PROJECT MANUAL

PROJECT:

WYLIE ELEMENTARY SCHOOL - ROOFING
3060 Kensington Road
Dexter MI 48130

OWNER:

DEXTER COMMUNITY SCHOOL DISTRICT
2704 Baker Road
Dexter, MI 48130

TMP PROJECT NO.: 25023B

DATE: March 17, 2026

ISSUED FOR: CONSTRUCTION DOCUMENTS

ARCHITECT

TMP ARCHITECTURE, INC.
1191 West Square Lake Road
Bloomfield Hills, Michigan 48302-0374

PH (248) 338-4561
Email info@tmp-architecture.com

CONSTRUCTION MANAGER

GRANGER CONSTRUCTION COMPANY
1441 Brooklyne Street Suite 400
Detroit, MI 48226

PH (248) 724 2950

MECHANICAL CONSULTANT

PETER BASSO ASSOCIATES, INC.
5145 Livernois Road, Suite 100
Troy, MI 48098

PH (248) 879 5666
Email peterbassoassociates.com

Wylie Elementary School – Roofing

TMP 25023B

This Document has been prepared under the supervision of the Architect and/or Professional Engineer as indicated by their individual License Seals affixed hereon.

Professional License Seals

Seal

TMP Architecture, Inc.
Architect

TABLE OF CONTENTS

PROCUREMENT AND CONTRACTING REQUIREMENTS GROUP

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

SPECIFICATIONS GROUP

GENERAL REQUIREMENTS SUBGROUP

DIVISION 01 - GENERAL REQUIREMENTS

FACILITY CONSTRUCTION SUBGROUP

DIVISION 02 – EXISTING CONDITIONS

DIVISION 03 - CONCRETE

Not Used

DIVISION 04 - MASONRY

Not Used

DIVISION 05 - METALS

Not Used

DIVISION 06 – WOOD, PLASTICS, AND COMPOSITES

DIVISION 07 - THERMAL AND MOISTURE PROTECTION

DIVISION 08 - OPENINGS

Not Used

DIVISION 09 - FINISHES

Not Used

DIVISION 10 - SPECIALTIES

Not Used

DIVISION 11 - EQUIPMENT

Not Used

DIVISION 12 - FURNISHINGS

Not Used

DIVISION 13 - SPECIAL CONSTRUCTION

Not Used

DIVISION 14 - CONVEYING EQUIPMENT

Not Used

FACILITY SERVICES SUBGROUP

DIVISION 20 – COMMON MECHANICAL REQUIREMENTS

Not Used

DIVISION 21 – FIRE SUPPRESSION

Not Used

DIVISION 22 - PLUMBING

Not Used

DIVISION 23 – HEATING VENTILATING AND AIR CONDITIONING (HVAC)

Not Used

DIVISION 25 – INTEGRATED AUTOMATION

Not Used

DIVISION 26 – ELECTRICAL

Not Used

DIVISION 27 – COMMUNICATIONS

Not Used

DIVISION 28 – ELECTRONIC SAFETY AND SECURITY

Not Used

SITE AND INFRASTRUCTURE SUBGROUP

DIVISION 31 – EARTHWORK

Not Used

DIVISION 32 – EXTERIOR IMPROVEMENTS

Not Used

DIVISION 33 – UTILITIES

Not Used

END OF SECTION

SECTION 00 0115 - LIST OF DRAWINGS

LIST OF DRAWINGS

1.01 GENERAL

A. Drawings: Drawings consist of the Contract Drawings including drawings listed on the TITLE SHEET page of the separately bound drawing set titled Wylie Elementary School - Reroofing, dated March 17, 2026 and any subsequent Addenda and Contract modifications which may occur.

END OF SECTION 00 0115

SECTION 00 8200.01 - TMP ELECTRONIC FILE RELEASE FORM

.

RE: AUTHORIZATION FORM FOR CAD FILE TRANSFERS
PROJECT NAME: _____
TMP PROJECT NO. : _____ BID PACK NO._____

DEAR SIR/MADAM:

A. Per your request, TMP Architecture, Inc. will electronically transmit requested CAD files upon receipt of an original signed copy of this form which states the conditions of agreement and the receipt of the required compensation fee.
B. By acceptance it is understood and agreed that the data and medium being supplied is to be used only for the project referenced.
C. It is further understood and agreed that the undersigned will hold TMP Architecture, Inc. and its Consultants harmless and indemnify TMP Architecture, Inc. and its Consultants from all claims, liabilities, losses, and so forth, including attorney's fees arising out of the use or misuse of the transferred files.
D. It is understood and agreed that the items transmitted are prepared from CAD files current at the time of preparation. All files are [AutoCAD version 2018 dwg files].
E. This information does not waive the need to verify and review current field conditions and the status of Addenda and/or Bulletin documentation.
F. As a record of information to be transmitted, TMP Architecture, Inc. will prepare a duplicate electronic back-up for its record.
G. Compensation for providing this material will be as follows:
    1. Base Fee of [$250] for 1 to 3 Drawings.
    2. Base Fee of [$500] for 4 to 10 Drawings.
H. For each additional Drawing after 10 the fee is [$40] per Drawing.
I. Example: [11 drawings = $540].
J. Payment must be provided along with a signed copy of this form before files will be released. Please remit to [Construction Manager] to be forwarded to the Project Manager at TMP Architecture, Inc. and allow five working days for processing.

FEE: $_____
REQUESTED DRAWINGS: _____
_____
_____

FIRM REQUESTING FILES:

Company: _____
Address: _____
Signed:_____Date: _____
Printed Name / Title: _____
Email: _____

TO BE COMPLETED BY TMP ARCHITECTURE, INC.

Released(signed by): _____TMP Architecture, Inc.
Printed Name/Title:_____ Date: _____

END OF SECTION 00 8200.01

SECTION 00 8200 - AVAILABILITY OF ELECTRONIC FILES

AVAILABILITY OF ELECTRONIC FILES

1.01 POLICY

A. As a service to Contractor, subcontractors, vendors, material suppliers and others needing electronic copies of Drawings, the Architect will provide CAD files electronically in accordance with the following policy:

1. By acceptance it is understood and agreed that the data and medium being supplied is to be used only for the project referenced.
2. It is further understood and agreed that the undersigned will hold TMP Architecture, Inc. and its Consultants harmless and indemnify TMP Architecture, Inc. and its Consultants from all claims, liabilities, losses, and so forth, including attorney's fees arising out of the use or misuse of the transferred files.
3. It is understood and agreed that the files transmitted are prepared from CAD files current at the time of preparation. All files are AutoCAD version 2018 dwg files.
4. This information does not waive the need to verify and review current field conditions and the status of Addenda and/or Bulletin documentation.
5. As a record of information to be transmitted, TMP Architecture, Inc. will prepare a duplicate electronic back-up for its record.
6. Compensation Fee for providing this material will be as follows:
   a. Base Fee of $250 for 1 to 3 Drawings.
   b. Base Fee of $500 for 4 to 10 Drawings.
   c. For each additional Drawing after 10, the fee is $40 per Drawing.
      1) Example: 11 Drawings = $540.
7. A signed copy of the Release Form and Fee must be provided before files will be released.

1.02 REQUEST PROCEDURE

A. To receive Drawing CAD files the Release Form must be completed in full and submitted to the Construction Manager to be forwarded to the Project Manager at TMP Architecture, Inc.

1. A signed copy of the Release Form must be submitted.
   a. Faxed or emailed copies will be accepted.
2. Upon remittance of the signed Release Form and Fee, allow five working days for processing.
3. Transmission of Drawings will be provided electronically after the receipt of Fee.

1.03 RELEASE FORM

A. Release Form is located immediately after this Section. Refer to Section 00 8200.01 Electronic Files Release Form.

END OF SECTION 00 8200

SECTION 01 0005 - RELATED REQUIREMENTS

PART 1 GENERAL

1.01 DIVISION 00 AND DIVISION 01

A. Unless otherwise noted, all provisions of sections and documents in Division 00 and Division 01, including, but not limited to, General Conditions and Supplementary Conditions, relate and apply to all sections and documents within Project Manual; including, but not limited to, sections and documents in Division 00 through Division 48.

1.02 DRAWINGS

A. Unless otherwise noted, Drawings relate and apply to all specification sections and documents within Project Manual; including, but not limited to, sections and documents in Division 00 through Division 48.

PART 2 PRODUCTS -- NOT USED

PART 3 EXECUTION -- NOT USED

END OF SECTION 01 0005

SECTION 01 2500.01 - TMP SUBSTITUTION REQUEST FORM

SUBSTITUTION REQUEST NUMBER: _____ DATE SUBMITTED: _____
TMP PROJECT NUMBER : 25023B PROJECT NAME: WYLIE ELEMENTARY SCHOOL - REROOFING

SPECIFIED ITEM

SPECIFICATION TITLE:_____
SPECIFICATION SECTION_____SPECIFICATION ARTICLE/PARAGRAPH: _____
SPECIFIED PRODUCT / DESCRIPTION: _____
SPECIFIED MANUFACTURER: _____
SPECIFIED PRODUCT / MODEL: _____
REASON SPECIFIED ITEM CANNOT BE PROVIDED: _____
_____
_____

PROPOSED SUBSTITUTION

DESCRIPTION OF PROPOSED SUBSTITUTION: _____
_____
PROPOSED MANUFACTURER: _____
ADDRESS: _____
WEBSITE: _____
PRODUCT / MODEL: _____
YEARS PRODUCT/MODEL HAS BEEN MANUFACTURED: _____
DIFFERENCES BETWEEN PROPOSED SUBSTITUTION AND SPECIFIED ITEM: _____
_____
_____
_____
_____
WILL PROPOSED SUBSTITUTION AFFECT OTHER PARTS OF WORK? ☐ NO ☐ YES
IF YES, EXPLAIN HOW: _____
_____
_____
_____
HOW WILL SUBSTITUTION BENEFIT THE OWNER: ☐ COST SAVINGS ☐ TIME SAVINGS ☐ OTHER
PROVIDE SPECIFIC DETAILS: _____
_____
_____
_____

THE FOLLOWING INFORMATION IS REQUIRED; CHECK TO INDICATE INFORMATION IS ATTACHED. (REQUEST WILL BE REJECTED WITHOUT REQUIRED DATA)

32.01

A. ☐ List of references where proposed product has been installed; include address, owner, architect, and date installed.
B. ☐ Product data sheets.

C. ☐ Applicable certificates and test reports.
D. ☐ Comparative Data: Provide point-by-point, side-by-side comparison of specified product and proposed substitution addressing essential attributes specified.

INDICATE WHICH OF THE FOLLOWING VOLUNTARY INFORMATION IS ATTACHED, IF ANY:
☐ DRAWINGS.
☐ SAMPLES.
☐ OTHER ITEMS: _____

SIGNATURE

THE UNDERSIGNED CERTIFIES:

The proposed substitution meets or exceeds the quality level of the specified product, equipment, assembly, or system.
To provide the same warranty for the substitution as for the specified product.
Agrees to provide same or equivalent maintenance service and source of replacement parts, as applicable.
Agrees to coordinate installation and make changes to other work that may be required for the work to be complete, with no additional cost to Owner.
The proposed substitution will have no adverse effects on other work.
The proposed substitution will not affect project schedule.
Waives claims for additional costs or time extension that may subsequently become apparent.

CONTRACTOR / COMPANY: _____
SIGNED BY: _____PRINTED NAME: _____
TITLE: _____
ADDRESS: _____
EMAIL: _____ PHONE: _____

ARCHITECT'S RESPONSE

A. During bidding, Architect will approve substitution requests by issuing an Addendum. Substitutions not approved by addendum are rejected.
B. During construction, Architect will notify Contractor in writing (see below) of decision to accept or reject request, and incorporate the substitution into the project by Change Order, Construction Change Directive, Architectural Supplementary Instructions, or similar instruments as provided for in the Conditions of the Contract.

☐ SUBSTITUTION APPROVED - PROVIDE SUBMITTALS PER SECTION 01 3000 AND RESPECTIVE SECTION FOR WHICH SUBSTITUTION WAS MADE.
☐ SUBSTITUTION REJECTED - PROVIDE SPECIFIED MATERIALS.

SIGNED BY: _____PRINTED NAME: _____
ARCHITECT'S COMMENTS: _____
_____
_____

END OF SECTION 01 2500.01

SECTION 01 2500 - SUBSTITUTION PROCEDURES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Procedural requirements for proposed substitutions.

1.02 RELATED REQUIREMENTS

A. Section 01 2500.01 - TMP Substitution Request Form.

1.03 DEFINITIONS

A. Substitutions: Changes from Contract Documents requirements proposed by Contractor to materials, products, assemblies, and equipment.
   1. Substitutions for Cause: Proposed due to changed Project circumstances beyond Contractor's control.
   2. Substitutions for Convenience: Proposed due to possibility of offering substantial advantage to the Project.

B. Substitutions: Any proposed substitution to be evaluated by the Architect and accepted as stipulated below.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 GENERAL REQUIREMENTS

A. A Substitution Request for products, assemblies, materials, and equipment constitutes a representation that the submitter:
   1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product, equipment, assembly, or system.
   2. Agrees to provide the same warranty for the substitution as for the specified product.
   3. Agrees to provide same or equivalent maintenance service and source of replacement parts, as applicable.
   4. Agrees to coordinate installation and make changes to other work that may be required for the work to be complete, with no additional cost to Owner.
   5. Waives claims for additional costs or time extension that may subsequently become apparent.

B. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents. Burden of proof is on proposer.
   1. Note explicitly any non-compliant characteristics.

C. Content: Include information necessary for tracking the status of each Substitution Request, and information necessary to provide an actionable response.
   1. Forms included in the Project Manual are adequate for this purpose, and must be used.

D. Limit each request to a single proposed substitution item.
   1. Submit an electronic document, combining the request form with supporting data into single document.

3.02 SUBSTITUTION PROCEDURES DURING PROCUREMENT

A. Submittal Time Restrictions:

B. Substitution Request Form: TMP Substitution Request Form must be completed and provided at the beginning of each substitution request.
   1. Refer to Section 01 2500.01 - TMP Substitution Request Form.
   2. Submittals without a completed TMP Substitution Request Form will not be acknowledged, reviewed, or returned. Use only this form; other forms of submission are unacceptable.

C. Instructions to Bidders specifies time restrictions for submitting requests for substitutions during the bidding period.

3.03 SUBSTITUTION PROCEDURES DURING CONSTRUCTION

A. Substitution Request Form: TMP Substitution Request Form must be completed and provided at the beginning of each substitution request.
   1. Refer to Section 01 2500.01 - TMP Substitution Request Form.
   2. Submittals without a completed TMP Substitution Request Form will not be acknowledged, reviewed, or returned. Use only this form; other forms of submission are unacceptable.

B. Submit request for Substitution for Cause immediately upon discovery of need for substitution, but not later than 14 days prior to time required for review and approval by Architect, in order to stay on approved project schedule.

C. Submit request for Substitution for Convenience within 14 days of discovery of its potential advantage to the project, but not later than 14 days prior to time required for review and approval by Architect, in order to stay on approved project schedule.
   1. In addition to meeting general documentation requirements, document how the requested substitution benefits the Owner through cost savings, time savings, greater energy conservation, or in other specific ways.
   2. Document means of coordinating of substitution item with other portions of the work, including work by affected subcontractors.
   3. Bear the costs engendered by proposed substitution of:
      a. Owner's compensation to the Architect for any required redesign, time spent processing and evaluating the request.
      b. Other unanticipated project considerations.

D. Substitutions will not be considered under one or more of the following circumstances:
   1. When they are indicated or implied on shop drawing or product data submittals, without having received prior approval.
   2. Without a separate written request.

3.04 RESOLUTION

A. Architect may request additional information and documentation prior to rendering a decision. Provide this data in an expeditious manner.

B. Architect will notify Contractor in writing of decision to accept or reject request.
   1. During construction, Architect's decision following review of proposed substitution will be noted on the submitted form.
   2. During bidding, Architect will approve substitution requests by issuing an Addendum. Substitutions not approved by addendum are rejected.

3.05 ACCEPTANCE

A. Accepted substitutions change the work of the Project. They will be documented and incorporated into work of the project by Change Order, Construction Change Directive, Architectural Supplementary Instructions, or similar instruments provided for in the Conditions of the Contract.

3.06 CLOSEOUT ACTIVITIES

A. See Section 01 7800 - Closeout Submittals, for closeout submittals.

END OF SECTION 01 2500

SUBMITTAL AND SAMPLE TRANSMITTAL FORM

01 3000.01

CONST. MANAGER / CONTRACTOR	PROJECT	TMP PROJECT NO.	DATE SUBMITTED	SUBMITTAL NO.
Name and Address:	Title:	25023B		
	Wylie Elementary School Roofing	* ACTION CODES		Initial Submittal ☐
		R Reviewed – No Exceptions Taken		Resubmittal ☐
		RN Reviewed with Corrections Noted		
Email:	Location:	RR Revise and Resubmit		REVIEWED BY
		X Not Approved – Resubmit		TMP ☐
Phone:	3060 Kensington Road Dexter, MI 48130	NA No Action Taken – Not Reviewed		Consultant ☐
				Reviewer:

SPECIFICATION SECTION NO.	SUBCONTRACTOR / MANUFACTURER	ITEM DESCRIPTION	NO. OF SAMPLES	NO. OF SAMPLES RETURNED	ACTION CODE *	DATE REVIEWED	DATE RETURNED
Transmittal shall be for one specification section only; do not submit items from multiple sections under the same transmittal. Multi-section submittals will be returned; stamped "X - Not Approved - Resubmit"							

Submittal Stamps may be placed on subsequent blank page.

CONTRACTOR COMMENTS	ARCHITECT COMMENTS	
		The undersigned certifies that the above submitted items have been reviewed in detail and are correct and in strict conformance with the Contract Documents except as otherwise noted. NOTE: Approval of items submitted does not relieve Contractor from complying with all requirements of the Contract Documents.
		CONTRACTOR NAME
		SIGNATURE

This page intentionally left blank for Submittal Stamps

SECTION 01 3000 - ADMINISTRATIVE REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Submittals for review, information, and project closeout.
B. Number of copies of submittals.
C. Requests for Interpretation (RFI) procedures.
D. Submittal procedures.

1.02 RELATED REQUIREMENTS

A. Section 01 3000.01 - TMP Submittal and Sample Transmittal Form.

1.03 REFERENCE STANDARDS

A. AIA G716 - Request for Information; 2004.
B. CSI/CSC Form 13.2A - Request for Information; Current Edition.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 REQUESTS FOR INTERPRETATION (RFI)

A. Definition: A request seeking one of the following:
   1. An interpretation, amplification, or clarification of some requirement of Contract Documents arising from inability to determine from them the exact material, process, or system to be installed; or when the elements of construction are required to occupy the same space (interference); or when an item of work is described differently at more than one place in Contract Documents.
   2. A resolution to an issue which has arisen due to field conditions and affects design intent.
B. Preparation: Prepare an RFI immediately upon discovery of a need for interpretation of Contract Documents. Failure to submit a RFI in a timely manner is not a legitimate cause for claiming additional costs or delays in execution of the work.
   1. Prepare a separate RFI for each specific item.
      a. Review, coordinate, and comment on requests originating with subcontractors and/or materials suppliers.
      b. Do not forward requests which solely require internal coordination between subcontractors.
   2. Prepare in a format and with content acceptable to Architect. Use one of the following:
      a. Use AIA G716 - Request for Information .
      b. Use CSI/CSC Form 13.2A - Request for Interpretation.
      c. Other format acceptable to Architect.
   3. Combine RFI and its attachments into a single electronic file. PDF format is preferred.
   4. Submit RFIs through Procore, email, or other approved method agreed to by the Architect and Owner.
      a. RFIs submitted via an internet-based submittal service are to send electronic documents to the Architect via email with a downloadable link.
C. Reason for the RFI: Prior to initiation of an RFI, carefully study all Contract Documents to confirm that information sufficient for their interpretation is definitely not included.
   1. Include in each request Contractor's signature attesting to good faith effort to determine from Contract Documents information requiring interpretation.
   2. Improper RFIs: Requests not prepared in conformance to requirements of this section, and/or missing key information required to render an actionable response. They will be returned without a response and may include an explanatory notation.
   3. Frivolous RFIs: Requests regarding information that is clearly indicated on, or reasonably inferable from, the Contract Documents, with no additional input required to clarify the question. They will be returned without a response and may include an explanatory notation.

a. The Owner reserves the right to assess the Contractor for the costs (on time-and-materials basis) incurred by the Architect, and any of its consultants, due to processing of such RFIs.

D. Content: Include identifiers necessary for tracking the status of each RFI, and information necessary to provide an actionable response.
1. Official Project name and number, and any additional required identifiers established in Contract Documents.
2. Discrete and consecutive RFI number, and descriptive subject/title.
3. Issue date, and requested reply date.
4. Reference to particular Contract Document(s) requiring additional information/interpretation. Identify pertinent drawing and detail number and/or specification section number, title, and paragraph(s).
5. Annotations: Field dimensions and/or description of conditions which have engendered the request.
6. Contractor's suggested resolution: A written and/or a graphic solution, to scale, is required in cases where clarification of coordination issues is involved, for example; routing, clearances, and/or specific locations of work shown diagrammatically in Contract Documents. If applicable, state the likely impact of the suggested resolution on Contract Time or the Contract Sum.

E. Attachments: Include sketches, coordination drawings, descriptions, photos, submittals, and other information necessary to substantiate the reason for the request.

F. RFI Log: Prepare and maintain a tabular log of RFIs for the duration of the project.
1. Indicate current status of every RFI. Update log promptly and on a regular basis.
2. Note dates of when each request is made, and when a response is received.
3. Identify and include improper or frivolous RFIs.

G. Review Time: Architect will respond and return RFIs to Contractor within seven calendar days of receipt. For the purpose of establishing the start of the mandated response period, RFIs received after 3:00 PM will be considered as having been received on the following regular working day.
1. Response period may be shortened or lengthened for specific items, subject to mutual agreement, and recorded in a timely manner in progress meeting minutes.

H. Responses: Content of answered RFIs will not constitute in any manner a directive or authorization to perform extra work or delay the project. If in Contractor's belief it is likely to lead to a change to Contract Sum or Contract Time, promptly issue a notice to this effect, and follow up with an appropriate Change Order request to Owner.
1. Response may include a request for additional information, in which case the original RFI will be deemed as having been answered, and an amended one is to be issued forthwith. Identify the amended RFI with an R suffix to the original number.
2. Do not extend applicability of a response to specific item to encompass other similar conditions, unless specifically so noted in the response.
3. Upon receipt of a response, promptly review and distribute it to all affected parties, and update the RFI Log.
4. Notify Architect within seven calendar days if an additional or corrected response is required by submitting an amended version of the original RFI, identified as specified above.

3.02 SUBMITTAL SCHEDULE

A. Submit to Architect for review a schedule for submittals in tabular format.
1. Submit at the same time as the preliminary schedule.
2. Coordinate with Contractor's construction schedule and schedule of values.
3. Format schedule to allow tracking of status of submittals throughout duration of construction.

4. Arrange information to include scheduled date for initial submittal, specification number and title, description of item of work covered, and role and name of subcontractor.
5. Account for time required for preparation, review, manufacturing, fabrication and delivery when establishing submittal delivery and review deadline dates.
    a. For assemblies, equipment, systems comprised of multiple components and/or requiring detailed coordination with other work, allow for additional time to make corrections or revisions to initial submittals, and time for their review.

3.03 SUBMITTALS FOR REVIEW

A. When the following are specified in individual sections, submit them for review:
1. Product data.
2. Shop drawings.
3. Samples for selection.
4. Samples for verification.

B. Submit to Architect for review for the limited purpose of checking for compliance with information given and the design concept expressed in Contract Documents.

C. Samples will be reviewed for aesthetic, color, or finish selection.

D. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article below and for record documents purposes described in Section 01 7800 - Closeout Submittals.

3.04 SUBMITTALS FOR INFORMATION

A. When the following are specified in individual sections, submit them for information:
1. Design data.
2. Certificates.
3. Test reports.
4. Inspection reports.
5. Manufacturer's instructions.
6. Manufacturer's field reports.
7. Other types indicated.

B. Submit for Architect's knowledge as contract administrator or for Owner.

3.05 SUBMITTALS FOR PROJECT CLOSEOUT

A. Submit Correction Punch List for Substantial Completion.

B. Submit Final Correction Punch List for Substantial Completion.

C. When the following are specified in individual sections, submit them at project closeout in compliance with requirements of Section 01 7800 - Closeout Submittals:
1. Project record documents.
2. Operation and maintenance data.
3. Warranties.
4. Other types as indicated.

D. Submit for Owner's benefit during and after project completion.

3.06 NUMBER OF COPIES OF SUBMITTALS

A. Electronic Documents: Submit one electronic copy.

B. Samples: Submit the number specified in individual specification sections, but not less than 3; one (minimum) of which will be retained by Architect.
1. After review, produce duplicates.
2. Retained samples will not be returned to Contractor unless specifically so stated.

3.07 SUBMITTAL PROCEDURES

A. Transmittal Form: TMP Submittal and Sample Transmittal Form must be completed and provided at the beginning of each submittal.
1. Refer to Section 01 3000.01 - TMP Submittal and Sample Transmittal Form.

2. Submittals without a completed TMP Submittal and Sample Transmittal Form will not be acknowledged, reviewed, or returned.

B. Submittals shall be submitted in electronic form.
   1. Exceptions: Physical samples.
      a. Physical Samples must be accompanied by an electronic copy and a hard/physical copy of the completed TMP Submittal and Sample Transmittal Form.

C. Electronic Submittals: Comply with the following:
   1. Submittal process shall be through Procore, email, or other approved method agreed to by the Architect and Owner.
      a. Submittals via an internet-based submittal service are to send electronic documents to the Architect via email with a downloadable link.
   2. File Format: Portable Document Format (PDF).
   3. File Naming: File naming shall be in the following format:
      a. Specification section number, followed by a hyphen, and a consecutive number indicating sequential submittals for that section; followed by a general description of the submittal contents.
         1) Examples:
            (a) Section 07 9200; first submittal:
               (1) 07 9200-01 Joint Sealants
            (b) Section 07 9200; second submittal:
               (1) 07 9200-02 Joint Sealant Color
      b. Resubmittals. For revised resubmittals use original number and a sequential combination numerical and alphabetical suffix; hyphen followed by "R" and a two-digit consecutive number indicating sequential resubmittals for that particular submittal.
         1) Examples:
            (a) Section 07 9200; resubmittal of first submittal of section:
               (1) 07 9200-01-R01 Joint Sealants.
            (b) Section 07 9200; second resubmittal of first submittal of section:
               (1) 07 9200-01-R02 Joint Sealants
            (c) Section 07 9200; first resubmittal of second submittal of section:
               (1) 07 9200-02-R01 Joint Sealant Color
   4. Each Submittal shall be one file, complete with all attachments.
      a. Multi-file submittal will not be acknowledged, reviewed, or returned.

D. General Requirements:
   1. Use a single transmittal for related items.
      a. Each transmittal shall be for one specification section only; do not submit items for multiple sections under the same transmittal.
         1) Multi-section submittals will be acknowledged and returned; stamped "X - Not Approved - Resubmit".
   2. Submit separate packages of submittals for review and submittals for information, when included in the same specification section.
   3. 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 in accordance with the requirements of the work and Contract Documents.
      a. Submittals from sources other than the Contractor, or without Contractor's stamp will not be acknowledged, reviewed, or returned.
   4. Deliver each submittal on date noted in submittal schedule, unless an earlier date has been agreed to by all affected parties, and is of the benefit to the project.
   5. Schedule submittals to expedite the Project, and coordinate submission of related items.
      a. For each submittal for review, allow 14 calendar days excluding delivery time to and from the Contractor.
      b. For sequential reviews involving Architect's consultants, Owner, or another affected party, allow an additional 7 calendardays.

6. Identify variations from Contract Documents and product or system limitations that may be detrimental to successful performance of the completed work.
7. When revised for resubmission, identify all changes made since previous submission.
8. Distribute reviewed submittals. Instruct parties to promptly report inability to comply with requirements.
9. Incomplete submittals will not be reviewed, unless they are partial submittals for distinct portion(s) of the work, and have received prior approval for their use.
10. Submittals not requested will be recognized and returned; stamped "NA - No Action Taken - Not Reviewed"

E. Product Data Procedures:
1. Submit only information required by individual specification sections.
2. Collect required information into a single submittal.
3. Submit concurrently with related shop drawing submittal.
4. Do not submit (Material) Safety Data Sheets for materials or products unless specifically called for in individual sections.

F. Shop Drawing Procedures:
1. Prepare accurate, drawn-to-scale, original shop drawing documentation by interpreting Contract Documents and coordinating related work.
2. Do not reproduce Contract Documents to create shop drawings.
3. Generic, non-project-specific information submitted as shop drawings do not meet the requirements for shop drawings.
4. Non-complying submittals will be acknowledged and returned; stamped "X - Not Approved - Resubmit".

G. Samples Procedures:
1. Transmit related items together as single package.
2. Identify each item to allow review for applicability in relation to shop drawings showing installation locations.
3. Submit actual physical samples.
4. Electronic submittals will not be accepted unless prior approval is received from the Architect. Electronic samples without prior approval will be acknowledged and returned; stamped "X - Not Approved - Resubmit."

3.08 SUBMITTAL REVIEW

A. General: Submittals that do not conform to the requirements of this section will not be acknowledged, reviewed, or returned.

B. Submittals for Review: Architect will review each submittal, and approve, or take other appropriate action.

C. Submittals for Information: Architect will acknowledge and may review. See below for actions to be taken.

D. Architect's actions will be reflected by marking each returned submittal using virtual stamp on electronic submittals.
1. Where more than one action has been indicated, each shall apply to that portion of the submittal for which the action is indicated.

E. Architect's review shall not indicate approval of dimensions, quantities or fabrication processes unless specific notations are made by the Architect regarding same.

F. Architect's and consultants' actions on items submitted for review:
1. Authorizing purchasing, fabrication, delivery, and installation:
a. "Reviewed - No Exceptions Taken", "Approved", or language with same legal meaning.
b. "Reviewed with Corrections Noted", "Approved as Noted, Resubmission not required", or language with same legal meaning.
1) At Contractor's option, submit corrected item, with review notations acknowledged and incorporated.

2. Not Authorizing fabrication, delivery, and installation:
   a. "Revise and Resubmit", "Not Approved - Resubmit", or language with the same legal meaning.
      1) Resubmit revised item, with review notations acknowledged and incorporated.
3. Not Authorizing manufacturer:
   a. Rejected - Resubmit, or language with the same legal meaning.

G. Architect's and consultants' actions on items submitted for information:
1. Items for which no action was taken:
   a. "No Action Taken - Not Reviewed" or "Received" - to notify the Contractor that the submittal has been received for record only.

END OF SECTION 01 3000

SECTION 01 4000 - QUALITY REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Submittals.
B. Quality assurance.
C. References and standards.
D. Testing and inspection agencies and services.
E. Contractor's design-related professional design services.
F. Control of installation.
G. Mock-ups.
H. Tolerances.
I. Manufacturers' field services.
J. Defect Assessment.

1.02 REFERENCE STANDARDS

A. ASTM E329 - Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection; 2025b.
B. ASTM E543 - Standard Specification for Agencies Performing Nondestructive Testing; 2026.
C. ASTM E699 - Standard Specification for Agencies Involved in Testing, Quality Assurance, and Evaluating of Manufactured Building Components; 2016.

1.03 DEFINITIONS

A. Contractor's Professional Design Services: Design of some aspect or portion of the project by party other than the design professional of record. Provide these services as part of the Contract for Construction.
    1. Design Services Types Required:
        a. Design-Related: Design services explicitly required to be performed by another design professional due to highly-technical and/or specialized nature of a portion of the project. Services primarily involve engineering analysis, calculations, and design, and are not intended to alter the aesthetic aspects of the design.
B. Design Data: Design-related, signed and sealed drawings, calculations, specifications, certifications, shop drawings and other submittals provided by Contractor, and prepared directly by, or under direct supervision of, appropriately licensed design professional.

1.04 CONTRACTOR'S DESIGN-RELATED PROFESSIONAL DESIGN SERVICES

A. Coordination: Contractor's professional design services are subject to requirements of project's Conditions for Construction Contract.
B. Base design on performance and/or design criteria indicated in individual specification sections.

1.05 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
B. Design Data: Submit for Architect's knowledge as contract administrator for the limited purpose of assessing compliance with information given and the design concept expressed in the Contract Documents, or for Owner's information.
    1. Include a statement or certification attesting that design data complies with criteria indicated, such as building codes, loads, functional, and similar engineering requirements.
    2. Include signature and seal of design professional responsible for allocated design services on calculations and drawings.
C. Test Reports: After each test/inspection, promptly submit 1 copies of report to Architect and to Contractor.
    1. Include:

a. Date issued.
b. Project title and number.
c. Name of inspector.
d. Date and time of sampling or inspection.
e. Identification of product and specifications section.
f. Location in the Project.
g. Type of test/inspection.
h. Date of test/inspection.
i. Results of test/inspection.
j. Compliance with Contract Documents.
k. When requested by Architect, provide interpretation of results.

2. Test report submittals are for Architect's knowledge as contract administrator for the limited purpose of assessing compliance with information given and the design concept expressed in the Contract Documents, or for Owner's information.

D. Certificates: When specified in individual specification sections, submit certification by the manufacturer and Contractor or installation/application subcontractor to Architect, in quantities specified for Product Data.
1. Indicate material or product complies with or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
2. Certificates may be recent or previous test results on material or product, but must be acceptable to Architect.

E. Manufacturer's Instructions: When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, for the Owner's information. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.

F. Manufacturer's Field Reports: Submit reports for Architect's benefit as contract administrator or for Owner.
1. Submit for information for the limited purpose of assessing compliance with information given and the design concept expressed in the Contract Documents.

1.06 QUALITY ASSURANCE

A. Testing Agency Qualifications:
1. Prior to start of Work, submit agency name, address, and telephone number, and names of full time specialist and responsible officer.

B. Designer Qualifications: Where professional engineering design services and design data submittals are specifically required of Contractor by Contract Documents, provide services of a Professional Engineer experienced in design of this type of work and licensed in the State in which the Project is located.

1.07 REFERENCES AND STANDARDS

A. Comply with reference standard of date of issue current on date of Contract Documents, except where a specific date is established by applicable code.

B. Obtain copies of standards where required by product specification sections.

C. Maintain copy at project site during submittals, planning, and progress of the specific work, until Substantial Completion.

1.08 TESTING AND INSPECTION AGENCIES AND SERVICES

A. As indicated in individual specification sections, Owner or Contractor shall employ and pay for services of an independent testing agency to perform other specified testing.

B. Employment of agency in no way relieves Contractor of obligation to perform Work in accordance with requirements of Contract Documents.

C. Contractor Employed Agency:

1. Testing agency: Comply with requirements of ASTM E329, ASTM E543, and ASTM E699.
2. Inspection agency: Comply with requirements of ASTM E329.
3. Laboratory Staff: Maintain a full time specialist on staff to review services.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 CONTROL OF INSTALLATION

A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce work of specified quality.
B. Comply with manufacturers' instructions, including each step in sequence.
C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Architect before proceeding.
D. Comply with specified standards as minimum quality for the work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
E. Have work performed by persons qualified to produce required and specified quality.
F. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.
G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, and disfigurement.

3.02 MOCK-UPS

A. Before installing portions of the Work where mock-ups are required, construct mock-ups in location and size indicated for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work. The purpose of mock-up is to demonstrate the proposed range of aesthetic effects and workmanship.
B. Accepted mock-ups establish the standard of quality the Architect will use to judge the Work.
C. Integrated Exterior Mock-ups: Construct integrated exterior mock-up as indicated on drawings. Coordinate installation of exterior envelope materials and products as required in individual Specification Sections. Provide adequate supporting structure for mock-up materials as necessary.
D. Notify Architect 5 working days in advance of dates and times when mock-ups will be constructed.
E. Provide supervisory personnel who will oversee mock-up construction. Provide workers that will be employed during the construction at Project.
F. Tests shall be performed under provisions identified in this section and identified in the respective product specification sections.
G. Assemble and erect specified items with specified attachment and anchorage devices, flashings, seals, and finishes.
H. Obtain Architect's approval of mock-ups before starting work, fabrication, or construction.
   1. Make corrections as necessary until Architect's approval is issued.
I. Architect will use accepted mock-ups as a comparison standard for the remaining Work.
J. Where mock-up has been accepted by Architect and is specified in product specification sections to be removed, protect mock-up throughout construction, remove mock-up and clear area when directed to do so by Architect.

3.03 TOLERANCES

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

B. Comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from Architect before proceeding.
C. Adjust products to appropriate dimensions; position before securing products in place.

3.04 TESTING AND INSPECTION

A. See individual specification sections for testing and inspection required.
B. Testing Agency Duties:
   1. Provide qualified personnel at site. Cooperate with Architect and Contractor in performance of services.
   2. Perform specified sampling and testing of products in accordance with specified standards.
   3. Ascertain compliance of materials and mixes with requirements of Contract Documents.
   4. Promptly notify Architect and Contractor of observed irregularities or non-compliance of Work or products.
   5. Perform additional tests and inspections required by Architect.
   6. Submit reports of all tests/inspections specified.
C. Limits on Testing/Inspection Agency Authority:
   1. Agency may not release, revoke, alter, or enlarge on requirements of Contract Documents.
   2. Agency may not approve or accept any portion of the Work.
   3. Agency may not assume any duties of Contractor.
   4. Agency has no authority to stop the Work.
D. Contractor Responsibilities:
   1. Deliver to agency at designated location, adequate samples of materials proposed to be used that require testing, along with proposed mix designs.
   2. Cooperate with laboratory personnel, and provide access to the Work.
   3. Provide incidental labor and facilities:
      a. To provide access to Work to be tested/inspected.
      b. To obtain and handle samples at the site or at source of Products to be tested/inspected.
      c. To facilitate tests/inspections.
      d. To provide storage and curing of test samples.
   4. Notify Architect and laboratory 48 hours prior to expected time for operations requiring testing/inspection services.
   5. Employ services of an independent qualified testing laboratory and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.
   6. Arrange with Owner's agency and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.
E. Re-testing required because of non-compliance with specified requirements shall be performed by the same agency on instructions by Architect.
F. Re-testing required because of non-compliance with specified requirements shall be paid for by Contractor.

3.05 MANUFACTURERS' 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, start-up of equipment, test, adjust, and balance equipment as applicable, and to initiate instructions when necessary.
B. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

3.06 DEFECT ASSESSMENT

A. Replace Work or portions of the Work not complying with specified requirements.

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

END OF SECTION 01 4000

SECTION 01 4100 - REGULATORY REQUIREMENTS

PART 1 GENERAL

1.01 SUMMARY OF REFERENCE STANDARDS

A. Regulatory requirements applicable to this project are the following:
   1. ASHRAE Std 90.1 I-P-2019 - Energy Standard for Buildings Except Low-Rise Residential Buildings; 2019, with Errata and Addenda (2021).
   2. Barrier Free Code: Comply with the following:
      a. Michigan Building Code; 2021.
      b. ICC A117.1 - Accessible and Usable Buildings and Facilities; 2017.
   3. School Fire Safety Rules: Michigan School Fire Safety Rules; 2016.
      a. Includes NFPA 101-2012 - Life Safety Code; 2012, plus amendments.
   4. Building Code: Michigan Building Code; 2021.
   5. Plumbing Code: Michigan Plumbing Code; 2021.
   6. Mechanical Code: Michigan Mechanical Code; 2021.
   7. Electrical Code: NFPA 70 - National Electric Code; 2023.
      a. Includes 2023 Michigan Construction Code - Part 8 Electrical Code Rules.
   8. Elevator Code: Comply with the following:
      a. ASME A17.1 - Safety Code for Elevators and Escalators; 2016.
      b. ASME A18.1- Safety Standard for Platform Lifts and Stairway Chairlifts; 2017.
      c. 2023 Michigan Elevator Safety Board General Rules.
   9. Boiler Code: Michigan Boiler Code.
      a. Includes the following:
         1) ASME Boiler and Pressure Vessel Codes; 2019.
         2) National Board Inspection Code; 2019.
         3) PA 407 Skilled Trades Regulation Act; 2016.
   10. Energy Code: Michigan Commercial Energy Code; 2021.
      a. Includes ASHRAE Std 90.1 I-P-2019 - Energy Standard for Buildings Except Low-Rise Residential Buildings; 2019.
   11. Existing Building Code: Michigan Rehabilitation Code; 2021.

B. Where specification sections reference more current standards or codes, comply with the more restrictive requirements unless notified in writing by Architect.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION 01 4100

SECTION 01 4216 - DEFINITIONS

PART 1 GENERAL

1.01 SUMMARY

A. This section supplements the definitions contained in the General Conditions.

B. Other definitions are included in individual specification sections.

1.02 DEFINITIONS

A. Furnish: To supply, deliver, unload, and inspect for damage.

B. Install: To unpack, assemble, erect, apply, place, finish, cure, protect, clean, start up, and make ready for use.

C. Product: Material, machinery, components, equipment, fixtures, and systems forming the work result. Not materials or equipment used for preparation, fabrication, conveying, or erection and not incorporated into the work result. Products may be new, never before used, or re-used materials or equipment.

D. Project Manual: The book-sized volume that includes the procurement requirements (if any), the contracting requirements, and the specifications.

E. Provide: To furnish and install.

F. Supply: Same as Furnish.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION 01 4216

SECTION 01 4219 - REFERENCE STANDARDS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Requirements relating to referenced standards.

1.02 QUALITY ASSURANCE

A. For products or workmanship specified by reference to a document or documents not included in the Project Manual, also referred to as reference standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.

B. Comply with the reference standard of date of issue , except where a specific date is established by applicable code.

C. Should specified reference standards conflict with Contract Documents, request clarification from the Architect before proceeding.

D. Neither the contractual relationships, duties, or responsibilities of the parties in Contract nor those of the Architect shall be altered by Contract Documents by mention or inference otherwise in any reference document.

PART 2 PRODUCTS -- NOT USED

PART 3 EXECUTION -- NOT USED

END OF SECTION 01 4219

SECTION 01 4533 - CODE-REQUIRED SPECIAL INSPECTIONS AND PROCEDURES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Code-required special inspections.
B. Submittals.

1.02 ABBREVIATIONS AND ACRONYMS

A. AHJ: Authority having jurisdiction.
B. NIST: National Institute of Standards and Technology.

1.03 DEFINITIONS

A. Code or Building Code: Michigan Building Code; 2021, specifically Chapter 17 - Special Inspections and Tests.
B. Authority Having Jurisdiction (AHJ): Agency or individual officially empowered to enforce the building, fire and life safety code requirements of the permitting jurisdiction in which the Project is located.
C. Special Inspection:
   1. Special inspections are inspections and testing of materials, installation, fabrication, erection or placement of components and connections mandated by the AHJ that also require special expertise to ensure compliance with the approved Contract Documents and the referenced standards.
   2. Special inspections are separate from and independent of tests and inspections conducted by Owner or Contractor for the purposes of quality assurance and contract administration.

1.04 REFERENCE STANDARDS

A. ASTM E329 - Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection; 2025b.

1.05 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
B. Special Inspection Agency Qualifications: Prior to the start of work, the Special Inspection Agency is required to:
   1. Submit agency name, address, and telephone number, names of full time specialist and responsible officer.
   2. Submit copy of report of laboratory facilities inspection made by NIST Construction Materials Reference Laboratory during most recent inspection, with memorandum of remedies of any deficiencies reported by the inspection.
   3. Submit certification that Special Inspection Agency is acceptable to AHJ.
C. Special Inspection Reports: After each special inspection, Special Inspector is required to promptly submit at least two copies of report; one to Architect and one to the AHJ.
   1. Include:
      a. Date issued.
      b. Project title and number.
      c. Name of Special Inspector.
      d. Date and time of special inspection.
      e. Identification of product and specifications section.
      f. Location in the Project.
      g. Type of special inspection.
      h. Date of special inspection.
      i. Results of special inspection.
      j. Compliance with Contract Documents.

2. Final Special Inspection Report: Document special inspections and correction of discrepancies prior to the start of the work.

D. Fabricator Special Inspection Reports: After each special inspection of fabricated items at the Fabricator's facility, Special Inspector is required to promptly submit at least two copies of report; one to Architect and one to AHJ.
   1. Include:
      a. Date issued.
      b. Project title and number.
      c. Name of Special Inspector.
      d. Date and time of special inspection.
      e. Identification of fabricated item and specification section.
      f. Location in the Project.
      g. Results of special inspection.
      h. Verification of fabrication and quality control procedures.
      i. Compliance with Contract Documents.
      j. Compliance with referenced standard(s).

E. Test Reports: After each test or inspection, promptly submit at least two copies of report; one to Architect and one to AHJ.
   1. Include:
      a. Date issued.
      b. Project title and number.
      c. Name of inspector.
      d. Date and time of sampling or inspection.
      e. Identification of product and specifications section.
      f. Location in the Project.
      g. Type of test or inspection.
      h. Date of test or inspection.
      i. Results of test or inspection.
      j. Compliance with Contract Documents.

1.06 SPECIAL INSPECTION AGENCY

A. Owner will employ services of a Special Inspection Agency to perform inspections and associated testing and sampling in accordance with ASTM E329 and required by the building code.

B. Employment of agency in no way relieves Contractor of obligation to perform work in accordance with requirements of Contract Documents.

1.07 QUALITY ASSURANCE

A. Special Inspection Agency Qualifications:
   1. Independent firm specializing in performing testing and inspections of the type specified in this section.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 SCHEDULE OF SPECIAL INSPECTIONS, GENERAL

A. Frequency of Special Inspections: Special Inspections are indicated as continuous or periodic.
   1. Continuous Special Inspection: Special Inspection Agency is required to be present in the area where the work is being performed and observe the work at all times the work is in progress.
   2. Periodic Special Inspection: Special Inspection Agency is required to be present in the area where work is being performed and observe the work part-time or intermittently and at the completion of the work.

3.02 SPECIAL INSPECTIONS

A. Special inspections and testing shall be for materials, installation, fabrication, erection or placement of components and connections as indicated on Drawings, but not less than that required by the building code.

END OF SECTION 01 4533

SECTION 01 6000 - PRODUCT REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Re-use of existing products.
B. Transportation, handling, storage and protection.
C. Product option requirements.
D. Substitution limitations.
E. Procedures for Owner-supplied products.
F. Maintenance materials, including extra materials, spare parts, tools, and software.

1.02 SUBMITTALS

A. Product Data Submittals: Submit manufacturer's standard published data. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.
B. Shop Drawing Submittals: Prepared specifically for this Project; indicate utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.
C. Sample Submittals: Illustrate functional and aesthetic characteristics of the product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.
    1. For selection from standard finishes, submit samples of the full range of the manufacturer's standard colors, textures, and patterns.

PART 2 PRODUCTS

2.01 EXISTING PRODUCTS

A. Do not use materials and equipment removed from existing premises unless specifically required or permitted by Contract Documents.
B. Unforeseen historic items encountered remain the property of the Owner; notify Owner promptly upon discovery; protect, remove, handle, and store as directed by Owner.
C. Existing materials and equipment indicated to be removed, but not to be re-used, relocated, reinstalled, delivered to the Owner, or otherwise indicated as to remain the property of the Owner, become the property of the Contractor; remove from site.
D. Specific Products to be Reused: The reuse of certain materials and equipment already existing on the project site is required.
    1. Refer to Drawings and Section 02 4100 - Demolition.

2.02 NEW PRODUCTS

A. Provide new products unless specifically required or permitted by Contract Documents.

2.03 PRODUCT OPTIONS

A. Products Specified by Reference Standards or by Description Only: Use any product meeting those standards or description.
B. Products Specified by Naming One or More Manufacturers: Use a product of one of the manufacturers named and meeting specifications, no options or substitutions allowed.
C. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named.
D. Available Products: Products specified by naming one or more Manufacturers as an Available Product indicates that these Manufacturers' products may be provided but other comparable products and Manufacturers not named may also be provided without submitting a request for substitution.

2.04 MAINTENANCE MATERIALS

A. Furnish extra materials, spare parts, tools, and software of types and in quantities specified in individual specification sections.

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

PART 3 EXECUTION

3.01 SUBSTITUTION LIMITATIONS

A. See Section 01 2500 - Substitution Procedures.

3.02 OWNER-SUPPLIED PRODUCTS

A. Owner's Responsibilities:

1. Arrange for and deliver Owner reviewed shop drawings, product data, and samples, to Contractor.
2. Arrange and pay for product delivery to site.
3. On delivery, inspect products jointly with Contractor.
4. Submit claims for transportation damage and replace damaged, defective, or deficient items.
5. Arrange for manufacturers' warranties, inspections, and service.

B. Contractor's Responsibilities:

1. Review Owner reviewed shop drawings, product data, and samples.
2. Receive and unload products at site; inspect for completeness or damage jointly with Owner.
3. Handle, store, install and finish products.
4. Repair or replace items damaged after receipt.

3.03 TRANSPORTATION AND HANDLING

A. Package products for shipment in manner to prevent damage; for equipment, package to avoid loss of factory calibration.

B. If special precautions are required, attach instructions prominently and legibly on outside of packaging.

C. Coordinate schedule of product delivery to designated prepared areas in order to minimize site storage time and potential damage to stored materials.

D. Transport and handle products in accordance with manufacturer's instructions.

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

F. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage, and to minimize handling.

G. Arrange for the return of packing materials, such as wood pallets, where economically feasible.

3.04 STORAGE AND PROTECTION

A. Designate receiving/storage areas for incoming products so that they are delivered according to installation schedule and placed convenient to work area in order to minimize waste due to excessive materials handling and misapplication.

B. Store and protect products in accordance with manufacturers' instructions.

C. Store with seals and labels intact and legible.

D. Store sensitive products in weathertight, climate-controlled enclosures in an environment favorable to product.

E. For exterior storage of fabricated products, place on sloped supports above ground.

F. Provide off-site storage and protection when site does not permit on-site storage or protection.

G. Protect products from damage or deterioration due to construction operations, weather, precipitation, humidity, temperature, sunlight and ultraviolet light, dirt, dust, and other contaminants.

H. Comply with manufacturer's warranty conditions, if any.

I. Do not store products directly on the ground.
J. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.
K. Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.
L. Prevent contact with material that may cause corrosion, discoloration, or staining.
M. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.
N. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

END OF SECTION 01 6000

SECTION 01 7000 - EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Examination, preparation, and general installation procedures.
B. Requirements for alterations work, including selective demolition.
C. Pre-installation meetings.
D. Cutting and patching.
E. Surveying for laying out the work.
F. Cleaning and protection.
G. Starting of systems and equipment.
H. Demonstration and instruction of Owner personnel.
I. Closeout procedures, including Contractor's Correction Punch List, except payment procedures.
J. General requirements for maintenance service.

1.02 REFERENCE STANDARDS

A. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations; 2022, with Errata (2021).

1.03 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
B. Cutting and Patching: Submit written request in advance of cutting or alteration that affects:
    1. Structural integrity of any element of Project.
    2. Integrity of weather exposed or moisture resistant element.
    3. Efficiency, maintenance, or safety of any operational element.
    4. Visual qualities of sight exposed elements.
    5. Work of Owner or separate Contractor.
    6. Include in request:
        a. Identification of Project.
        b. Location and description of affected work.
        c. Necessity for cutting or alteration.
        d. Description of proposed work and products to be used.
        e. Effect on work of Owner or separate Contractor.
C. Project Record Documents: Accurately record actual locations of capped and active utilities.
D. Warranties: For each affected material under warranty, submit written verification, signed by manufacturer of existing materials, stating that the Owner's full warranty will remain in effect after cutting and patching operations have been completed

1.04 QUALIFICATIONS

A. For surveying work, employ a land surveyor registered in the State in which the Project is located and acceptable to Architect. Submit evidence of surveyor's Errors and Omissions insurance coverage in the form of an Insurance Certificate. Employ only individual(s) trained and experienced in collecting and recording accurate data relevant to ongoing construction activities,

1.05 PROJECT CONDITIONS

A. Use of explosives is not permitted.
B. Grade site to drain. Maintain excavations free of water. Provide, operate, and maintain pumping equipment.
C. Protect site from puddling or running water. Provide water barriers as required to protect site from soil erosion.
D. Perform dewatering activities, as required, for the duration of the project.

E. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.
F. Dust Control: Execute work by methods to minimize raising dust from construction operations. Provide positive means to prevent air-borne dust from dispersing into atmosphere and over adjacent property.
   1. Provide dust-proof enclosures to prevent entry of dust generated outdoors.
   2. Provide dust-proof barriers between construction areas and areas continuing to be occupied by Owner.
G. Erosion and Sediment Control: Plan and execute work by methods to control surface drainage from cuts and fills, from borrow and waste disposal areas. Prevent erosion and sedimentation.
   1. Periodically inspect earthwork to detect evidence of erosion and sedimentation; promptly apply corrective measures.
H. Noise Control: Provide methods, means, and facilities to minimize noise produced by construction operations.
   1. Outdoors: Limit conduct of especially noisy exterior work to the hours of 8 am to 5 pm.
   2. Indoors: Limit conduct of especially noisy interior work to the hours of 6 pm to 7 am.
I. Pest and Rodent Control: Provide methods, means, and facilities to prevent pests and insects from damaging the work.
J. Pollution Control: 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. Comply with federal, state, and local regulations.

1.06 COORDINATION

A. Coordinate scheduling, submittals, and work of the various sections of the Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.
B. Notify affected utility companies and comply with their requirements.
C. Verify that utility requirements and characteristics of new operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.
D. Coordinate space requirements, supports, and installation of mechanical and electrical work that are indicated diagrammatically on drawings. Follow routing indicated for pipes, ducts, and conduit, as closely as practicable; place runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
E. In finished areas except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.
F. Coordinate completion and clean-up of work of separate sections.
G. After Owner occupancy of premises, coordinate access to site for correction of defective work and work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

1.07 WARRANTIES

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

PART 2 PRODUCTS

2.01 PATCHING MATERIALS

A. New Materials: As specified in product sections; match existing products and work for patching and extending work.

B. Type and Quality of Existing Products: Determine by inspecting and testing products where necessary, referring to existing work as a standard.
C. Product Substitution: For any proposed change in materials, submit request for substitution described in Section 01 6000 - Product Requirements.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent work. Start of 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. Take field measurements before confirming product orders or beginning fabrication, to minimize waste due to over-ordering or misfabrication.
E. Verify that utility services are available, of the correct characteristics, and in the correct locations.
F. Prior to Cutting: Examine existing conditions prior to commencing work, including elements subject to damage or movement during cutting and patching. After uncovering existing work, assess conditions affecting performance of work. Beginning of cutting or patching means acceptance of existing conditions.

3.02 PREPARATION

A. Clean substrate surfaces prior to applying next material or substance.
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 any new material or substance in contact or bond.

3.03 PREINSTALLATION MEETINGS

A. When required in individual specification sections, convene a preinstallation meeting at the site prior to commencing work of the section.
B. Require attendance of parties directly affecting, or affected by, work of the specific section.
C. Notify Architect 5 calendar days in advance of meeting date.
D. Prepare agenda and preside at meeting:
    1. Review conditions of examination, preparation and installation procedures.
    2. Review coordination with related work.
E. Record minutes and distribute copies within two days after meeting to participants, with 1 copies to Architect, Owner, participants, and those affected by decisions made.

3.04 LAYING OUT THE WORK

A. Verify locations of survey control points prior to starting work.
B. Promptly notify Architect of any discrepancies discovered.
C. Contractor shall locate and protect survey control and reference points.
D. Protect survey control points prior to starting site work; preserve permanent reference points during construction.
E. Promptly report to Architect the loss or destruction of any reference point or relocation required because of changes in grades or other reasons.
F. Replace dislocated survey control points based on original survey control. Make no changes without prior written notice to Architect.
G. Utilize recognized engineering survey practices.
H. Establish elevations, lines and levels. Locate and lay out by instrumentation and similar appropriate means:

1. Site improvements including pavements; stakes for grading, fill and topsoil placement; utility locations, slopes, and invert elevations.
2. Grid or axis for structures.
3. Building foundation, column locations, ground floor elevations.
4. Controlling lines and levels required for mechanical and electrical trades.

I. Periodically verify layouts by same means.

J. Maintain a complete and accurate log of control and survey work as it progresses.

3.05 GENERAL INSTALLATION REQUIREMENTS

A. In addition to compliance with regulatory requirements, conduct construction operations in compliance with NFPA 241, including applicable recommendations in Appendix A.

B. Install products as specified in individual sections, in accordance with manufacturer's instructions and recommendations, and so as to avoid waste due to necessity for replacement.

C. Make vertical elements plumb and horizontal elements level, unless otherwise indicated.

D. Install equipment and fittings plumb and level, neatly aligned with adjacent vertical and horizontal lines, unless otherwise indicated.

E. Make consistent texture on surfaces, with seamless transitions, unless otherwise indicated.

F. Make neat transitions between different surfaces, maintaining texture and appearance.

3.06 ALTERATIONS

A. Drawings showing existing construction and utilities are based on casual field observation only.
1. Verify that construction and utility arrangements are as indicated.
2. Report discrepancies to Architect before disturbing existing installation.
3. Beginning of alterations work constitutes acceptance of existing conditions.

B. Keep areas in which alterations are being conducted separated from other areas that are still occupied.
1. Provide, erect, and maintain temporary dustproof partitions.

C. Maintain weatherproof exterior building enclosure except for interruptions required for replacement or modifications; take care to prevent water and humidity damage.
1. Where openings in exterior enclosure exist, provide construction to make exterior enclosure weatherproof.
2. Insulate existing ducts or pipes that are exposed to outdoor ambient temperatures by alterations work.

D. Remove existing work as indicated and as required to accomplish new work.
1. Remove items indicated on drawings.
2. Relocate items indicated on drawings.
3. Where new surface finishes are to be applied to existing work, perform removals, patch, and prepare existing surfaces as required to receive new finish; remove existing finish if necessary for successful application of new finish.
4. Where new surface finishes are not specified or indicated, patch holes and damaged surfaces to match adjacent finished surfaces as closely as possible.

E. Services (Including but not limited to HVAC, Plumbing, Fire Protection, Electrical, and Telecommunications): Remove, relocate, and extend existing systems to accommodate new construction.
1. Maintain existing active systems that are to remain in operation; maintain access to equipment and operational components; if necessary, modify installation to allow access or provide access panel.
2. Where existing systems or equipment are not active and Contract Documents require reactivation, put back into operational condition; repair supply, distribution, and equipment as required.
3. Where existing active systems serve occupied facilities but are to be replaced with new services, maintain existing systems in service until new systems are complete and ready for service.

a. Disable existing systems only to make switchovers and connections; minimize duration of outages.
b. Provide temporary connections as required to maintain existing systems in service.

4. Verify that abandoned services serve only abandoned facilities.
5. Remove abandoned pipe, ducts, conduits, and equipment , including those above accessible ceilings; remove back to source of supply where possible, otherwise cap stub and tag with identification; patch holes left by removal using materials specified for new construction.

F. Protect existing work to remain.
1. Prevent movement of structure; provide shoring and bracing if necessary.
2. Perform cutting to accomplish removals neatly and as specified for cutting new work.
3. Repair adjacent construction and finishes damaged during removal work.

G. Adapt existing work to fit new work: Make as neat and smooth transition as possible.
1. Where removal of partitions or walls results in adjacent spaces becoming one, rework floors, walls, and ceilings to a smooth plane without breaks, steps, or bulkheads.

H. Patching: Where the existing surface is not indicated to be refinished, patch to match the surface finish that existed prior to cutting. Where the surface is indicated to be refinished, patch so that the substrate is ready for the new finish.

I. Refinish existing surfaces as indicated:
1. Where rooms or spaces are indicated to be refinished, refinish all visible existing surfaces to remain to the specified condition for each material, with a neat transition to adjacent finishes.
2. If mechanical or electrical work is exposed accidentally during the work, re-cover and refinish to match.

J. Clean existing systems and equipment.

K. Remove demolition debris and abandoned items from alterations areas and dispose of off-site; do not burn or bury.

L. Do not begin new construction in alterations areas before demolition is complete.

M. Comply with all other applicable requirements of this section.

3.07 CUTTING AND PATCHING

A. Whenever possible, execute the work by methods that avoid cutting or patching.

B. See Alterations article above for additional requirements.

C. Perform whatever cutting and patching is necessary to:
1. Complete the work.
2. Fit products together to integrate with other work.
3. Provide openings for penetration of mechanical, electrical, and other services.
4. Match work that has been cut to adjacent work.
5. Repair areas adjacent to cuts to required condition.
6. Repair new work damaged by subsequent work.
7. Remove samples of installed work for testing when requested.
8. Remove and replace defective and non-complying work.

D. Execute work by methods that avoid damage to other work and that will provide appropriate surfaces to receive patching and finishing. In existing work, minimize damage and restore to original condition.

E. Employ skilled and experienced installer to perform cutting for weather exposed and moisture resistant elements, and sight exposed surfaces.

F. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval.

G. Restore work with new products in accordance with requirements of Contract Documents.

H. Fit work air tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.

I. At penetrations of fire rated walls, partitions, ceiling, or floor construction, completely seal voids with fire rated material in accordance with Section 07 8400, to full thickness of the penetrated element.

J. Patching:
   1. Finish patched surfaces to match finish that existed prior to patching. On continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.
      a. This includes painted surfaces.
      b. Where the surface is indicated to be refinished, patch so that the substrate is ready for the new finish.
   2. Match color, texture, and appearance.
   3. Repair patched surfaces that are damaged, lifted, discolored, or showing other imperfections due to patching work. If defects are due to condition of substrate, repair substrate prior to repairing finish.

3.08 PROGRESS CLEANING

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

B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.

C. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.

D. Collect and remove waste materials, debris, and trash/rubbish from site periodically and dispose off-site; do not burn or bury.

3.09 PROTECTION OF INSTALLED WORK

A. Protect installed work from damage by construction operations.

B. Provide special protection where specified in individual specification sections.

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

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

E. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.

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

G. Remove protective coverings when no longer needed; reuse or recycle coverings if possible.

3.10 SYSTEM STARTUP

A. Coordinate schedule for start-up of various equipment and systems.

B. Notify Architectand Owner 7 calendar days prior to start-up 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 tests, meter readings, and specified electrical characteristics agree with those required by the equipment or system manufacturer.

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

F. Execute start-up under supervision of applicable Contractor personnel and manufacturer's representative in accordance with manufacturers' instructions.

G. When specified in individual specification Sections, require manufacturer to provide authorized representative to be present at site to inspect, check, and approve equipment or system installation prior to start-up, and to supervise placing equipment or system in operation.

H. Submit a written report that equipment or system has been properly installed and is functioning correctly.

3.11 DEMONSTRATION AND INSTRUCTION

A. Demonstrate operation and maintenance of products to Owner's personnel two weeks prior to date of Substantial Completion.
B. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance, and shutdown of each item of equipment at agreed time, at equipment location.
C. For equipment or systems requiring seasonal operation, perform demonstration for other season within six months.
D. Provide a qualified person who is knowledgeable about the Project to perform demonstration and instruction of Owner's personnel.
E. Utilize operation and maintenance manuals as basis for instruction. Review contents of manual with Owner's personnel in detail to explain all aspects of operation and maintenance.
F. Prepare and insert additional data in operations and maintenance manuals when need for additional data becomes apparent during instruction.

3.12 ADJUSTING

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

3.13 FINAL CLEANING

A. Use cleaning materials that are nonhazardous.
B. Clean interior and exterior glass, surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.
C. Remove all labels that are not permanent. Do not paint or otherwise cover fire test labels or nameplates on mechanical and electrical equipment.
D. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.
E. Clean filters of operating equipment.
F. Clean debris from roofs, gutters, downspouts, scuppers, overflow drains, area drains, and drainage systems.
G. Clean site; sweep paved areas, rake clean landscaped surfaces.
H. Remove waste, surplus materials, trash/rubbish, and construction facilities from the site; dispose of in legal manner; do not burn or bury.

3.14 CLOSEOUT PROCEDURES

A. Make submittals that are required by governing or other authorities.
B. Accompany Contractor on preliminary inspection to determine items to be listed for completion or correction in the Contractor's Correction Punch List for Contractor's Notice of Substantial Completion.
C. Notify Architect when work is considered ready for Architect's Substantial Completion inspection.
D. Submit written certification containing Contractor's Correction Punch List, that Contract Documents have been reviewed, work has been inspected, and that work is complete in accordance with Contract Documents and ready for Architect's Substantial Completion inspection.
E. Conduct Substantial Completion inspection and create Final Correction Punch List containing Architect's and Contractor's comprehensive list of items identified to be completed or corrected and submit to Architect.

F. Correct items of work listed in Final Correction Punch List and comply with requirements for access to Owner-occupied areas.
G. Notify Architect when work is considered finally complete and ready for Architect's Substantial Completion final inspection.
H. Complete items of work determined by Architect listed in executed Certificate of Substantial Completion.

3.15 MAINTENANCE

A. Provide service and maintenance of components indicated in specification sections.
B. Maintenance Period: As indicated in specification sections or, if not indicated, not less than one year from the Date of Substantial Completion or the length of the specified warranty, whichever is longer.
C. Examine system components at a frequency consistent with reliable operation. Clean, adjust, and lubricate as required.
D. Include systematic examination, adjustment, and lubrication of components. Repair or replace parts whenever required. Use parts produced by the manufacturer of the original component.
E. Maintenance service shall not be assigned or transferred to any agent or subcontractor without prior written consent of the Owner.

END OF SECTION 01 7000

SECTION 01 7327 - CUTTING AND PATCHING OF SINGLE PLY ROOFING

PART 1 - GENERAL

1.01 SUMMARY

A. This Section includes procedural requirements for cutting and patching.
   1. Related Sections include the following:
      a. Divisions 2 through 28 Sections for specific requirements and limitations applicable to cutting and patching individual parts of the Work.

1.02 DEFINITIONS

A. Cutting: Removal of existing construction necessary to permit installation or performance of other Work.

B. Patching: Fitting and repair work required to restore surfaces to original conditions after installation of other Work.

1.03 SUBMITTALS

A. Cutting and Patching Proposal: Submit a proposal describing procedures at least 10 days before the time cutting and patching will be performed, requesting approval to proceed. Include the following information:
   1. Extent: Describe cutting and patching, show how they will be performed, and indicate why they cannot be avoided.
   2. Changes to Existing Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building's appearance and other significant visual elements.
   3. Products: List products to be used and firms or entities that will perform the Work.
   4. Dates: Indicate when cutting and patching will be performed.
   5. Structural Elements: Where cutting and patching involve adding reinforcement to structural elements, submit details and engineering calculations showing integration of reinforcement with original structure.
   6. Architect's Approval: Obtain approval of cutting and patching proposal before cutting and patching. Approval does not waive right to later require removal and replacement of unsatisfactory work.

B. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.
   1. If possible, retain original Installer to cut and patch exposed Work listed below:
      a. EPDM Single Ply Membrane Roofing

C. Cutting and Patching Conference: Before proceeding, meet at Project site with parties involved in cutting and patching. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

1.04 WARRANTY

A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during cutting and patching operations, by methods and with materials so as not to void existing warranties.
   1. Existing Roof: The existing roof is a roof system which is still under warranty. Comply with the following requirements when modifying the existing roof and adding new penetrations:
      a. Notify original roof manufacturer prior to beginning any work and comply with all manufacturer guidelines and requirements.

b. Provide original roof manufacturer with a brief description of the proposed work, including any required submittals.
c. Work shall not begin until written approval is received from original roof manufacturer.
d. Work must be done by an approved manufacturer's contractor.
e. Original roof manufacturer shall inspect all modifications to the original roof system.

PART 2 - PRODUCTS

2.01 MATERIALS

A. General: Comply with requirements specified in other Sections of these Specifications.
B. Existing Materials: Use materials identical to existing materials. For exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.
   1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
   2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Temporary Support: Provide temporary support of Work to be cut.
B. Protection: Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.

3.03 PERFORMANCE

A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
   1. Cut existing construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
B. Cutting: Cut existing construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. Review proposed procedures with original Roof Installer; comply with original Installer's written recommendations.
   1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
   2. Proceed with patching after construction operations requiring cutting are complete.

3.04 ROOF FLASHING INSTALLATION AROUND NEW PENETRATIONS

A. Install sheet flashings and preformed flashing accessories and adhere to substrates according to roofing system manufacturer's written instructions.
B. Apply bonding adhesive to substrate and underside of flashing sheet at required rate and allow to partially dry. Do not apply bonding adhesive to seam area of flashing.
C. Flash penetrations and field-formed inside and outside corners with cured or uncured sheet flashing as recommended by manufacturer.
D. Clean splice areas, apply splicing cement, and firmly roll side and end laps of overlapping sheets according to manufacturer's written instructions to ensure a watertight seam installation. Apply lap sealant and seal exposed edges of sheet flashing terminations.

E. Terminate and seal top of sheet flashings.
F. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections of these Specifications.
    1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
    2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into adjoining construction in a manner that will eliminate evidence of patching and refinishing.

END OF SECTION 01 7327

SECTION 01 7329 - CUTTING AND PATCHING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Cutting and patching.

1.02 REFERENCE STANDARDS

A. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations; 2013.

1.03 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

B. Cutting and Patching: Submit written request in advance of cutting or alteration that affects:

1. Structural integrity of any element of Project.
2. Integrity of weather exposed or moisture resistant element.
3. Efficiency, maintenance, or safety of any operational element.
4. Visual qualities of sight exposed elements.
5. Work of Owner or separate Contractor.
6. Include in request:
   a. Location and description of affected work.
   b. Necessity for cutting or alteration.
   c. Description of proposed work and products to be used.
   d. Effect on work of Owner or separate Contractor.

C. Warranties: For each affected material under warranty, submit written verification, signed by manufacturer of existing materials, stating that the Owner's full warranty will remain in effect after cutting and patching operations have been completed.

1.04 WARRANTIES

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

1. Materials that are still under warranty include, but are not limited to, the following:
   a. _____.
   b. _____.
   c. _____.

PART 2 PRODUCTS

2.01 PATCHING MATERIALS

A. New Materials: As specified in product sections; match existing products and work for patching and extending work.

B. Type and Quality of Existing Products: Determine by inspecting and testing products where necessary, referring to existing work as a standard.

C. Product Substitution: For any proposed change in materials, submit request for substitution described in Section 01 6000 - Product Requirements.

PART 3 EXECUTION

3.01 EXAMINATION

A. Prior to Cutting: Examine existing conditions prior to commencing work, including elements subject to damage or movement during cutting and patching. After uncovering existing work, assess conditions affecting performance of work. Beginning of cutting or patching means acceptance of existing conditions.

B. Prior to Patching: Before patching, verify compatibility and suitability of substrates, including compatibility with existing finishes or primers. Beginning of patching means acceptance of existing conditions.

3.02 PREPARATION

A. Clean substrate surfaces prior to applying next material or substance.
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 any new material or substance in contact or bond.
D. Protect existing work to remain.
    1. Prevent movement of structure; provide shoring and bracing if necessary.
    2. Perform cutting to accomplish removals neatly and as specified for cutting new work.
E. Existing Services: Where existing services are required to be removed, relocated, or abandoned, bypass such services before cutting to avoid interruption of services to occupied areas.

3.03 CUTTING AND PATCHING

A. Whenever possible, execute the work by methods that avoid cutting or patching.
B. Perform whatever cutting and patching is necessary to:
    1. Complete the work.
    2. Fit products together to integrate with other work.
    3. Provide openings for penetration of mechanical, electrical, and other services.
    4. Match work that has been cut to adjacent work.
    5. Repair areas adjacent to cuts to required condition.
    6. Repair new work damaged by subsequent work.
    7. Remove samples of installed work for testing when requested.
    8. Remove and replace defective and non-conforming work.
C. Execute work by methods that avoid damage to other work and that will provide appropriate surfaces to receive patching and finishing. In existing work, minimize damage and restore to original condition.
D. Employ skilled and experienced installer to perform cutting for weather exposed and moisture resistant elements, and sight exposed surfaces.
E. Cutting:
    1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces.
    2. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval.
    3. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
F. Restore work with new products in accordance with requirements of Contract Documents.
G. Fit work air tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
H. At penetrations of fire rated walls, partitions, ceiling, or floor construction, completely seal voids with fire rated material in accordance with Section 07 8400 - Firestopping, to full thickness of the penetrated element.
I. Patching:
    1. Repair adjacent construction and finishes damaged during removal work and cutting work.
    2. Finish patched surfaces to match finish that existed prior to patching. On continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.
        a. This includes painted surfaces.
        b. Where the surface is indicated to be refinished, patch so that the substrate is ready for the new finish.
    3. Match color, texture, and appearance.

4. Repair patched surfaces that are damaged, lifted, discolored, or showing other imperfections due to patching work. If defects are due to condition of substrate, repair substrate prior to repairing finish.

END OF SECTION 01 7329

SECTION 01 7800 - CLOSEOUT SUBMITTALS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Project record documents.
B. Operation and maintenance data.
C. Warranties and bonds.

1.02 SUBMITTALS

A. Project Record Documents: Submit documents to Architect with claim for final Application for Payment.
B. Operation and Maintenance Data:
   1. Submit two copies of preliminary draft or proposed formats and outlines of contents before start of Work. Architect will review draft and return one copy with comments.
   2. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit completed documents within ten days after acceptance.
   3. Submit one copy of completed documents 15 days prior to final inspection. This copy will be reviewed and returned after final inspection, with Architect comments. Revise content of all document sets as required prior to final submission.
   4. Submit two sets of revised final documents in final form within 10 days after final inspection.
C. Warranties and Bonds:
   1. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within 10 days after acceptance.
   2. Make other submittals within 10 days after Date of Substantial Completion, prior to final Application for Payment.
   3. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within 10 days after acceptance, listing the date of acceptance as the beginning of the warranty period.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 PROJECT RECORD DOCUMENTS

A. General:
   1. Project Record Documents include:
      a. Complete set of Record Drawings.
      b. Complete set of Record Submittals.
      c. Complete set of Specifications.
   2. Project Record Documents shall be submitted in electronic form.
      a. File Format: Portable Document Format (PDF).
      b. Files shall be named and organized in a searchable, easy to understand, system.
   3. Ensure entries are complete and accurate, enabling future reference by Owner.
   4. Record information concurrent with construction progress.
B. Record Drawings: Record Drawings shall include the following:
   1. Complete set of Drawings.
      a. Indicate and record actual construction including, but not limited to, the following:
         1) Show all systems and assemblies as they exist at completion of the Work.
         2) Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
         3) Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
         4) Field changes of dimension and detail.
         5) Details not on original Contract drawings.
   2. Addenda.
   3. Change Orders and other modifications to the Contract.

C. Record Submittals: Record Submittals shall include the following:
   1. Complete set of Submittals, including resubmittals.
   2. Shop Drawings shall indicate all field changes and other variations from the Submittal as originally reviewed by Architect.
D. Specifications: Specifications shall include the following:
   1. Complete Project Manual including all specifications, front end material, reports, and information available to bidders, as originally bid.
   2. Addenda.
   3. Change Orders and other modifications to the Contract.

3.02 OPERATION AND MAINTENANCE DATA

A. Source Data: For each product or system, list names, addresses and telephone numbers of Subcontractors and suppliers, including local source of supplies and replacement parts.
B. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.
C. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Do not use Project Record Documents as maintenance drawings.
D. Typed Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.

3.03 OPERATION AND MAINTENANCE DATA FOR MATERIALS AND FINISHES

A. For Each Product, Applied Material, and Finish:
   1. Product data, with catalog number, size, composition, and color and texture designations.
B. Instructions for Care and Maintenance: Manufacturer's recommendations for cleaning agents and methods, precautions against detrimental cleaning agents and methods, and recommended schedule for cleaning and maintenance.
C. Additional information as specified in individual product specification sections.
D. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.

3.04 OPERATION AND MAINTENANCE DATA FOR EQUIPMENT AND SYSTEMS

A. For Each Item of Equipment and Each System:
   1. Description of unit or system, and component parts.
   2. Identify function, normal operating characteristics, and limiting conditions.
   3. Include performance curves, with engineering data and tests.
   4. Complete nomenclature and model number of replaceable parts.
B. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.
C. Panelboard Circuit Directories: Provide electrical service characteristics, controls, and communications; typed.
D. Include color coded wiring diagrams as installed.
E. Operating Procedures: Include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and any special operating instructions.
F. Maintenance Requirements: Include routine procedures and guide for preventative maintenance and trouble shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
G. Provide servicing and lubrication schedule, and list of lubricants required.
H. Include manufacturer's printed operation and maintenance instructions.

I. Include sequence of operation by controls manufacturer.
J. Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
K. Provide control diagrams by controls manufacturer as installed.
L. Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.
M. Include test and balancing reports.
N. Additional Requirements: As specified in individual product specification sections.

3.05 ASSEMBLY OF OPERATION AND MAINTENANCE MANUALS

A. General:
   1. Operational and Maintenance Manuals include:
      a. Operational and maintenance data.
      b. Operational and maintenance data for materials and finishes.
      c. Operational and maintenance data for equipment and systems.
   2. Operational and Maintenance Manuals shall be submitted both in electronic form and as hard copy/durable manuals.
      a. Subject to Owner approval, hard copy/durable manuals may be omitted.
      b. Electronic File Format: Portable Document Format (PDF).
         1) Files shall be named and organized in a searchable, easy to understand, system similar to the descriptions for the hard copy/durable manuals
B. Assemble operation and maintenance data into durable manuals for Owner's personnel use, with data arranged in the same sequence as, and identified by, the specification sections.
C. Where systems involve more than one specification section, provide separate tabbed divider for each system.
D. Binders: Commercial quality, 8-1/2 by 11 inch three D side ring binders with durable plastic covers; 3 inch maximum ring size. When multiple binders are used, correlate data into related consistent groupings.
E. Cover: Identify each binder with typed or printed title OPERATION AND MAINTENANCE INSTRUCTIONS; identify title of Project; identify subject matter of contents.
F. Project Directory: Title and address of Project; names, addresses, and telephone numbers of Architect, Consultants, Contractor and subcontractors, with names of responsible parties.
G. Tables of Contents: List every item separated by a divider, using the same identification as on the divider tab; where multiple volumes are required, include all volumes Tables of Contents in each volume, with the current volume clearly identified.
H. Dividers: Provide tabbed dividers for each separate product and system; identify the contents on the divider tab; immediately following the divider tab include a description of product and major component parts of equipment.
I. Text: Manufacturer's printed data, or typewritten data on 20 pound paper.
J. Drawings: Provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.
K. Arrangement of Contents: Organize each volume in parts as follows:
   1. Project Directory.
   2. Table of Contents, of all volumes, and of this volume.
   3. Operation and Maintenance Data: Arranged by system, then by product category.
      a. Source data.
      b. Operation and maintenance data.
      c. Field quality control data.
      d. Photocopies of warranties and bonds.

3.06 WARRANTIES AND BONDS

A. Obtain warranties and bonds, executed in duplicate by responsible Subcontractors, suppliers, and manufacturers, within 10 days after completion of the applicable item of work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until Date of Substantial completion is determined.

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

C. Co-execute submittals when required.

D. Retain warranties and bonds until time specified for submittal.

E. Manual: Bind in commercial quality 8-1/2 by 11 inch three D side ring binders with durable plastic covers.

F. Cover: Identify each binder with typed or printed title WARRANTIES AND BONDS, with title of Project; name, address and telephone number of Contractor and equipment supplier; and name of responsible company principal.

G. Table of Contents: Neatly typed, in the sequence of the Table of Contents of the Project Manual, with each item identified with the number and title of the specification section in which specified, and the name of product or work item.

H. Separate each warranty or bond with index tab sheets keyed to the Table of Contents listing. Provide full information, using separate typed sheets as necessary. List Subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.

END OF SECTION 01 7800

SECTION 02 4100 - DEMOLITION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Selective demolition of building elements for alteration purposes.
B. Salvaged items.
C. Removed and reinstalled items.

1.02 RELATED REQUIREMENTS

A. Section 04 2000 - Unit Masonry: Salvaging existing brick.

1.03 REFERENCE STANDARDS

A. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations; 2022, with Errata (2021).
B. RFCI (RWP) - Recommended Work Practices for Removal of Resilient Floor Coverings; 2018.

1.04 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
B. Project Record Documents: Accurately record actual locations of capped and active utilities and subsurface construction.

1.05 QUALITY ASSURANCE

A. Demolition Firm Qualifications: Company specializing in the type of work required.
    1. Minimum of 5 years of documented experience.

PART 2 PRODUCTS - NOT USED

2.01 MATERIALS

PART 3 EXECUTION

3.01 SCOPE

A. Remove the entire building designated _____.
B. Remove portions of existing building as indicated on Drawings including, but not limited to, the following:
    1. Remove other items indicated, for salvage and relocation.

3.02 GENERAL PROCEDURES AND PROJECT CONDITIONS

A. Comply with other requirements specified in Section 01 7000.
B. Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public.
    1. Obtain required permits.
    2. Comply with applicable requirements of NFPA 241.
    3. Prior to start of demolition operations, perform an engineering survey of building condition to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures.
    4. Use of explosives is not permitted.
    5. Take precautions to prevent catastrophic or uncontrolled collapse of structures to be removed; do not allow worker or public access within range of potential collapse of unstable structures.
    6. Provide, erect, and maintain temporary barriers and security devices.
    7. Conduct operations to minimize effects on and interference with adjacent structures and occupants.
    8. Do not close or obstruct roadways or sidewalks without permit.
    9. Conduct operations to minimize obstruction of public and private entrances and exits; do not obstruct required exits at any time; protect persons using entrances and exits from removal operations.
    10. Obtain written permission from owners of adjacent properties when demolition equipment will traverse, infringe upon or limit access to their property.
C. Do not begin removal until receipt of notification to proceed from Owner.

D. Do not begin removal until built elements to be salvaged or relocated have been removed.
E. Minimize production of dust due to demolition operations; do not use water if that will result in ice, flooding, sedimentation of public waterways or storm sewers, or other pollution.
F. If hazardous materials are discovered during removal operations, stop work and notify Architect and Owner; hazardous materials include regulated asbestos containing materials, PCB's, and mercury.
G. Partial Removal of Paving and Curbs: Neatly saw cut at right angle to surface.

3.03 SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS

A. Concrete: Demolish in sections. Cut concrete full depth at junctures with construction to remain and at regular intervals using power-driven saw, and then remove concrete between saw cuts.
   1. Where concrete cannot be cut full depth, cut concrete to a depth of at least 3/4 inch. Dislodge concrete from reinforcement at perimeter of areas being demolished, cut reinforcement, and then remove remainder of concrete. Neatly trim openings to dimensions indicated.
B. Masonry: Demolish in small sections. Cut masonry at junctures with construction to remain, using power-driven saw, and then remove masonry between saw cuts.
   1. Refer to Section 04 2000 - Unit Masonry for salvaging brick.
C. Concrete Slabs-on-Grade: Saw-cut perimeter of area to be demolished, and then break up and remove.
D. Resilient Floor Coverings: Remove floor coverings and adhesive according to recommendations in RFCI (RWP). Do not use methods requiring solvent-based adhesive strippers.
E. Carpet: Remove carpet and adhesive according to industry standard and below. Do not use methods requiring solvent-based adhesive strippers.
   1. Remove carpet in managable sections and dispose.
   2. Using a floor scraper, scrape residual of carpet and adhesive from concrete.
   3. Sand the floor by mechanical means starting with a heavy grit to remove the bulk of the left adhesive and then a finer grit (approx 300) for the finish sand to allow new finish to be applied.

3.04 EXISTING UTILITIES

A. Coordinate work with utility companies; notify before starting work and comply with their requirements; obtain required permits.
B. Protect existing utilities to remain from damage.
C. Do not disrupt public utilities without permit from authority having jurisdiction.
D. Do not close, shut off, or disrupt existing life safety systems that are in use without at least 7 days prior written notification to Owner.
E. Do not close, shut off, or disrupt existing utility branches or take-offs that are in use without at least 3 days prior written notification to Owner.
F. Locate and mark utilities to remain; mark using highly visible tags or flags, with identification of utility type; protect from damage due to subsequent construction, using substantial barricades if necessary.
G. Remove exposed piping, valves, meters, equipment, supports, and foundations of disconnected and abandoned utilities.
H. Prepare building demolition areas by disconnecting and capping utilities outside the demolition zone; identify and mark utilities to be subsequently reconnected, in same manner as other utilities to remain.

3.05 SELECTIVE DEMOLITION FOR ALTERATIONS

A. Drawings showing existing construction and utilities are based on casual field observation and existing record documents only.
   1. Verify that construction and utility arrangements are as indicated.
   2. Report discrepancies to Architect before disturbing existing installation.
   3. Beginning of demolition work constitutes acceptance of existing conditions that would be apparent upon examination prior to starting demolition.

B. Separate areas in which demolition is being conducted from other areas that are still occupied.
   1. Provide, erect, and maintain temporary dustproof partitions of construction as specified and/or indicated on Drawings .

C. Maintain weatherproof exterior building enclosure except for interruptions required for replacement or modifications; take care to prevent water and humidity damage.

D. Remove existing work as indicated and as required to accomplish new work.
   1. Remove items indicated on Drawings.

E. Services (Including but not limited to HVAC, Plumbing, Fire Protection, Electrical, and Telecommunications): Remove existing systems and equipment as indicated.
   1. Maintain existing active systems that are to remain in operation; maintain access to equipment and operational components.
   2. Where existing active systems serve occupied facilities but are to be replaced with new services, maintain existing systems in service until new systems are complete and ready for service.
   3. Verify that abandoned services serve only abandoned facilities before removal.
   4. Remove abandoned pipe, ducts, conduits, and equipment, including those above accessible ceilings; remove back to source of supply where possible, otherwise cap stub and tag with identification.

F. Protect existing work to remain.
   1. Prevent movement of structure; provide shoring and bracing if necessary.
   2. Perform cutting to accomplish removals neatly and as specified for cutting new work.
   3. Repair adjacent construction and finishes damaged during removal work.
   4. Patch as specified for patching new work.

3.06 SALVAGED ITEMS

A. Clean salvaged items.

B. Pack or crate items after cleaning. Identify contents of containers.

C. Store items in a secure area until delivery to Owner.

D. Transport items to Owner's storage area on-site.

E. Protect items from damage during transport and storage.

3.07 REMOVED AND REINSTALLED ITEMS

A. Clean and repair items to functional condition adequate for intended reuse.

B. Pack or crate items after cleaning and repairing. Identify contents of containers.

C. Protect items from damage during transport and storage.

D. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.

3.08 EXISTING ITEMS TO REMAIN

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

3.09 DEBRIS AND WASTE REMOVAL

A. Remove debris, junk, and trash from site.

B. Leave site in clean condition, ready for subsequent work.
C. Clean up spillage and wind-blown debris from public and private lands.

END OF SECTION 02 4100

SECTION 06 1000 - ROUGH CARPENTRY

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Nonstructural dimension lumber framing.
B. Roofing nailers.
C. Preservative treated wood materials.
D. Fire retardant treated wood materials.
E. Miscellaneous framing and sheathing.
F. Concealed wood blocking, nailers, and supports.
G. Miscellaneous wood nailers, furring, and grounds.

1.02 REFERENCE STANDARDS

A. AWC (WFCM) - Wood Frame Construction Manual for One- and Two-Family Dwellings; 2024, with Errata.
B. ASTM C557 - Standard Specification for Adhesives for Fastening Gypsum Wallboard to Wood Framing; 2003 (Reapproved 2017).
C. ASTM D2898 - Standard Practice for Accelerated Weathering of Fire-Retardant-Treated Wood for Fire Testing; 2010 (Reapproved 2024).
D. ASTM D3498 - Standard Specification for Adhesives for Field-Gluing Wood Structural Panels (Plywood or Oriented Strand Board) to Wood Based Floor System Framing; 2019a.
E. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2023d.
F. AWPA U1 - Use Category System: User Specification for Treated Wood; 2025.
G. PS 20 - American Softwood Lumber Standard; 2025.

1.03 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements for submittal procedures.
B. Product Data: Provide technical data on insulated sheathing, wood preservative materials, and application instructions.
C. Manufacturer's Certificate: Certify that wood products supplied for rough carpentry meet or exceed specified requirements.

1.04 DELIVERY, STORAGE, AND HANDLING

A. General: Cover wood products to protect against moisture. Support stacked products to prevent deformation and to allow air circulation.
B. Fire Retardant Treated Wood: Prevent exposure to precipitation during shipping, storage, and installation.
    1. Species: Unless otherwise indicated, provide any species graded by the agency specified; if no grading agency is specified, provide lumber graded by any grading agency meeting the specified requirements.
    2. Grading Agency: Grading agency whose rules are approved by the Board of Review, American Lumber Standard Committee at www.alsc.org, and who provides grading service for the species and grade specified; provide lumber stamped with grade mark unless otherwise indicated.

1.05 DIMENSION LUMBER

A. Sizes: Nominal sizes as indicated on drawings, S4S.
B. Moisture Content: Kiln-dry or MC15.
C. Stud Framing (2 by 2 through 2 by 6):
    1. Species: Southern Pine.
    2. Grade: No. 2.
D. Stud Framing Framing (2 by 6 through 4 by 16):

1. Species: Southern Pine.
2. Grade: No. 2.

E. Miscellaneous Framing, Blocking, Nailers, Grounds, and Furring:
1. Lumber: S4S, No. 2 or Standard Grade.
2. Boards: Grade No. 2.

1.06 ACCESSORIES

A. Fasteners and Anchors:
1. Metal and Finish: Stainless steel for high humidity and preservative-treated wood locations, unfinished steel elsewhere.
2. Drywall Screws: Bugle head, hardened steel, power driven type, length three times thickness of sheathing.
3. Anchors:
a. Toggle bolt type for anchorage to hollow masonry.
b. Expansion shield and lag bolt type for anchorage to solid masonry or concrete.
c. Bolt or ballistic fastener for anchorages to steel

B. Construction Adhesives: Adhesives complying with ASTM C557 or ASTM D3498.
1. Manufacturers:
a. Franklin International, Inc; Titebond GREENchoice Heavy Duty Construction Adhesive: www.titebond.com.
b. Liquid Nails, a brand of PPG Industries, Inc.; LN-903 Heavy Duty Construction Adhesive (Low VOC): www.liquidnails.com.
c. Substitutions: See Section 01 6000 - Product Requirements.

1.07 FACTORY WOOD TREATMENT

A. Treated Lumber and Plywood: Comply with requirements of AWPA U1 - Use Category System for wood treatments determined by use categories, expected service conditions, and specific applications.
1. Fire-Retardant Treated Wood: Mark each piece of wood with producer's stamp indicating compliance with specified requirements.
2. Preservative-Treated Wood: Provide lumber and plywood marked or stamped by an ALSC-accredited testing agency, certifying level and type of treatment in accordance with AWPA standards.

B. Fire Retardant Treatment:
1. Manufacturers:
a. Lonza Group: www.wolmanizedwood.com.
b. Hoover Treated Wood Products, Inc: www.frtw.com.
c. Koppers, Inc: www.koppersperformancechemicals.com.
d. Viance, LLC: www.treatedwood.com.
e. Substitutions: See Section 01 6000 - Product Requirements.
2. Exterior Type: AWPA U1, Category UCFB, Commodity Specification H, chemically treated and pressure impregnated; capable of providing a maximum flame spread index of 25 when tested in accordance with ASTM E84, with no evidence of significant combustion when test is extended for an additional 20 minutes both before and after accelerated weathering test performed in accordance with ASTM D2898.
a. Kiln dry wood after treatment to a maximum moisture content of 19 percent for lumber and 15 percent for plywood.
b. Treat lumber in locations as indicated
3. Interior Type A: AWPA U1, Use Category UCFA, Commodity Specification H, low temperature (low hygroscopic) type, chemically treated and pressure impregnated; capable of providing a maximum flame spread index of 25 when tested in accordance with ASTM E84, with no evidence of significant combustion when test is extended for an additional 20 minutes.
a. Kiln dry wood after treatment to a maximum moisture content of 19 percent for lumber and 15 percent for plywood.

b. Interior rough carpentry items are to be fire retardant treated.

C. Preservative Treatment:

1. Manufacturers:
   a. Lonza Group: www.wolmanizedwood.com.
   b. Hoover Treated Wood Products, Inc: www.frtw.com.
   c. Koppers Performance Chemicals, Inc: www.koppersperformancechemicals.com.
   d. Viance, LLC: www.treatedwood.com.
   e. Substitutions: See Section 01 6000 - Product Requirements.
2. Preservative Pressure Treatment of Lumber Above Grade: AWPA U1, Use Category UC3B, Commodity Specification A using waterborne preservative.
   a. Kiln dry lumber after treatment to maximum moisture content of 19 percent.
   b. Treat lumber exposed to weather.
   c. Treat lumber in contact with roofing, flashing, or waterproofing.
      1) At Contractor's option, roof nailers may be non-preservative treated.
   d. Treat lumber in contact with masonry or concrete.
   e. Treat lumber less than 18 inches above grade.
   f. Treat lumber in other locations as indicated.
3. Preservative Pressure Treatment of Plywood Above Grade: AWPA U1, Use Category UC2 and UC3B, Commodity Specification F using waterborne preservative.
   a. Kiln dry plywood after treatment to maximum moisture content of 19 percent.
   b. Treat plywood in contact with roofing, flashing, or waterproofing.
   c. Treat plywood in contact with masonry or concrete.
   d. Treat plywood less than 18 inches above grade.
   e. Treat plywood in other locations as indicated.
4. Preservative Pressure Treatment of Lumber in Contact with Soil: AWPA U1, Use Category UC4A, Commodity Specification A using waterborne preservative.
5. Preservative for Field Application to Cut Surfaces: As recommended by manufacturer of factory treatment chemicals for brush-application in the field.

PART 3 EXECUTION

2.01 PREPARATION

A. Install sill gasket under sill plate of framed walls bearing on foundations; puncture gasket cleanly to fit tightly around protruding anchor bolts.

2.02 INSTALLATION - GENERAL

A. Select material sizes to minimize waste.

B. Reuse scrap to the greatest extent possible; clearly separate scrap for use on site as accessory components, including: shims, bracing, and blocking.

C. Where treated wood is used on interior, provide temporary ventilation during and immediately after installation sufficient to remove indoor air contaminants.

2.03 MISCELLANEOUS FRAMING

A. Install miscellaneous framing level, plumb, and true to line.

B. Comply with member sizes, spacing, and configurations indicated, and fastener size and spacing indicated, but not less than required by applicable codes and AWC (WFCM) Wood Frame Construction Manual.

C. Install horizontal spanning members with crown edge up and not less than 3 inches of bearing at each end.

2.04 BLOCKING, NAILERS, AND SUPPORTS

A. Provide framing and blocking members as indicated or as required to support finishes, fixtures, specialty items, and trim.

2.05 ROOF-RELATED CARPENTRY

A. Coordinate installation of roofing carpentry with deck construction, framing of roof openings, and roofing assembly installation.

2.06 SITE APPLIED WOOD TREATMENT

A. Apply preservative treatment compatible with factory applied treatment at site-sawn cuts, complying with manufacturer's instructions.

B. Allow preservative to dry prior to erecting members.

2.07 TOLERANCES

A. Framing Members: 1/4 inch from true position, maximum.

B. Variation from Plane, Other than Floors: 1/4 inch in 10 feet maximum, and 1/4 inch in 30 feet maximum.

2.08 CLEANING

A. Do not leave wood, shavings, sawdust, etc. on the ground or buried in fill.

B. Prevent sawdust and wood shavings from entering the storm drainage system.

END OF SECTION 06 1000

SECTION 07 4113 - METAL ROOF PANELS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Architectural standing seam roofing system of preformed steel panels.
B. Underlayment.
C. Accessories.

1.02 RELATED REQUIREMENTS

A. Section 07 7200 - Roof Accessories: For installation of fence type snow guard inserts.

1.03 REFERENCE STANDARDS

A. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix); 2022.
B. ASTM A792/A792M - Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process; 2023.
C. ASTM D1970/D1970M - Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection; 2021.
D. ASTM E331 - Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference; 2000 (Reapproved 2023).
E. ASTM E96/E96M - Standard Test Methods for Gravimetric Determination of Water Vapor Transmission Rate of Materials; 2023.
F. UL 2218 - Standard for Impact Resistance of Prepared Roof Covering Materials; Current Edition, Including All Revisions.
G. UL 580 - Standard for Tests for Uplift Resistance of Roof Assemblies; Current Edition, Including All Revisions.
H. UL 790 - Standard for Standard Test Methods for Fire Tests of Roof Coverings; Current Edition, Including All Revisions.

1.04 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements for submittal procedures.
B. Product Data: Manufacturer's data sheets on each product to be used, including:
   1. Storage and handling requirements and recommendations.
   2. Installation methods.
   3. Specimen warranty.
C. Shop Drawings: Include layouts of roof panels, details of edge and penetration conditions, spacing and type of connections, flashings, underlayments, and special conditions.
D. Verification Samples: For each roofing system specified, submit three samples of minimum size 12 inches square, representing actual roofing metal, thickness, profile, color, and texture.
   1. Include typical fastening detail.
E. Warranty: Submit specified manufacturer's warranty and ensure that forms have been completed in Owner's name and are registered with manufacturer.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than five years of documented experience.
B. Installer Qualifications: Company specializing in performing work of the type specified and with at least five years of documented experience and approved by manufacturer.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Store roofing panels on project site as recommended by manufacturer to minimize damage to panels prior to installation.

1.07 WARRANTY

A. See Section 01 7800 - Closeout Submittals for additional warranty requirements.

B. Finish Warranty: Provide manufacturer's special warranty covering failure of factory-applied exterior finish on metal roof panels and agreeing to repair or replace panels that show evidence of finish degradation, including significant fading, chalking, cracking, or peeling within specified warranty period of twenty years from Date of Substantial Completion.

C. Waterproofing Warranty: Provide manufacturer's warranty for weathertightness of roofing system, including agreement to repair or replace roofing that fails to keep out water within specified warranty period of five years from Date of Substantial Completion.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Standing Seam Metal Roof Panels:

1. AEP Span; Design Span HP: www.aepspan.com.
2. Berridge Manufacturing Company; Cee-Lock Panel: www.berridge.com.
3. Centria; SDP 175: www.centria.com.
4. Fabral; Thin Seam: www.fabral.com.
5. Holcim Elevate; Una-Clad UC-4: www.holcimelevate.com.
6. MBCI, an NCI Building Systems company; Lokseam: www.mbci.com.
7. Metal Sales Manufacturing Corp.; Vertical Seam: www.metalsales.us.com.
8. Morin Corp., a Kingspan Group Company; SWL: www.morincorp.com.
9. Petersen Aluminum Corporation; Snap-Clad Panel: www.pac-clad.com.
10. Substitutions: See Section 01 6000 - Product Requirements.

2.02 ARCHITECTURAL METAL ROOF PANELS

A. Architectural Metal Roof Panels: Provide complete engineered system complying with specified requirements and capable of remaining weathertight while withstanding anticipated movement of substrate and thermally induced movement of roofing system.

B. Performance Requirements:

1. Water Penetration: No water penetration at 15 psf per ASTM E331.
2. Wind Uplift: UL 580, Class 90.
3. Hail Resistance: UL 2218, Class 4.
4. Fire Resistance: UL 790, Class A.

C. Architectural Metal Panels: Factory-formed panels with factory-applied finish.

1. Steel Panels:
   a. Aluminum-zinc alloy-coated steel conforming to ASTM A792/A792M; minimum AZ50 coating. (Galvalume)
   b. Steel Thickness: Minimum 22 gage (0.029 inch).
2. Profile: Standing seam, with minimum 1.5 inch seam height; concealed fastener system with self-locking snap-together seams.
3. Panel Coverage; Width: 16 inches.

2.03 ATTACHMENT SYSTEM

2.04 FABRICATION

A. Panels: Provide factory fabricated panels with applied finish and accessory items, using manufacturer's standard processes as required to achieve specified appearance and performance requirements.

B. Joints: Provide captive gaskets, sealants, or separator strips at panel joints to ensure weathertight seals, eliminate metal-to-metal contact, and minimize noise from panel movements.

2.05 FINISHES

A. Fluoropolymer Coil Coating System: Polyvinylidene fluoride (PVDF) multi-coat superior performing organic coatings system complying with AAMA 2605, including at least 70 percent

PVDF resin, and at least 80 percent of coil coated aluminum surfaces having minimum total dry film thickness (DFT) of 0.9 mil, 0.0009 inch.

1. Color: Custom color to match Architect's sample.

2.06 ACCESSORIES

A. Miscellaneous Sheet Metal Items: Provide flashings, trim, closure strips, and similar sheet metal items of the same material, thickness, and finish as used for the roofing panels. Items completely concealed after installation may optionally be made of stainless steel.

B. Rib and Ridge Closures: Provide prefabricated, close-fitting components of steel with corrosion resistant finish or combination steel and closed-cell foam.

C. Fence Type Snow Guard Inserts: Provide pre-finished sheet metal inserts for installation in fence type snow guards; refer to Section 07 7200 - Roof Accessories, for installation.

1. Color and Finish: To match standing seam metal roof panels.
2. Size: Coordinate with snow guard manufacturer.

D. Sealants:

1. Exposed Sealant: Elastomeric silicone as recommended by roof panel manufacturer, compatible with adjacent materials, and complying with requirements of Section 07 9200 - Joint Sealants.
2. Concealed Sealant: Non-curing butyl sealant or tape sealant.
3. Seam Sealant: Factory-applied, non-skinning, non-drying type.

E. Underlayment: Self-adhering rubber-modified asphalt sheet complying with ASTM D1970/D1970M; 40 mil total thickness; with strippable release film and woven polypropylene sheet top surface.

1. Water Vapor Permeance: 0.1 perm, maximum, when tested in accordance with ASTM E96/E96M using Desiccant Method (Method A).
2. Designed to withstand temperatures up to 250 degrees F.
3. Products:
   a. Carlisle WIP Products, a division of Carlisle Construction Materials Inc.; WIP 300HT www.carlislewipproducts.com.
   b. Firestone Building Products; Clad-Gard SA Metal Underlayment: www.firestonebpco.com.
   c. GCP Applied Technologies Inc.; Grace Ice & Water Shield HT: www.gcpat.com.
   d. Henry Company; Blueskin PE200HT : www.us.henry.com.
   e. Polyguard Products, Inc.; Deckguard HT: www.polyguardproducts.com.
   f. Soprema, Inc.; Lastobond Shield HT: www.soprema.us.
   g. Substitutions: See Section 01 6000 - Product Requirements.

PART 3 EXECUTION

3.01 EXAMINATION

A. Do not begin installation of preformed metal roof panels until substrates have been properly prepared.

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

3.02 PREPARATION

A. Broom clean wood sheathing prior to installation of roofing system.

B. Coordinate roofing work with provisions for roof drainage, flashing, trim, penetrations, and other adjoining work to ensure that completed roof will be free of leaks.

C. Separate dissimilar metals by applying a bituminous coating, self-adhering rubberized asphalt sheet, or other permanent method approved by metal roof panel manufacturer.

D. At locations where metal will be in contact with wood or other absorbent material subject to wetting, seal joints with sealing compound and apply one coat of heavy-bodied bituminous paint.

3.03 INSTALLATION

A. Overall: Install roofing system in accordance withapproved shop drawings and panel manufacturer's instructions and recommendations, as applicable to specific project conditions. Anchor all components of roofing system securely in place while allowing for thermal and structural movement.
   1. Minimize field cutting of panels. Where field cutting is absolutely required, use methods that will not distort panel profiles. Use of torches for field cutting is absolutely prohibited.

B. Accessories: Install all components required for a complete roofing assembly, including flashings, trim, closure strips, caps, rib closures, ridge closures, and similar roof accessory items.

C. Underlayment:
   1. General: Install underlayment according to manufacturer's instructions and as specified.
      a. Underlayments shall weather lap metal drip edges.
   2. Install self-adhering sheet underlayment with ends and edges weather lapped minimum 4 inches, stagger end laps of each consecutive layer.
      a. Install without wrinkles; overlapping edges shall be sealed tightly without gaps.
      b. Locations:
         1) Extend over entire roof area and return vertically against penetrating elements and sidewalls not less than 4 inches.

D. Roof Panels: Install panels in strict accordance with manufacturer's instructions, minimizing transverse joints except at junction with penetrations.
   1. Incorporate concealed clips at panel joints, and snap panels together to provide weathertight joints.
   2. Provide sealant tape or other approved joint sealer at lapped panel joints.
   3. Install sealant or sealant tape, as recommended by panel manufacturer, at end laps and side joints.

3.04 CLEANING

A. Clean exposed sheet metal work at completion of installation. Remove grease and oil films, excess joint sealer, handling marks, and debris from installation, leaving the work clean and unmarked, free from dents, creases, waves, scratch marks, or other damage to the finish.

3.05 PROTECTION

A. Do not permit storage of materials or roof traffic on installed roof panels. Provide temporary walkways or planks as necessary to avoid damage to completed work. Protect roofing until completion of project.

B. Touch-up, repair, or replace damaged roof panels or accessories before Date of Substantial Completion.

END OF SECTION 07 4113

SECTION 07 5323 - EPDM MEMBRANE ROOFING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Ethylene-propylene-diene-terpolymer (EPDM) roofing assembly; fully adhered. Including, but not limited to, the following:
   1. Cover board.
   2. Insulation, flat and tapered.
   3. Walkway pads.

1.02 ABBREVIATIONS

A. EPDM: Ethylene-propylene-diene-terpolymer.

1.03 REFERENCE STANDARDS

A. ASTM C1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board; 2023a.
B. ASTM D4637/D4637M - Standard Specification for EPDM Sheet Used in Single-Ply Roof Membrane; 2015, with Editorial Revision (2022).
C. FM (AG) - FM Approval Guide; Current Edition.
D. FM 4470 - Examination Standard for Single-Ply, Polymer-Modified Bitumen Sheet, Built-Up Roof (BUR) and Liquid Applied Roof Assemblies for Use in Class 1 and Noncombustible Roof Deck Construction; 2022.
E. FM DS 1-28 - Wind Design; 2015, with Editorial Revision (2024).
F. FM DS 1-29 - Roof Deck Securement and Above-Deck Roof Components; 2016, with Editorial Revision (2022).
G. FM DS 1-49 - Perimeter Flashing; 2016.
H. NRCA (RM) - The NRCA Roofing Manual; 2023.
I. NRCA (WM) - The NRCA Waterproofing Manual; 2021.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordinate with installation of associated counterflashings installed under other sections.
B. Preinstallation Meeting: Convene a preinstallation meeting one week before starting work of this section; require attendance by all affected installers; review preparation and installation procedures and coordination and scheduling necessary for related work.

1.05 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
B. Product Data: Provide data indicating membrane materials, flashing materials, cover boards, insulation, vapor barrier, substrate board, adhesives, and fasteners.
C. Shop Drawings: Indicate joint or termination detail conditions, conditions of interface with other materials, setting plan for tapered insulation, walkway pad locations, and sacrificial membrane locations.
D. Samples for Verification: Submit three samples 4 by 4 inches in size illustrating roofing membrane, cover board, insulation, vapor barrier, substrate board, and walkway pads.
E. Manufacturer's Field Reports: Indicate procedures followed, ambient temperatures, humidity, wind velocity during application, and supplementary instructions given.
F. Manufacturer's Qualification Statement.
G. Installer's Qualification Statement.
H. Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.
I. Field Quality Control Reports.

1.06 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum 5 years of documented experience.

B. Installer Qualifications: Company specializing in performing the work of this section with minimum 5 years documented experience, and approved by manufacturer.

1.07 DELIVERY, STORAGE, AND HANDLING

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

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

C. Ensure storage and staging of materials does not exceed static and dynamic load-bearing capacities of roof decking.

D. Protect foam insulation from direct exposure to sunlight.

E. Schedule applications so that no partially completed sections of roof are left exposed at end of workday.

1.08 FIELD CONDITIONS

A. Do not install roofing assembly during unsuitable weather and temperatures as defined by roofing membrane manufacturer.

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

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

1.09 WARRANTY

A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.

B. Manufacturer Warranty: Provide 20 year manufacturer's system warranty where manufacturer shall repair or replace roofing system components that fail in materials or workmanship; includes failure to prevent penetration of water to include rood edge metals.

C. Installer Warranty: Provide installation warranty where Installer agrees to correct defective Work within a 2 year period after Date of Substantial Completion; includes failure to prevent penetration of water.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Roof Assembly shall be provided by by one of the following:

1. Carlisle SynTec Systems; www.carlislesyntec.com.
2. Holcim Elevate (formerly Firestone Building Products); www.holcimelevate.com.
3. Substitutions: Not permitted.

B. Source Limitations: Obtain roof membrane from one of the named Roof Assembly manufacturers and provide related roofing assembly components from either the roof membrane manufacturer or one of the listed product manufacturers; subject to approval of roof membrane manufacturer.

2.02 ROOFING ASSEMBLY

A. Single-ply membrane roofing assembly consisting of the following:

1. EPDM single-ply roof membrane; fully adhered.
2. Cover board; fully adhered.
3. Insulation, including tapered insulation; first layer mechanically fastened, all subsequent layers fully adhered.
4. Walkway pads.

B. Performance Requirements:

1. Comply with Factory Mutual (FM) Global and FM Approvals' RoofNav Listing requirements as follows:
   a. Roof membrane, base flashings, and component materials shall comply with requirements in FM Approvals FM 4450 or FM Approvals FM 4470 as part of a roofing system, and shall be listed in FM Approvals' RoofNav for Class 1 or noncombustible construction, as applicable. Identify materials with FM Approvals Certification markings.
      1) Fire/Windstorm Classification: Class 1A-90.
      2) Hail-Resistance Rating: SH.
   b. Comply with the following Property Loss Prevention Data Sheets:
      1) Data Sheet FM DS 1-28: Wind Design.
      2) Data Sheet FM DS 1-29: Roof Deck Securement and Above-Deck Roof Components.
      3) Data Sheet FM DS 1-49: Perimeter Flashing.
2. Minimum Insulation Requirements: Excluding tapered insulation.
   a. Minimum Layers of Insulation: Two.
   b. Minimum R-value: 30.
3. Material Compatibility: Roofing materials shall be compatible with one another and adjacent materials as demonstrated by roof membrane manufacturer based on testing and field experience.

2.03 ROOF MEMBRANE

A. Membrane: Ethylene-propylene-diene-terpolymer (EPDM); internally reinforced with fabric or scrim; complying with minimum properties of ASTM D4637/D4637M.
   1. Thickness: 0.060 inch (60 mil), nominal.
   2. Color: Black.

2.04 COVER BOARD

A. Faced Polyisocyanurate Cover Board: High compressive strength board, conforming to ASTM C1289, Type II, Class 4 - Faced with coated or uncoated polymer-bonded glass fiber mat facers on both major surfaces of the core foam.
   1. Grade and Compressive Strength: Grade 1, 80 psi.
   2. Board Size: 4 by 4, or 4 by 8 feet.
   3. Board Thickness: 1/2 inch.
   4. Insulation Thermal Resistance, R-value: 2.5, nominal.
   5. Products:
      a. Carlisle SynTec Systems; SecurShield HD Plus: www.carlislesyntec.com.
      b. Holcim Elevate (formerly Firestone Building Products); ISOGARD HD Cover Board: www.holcimelevate.com.
      c. Substitutions: See Section 01 6000 - Product Requirements.

2.05 INSULATION

A. Polyisocyanurate Board Insulation: Rigid cellular foam, conforming to ASTM C1289.
   1. Classifications:
      a. Type II:
         1) Class 1 - Faced with glass fiber reinforced cellulosic felt facers on both major surfaces of core foam.
         2) Compressive Strength: Grade 2 - 20 psi (138 kPa), minimum.
         3) Long Term Thermal Resistance (LTTR) R-value: At 1 inch thick; 5.7 at 75 degrees F.
   2. Board Size: 4 by 4, or 4 by 8 feet.
   3. Board Thickness: 2.0 inch.
   4. Tapered Board: Slope as indicated; minimum thickness 1/2 inch; fabricate of fewest layers possible.
   5. Board Edges: Square.
   6. Products:

a. Carlisle SynTec Systems; SecurShield: www.carlislesyntec.com.
b. Holcim Elevate (formerly Firestone Building Products); Resista: www.holcimelevate.com.
c. Substitutions: See Section 01 6000 - Product Requirements.

2.06 WALKWAYS

A. Flexible Walkways: Factory-formed, nonporous, heavy-duty, slip-resisting, surface-textured walkway pads.
1. Size: 30 by 30 inches.
2. Thickness: 0.30 inch, minimum.
3. Color: Black.
4. Products:
a. Carlisle SynTec Systems; Sure-Seal EPDM Pressure-Sensitive Molded Walkway Pads: www.carlislesyntec.com.
b. Holcim Elevate (formerly Firestone Building Products); QuickSeam Walkway Pad: www.holcimelevate.com.
c. Johns Manville; JM EPDM Peel & Stick Walkpads: www.jm.com.
d. Substitutions: See Section 01 6000 - Product Requirements.

2.07 ACCESSORIES

A. Auxiliary Materials: Provide all materials recommended by roofing assembly manufacturer for a complete and weathertight assembly.
B. Flexible Flashing Material: Same material as roofing membrane.
1. Thickness: Same as roofing membrane unless otherwise recommended by roof membrane manufacturer.
2. Uncured, unless otherwise recommended by roof membrane manufacturer.
C. Factory Fabricated Flashings: Same material as roofing membrane
1. Provide manufacturer's standard preformed flashings including, but not limited to, cone and vent sheet flashings, molded pipe boot flashings, and pourable sealer penetration pockets.
D. Metal Termination Bars: Manufacturer's standard, predrilled stainless steel bars, approximately 1 by 1/8 inch thick; with anchors.
E. Membrane and Flashing Adhesive: As recommended by membrane manufacturer.
F. Seaming Materials: Manufacturer's standard splice tape with release film.
G. Insulation Adhesive: As recommended by insulation manufacturer and as follows:
1. Full-spread, spray-applied, low-rise, two-component urethane adhesive.
H. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Approvals FM 4470, designed for fastening components to substrate, and acceptable to roofing system manufacturer
I. Sealants and Pourable Sealers: As recommended by membrane manufacturer.
J. Surface Conditioner for Adhesives: Compatible with membrane and adhesives.
K. Vapor Barrier Primer: As recommended by vapor barrier manufacturer.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that surfaces and site conditions are ready to receive work.
B. Verify deck is supported and secure.
C. Verify deck is clean and smooth, flat, free of depressions, waves, or projections, properly sloped and suitable for installation of roof system.
D. Verify deck surfaces are dry and free of snow or ice.
E. Verify that roof openings, curbs, and penetrations through roof are solidly set, and nailing strips are in place.

3.02 INSTALLATION - GENERAL

A. Perform work in accordance with manufacturer's instructions, NRCA (RM), and NRCA (WM) applicable requirements.
B. Do not apply roofing membrane during unsuitable weather.
C. Do not apply roofing membrane when ambient temperature is outside the temperature range recommended by manufacturer.
D. Do not apply roofing membrane to damp or frozen deck surface or when precipitation is expected or occurring.
E. Do not expose materials vulnerable to water or sun damage in quantities greater than can be weatherproofed the same day.

3.03 INSULATION INSTALLATION

A. Ensure vapor barrier is clean and dry, continuous, and ready for application of insulation.
B. Attachment of Insulation: Includes tappered insulation.
   1. Mechanically fasten first layer of insulation to deck in accordance with roof assembly manufacturer's instructions and FM (AG) Factory Mutual requirements.
   2. Embed each subsequent layer of insulation in adhesive in accordance with roof assembly manufacturers' instructions and FM (AG) Factory Mutual requirements.
   3. Lay subsequent layers of insulation with joints staggered minimum 6 inch from joints of preceding layer.
C. Cover Boards:
   1. Adhere cover board to insulation using adhesive according to roof assembly manufacturer's instructions and FM (AG) Factory Mutual requirements.
D. Place tapered insulation to the required slope pattern in accordance with manufacturer's instructions.
E. On metal deck, place boards perpendicular to flutes with insulation board ends bearing on deck flutes.
F. Lay boards with edges in tight contact without forcing. Cut insulation to fit neatly to perimeter blocking and around penetrations through roof.
   1. Gaps between boards and adjacent materials shall not exceed 1/4 inch.
G. At roof drains, use factory-tapered boards to slope down to roof drains over a distance of 24 inches.
H. Do not apply more insulation than can be covered with membrane in same day.

3.04 MEMBRANE INSTALLATION

A. Fully adhere membrane roofing system in accordance with manufacturer's recommendations and NRCA (RM) applicable requirements.
B. Roll out membrane, free from wrinkles or tears. Place sheet into place without stretching.
C. Shingle joints on sloped substrate in direction of drainage.
D. Accurately align roof membrane, and maintain uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.
   1. Overlap edges and ends and seal seams by splice tape. Seal permanently waterproof.
E. At intersections with vertical surfaces:
   1. Fully adhere flexible flashing over membrane and up to nailing strips.
   2. Secure flashing to nailing strips at 4 inches on center.
F. At gravel stops, extend membrane under gravel stop and down face of wall behind gravel stop fascia. Secure with fasteners to nailing strips.
G. At copings, unless otherwise indicated, extend membrane under coping and down face of wall behind front of coping. Secure with fasteners to nailing strips.
H. Around roof penetrations, seal flanges and flashings with flexible flashing.
I. Install roofing expansion joints where indicated. Make joints watertight.

1. Install prefabricated joint components in accordance with manufacturer's instructions.

J. Coordinate installation of roof drains and sumps and related flashings.

K. Coordinate installation of associated counterflashings installed under other sections.

3.05 SACRIFICIAL MEMBRANE INSTALLATION

A. At roof exhausts which expel vegetable oils, animal fats, and other kitchen wastes, or expel other chemicals detrimental to the roof membrane, install a sacrificial membrane over the roof membrane in an 8 foot radius, minimum, around the roof exhaust.

1. Sacrificial membrane shall be the same material and thickness as the roof membrane.

3.06 WALKWAY PAD INSTALLATION

A. Walkway Pads: Install walkway products according to manufacturer's instructions.

B. Install walkway pads at the following locations:

1. Perimeter of each rooftop unit.
2. Between each rooftop unit location, creating a continuous path connecting rooftop unit locations.
3. Between each roof hatch and each rooftop unit location or path connecting rooftop unit locations.
4. Top and bottom of each roof access ladder.
5. Between each roof access ladder and each rooftop unit location or path connecting rooftop unit locations.
6. At downspout discharges onto roof assembly.
7. Other locations as indicated on Drawings.
8. As required by roof membrane manufacturer's warranty requirements.

C. Provide 6 inch clearance between adjoining pads.

D. Adhere walkway products to substrate with compatible adhesive according to walkway pad manufacturer's instructions.

3.07 FIELD QUALITY CONTROL

A. See Section 01 4000 - Quality Requirements, for general requirements for field quality control and inspection.

B. Require site attendance of roof assembly manufacturer daily during installation of the Work.

C. Final Roof Inspection: Arrange for roof assembly manufacturer's technical personnel to inspect roofing installation on completion, in presence of Architect, and to prepare inspection report.

D. Repair or remove and replace components of roofing system where inspections indicate that they do not comply with specified requirements.

E. Additional testing and inspecting, at Contractor's expense, will be performed to determine if replaced or additional work complies with specified requirements

3.08 CLEANING

A. Clean all dirt, footprints, overspray, spillage, debris, and other construction waste materials from the roof assembly.

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 damaged finishes caused by work of this section.

3.09 PROTECTION

A. Protect installed roofing and flashings from construction operations.

END OF SECTION 07 5323

SECTION 07 6200 - SHEET METAL FLASHING AND TRIM

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Formed sheet metal items, including, but not limited to, the following:
   1. Flashings.
   2. Counterflashings.
   3. Drip edges.
   4. Gutters and downspouts.
   5. Precast splash blocks.
   6. Other items as indicated on Drawings.

B. Manufactured reglets.

1.02 REFERENCE STANDARDS

A. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix); 2022.

B. ASTM A666/A666M - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar; 2024.

C. ASTM B32 - Standard Specification for Solder Metal; 2020.

D. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2018.

E. FM DS 1-49 - FM Global Property Loss Prevention Data Sheet - Perimeter Flashing; 2016.

F. NRCA (RM) - The NRCA Roofing Manual; 2023.

G. SMACNA (ASMM) - Architectural Sheet Metal Manual; 2012.

1.03 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Convene one week before starting work of this section.

1.04 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements for submittal procedures.

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

C. Samples:
   1. For each material and finish, submit three samples 4 by 4 inch in size illustrating metal finish color.
   2. Reglets: Submit three samples, 4 inches long, full size, of each type and finish.

1.05 QUALITY ASSURANCE

A. Perform work in accordance with SMACNA (ASMM) requirements, except as otherwise indicated.

B. Fabricator and Installer Qualifications: Company specializing in sheet metal work with 5 years of documented experience.

1.06 MOCK-UP

A. Mockups: Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for materials and execution.
   1. Build mockup of typical wall flashing with counterflashing, approximately 10 feet long, including supporting construction cleats, seams, attachments and accessories.
   2. Locate where directed.
   3. Mock-up may remain as part of the Work.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Stack material to prevent twisting, bending, and abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.

B. Prevent contact with materials that could cause discoloration or staining.

PART 2 PRODUCTS

2.01 PERFORMANCE REQUIREMENTS

A. Perform work in accordance with SMACNA (ASMM) and NRCA (RM) requirements, unless more stringent requirements are indicated.
B. Sheet metal flashing and trim shall withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction.
C. Sheet metal flashing and trim shall not rattle, leak, or loosen, and shall remain watertight.
D. Fabricate cleats and attachment devices of sizes as recommended by cited sheet metal standards, and by Data Sheet FM DS 1-49: Perimeter Flashing, for application, but not less than thickness of metal being secured.
E. Coordination:
    1. Coordinate sheet metal flashing and trim layout and seams with sizes and locations of penetrations to be flashed, and joints and seams in adjacent materials.
    2. Coordinate sheet metal flashing and trim installation with adjoining roofing and wall materials, joints, and seams to provide leakproof, secure, and noncorrosive installation.

2.02 SHEET MATERIALS

A. Pre-Finished Aluminum: ASTM B209 (ASTM B209M); 20 gage, (0.032 inch) thick, minimum; plain finish shop pre-coated with fluoropolymer coating.
    1. Fluoropolymer Coating: High Performance Organic Finish, AAMA 2605; multiple coat, thermally cured fluoropolymer finish system.
    2. Color: Two or three-coat custom color to match Architect's sample.
B. Stainless Steel: ASTM A666/A666M, Type 304 alloy, soft temper, 24 gage, 0.025 inch thick, minimum; smooth 2D (dull, cold rolled) finish.

2.03 FABRICATION

A. Form sections true to shape, accurate in size, square, and free from distortion or defects.
B. Form sheet metal flashing and trim to fit substrates without excessive oil canning, buckling, and tool marks; true to line, levels, and slopes.
C. Fabricate cleats of same material as sheet, interlocking with sheet.
D. Form pieces in longest possible lengths.
E. Hem exposed edges on underside 1/2 inch; miter and seam corners.
F. Form material with flat lock seams, except where otherwise indicated; at moving joints, use sealed lapped, bayonet-type or interlocking hooked seams.
G. Fabricate corners from one piece with minimum 18 inch long legs; seam for rigidity, seal with sealant.
H. Fabricate vertical faces with bottom edge formed outward 1/4 inch and hemmed to form drip.

2.04 GUTTER AND DOWNSPOUT FABRICATION

A. Material: Pre-finished aluminum.
B. Gutters: SMACNA (ASMM) Rectangular profile; matching Style A.
    1. Expansion Joints: Lap type.
C. Downspouts: Rectangular profile.
D. Gutters and Downspouts: Size for rainfall intensity determined by a storm occurrence of 1 in 10 years in accordance with SMACNA (ASMM), unless otherwise indicated.
E. Anchorage Accessories: Profiled to suit gutters and downspouts.
    1. Anchorage Devices: In accordance with SMACNA (ASMM) requirements.
    2. Gutter Supports: Continuous cleat and straps.
    3. Downspout Supports: Straps.
F. Downspout Boots: Plastic, unless otherwise indicated.
G. Seal metal joints.

H. Accessories:
1. Continuous, removable leaf screen; sheet metal frame and hardware cloth screen.
2. Valley baffles.

2.05 ACCESSORIES

A. General: Provide all related materials, fasteners, hardware and accessories for a complete installation.
B. Fasteners: Same material and finish as flashing metal, with soft neoprene washers.
1. Blind Fasteners: High-strength aluminum or stainless-steel rivets suitable for metal being fastened.
2. Exposed Fasteners: Heads matching color of sheet metal using factory-applied coating.
C. Protective Backing Paint: Zinc molybdate alkyd.
D. Concealed Sealants: Non-curing butyl sealant.
E. Exposed Sealants: ASTM C920; elastomeric silicone sealant, with minimum movement capability as recommended by manufacturer for substrates to be sealed; color to match adjacent material.
F. Solder: ASTM B32; Sn96 type for stainless steel.

2.06 DRIP EDGES

A. Material: Pre-finished aluminum.
B. Provide L-shaped drip edges; extend horizontal leg 4 inches onto roof with vertical leg terminated with a 45 degree bent drip edge.
C. At Contractor's option, provide manufactured drip edges of type and profile required.

2.07 REGLETS

A. Manufactured Reglets: Units of type and profile required, formed to securely interlock with separate counterflashing pieces. Provide factory-mitered and welded corners and junctions.
1. Material: Same material and finish as counterflashing metal.
2. Surface Mounted Type: Provide slotted holes for fastening to substrate, with neoprene or other suitable weatherproofing washers, and with channel for sealant at top edge.
3. Concrete Type: Provide temporary closure tape to keep reglet free of concrete materials, special fasteners for attaching reglet to concrete forms, and guides to ensure alignment of reglet section ends.
4. Masonry Type: Provide with offset top flange for embedment in masonry mortar joint.
5. Accessories:
a. Counterflashing Wind-Restraint Clips: Provide clips to be installed before counterflashing to prevent wind uplift of counterflashing's lower edge
6. Manufacturers:
a. Cheney Flashing Company: www.cheneyflashing.com.
b. Fry Reglet Corporation: www.fryreglet.com.
c. Heckmann Building Products, Inc.: www.heckmannbuildingprods.com.
d. Hohmann & Barnard, Inc.: www.h-b.com.
e. Substitutions: See Section 01 6000 - Product Requirements.

2.08 PRECAST CONCRETE SPLASH BLOCKS

A. Precast Concrete Splash Block:
1. Size: Approximately 12 inches wide by 30 inches long by 4 inches deep.
2. Color: Gray.
3. Weight: Approximately 50 pounds.
4. Manufacturers: Available manufacturer's include, but are not limited to, the following:
a. The Century Group: www.centurygrp.com.
b. Modern Pre-Cast, Inc.: www.modernprecast.com.
c. NuCast Precast Company: www.nucastprecast.com.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify roof openings, curbs, pipes, sleeves, ducts, and vents through roof are solidly set, reglets in place, and nailing strips located.
B. Verify roofing termination and base flashings are in place, sealed, and secure.

3.02 PREPARATION

A. Install starter and edge strips, and cleats before starting installation.
B. Install surface mounted reglets true to lines and levels, and seal top of reglets with sealant.
C. To prevent galvanic action or corrosion, back paint concealed metal surfaces with protective backing paint, minimum dry film thickness of 3 mil, where dissimilar metals contact each other, or where metal contacts pressure-treated wood or other corrosive substrates.

3.03 INSTALLATION - GENERAL

A. Install flashings and trim in accordance with SMACNA (ASMM) and NRCA (RM) requirements, unless more stringent methods are indicated.
B. Unless otherwise indicated, provide pre-finished aluminum flashings and trim in areas exposed to public view; at all other areas provide stainless steel flashings.
C. Insert flashings into reglets to form tight fit; secure in place with plastic wedges; seal flashings into reglets with sealant.
    1. Counterflashings shall lap base flashing 4 inches, minimum.
D. Secure flashings in place using concealed fasteners, and use exposed fasteners only where permitted.
E. Fit flashings tight in place; make corners square, surfaces true and straight in planes, and lines accurate to profiles.
F. Seal metal joints watertight.
G. For stainless steel, solder metal joints for full metal surface contact, and after soldering wash metal clean with neutralizing solution and rinse with water.
    1. Do not solder aluminum.

3.04 GUTTERS AND DOWNSPOUTS

A. Secure gutters and downspouts in place with concealed fasteners.
    1. Gutter Supports: Space 30 inches on center, maximum.
    2. Downspout Supports: Locate at top and bottom of downspout and 60 inches on center, maximum.
B. Slope gutters 1/4 inch per 10 feet, minimum, unless otherwise indicated.
C. Where indicated, connect downspouts to downspout boots, and seal connection watertight.
D. Where gutters spill on grade, provide precast concrete splash block at each downspout discharge.

3.05 DRIP EDGES

A. Install at bottom edges of roof slopes, roof rakes, and elsewhere as indicated.
B. Fasteners: Space 18 inches on center, maximum.

3.06 REGLETS

A. Surface Mounted Type: Install according to manufacturer's instructions.
B. Refer to Section 03 3000 - Cast-in-Place Concrete, for casting reglets in concrete.
C. Refer to Section 04 2000 - Unit Masonry, for embedding reglets in masonry.

3.07 TOLERANCES

A. Sheet Metal Flashing and Trim Tolerances:
    1. Install to tolerance of 1/4 inch in 20 feet on slope and location lines indicated on Drawings.
    2. Install with 1/8 inch maximum offset of adjoining faces and of alignment of matching profiles.

3.08 CLEANING

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

B. Replace sheet metal flashing and trim damaged or deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION 07 6200

SECTION 07 7100 - ROOF SPECIALTIES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Manufactured roof specialties, including:
   1. Copings.
   2. Fascia/gravel stops.
   3. Roof expansion joint cover assemblies.

1.02 REFERENCE STANDARDS

A. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix); 2022.
B. ANSI/SPRI/FM 4435/ES-1 - Test Standard for Edge Systems Used with Low Slope Roofing Systems; 2022.
C. ASTM D4586/D4586M - Standard Specification for Asphalt Roof Cement; 2025.
D. NRCA (RM) - The NRCA Roofing Manual; 2023.

1.03 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
B. Product Data: Provide data on shape of components, materials and finishes, anchor types and locations.
C. Shop Drawings: Indicate configuration and dimension of components, adjacent construction, required clearances and tolerances, and other affected work.
D. Samples:
   1. For each material and finish, submit three samples 4 by 4 inch inch in size illustrating metal finish color.
   2. Provide a full size sample, 12 inches long, for each of the following:
      a. Copings.
      b. Roof edges/gravel stops.
      c. Roof expansion joint cover assemblies.
      d. Gutters and downspouts.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.
B. Store products under cover and elevated above grade.

PART 2 PRODUCTS

2.01 COMPONENTS

A. Copings: Factory fabricated to sizes required; corners mitered; concealed fasteners.
   1. Configuration: Concealed continuous hold down cleat at both legs; internal splice piece at joints of same material, thickness, and finish as cap; concealed stainless steel fasteners.
   2. Pull-Off Resistance: Tested in accordance with ANSI/SPRI/FM 4435/ES-1 using test method RE-3 to positive and negative design wind pressure as defined by applicable local building code.
   3. Material: Formed aluminum sheet, 0.063 inch thick, minimum.
   4. Finish: PVDF coating; 70 percent polyvinylidene fluoride.
   5. Color: Two or three coat custom color to match Architect's sample.
   6. Products:
      a. Architectural Products Co.; AP Snap Tight Coping: www.archprod.com.
      b. ATAS International, Inc.; Rapid-Lok Coping: www.atas.com.
      c. Carlisle SynTec Systems; SecureEdge 200 Coping: www.carlislesyntec.com.
      d. Firestone Building Products; Firestone Gold Coping: www.firestonebpco.com.
      e. Johns Manville; Presto Lock Coping System: www.jm.com.
      f. Metal-Era; Perma-Tite Coping: www.metalera.com.

g. OMG Roofing Products; PermaSnap: www.omgroofing.com.
h. Petersen Aluminum Corp.; PAC-TITE Coping: www.pac-clad.com.
i. Sika Sarnafil; Wall Grip Coping: usa.sarnafil.sika.com.
j. Substitutions: See Section 01 6000 - Product Requirements.

B. Fascia/Gravel Stop: Factory fabricated to sizes required; mitered, welded corners; concealed fasteners.
1. Configuration: Fascia, cant, and edge securement for roof membrane.
2. Accessories:
a. Fascia extenders with continuous hold-down cleats.
1) Depth: As indicated on Drawings.
3. Pull-Off Resistance: Tested in accordance with ANSI/SPRI/FM 4435/ES-1 using test methods RE-1 and RE-2 to positive and negative design wind pressure as defined by applicable local building code.
4. Material: Formed aluminum sheet, 0.050 inch thick, minimum.
5. Finish: PVDF coating; 70 percent polyvinylidene fluoride.
6. Color: Two or three coat custom color to match Architect's sample.
7. Products:
a. Architectural Products Co.; AP Snap-On Fascia: www.archprod.com.
b. ATAS International, Inc.; Edge-Lok 2: www.atas.com.
c. Carlisle SynTec Systems; SecureEdge 200 Fascia: www.carlislesyntec.com.
d. Firestone Building Products; Firestone EdgeGard - Snap-On: www.firestonebpco.com.
e. Johns Manville; Presto-Tite Edge One Fascia System: www.jm.com.
f. Metal-Era; Perma-Tite System 200 Fascia: www.metalera.com.
g. OMG Roofing Products; EconoSnap Fascia System: www.omgroofing.com.
h. Petersen Aluminum Corp.; PAC Snap Edge Fascia: www.pac-clad.com.
i. Sika Sarnafil; Edge Grip Fascia: usa.sarnafil.sika.com.
j. Substitutions: See Section 01 6000 - Product Requirements.

C. Expansion Joint Covers - Bellows: Composite construction of flexible EPDM or neoprene flashing of black color with closed cell urethane foam backing, each edge seamed to stainless steel sheet metal flanges, designed for nominal joint width of 2 inch. Include special formed corners, tees, intersections, and wall flashings, each sealed watertight.
1. Type: Roof-to-roof and roof-to-wall; cant based.
2. Accessories: Include the following:
a. Manufacturer's standard moisture barrier.
3. Products:
a. Balco, Inc.; BRB-WC Series: www.balcousa.com.
b. Construction Specialties, Inc.; BRJW-CF Series: www.c-sgroup.com.
c. Johns Manville; Expand-O-Flash CF/EJ Series: www.jm.com.
d. MM Systems Corp.; ERFL Series: www.mmsystemscorp.com.
e. Inpro Corporation; 674-G02 Series: www.inprocorp.com.
f. Nystrom; ECFw Series: www.nystrom.com.
g. Watson Bowman Acme Corp.; Wabo Flash EEJ/C Series: www.wbacorp.com.
h. Substitutions: See Section 01 6000 - Product Requirements.

2.02 FINISHES

A. PVDF (Polyvinylidene Fluoride) Coating: Superior Performance Organic Finish, AAMA 2605; multiple coat, thermally cured fluoropolymer finish system. Two or three-coat system, unless otherwise indicated.

2.03 ACCESSORIES

A. Sealant for Joints in Linear Components: As recommended by component manufacturer.
B. Adhesive for Anchoring to Roof Membrane: Compatible with roof membrane and approved by roof membrane manufacturer.

C. Roof Cement: ASTM D4586/D4586M, Type I.
D. Protective Backing Paint: Zinc molybdate alkyd.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that deck, curbs, roof membrane, base flashing, and other items affecting work of this Section are in place and positioned correctly.

3.02 PREPARATION

A. To prevent galvanic action or corrosion, back paint concealed metal surfaces with protective backing paint, minimum dry film thickness of 3 mil, or provide other permanent separation as recommended by unit manufacturer, where dissimilar metals contact each other, or where metal contacts pressure-treated wood or other corrosive substrates.

3.03 INSTALLATION - GENERAL

A. Install components in accordance with manufacturer's instructions and NRCA (RM) applicable requirements.
B. Seal joints within components when required by component manufacturer.
C. Anchor components securely.
D. Coordinate installation of components of this section with installation of roofing membrane and base flashings.

3.04 CLEANING

A. On completion of manufactured roof specialties installations, remove unused materials and clean finished surfaces as recommended by roof specialties manufacturers. Maintain finishes in clean condition.
B. Replace manufactured roof specialties damaged or deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION 07 7100

SECTION 07 9200 - JOINT SEALANTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Nonsag gunnable joint sealants.
B. Self-leveling pourable joint sealants.
C. Joint backings and accessories.

1.02 RELATED REQUIREMENTS

A. Section 07 8400 - Firestopping: Firestopping sealants.
B. Section 07 9100 - Preformed Joint Seals: Precompressed foam, gaskets, and strip seals.
C. Section 08 8000 - Glazing: Glazing sealants and accessories.
D. Section 09 2116 - Gypsum Board Assemblies: Sealing acoustical and sound-rated walls and ceilings.

1.03 REFERENCE STANDARDS

A. ASTM C661 - Standard Test Method for Indentation Hardness of Elastomeric-Type Sealants by Means of a Durometer; 2015 (Reapproved 2022).
B. ASTM C794 - Standard Test Method for Adhesion-in-Peel of Elastomeric Joint Sealants; 2018 (Reapproved 2022).
C. ASTM C834 - Standard Specification for Latex Sealants; 2017 (Reapproved 2023).
D. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2018.
E. ASTM C1087 - Standard Test Method for Determining Compatibility of Liquid-Applied Sealants with Accessories Used in Structural Glazing Systems; 2023.
F. ASTM C1193 - Standard Guide for Use of Joint Sealants; 2016 (Reapproved 2023).
G. ASTM C1248 - Standard Test Method for Staining of Porous Substrate by Joint Sealants; 2022.
H. ASTM C1330 - Standard Specification for Cylindrical Sealant Backing for Use with Cold Liquid-Applied Sealants; 2023.
I. ASTM C1521 - Standard Practice for Evaluating Adhesion of Installed Weatherproofing Sealant Joints; 2019 (Reapproved 2025).
J. ASTM D2240 - Standard Test Method for Rubber Property--Durometer Hardness; 2015 (Reapproved 2021).

1.04 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
B. Product Data for Sealants: Submit manufacturer's technical data sheets for each product to be used, that includes the following.
    1. Physical characteristics, including movement capability, VOC content, hardness, cure time, and color availability.
    2. List of backing materials approved for use with the specific product.
    3. Substrates that product is known to satisfactorily adhere to and with which it is compatible.
    4. Substrates the product should not be used on.
    5. Substrates for which use of primer is required.
    6. Sample product warranty.
C. Product Data for Accessory Products: Submit manufacturer's technical data sheet for each product to be used, including physical characteristics, installation instructions, and recommended tools.
D. Color Cards for Selection: Where custom colors are not specified, submit manufacturer's color cards showing standard colors available for selection.
E. Samples for Verification: For each sealant color, submit at least three physical samples for color verification.

1. Provide 1/2 inch wide joint sealant samples formed between two 4 inch long strips of material matching appearance of exposed surfaces adjacent to joint sealants.

F. Preconstruction Laboratory Test Reports: Submit at least four weeks prior to start of installation.

G. Field Quality Control Plan: Submit at least two weeks prior to start of installation.

H. Field Quality Control Log: Submit filled out log for each length or instance of sealant installed, within 10 days after completion of inspections/tests; include bagged test samples and photographic records, if any.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum 5 years documented experience.

B. Installer Qualifications: Company specializing in performing the work of this section and with at least 5 years of documented experience.

C. Preconstruction Laboratory Testing: Arrange for sealant manufacturer(s) to test each combination of sealant, substrate, backing, and accessories.

1. Adhesion Testing: In accordance with ASTM C794.
2. Compatibility Testing: In accordance with ASTM C1087.
3. Stain Testing: In accordance with ASTM C1248; required only for stone substrates.
4. Allow sufficient time for testing to avoid delaying the work.
5. Deliver to manufacturer sufficient samples for testing.
6. Report manufacturer's recommended corrective measures, if any, including primers or techniques not indicated in product data submittals.
7. Testing is not required if sealant manufacturer provides data showing previous testing, not older than 24 months, that shows satisfactory adhesion, lack of staining, and compatibility.

D. Owner may employ an independent testing agency to perform the field quality control inspection and testing as referenced in PART 3 of this section and as follows, to prepare and submit the field quality control plan and log, and to provide recommendations of remedies in the case of failure.

1. Contractor shall cooperate with testing agency and repair failures discovered.
2. Otherwise, if Owner does not employ an independent testing agency, Contractor shall perform its own field quality control measures including the following:
   a. Field Quality Control Plan and Log.
   b. Field Adhesion Test Procedures.

E. Field Quality Control Plan:

1. Visual inspection of entire length of sealant joints.
2. Non-destructive field adhesion testing of sealant joints, except interior acrylic latex sealants.
   a. For each different sealant and substrate combination, allow for one test every 12 inches in the first 10 linear feet of joint and one test every 120 inches thereafter.
   b. If any failures occur in the first 10 linear feet, continue testing at 48 inch intervals at no extra cost to Owner.

F. Field Adhesion Test Procedures:

1. Allow sealants to fully cure as recommended by manufacturer before testing.
2. Have a copy of the test method document available during tests.
3. Record the type of failure that occurred, other information required by test method, and the information required on the Field Quality Control Log.
4. If any combination of sealant type and substrate does not show evidence of minimum adhesion or shows cohesion failure before minimum adhesion, report results to Architect.
5. Non-Destructive Field Adhesion Test: Test for adhesion in accordance with ASTM C1521, using Nondestructive Spot Method.
   a. Record results on Field Quality Control Log.

b. Repair failed portions of joints.

1.06 WARRANTY

A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.

B. Correct defective work within a five year period after Date of Substantial Completion.

C. Warranty: Include coverage for installed sealants and accessories that fail to achieve watertight seal , exhibit loss of adhesion or cohesion, or do not cure.

PART 2 PRODUCTS

2.01 JOINT SEALANT APPLICATIONS

A. Scope:

1. Exterior Joints: Seal open joints, whether or not the joint is indicated on drawings, unless specifically indicated not to be sealed. Exterior joints to be sealed include, but are not limited to, the following items.
   a. Wall expansion and control joints.
   b. Joints between door, window, and other frames and adjacent construction.
   c. Joints between different exposed materials.
   d. Openings below ledge angles in masonry.
   e. Other joints as indicated.
2. Interior Joints: Do not seal interior joints unless specifically indicated to be sealed. Interior joints to be sealed include, but are not limited to, the following items.
   a. Joints between door, window, and other frames and adjacent construction.
   b. Other joints as indicated.
3. Do not seal the following types of joints.
   a. Intentional weepholes in masonry.
   b. Joints indicated to be treated with manufactured expansion joint cover or some other type of sealing device.
   c. Joints where sealant is specified to be provided by manufacturer of product to be sealed.
   d. Joints where installation of sealant is specified in another section.
   e. Joints between suspended panel ceilings/grid and walls.

B. Exterior Joints: Use non-sag non-staining silicone sealant, unless otherwise indicated.

1. Control and Expansion Joints in Concrete Paving: Self-leveling silicone traffic-grade sealant.

C. Interior Joints: Use non-sag acrylic emulsion latex sealant, unless otherwise indicated.

1. Interior Sides of Aluminum Framing in Exterior Walls: Use non-sag non-staining silicone sealant, unless otherwise indicated.
   a. Includes, but is not limited to, curtain walls, storefronts, and metal-framed skylights.
2. Control Joints in Interior Concrete Slabs: Self-leveling silicone "traffic grade" sealant.
3. Column Isolation Joints in Interior Concrete Slabs: Self-leveling silicone "traffic grade" sealant.
4. Floor Joints in Wet Areas: Self-leveling silicone "traffic grade" sealant; not for continuous liquid immersion
5. Joints between Fixtures in Wet Areas and Floors, Walls, and Ceilings: Mildew-resistant silicone sealant; clear, unless otherwise indicated.
6. Joints between countertops and walls: Mildew-resistant silicone sealant; clear, unless otherwise indicated.

D. Interior Wet Areas: Includes, but is not limited to, toilet rooms, showering areas, locker rooms, kitchens, and food service areas; fixtures in wet areas include plumbing fixtures, food service equipment, countertops, cabinets, and other similar items.

2.02 NONSAG JOINT SEALANTS

A. Non-Staining Silicone Sealant: ASTM C920, Grade NS, Type S, Uses NT, A, G, M and O; not expected to withstand continuous water immersion or traffic.

1. Movement Capability: Plus and minus 50 percent, minimum.

2. Non-Staining To Porous Stone: Non-staining to light-colored natural stone when tested in accordance with ASTM C1248.
3. Dirt Pick-Up: Reduced dirt pick-up compared to other silicone sealants.
4. Hardness Range: Comply with one of the following:
   a. 15 to 35, Shore A, when tested in accordance with ASTM C661.
   b. 25 to 35, Shore A, when tested in accordance with ASTM D2240.
5. Color: Custom color(s) to match Architect's sample(s).
6. Cure Type: Single-component, neutral moisture curing.
7. Service Temperature Range: Minus 40 to 250 degrees F.
8. Products:
   a. Momentive Performance Materials, Inc./GE; SCS9000 SilPruf NB: www.siliconeforbuilding.com.
   b. Pecora Corporation; 890NST: www.pecora.com.
   c. Sika Corporation; Sikasil WS-295 FPS: www.usa.sika.com.
   d. Tremco, Inc.; Spectrem 3: www.tremcosealants.com.
   e. Dow Chemical Company; DOWSIL 790 Silicone Building Sealant: consumer.dow.com/en-us/industry/ind-building-construction.html/#sle.
   f. Substitutions: See Section 01 6000 - Product Requirements.

B. Traffic Grade Silicone Sealant: ASTM C920, Grade NS, Type S, Uses T, M, and O; not expected to withstand continuous water immersion.
1. Movement Capability: Plus 100 percent, minus 50 percent, minimum
2. Hardness Range: Comply with one of the following:
   a. 5 to 15, Shore A, when tested in accordance with ASTM C661.
   b. 85, Shore 00, when tested in accordance with ASTM C661.
3. Color: To be selected by Architect from manufacturer's full range.
4. Cure Type: Single-component, neutral moisture curing.
5. Service Temperature Range: Minus 40 to 250 degrees F.
6. Products:
   a. Dow Corning; NS Parking Structure Sealant: www.dowcorning.com.
   b. Pecora Corporation; 311NS: www.pecora.com.
   c. Sika Corporation; Sikasil - 728 NS: www.usa.sika.com.
   d. Tremco, Inc.; Spectrem 800: www.tremcosealants.com.
   e. Substitutions: See Section 01 6000 - Product Requirements.

C. Mildew-Resistant Silicone Sealant: ASTM C920, Grade NS, Type S, Uses NT, A, G, and O; mildew resistant; not expected to withstand continuous water immersion or traffic.
1. Movement Capability: Plus and minus 25 percent, minimum.
2. Hardness Range: Comply with one of the following:
   a. 15 to 35, Shore A, when tested in accordance with ASTM C661.
   b. 25 to 35, Shore A, when tested in accordance with ASTM D2240.
3. Color: Clear.
4. Cure Type: Single-component, acetoxy or neutral moisture curing .
5. Service Temperature Range: Minus 40 to 300 degrees F.
6. Products:
   a. Dow Corning; 786 Sealant M: www.dowcorning.com.
   b. Momentive Performance Materials, Inc./GE; SCS1700 Sanitary: www.siliconeforbuilding.com.
   c. Pecora Corporation; 898NST: www.pecora.com.
   d. Sika Corporation; Sikasil - GP: www.usa.sika.com.
   e. Tremco, Inc.; Tremsil 200 with fungicide: www.tremcosealants.com.
   f. Substitutions: See Section 01 6000 - Product Requirements.

D. Acrylic Emulsion Latex: Water-based; ASTM C834, single component, non-staining, non-bleeding, non-sagging; not intended for exterior use. Siliconized.
1. Color: To be selected by Architect from manufacturer's full range.

2. Grade: ASTM C834; Grade Minus 18 Degrees C (0 Degrees F).
3. Products:
   a. Franklin International Inc; Titebond Painter's Plus Caulk: www.titebond.com.
   b. Pecora Corporation; AC-20 +Silicone: www.pecora.com.
   c. Sherwin Williams; 950A Siliconized Acrylic Latex Caulk: www.sherwin-williams.com.
   d. Tremco, Inc.; Tremflex 834: www.tremcosealants.com.
   e. Substitutions: See Section 01 6000 - Product Requirements.

2.03 SELF-LEVELING SEALANTS

A. Self-Leveling Silicone Sealant: ASTM C920, Type S, Grade P, Uses T, M and O; single-component, explicitly approved by manufacturer for traffic exposure when recessed below traffic surface; not expected to withstand continuous water immersion.
   1. Movement Capability: Plus 100 percent, minus 50 percent, minimum.
   2. Hardness Range: Comply with one of the following:
      a. 5 to 20, Shore A, when tested in accordance with ASTM C661.
      b. 40 to 85, Shore 00, when tested in accordance with ASTM D2240.
   3. Color: To be selected by Architect from manufacturer's full range.
   4. Cure Type: Single-component, neutral moisture curing.
   5. Service Temperature Range: Minus 50 to 300 degrees F.
   6. Products:
      a. Dow Corning; SL Parking Structure Sealant: www.siliconeforbuilding.com.
      b. Pecora Corporation; 310SL: www.pecora.com.
      c. Sika Corporation; Sikasil-728 SL: www.usa.sika.com.
      d. Tremco, Inc.; Spectrem 900SL: www.tremcosealants.com.
      e. Substitutions: See Section 01 6000 - Product Requirements.

2.04 ACCESSORIES

A. Backer Rod: Cylindrical cellular foam rod with surface that sealant will not adhere to, compatible with specific sealant used, and recommended by backing and sealant manufacturers for specific application.
   1. Type for Joints Not Subject to Pedestrian or Vehicular Traffic: ASTM C1330; Type B - Bi-Cellular Polyethylene.
   2. Type for Joints Subject to Pedestrian or Vehicular Traffic: ASTM C1330; Type B - Bi-Cellular Polyethylene.
   3. Bi-Cellular: 25 to 33 percent larger in diameter than joint width.

B. Backing Tape: Self-adhesive polyethylene tape with surface that sealant will not adhere to and recommended by tape and sealant manufacturers for specific application.

C. Masking Tape: Self-adhesive, nonabsorbent, non-staining, removable without adhesive residue, and compatible with surfaces adjacent to joints and sealants.

D. Primers: Type recommended by sealant manufacturer to suit application; non-staining.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that joints are ready to receive work.

B. Verify that backing materials are compatible with sealants.

C. Verify that backer rods are of the correct size.

3.02 PREPARATION

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

B. Clean joints, and prime as necessary, in accordance with manufacturer's instructions.

C. Perform preparation in accordance with manufacturer's instructions and ASTM C1193.

D. Mask elements and surfaces adjacent to joints from damage and disfigurement due to sealant work; be aware that sealant drips and smears may not be completely removable.

E. Concrete Floor Joints That Will Be Exposed in Completed Work: Test joint filler in inconspicuous area to verify that it does not stain or discolor slab.

3.03 INSTALLATION

A. Perform work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.
B. Perform installation in accordance with ASTM C1193.
C. Measure joint dimensions and size joint backers to achieve width-to-depth ratio, neck dimension, and surface bond area as recommended by manufacturer.
D. Install bond breaker backing tape where backer rod cannot be used.
E. Install sealant free of air pockets, foreign embedded matter, ridges, and sags, and without getting sealant on adjacent surfaces.
F. Do not install sealant when ambient temperature is outside manufacturer's recommended temperature range, or will be outside that range during the entire curing period, unless manufacturer's approval is obtained and instructions are followed.
G. Nonsag Sealants: Tool surface concave, unless otherwise indicated; remove masking tape immediately after tooling sealant surface.
H. Concrete Floor Joint Filler: After full cure, shave joint filler flush with top of concrete slab.
I. Installation of Two-Stage Joints at Precast Architectural Concrete Units:
    1. Joint system consists of two back-to-back sealant joints at each precast architectural concrete unit joint with a weep at the bottom of the unit joint per Precast/Prestressed Concrete Institute (PCI) recommendations and as follows:
        a. Inner (Secondary) Seal: Inner secondary backer rod and sealant joint is installed a minimum of 2 to 2-1/2 inches beyond the exposed face of the precast architectural concrete panels within the panel joint itself.
        b. Exterior (Primary) Seal: Following the installation of the secondary joint, the outer primary backer rod and sealant joint is installed at the face of the precast architectural concrete panels with a weep at the bottom of the joint. Leave open continuous air space between the primary backer rod and inner secondary seal.
        c. Install 3/8 inch minimum weep openings in the exterior seal to allow water penetrating the exterior seal and contained by the inner seal to exit the cavity between joint seals.
            1) Do not install weeps below finish grades.
        d. Near the junction of horizontal and vertical joints, the inner seal must turn out to the plane of the exterior seal at regular intervals to force water out of the joint.

3.04 FIELD QUALITY CONTROL

A. Owner may employ an independent testing agency to perform field quality control inspection and testing as specified in PART 1 under QUALITY ASSURANCE article.
B. Non-Destructive Adhesion Testing: If there are any failures in first 100 linear feet, notify Architect immediately.
C. Remove and replace failed portions of sealants using same materials and procedures as indicated for original installation.

END OF SECTION 07 9200

SECTION 07 9513 - EXPANSION JOINT COVER ASSEMBLIES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Expansion joint cover assemblies for floor, wall, and ceiling surfaces.
   1. Interior expansion joint cover assemblies.
   2. Exterior expansion joint cover assemblies.

1.02 RELATED REQUIREMENTS

A. Section 07 9100 - Preformed Joint Seals: Sealing expansion and control joints using preformed joint seals.

1.03 REFERENCE STANDARDS

A. AAMA 611 - Specification for Anodized Architectural Aluminum; 2024.
B. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes; 2021.
C. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric); 2021.
D. ASTM B308/B308M - Standard Specification for Aluminum-Alloy 6061-T6 Standard Structural Profiles; 2020.
E. ASTM C1107/C1107M - Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Nonshrink); 2020.
F. ITS (DIR) - Directory of Listed Products; Current Edition.
G. UL (DIR) - Online Certifications Directory; Current Edition.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Installation Templates: For frames and anchors to be embedded in concrete or masonry, furnish templates to relevant installers; include installation instructions and tolerances.

1.05 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements for submittal procedures.
B. Product Data: Provide joint assembly profiles, profile dimensions, anchorage devices, available colors and finish, and fire ratings.
C. Shop Drawings: Indicate joint and splice locations, miters, layout of the work, affected adjacent construction, anchorage locations, and fire ratings.
   1. Include plans, elevations, sections, details, splices, block-out requirement, attachments to other work.
   2. Include transition and termination details.
D. Expansion Joint Cover Assembly Schedule: Include the following information in tabular form:
   1. Manufacturer and model number for each expansion joint cover assembly.
   2. Expansion joint cover assembly location cross-referenced to Drawings.
   3. Nominal, minimum, and maximum joint width.
   4. Movement direction.
   5. Materials, colors, and finishes.
   6. Product options.
   7. Fire-resistance ratings.
E. Samples: For each expansion joint cover assembly, submit three samples 6 inch long, illustrating profile, dimension, color, and finish selected.
F. Manufacturer's Installation Instructions: Indicate rough-in sizes and required tolerances for item placement.
G. Field Quality Control: Submit field inspection reports.

1.06 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum 5 years of documented experience.

B. Installer Qualifications: Company specializing in installing products of the type specified in this section with minimum 5 years of documented experience and approved by manufacturer.

1.07 MOCK-UP

A. Mock-ups: Build mock-ups to demonstrate aesthetic effects and to set quality standards for materials and execution.
   1. Build mockup of each type of expansion joint cover assembly.
   2. Locate where directed by Architect.
   3. Mock-up may remain as part of the Work.

PART 2 PRODUCTS

2.01 EXPANSION JOINT COVER ASSEMBLY APPLICATIONS - EXTERIORS

A. Wall Joint Cover - Elastomeric Seal: Assembly consisting of elastomeric seal anchored to frames fixed to sides of joint gap.
   1. Application: Wall to wall and wall to corner.
   2. Exposed Metal: Aluminum.
   3. Seal: Preformed elastomeric membranes or extrusions.
   4. Nominal Joint Width: 2 inches.
   5. Minimum Joint Width: 1-1/2 inch.
   6. Maximum Joint Width: 3 inches.
   7. Fire Resistance Rating: Not less than that of adjacent construction.
   8. Secondary Moisture Barrier: Manufacturer's standard elastomeric moisture barrier.
   9. Finishes:
      a. Aluminum: Mill.
      b. Elastomeric Seal: As selected by Architect from manufacturer's standard colors.
   10. Products:
      a. Balco, Inc.; FC Series: www.balcousa.com.
      b. Construction Specialties, Inc; SF Series: www.c-sgroup.com.
      c. Inpro Corp; 611 Series: www.inprocorp.com.
      d. MM Systems Corp.; VSS Series: www.mmsystemcorp.com.
      e. Nystrom; EWN Series: www.nystrom.com.
      f. Watson Bowman Acme Corp./BASF Corp; WSW Series: www.wbacorp.com.
      g. Substitutions: See Section 01 6000 - Product Requirements.

2.02 EXPANSION JOINT COVER ASSEMBLY APPLICATIONS - INTERIORS

A. Floor Joint Cover - Surface Mounted, Metal Plate: Metal cover plate fixed on one side of joint gap and free to slide on other.
   1. Application: Floor to floor and floor to wall.
   2. Installation: Surface mounted.
   3. Exposed Metal: Aluminum.
   4. Cover Plate Style: Smooth or serrated.
   5. Nominal Joint Width: 2 inches.
   6. Minimum Joint Width: 0 inches.
   7. Maximum Joint Width: 3 inches.
   8. Fire Resistance Rating: Not less than that of adjacent construction.
   9. Secondary Moisture Barrier: None.
   10. Load Capacity - Concentrated Load: 500 lbs.
   11. Finishes:
      a. Aluminum: Mill.
   12. Products:
      a. Balco, Inc.; RPA/RPAL Series: www.balcousa.com.
      b. Construction Specialties, Inc; PC/PCW Series: www.c-sgroup.com.
      c. Inpro Corp; 801-A01/801-A02Series: www.inprocorp.com.
      d. MM Systems Corp.; SP Series: www.mmsystemcorp.com.
      e. Nystrom; DT/SW Series: www.nystrom.com.

f. Watson Bowman Acme Corp./BASF Corp; FJF/FJFc Series: www.wbacorp.com.
g. Substitutions: See Section 01 6000 - Product Requirements.

B. Floor Joint Cover - Recessed Mounted, Metal Glide Plate: Assembly consisting of center metal plate that slides in and out of recessed metal frames fixed to sides of joint gap; recessed frames covered by floor finish.
1. Application: Floor to floor and floor to wall.
2. Installation: Recessed.
3. Exposed Metal: Aluminum.
4. Nominal Joint Width: 2 inches.
5. Minimum Joint Width: 1 inches.
6. Maximum Joint Width: 3 inches.
7. Fire Resistance Rating: Not less than that of adjacent construction.
8. Secondary Moisture Barrier: None.
9. Load Capacity - Concentrated Load: 500 lbs.
10. Finishes:
a. Aluminum: Mill.
11. Products:
a. Balco, Inc.; 6000 Series: www.balcousa.com.
b. Construction Specialties, Inc; ALR/ALRW Series: www.c-sgroup.com.
c. Inpro Corp; 304 Series: www.inprocorp.com.
d. MM Systems Corp.; HFXR Series: www.mmsystemcorp.com.
e. Nystrom; NBR Series: www.nystrom.com.
f. Watson Bowman Acme Corp./BASF Corp; CCF Series: www.wbacorp.com.
g. Substitutions: See Section 01 6000 - Product Requirements.

C. Wall Joint Cover - Surface Mounted, Metal Plate: Metal cover plate fixed on one side of joint gap and free to slide on other.
1. Application: Wall to wall and wall to corner.
2. Installation: Surface mounted.
3. Exposed Metal: Aluminum.
4. Nominal Joint Width: 2 inches.
5. Minimum Joint Width: 1/2 inch.
6. Maximum Joint Width: 3 inches.
7. Fire Resistance Rating: Not less than that of adjacent construction.
8. Finishes:
a. Aluminum: Clear anodized.
9. Products:
a. Balco, Inc.; WD/WDC Series: www.balcousa.com.
b. Construction Specialties, Inc; ASM/ASMC Series: www.c-sgroup.com.
c. Inpro Corp; 811 Series: www.inprocorp.com.
d. MM Systems Corp.; XM Series: www.mmsystemcorp.com.
e. Nystrom; WJ Series: www.nystrom.com.
f. Watson Bowman Acme Corp./BASF Corp; EWH Series: www.wbacorp.com.
g. Substitutions: See Section 01 6000 - Product Requirements.

D. Wall Joint Cover - Flush Mounted, Metal Glide Plate: Assembly consisting of center metal plate that slides in and out of recessed metal frames fixed to sides of joint gap; recessed frames flush with face of wall, designed for gypsum board.
1. Application: Wall to wall and wall to corner.
2. Installation: Recess mounted.
3. Exposed Metal: Aluminum.
4. Nominal Joint Width: 2 inches.
5. Minimum Joint Width: 1/2 inch.
6. Maximum Joint Width: 3 inches.
7. Fire Resistance Rating: Not less than that of adjacent construction.

8. Finishes:
   a. Aluminum: Clear anodized.
9. Products:
   a. Balco, Inc.; 6000 Series: www.balcousa.com.
   b. Construction Specialties, Inc; AFW/AFWC Series: www.c-sgroup.com.
   c. Inpro Corp; 300 Series: www.inprocorp.com.
   d. MM Systems Corp.; FX-K Series: www.mmsystemcorp.com.
   e. Substitutions: See Section 01 6000 - Product Requirements.

E. Ceiling Joint Cover - Elastomeric Seal: Assembly consisting of elastomeric seal anchored to frames fixed to sides of joint gap, includes drywall bead for mudding to gypsum board.
1. Application: Ceiling to ceiling and ceiling to wall.
2. Installation: Flush mounted.
3. Exposed Metal: Aluminum.
4. Seal: Preformed elastomeric membranes or extrusions
5. Nominal Joint Width: 2 inches.
6. Minimum Joint Width: 1 inches.
7. Maximum Joint Width: 3-1/2 inches.
8. Fire Resistance Rating: Not less than that of adjacent construction.
9. Finishes:
   a. Aluminum: Mill.
   b. Elastomeric Seal: As selected by Architect from manufacturer's standard colors.
10. Products:
   a. Balco, Inc.; GCWW/GCWC Series: www.balcousa.com.
   b. Construction Specialties, Inc; FWS/FWSC Series: www.c-sgroup.com.
   c. Inpro Corp; 114 Series: www.inprocorp.com.
   d. MM Systems Corp.; VSW Series: www.mmsystemcorp.com.
   e. Nystrom; LCD Series: www.nystrom.com.
   f. Watson Bowman Acme Corp./BASF Corp; CWWS Series: www.wbacorp.com.
   g. Substitutions: See Section 01 6000 - Product Requirements.

F. Acoustical Ceiling Joint Cover - Elastomeric Seal: Elastomeric-seal assembly designed for use in suspended acoustical ceilings.
1. Application: Ceiling to ceiling and ceiling to wall.
2. Installation: Flush mounted.
3. Exposed Metal: Aluminum.
4. Seal: Preformed elastomeric membranes or extrusions
5. Nominal Joint Width: 2 inches.
6. Minimum Joint Width: 1 inches.
7. Maximum Joint Width: 3-1/2 inches.
8. Finishes:
   a. Aluminum: Mill.
   b. Elastomeric Seal: As selected by Architect from manufacturer's standard colors.
9. Products:
   a. Balco, Inc.; ACWW/ACWC Series: www.balcousa.com.
   b. Construction Specialties, Inc; FCS/FCSC Series: www.c-sgroup.com.
   c. Inpro Corp; 115 Series: www.inprocorp.com.
   d. MM Systems Corp.; VSG Series: www.mmsystemcorp.com.
   e. Nystrom; LCE Series: www.nystrom.com.
   f. Watson Bowman Acme Corp./BASF Corp; CEB Series: www.wbacorp.com.
   g. Substitutions: See Section 01 6000 - Product Requirements.

2.03 EXPANSION JOINT COVER ASSEMBLIES - GENERAL

A. Expansion Joint Cover Assemblies - General: Factory-fabricated and assembled; designed to completely fill joint openings, sealed to prevent passage of air, dust, water, smoke; suitable for traffic expected.

1. Lengths: Provide covers in full lengths required; avoid splicing wherever possible.
2. Anchors, Fasteners, and Fittings: Provided by cover manufacturer.

B. Provide factory fabricated corners, changes in direction, transitions, and terminations.
C. Floor Joint Covers: Coordinate with indicated floor coverings.
D. Sliding Cover Plate Type Covers: Provide plate with beveled edges and neat fit that does not collect dirt.
E. Covers In Gypsum Board Assemblies: Provide style with anchoring wings that can be completely covered by joint compound.
F. Covers In Fire Rated Assemblies: Provide cover assembly having fire rating equivalent to that of assembly into which it is installed.
1. Acceptable Evaluation Agencies: UL (DIR) and ITS (DIR).

2.04 MATERIALS

A. Extruded Aluminum: ASTM B221 (ASTM B221M), 6063 alloy, T6 temper; or ASTM B308/B308M, 6061 alloy, T6 temper.
B. Elastomeric Seals: Manufacturer's standard preformed elastomeric membranes or extrusions to be installed in metal frames.
C. Fire Barriers: Any material or material combination, when fire tested after cycling, designated to resist the passage of flame and hot gases through a movement joint and to comply with performance criteria for required fire-resistance rating.
D. Secondary Moisture Barriers: Manufacturer's standard, continuous, moisture and vapor barrier membrane; within joint and attached to substrate on sides of joint.
E. Anchors and Fasteners: As recommended by cover manufacturer.
F. Ferrous Metal Anchors: Galvanized where embedded in concrete or in contact with cementitious materials.
G. Nonshrink, Nonmetallic Grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C1107/C1107M. Provide grout specifically recommended by manufacturer for interior and exterior applications.
H. Backing Paint for Aluminum Components in Contact with Cementitious Materials: Asphaltic type.

2.05 FINISHES

A. Aluminum Finishes:
1. Mill finish.
2. Clear Anodic Finish: AAMA 611, AA-M12C22A41, Class I, 0.018 mm or thicker.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that joint preparation and dimensions are acceptable and in accordance with manufacturer's requirements.

3.02 INSTALLATION

A. Install components and accessories in accordance with manufacturer's instructions.
B. Align work plumb and level.
C. Rigidly anchor to substrate to prevent misalignment.
1. At recessed floor joint assemblies, grout annular spaces between concrete slab and floor joint framing solid with nonshrink, nonmetallic grout; make flush with concrete floor slab.
D. Fire Barriers: Install fire barriers to provide continuous, uninterrupted fire resistance throughout length of joint, including transitions and field splices.
1. Ensure that fire-resistance rated expansion joint assemblies comply with performance requirements of tested assemblies.

E. Secondary Moisture Barrier: Install continuous, uninterrupted barrier throughout length of joint, including transitions and field splices.
F. Do not install final covers of expansion joint assemblies until internal components inspected by manufacturer's representative.

3.03 FIELD QUALITY CONTROL

A. Provide manufacturer's representative to inspect installation of expansion joint cover assemblies, including internal fire barriers, secondary moisture barriers, transitions and terminations, and overall installation.
   1. Provide inspection reports.

3.04 PROTECTION

A. Touch-up, repair, or replace damaged expansion joint assemblies before Date of Substantial Completion
B. Do not permit traffic over unprotected floor joint surfaces.

END OF SECTION 07 9513