California Department of Health Services:
   1. CA/DHS/EHLB/R-174 - Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers.

C. South Coast Air Quality Management District:
   1. SCAQMD Rule 1168 - Adhesive and Sealant Applications.

1.3 COORDINATION

A. Section 013000 - Administrative Requirements: Requirements for coordination.

B. Coordinate Work of this Section with Sections referencing this Section.

1.4 SUBMITTALS

A. Section 013300 - Submittal Procedures: Requirements for submittals.

B. Product Data: Submit manufacturer information indicating sealant chemical characteristics, performance criteria, substrate preparation, limitations, and color availability.

C. Samples: Submit two samples, 2 by 2 inches in size, illustrating sealant colors for selection.

D. Manufacturer Instructions: Submit special procedures, surface preparation requirements, and perimeter conditions requiring special attention.
   1. Warranty: Include coverage for installed sealants and accessories failing to achieve seal, exhibit loss of adhesion or cohesion, and sealants which do not cure.

1.5 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum three years' documented experience.

B. Applicator: Company specializing in performing Work of this Section with minimum three years' documented experience.

1.6 MOCKUPS

A. Section 014000 - Quality Requirements: Requirements for mockup.

B. Construct mockup of sealant joints in conjunction with window and wall mockups as specified in other Sections.

C. Construct mockup with specified sealant types and with other components as indicated.

D. Preparation and Priming:
   1. Determine requirements based on manufacturer recommendations.
   2. Correct failure of sealant tests on mockup if required.

E. Verify that sealants, primers, and other components do not stain adjacent materials.

F. Locate where directed by Architect/Engineer.

G. Incorporate accepted mockup as part of Work.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Section 016000 - Product Requirements: Requirements for transporting, handling, storing, and protecting products.

B. Inspection: Accept materials on Site in manufacturer's original packaging and inspect for damage.

C. Store products according to manufacturer instructions.

D. Protection:
1. Protect materials from moisture and dust by storing in clean, dry location remote from construction operations areas.
2. Provide additional protection according to manufacturer instructions.

1.8 AMBIENT CONDITIONS

A. Section 015000 - Temporary Facilities and Controls: Requirements for ambient condition control facilities for product storage and installation.

B. Maintain temperature and humidity as recommended by sealant manufacturer during and after installation.

1.9 WARRANTY

A. Section 017000 - Execution and Closeout Requirements: Requirements for warranties.

B. Furnish two-year installer's warranty.

C. Include coverage for:
1. Installed sealants and accessories failing to achieve airtight and watertight seal.
2. Installed sealants and accessories exhibiting loss of adhesion or cohesion.
3. Sealants that do not cure.

PART 2 - PRODUCTS

2.1 JOINT SEALERS

A. Manufacturers:
1. Dow Corning Corp.
2. GE Silicones
3. Pecora Corp.
4. Sika Corp.
5. Tremco Sealants & Waterproofing
6. Substitutions: As specified in Section 016000 - Product Requirements.

2.2 JOINT SEALERS BY APPLICATION

A. High-Performance General-Purpose Exterior (Nontraffic) Sealant:
1. Material: Silicone.
2. Comply with ASTM C920, Grade NS, Class 25, Uses M, G, and A.
3. Type: Single-component.
4. Color: Standard; match finished surfaces.
5. Applications:

a. Control, expansion, and soft joints in masonry.
b. Joints between concrete and other materials.
c. Joints between metal frames and other materials.
d. Other exterior nontraffic joints for which no other sealant is indicated.

B. General-Purpose Exterior (Nontraffic) Sealant:
1. Description: Acrylic; solvent-release curing.
2. Comply with ASTM C920, Grade NS, Class 12-1/2, Uses M, G, and A.
3. Type: Single- or multiple-component.
4. Color: Standard; match finished surfaces.
5. Applications:
a. Control, expansion, and soft joints in masonry.
b. Joints between concrete and other materials.
c. Joints between metal frames and other materials.
d. Other exterior nontraffic joints for which no other sealant is indicated.

C. General-Purpose Traffic-Bearing Sealant:
1. Material: Polyurethane.
2. Comply with ASTM C920, Grade P, Class 25, Use T.
3. Type: Single- or multiple-component.
4. Color: Standard; match finished surfaces.
5. Applications: Exterior and interior pedestrian and vehicular traffic-bearing joints.

D. Exterior Compressible Gasket Expansion Joint Sealer:
1. Description: Hollow neoprene (polychloroprene) compression gasket.
2. Comply with ASTM D2628.
3. Color: Black.
4. Size and Shape: As indicated on Drawings.
5. Applications: Exterior wall expansion joints.

E. Exterior Metal Lap Joint Sealant:
1. Material: Butyl or polyisobutylene.
2. Type: Non-drying, non-skinning, non-curing.
3. Applications: Concealed sealant bead in sheet metalwork and siding overlaps.

F. General Purpose Interior Sealant:
1. Material: Acrylic-emulsion latex.
2. Comply with ASTM C834.
3. Type: Single-component; paintable.
4. Color: Standard; match finished surfaces.
5. Applications:
a. Interior wall and ceiling control joints.
b. Joints between door and window frames and wall surfaces.
c. Other interior joints for which no other type of sealant is indicated.

G. Sanitary Sealant:
1. Material: Silicone.
2. Comply with ASTM C920, Uses M and A.
3. Type: Single-component; mildew resistant.
4. Color: Clear.
5. Applications:

a. Joints between plumbing fixtures and floor and wall surfaces.
b. Joints between countertops and wall surfaces.

H. Acoustical Sealant:
1. Material: Butyl or acrylic.
2. Comply with ASTM C920, Grade NS, Class 12-1/2, Uses M and A.
3. Type: Single-component; solvent-release curing; non-skinning.
4. Applications: Concealed locations only at acoustically rated construction.

2.3 JOINT SEALERS BY TYPE

A. Acrylic-Emulsion Latex Sealant:
1. Comply with ASTM C834.
2. Type: Single-component; non-staining, non-bleeding, non-sagging.
3. Color: Standard; match finished surfaces.
4. Movement Capability: 2 to 5 percent.
5. Service Temperature Range: 2 to 160 deg. F.
6. Hardness Range: Shore A, 15 to 40.

B. Acrylic Sealant:
1. Comply with ASTM C920, Grade NS, Class 12-1/2, Uses NT, M, A, and O.
2. Type: Single-component; solvent release curing; non-staining, non-bleeding, non-sagging.
3. Color: Standard; match finished surfaces.
4. Movement Capability: Plus and minus 12-1/2 percent.
5. Service Temperature Range: Minus 13 to plus 180 deg. F.
6. Hardness Range: Shore A, 25 to 50.

C. Butyl Sealant:
1. Comply with ASTM C920, Grade NS, Class 12-1/2, Use NT.
2. Type: Single-component; solvent release curing; non-skinning, non-sagging.
3. Color: As selected.
4. Movement Capability: Plus and minus 12-1/2 percent.
5. Service Temperature Range: Minus13 to plus 180 deg. F.
6. Hardness Range: Shore A, 10 to 30.

D. Silicone Sealant:
1. Comply with ASTM C920, Grade NS, Class 25, Uses NT and A.
2. Type: Single-component; neutral curing; non-sagging, non-staining, non-bleeding; fungus resistant.
3. Color: Standard, match finished surfaces Clear.
4. Movement Capability: Plus 40 percent, minus 25 percent.
5. Service Temperature Range: Minus 65 to plus 180 deg. F.
6. Hardness Range: Shore A, 15 to 35.

2.4 ACCESSORIES

A. Primer:
1. Type: Non-staining.

2. As recommended by sealant manufacturer to suit application.

B. Joint Cleaner:
1. Type: Non-corrosive and non-staining.
2. As recommended by sealant manufacturer.
3. Compatible with joint forming materials.

C. Joint Backing:
1. Description: Round foam rod, compatible with sealant.
2. Comply with ASTM D1056, sponge or expanded rubber D1667, closed-cell PVC.
3. Size: Oversized 30 to 50 percent larger than joint width.

D. Bond Breaker:
1. Description: Pressure-sensitive tape.
2. As recommended by sealant manufacturer to suit application.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Section 017000 - Execution and Closeout Requirements: Requirements for application examination.

B. Verify that substrate surfaces and joint openings are ready to receive Work of this Section.

C. Verify that joint backing and release tapes are compatible with sealant.

3.2 PREPARATION

A. Section 017000 - Execution and Closeout Requirements: Requirements for application preparation.

B. Comply with ASTM C1193.

C. Remove loose materials and foreign matter that could impair adhesion of sealant.

D. Clean and prime joints.

E. Protect elements surrounding Work of this Section from damage or disfiguration.

3.3 APPLICATION

A. Comply with ASTM C1193.

B. Acoustical Sealant:
1. Comply with ASTM C919.
2. Provide sealant bead between top stud runner and structure, and between bottom stud track and floor.

C. Measure joint dimensions and size joint backers to achieve width-to-depth ratio, neck dimension, and surface bond area as recommended by manufacturer, except where specific dimensions are indicated on Drawings.

D. Install bond breaker where joint backing is not used.

E. Apply sealant free of air pockets, foreign embedded matter, ridges, and sags.

F. Joint Tooling: Concave.

G. Compression Gaskets:
   1. Avoid joints except at ends, corners, and intersections.
   2. Seal joints with adhesive.
   3. Install with face 1/8 to 1/4 inch below adjoining surface.

3.4 CLEANING

A. Section 017000 - Execution and Closeout Requirements: Requirements for cleaning.

B. Clean adjacent soiled surfaces.

3.5 PROTECTION

A. Section 017000 - Execution and Closeout Requirements: Requirements for protecting finished Work.

B. Protect sealants until cured.

END OF SECTION