

PROJECT MANUAL

PROJECT:

BATTLE CREEK SAFETY AND SECURITY RENOVATIONS

OWNER:

BATTLE CREEK PUBLIC SCHOOLS
3 West Van Buren Street
Battle Creek Michigan 49017

TMP PROJECT NO.: 25039

DATE: January 12, 2026

ISSUED FOR CONSTRUCTION DOCUMENTS

ARCHITECT

TMP ARCHITECTURE, INC.
259 East Michigan Avenue, Suite 308
Kalamazoo, Michigan 49007

PH 269-327-0077
Email info@tmp-architecture.com

CONSTRUCTION MANAGER

ELITE COMPANIES
221 E Water Street
Kalamazoo, MI 49007

PH (269) 910 1347
Email elite-companies.com

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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 Battle Creek Public Schools - Safety and Security Renovations, dated January 12, 2026 and any subsequent Addenda and Contract modifications which may occur.

END OF SECTION 00 0115

SECTION 00 3100 - AVAILABLE PROJECT INFORMATION

PART 1 GENERAL

1.01 SUMMARY

- A. Project Manual uses Appendixes to organize information that does not conform to 3-part specification formatting as defined by the Construction Specifications Institute (CSI).
 - 1. Appendix information does not have a six-digit number or title as defined by CSI's MasterFormat.

1.02 EXISTING CONDITIONS

- A. Certain information relating to existing surface and subsurface conditions and structures is available to bidders as Information Available to Bidders, but will not be part of Contract Documents, as follows:
 - 1. Geotechnical Report: Entitled _____, dated _____.
 - a. Copy is attached to Project Manual in Appendix 1.

1.03 MISCELLANEOUS INFORMATION

- A. Miscellaneous information relating to the project is available in the Appendixes as follows:
 - 1. Includes information issued as an Appendix by Addendum or other subsequent Contract modification.

PART 2 PRODUCTS -- NOT USED

PART 3 EXECUTION -- NOT USED

END OF SECTION 00 3100

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 2500.01 - TMP SUBSTITUTION REQUEST FORM

SUBSTITUTION REQUEST NUMBER: _____ DATE SUBMITTED: _____

TMP PROJECT NUMBER _____ PROJECT NAME: _____

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 1300.02

CONST. MANAGER / CONTRACTOR		PROJECT	TMP PROJECT NO.	DATE SUBMITTED	SUBMITTAL NO.						
Name and Address:		Title:									
			* ACTION CODES		Initial Submittal	<input type="checkbox"/>					
			R	Reviewed – No Exceptions Taken	Resubmittal	<input type="checkbox"/>					
			RN	Reviewed with Corrections Noted							
Email:		Location:	RR	Revise and Resubmit	REVIEWED BY						
			X	Not Approved – Resubmit	TMP	<input type="checkbox"/>					
Phone:			NA	No Action Taken – Not Reviewed	Consultant	<input type="checkbox"/>					
					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 Procure, 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 Procure, 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; 2025a.
- B. ASTM E543 - Standard Specification for Agencies Performing Nondestructive Testing; 2021.
- 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; 2015, 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; 2025a.

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 Architect and 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 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.

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**

- A. Fill Material: As specified in Division 31.

PART 3 EXECUTION**3.01 SCOPE**

- A. 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.
 - 2. Unless otherwise indicated, fill excavations, open pits, and holes in ground areas generated as result of removals, using specified fill; compact fill as specified in Division 31.

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. Use of explosives is not permitted.
 - 4. Provide, erect, and maintain temporary barriers and security devices.
- 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. 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.

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 manageable 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 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.

3.05 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.

3.06 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.

3.07 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

3.08 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. Preservative treated wood materials.
- C. Fire retardant treated wood materials.
- D. Miscellaneous framing and sheathing.
- E. Concealed wood blocking, nailers, and supports.
- F. 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.
- C. Dimension Lumber: Comply with PS 20 and requirements of specified grading agencies.
 - 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. 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 AWWA 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 AWWA 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: AWWA 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: AWWA 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: AWWA 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: AWWA 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: AWWA 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.
- B. In walls, provide blocking attached to studs as backing and support for wall-mounted items, unless item can be securely fastened to two or more studs or other method of support is explicitly indicated.
- C. Provide the following specific nonstructural framing and blocking:
 1. Cabinets and shelf supports.
 2. Wall brackets.
 3. Handrails.

4. Grab bars.
5. Towel and bath accessories.
6. Other locations as indicated.

2.05 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.

2.06 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.

2.07 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 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; 2025.
- 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 080671 – DOOR HARDWARE SCHEDULE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section references specification sections relating to commercial door hardware for the following:
 - 1. Swinging doors.
 - 2. Sliding Doors.
 - 3. Other doors to the extent indicated.
- B. Commercial door hardware includes, but is not necessarily limited to, the following:
 - 1. Mechanical door hardware.
 - 2. Electromechanical and access control door hardware.
 - 3. Electromechanical and access control door hardware power supplies, back-ups and surge protection.
 - 4. Automatic operators.
 - 5. Cylinders specified for doors in other sections.
- C. Related Sections:
 - 1. Division 08 Section “Door Hardware”.
- D. Codes and References: Comply with the version year adopted by the Authority Having Jurisdiction.
 - 1. ANSI A117.1 - Accessible and Usable Buildings and Facilities.
 - 2. ICC/IBC - International Building Code.
 - 3. NFPA 70 - National Electrical Code.
 - 4. NFPA 80 - Fire Doors and Windows.
 - 5. NFPA 101 - Life Safety Code.
 - 6. NFPA 105 - Installation of Smoke Door Assemblies.
 - 7. State Building Codes, Local Amendments.
- E. Standards: Reference Related Sections for requirements regarding compliance with applicable industry standards.

1.3 SUBMITTALS

- A. Product Data: Manufacturer's product data sheets including installation details, material descriptions, dimensions of individual components and profiles, operational descriptions and finishes.
- B. Door Hardware Schedule: Prepared by or under the supervision of supplier, detailing fabrication and assembly of door hardware, as well as procedures and diagrams. Coordinate the final Door Hardware Schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.
 - 1. Format: Comply with scheduling sequence and vertical format in DHI's "Sequence and Format for the Hardware Schedule."
 - 2. Organization: Organize the Door Hardware Schedule into door hardware sets indicating complete designations of every item required for each door or opening. Organize door hardware sets in same order as in the Door Hardware Sets at the end of Part 3. Submittals that do not follow the same format and order as the Door Hardware Sets will be rejected and subject to resubmission.
 - 3. Content: Include the following information:
 - a. Type, style, function, size, label, hand, and finish of each door hardware item.
 - b. Manufacturer of each item.
 - c. Fastenings and other pertinent information.
 - d. Location of door hardware set, cross-referenced to Drawings, both on floor plans and in door and frame schedule.
 - e. Explanation of abbreviations, symbols, and codes contained in schedule.
 - f. Mounting locations for door hardware.
 - g. Door and frame sizes and materials.
 - 4. Submittal Sequence: Submit the final Door Hardware Schedule at earliest possible date, particularly where approval of the Door Hardware Schedule must precede fabrication of other work that is critical in the Project construction schedule. Include Product Data, Samples, Shop Drawings of other work affected by door hardware, and other information essential to the coordinated review of the Door Hardware Schedule.
- C. Keying Schedule: Prepared under the supervision of the Owner, separate schedule detailing final keying instructions for locksets and cylinders in writing. Include keying system explanation, door numbers, key set symbols, hardware set numbers and special instructions. Owner to approve submitted keying schedule prior to the ordering of permanent cylinders.
- D. Product Test Reports: Indicating compliance with cycle testing requirements, based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified independent testing agency.
- E. Operating and Maintenance Manuals: Provide manufacturers operating and maintenance manuals for each item comprising the complete door hardware installation in quantity as required in Division 01, Closeout Submittals. The manual to include the name, address, and

contact information of the manufacturers providing the hardware and their nearest service representatives. The final copies delivered after completion of the installation test to include "as built" modifications made during installation, checkout, and acceptance.

- F. Warranties and Maintenance: Special warranties and maintenance agreements specified in the Related Sections.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Inventory door hardware on receipt and provide secure lock-up and shelving for door hardware delivered to Project site. Do not store electronic access control hardware, software or accessories at Project site without prior authorization.
- B. Tag each item or package separately with identification related to the final Door Hardware Schedule, and include basic installation instructions with each item or package.
- C. Deliver, as applicable, permanent keys, cylinders, cores, access control credentials, software and related accessories directly to Owner via registered mail or overnight package service. Instructions for delivery to the Owner shall be established at the "Keying Conference".

1.5 WARRANTY

- A. General Warranty: Reference Division 01, General Requirements. Special warranties specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.

1.6 MAINTENANCE SERVICE

- A. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of door hardware.

PART 2 - PRODUCTS

2.1 SCHEDULED DOOR HARDWARE

- A. Refer to "PART 3 – EXECUTION" for required specification sections.

PART 3 - EXECUTION

3.1 DOOR HARDWARE SETS

- A. The door hardware sets represent the design intent and direction of the owner and architect. They are a guideline only and should not be considered a detailed hardware schedule.

Discrepancies, conflicting hardware and missing items should be brought to the attention of the architect with corrections made prior to the bidding process. Omitted items not included in a hardware set should be scheduled with the appropriate additional hardware required for proper application and functionality.

1. Quantities listed are for each pair of doors, or for each single door.
 2. The supplier is responsible for handling and sizing all products.
 3. Where multiple options for a piece of hardware are given in a single line item, the supplier shall provide the appropriate application for the opening.
 4. At existing openings with new hardware the supplier shall field inspect existing conditions prior to the submittal stage to verify the specified hardware will work as required. Provide alternate solutions and proposals as needed.
- B. Products listed in the hardware sets shall be supplied by and in accordance with the requirements described in the specification section as noted for each item.
1. Section 08 71 00 – Door Hardware.
- C. Manufacturer’s Abbreviations:
1. MK - McKinney
 2. RO - Rockwood
 3. RU - Corbin Russwin
 4. MC - Medeco
 5. NO - Norton

Hardware Sets

Set: 1.0

Doors: [B109](#), [D112](#)

6 Hinge, Full Mortise	TA2714 [NRP]	US26D	MK	087100
1 Flush Bolt	2805	US26D	RO	087100
1 Mullion	CR972KM 7'2"		RU	087100
1 Storeroom Lock	ML2057 NSA CT7SB	626	RU	087100
2 Small Format Inter Core	33700007K P GMK	19	MC	087100
1 Housing	CR1040-138 A62 7-Pin	626	RU	087100
2 Surface Closer	PR7500	689	NO	087100
2 Door Stop & Holder	490	US26D	RO	087100
2 Silencer	608-RKW		RO	087100

Set: 2.0

Doors: [G108](#), [G219](#), [G319](#), [J112](#), [J205](#), [J306](#)

3 Hinge, Full Mortise	TA2714 [NRP]	US26D	MK	087100
1 Storeroom Lock	ML2057 NSA CT7SB	626	RU	087100
1 Small Format Inter Core	33700007K P GMK	19	MC	087100
1 Door Stop & Holder	490	US26D	RO	087100
3 Silencer	608-RKW		RO	087100

Set: 3.0

Doors: [F120](#), [F215](#), [F326](#)

3 Hinge, Full Mortise, Hvy Wt	T4A3786 [NRP]	US26D	MK	087100
1 Storeroom Lock	ML2057 NSA CT7SB	626	RU	087100
1 Small Format Inter Core	33700007K P GMK	19	MC	087100
1 Surface Closer	R 7500	689	NO	087100
1 Kick Plate	K1050 10" CSK BEV	US32D	RO	087100
1 Mop Plate	K1050 6" CSK BEV	US32D	RO	087100
1 Door Stop & Holder	490	US26D	RO	087100
3 Silencer	608-RKW		RO	087100

Set: 4.0

Doors: [B202](#), [B203](#)

3 Hinge, Full Mortise	TA2714 [NRP]	US26D	MK	087100
1 Storeroom Lock	ML2057 NSA CT7SB	626	RU	087100
1 Small Format Inter Core	33700007K P GMK	19	MC	087100
1 Surface Closer	PR7500	689	NO	087100
1 Door Stop & Holder	490	US26D	RO	087100
3 Silencer	608-RKW		RO	087100

END OF SECTION 080671

SECTION 08 1113 - HOLLOW METAL DOORS AND FRAMES**PART 1 GENERAL****1.01 SECTION INCLUDES**

- A. Non-fire-rated hollow metal doors and frames.
- B. Hollow metal frames for wood doors.
 - 1. Including fire-rated frames
- C. Fire-rated hollow metal doors and frames.
- D. Thermally insulated hollow metal doors with frames.
- E. Hollow metal borrowed lites glazing frames.

1.02 ABBREVIATIONS AND ACRONYMS

- A. ANSI: American National Standards Institute.
- B. BHMA - Builders Hardware Manufacturers Association.
- C. NFPA: National Fire Protection Association.
- D. SDI: Steel Door Institute.
- E. UL: Underwriters Laboratories.

1.03 REFERENCE STANDARDS

- A. ADA Standards - 2010 ADA Standards for Accessible Design; 2010.
- B. ANSI A250.8 - SDI-100 Recommended Specifications for Standard Steel Doors and Frames.; 2003.
- C. ANSI/SDI A250.4 - Test Procedure and Acceptance Criteria for Physical Endurance for Steel Doors, Frames and Frame Anchors; 2024.
- D. ANSI/SDI A250.8 - Specifications for Standard Steel Doors and Frames (SDI-100); 2023.
- E. ANSI/SDI A250.10 - Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames; 2025.
- F. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2023.
- G. ASTM A1008/A1008M - Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Required Hardness, Solution Hardened, and Bake Hardenable; 2023, with Editorial Revision.
- H. ASTM A1011/A1011M - Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength; 2023.
- I. ASTM C143/C143M - Standard Test Method for Slump of Hydraulic-Cement Concrete; 2020.
- J. ASTM C476 - Standard Specification for Grout for Masonry; 2023.
- K. ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing; 2023.
- L. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2023d.
- M. BHMA A156.115 - Hardware Preparation in Steel Doors and Frames; 2016.
- N. ICC A117.1 - Accessible and Usable Buildings and Facilities; 2017.
- O. ITS (DIR) - Directory of Listed Products; Current Edition.
- P. NAAMM HMMA 861 - Guide Specifications for Commercial Hollow Metal Doors and Frames; 2014.
- Q. NFPA 80 - Standard for Fire Doors and Other Opening Protectives; 2025.
- R. NFPA 105 - Standard for Smoke Door Assemblies and Other Opening Protectives; 2025.
- S. NFPA 252 - Standard Methods of Fire Tests of Door Assemblies; 2022.
- T. SDI 117 - Manufacturing Tolerances for Standard Steel Doors and Frames; 2023.

- U. UL (DIR) - Online Certifications Directory; Current Edition.
- V. UL 10C - Standard for Positive Pressure Fire Tests of Door Assemblies; Current Edition, Including All Revisions.
- W. UL 1784 - Standard for Air Leakage Tests of Door Assemblies and Other Opening Protectives; Current Edition, Including All Revisions.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Materials and details of design and construction, hardware locations, reinforcement type and locations, anchorage and fastening methods, and finishes.
- C. Shop Drawings: Details of each opening, showing elevations, glazing, frame profiles, and any indicated finish requirements.
 - 1. Include details of electrical raceway and preparation for electrified hardware, access control systems, and security systems.
- D. Manufacturer's Qualification Statement.
- E. Installer's Qualification Statement.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than 5 years documented experience.
- B. Installer Qualifications: Company specializing in performing work of the type specified and with at least 5 years of documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Comply with ANSI A250.8 (SDI-100) in accordance with specified requirements.
- B. Protect with resilient packaging; avoid humidity build-up under coverings; prevent corrosion and adverse effects on factory applied painted finish.

1.07 WARRANTY

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.
- B. Provide manufacturer warranty for doors and frames to be free from material or workmanship defects and within commercial tolerances within a 1 year period after Date of Substantial Completion.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Hollow Metal Doors and Frames:
 - 1. Ceco Door, an Assa Abloy Group company; _____: www.assaabloydss.com/#sle.
 - 2. Curries, an Assa Abloy Group company: www.curries.com.
 - 3. De La Fontaine: www.delafontaine.com.
 - 4. Mesker/Mesker Openings Group, a Dormakaba Group company: www.meskeropeningsgroup.com.
 - 5. Pioneer Industries, an Assa Abloy Group company: www.pioneerindustries.com.
 - 6. Republic Doors, an Allegion brand: www.republicdoor.com.
 - 7. Steelcraft, an Allegion brand: www.allegion.com.
 - 8. Substitutions: See Section 01 6000 - Product Requirements.

2.02 PERFORMANCE REQUIREMENTS

- A. Requirements for Hollow Metal Doors and Frames:
 - 1. Steel Sheet: Comply with one or more of the following requirements; galvanized steel complying with ASTM A653/A653M, cold-rolled steel complying with ASTM A1008/A1008M, or hot-rolled pickled and oiled (HRPO) steel complying with ASTM A1011/A1011M, commercial steel (CS) Type B, for each.
 - 2. Accessibility: Comply with ICC A117.1 and ADA Standards.
 - 3. Exterior Door Top Closures: Flush end closure channel, with top and door faces aligned.

4. Door Edge Profile: Beveled, both sides.
5. Typical Door Face Sheets: Flush.
6. Glazed Lights: Non-removable stops on non-secure side; sizes and configurations as indicated on drawings. Style: Manufacturer's standard.
7. Hardware Preparations, Selections and Locations: Comply with BHMA A156.115 and ANSI A250.8 (SDI-100) in accordance with specified requirements and as follows:
 - a. Minimum Hardware reinforcing thicknesses:
 - 1) Mortise Butt Hinges: 0.123 inches (10 gage),
 - 2) Pivot Hinges: 0.167 inches (7 gage)
 - 3) Continuous Hinges: 0.067 inches (14 gage).
 - 4) Exit Devices: 0.067 inches (14 gage)
 - 5) Mortise Locksets and Deadbolts: 0.067 inches (14 gage).
 - 6) Bored Locksets and Deadbolts: 0.067 inches (14 gage).
 - 7) Flush and Surface Bolts: 0.067 inches (14 gage).
 - 8) Closers and Hold Open Arms: 0.067 inches (14 gage).
 - 9) Pull Plates and Push/Pull Bars: 0.067 inches (14 gage).
 - 10) Protection Plates and Push Plates: No reinforcing required.
 8. Zinc Coating: Where indicated, provide metal components zinc-coated (galvanized) and/or zinc-iron alloy-coated (galvannealed) by the hot-dip process in accordance with ASTM A653/A653M.
 - a. Minimum A60/ZF180 (galvannealed) coating unless otherwise indicated.
- B. Hollow Metal In-Fill Panels: Same construction, performance, and finish as doors.
- C. Combined Requirements: If a particular door and frame unit is indicated to comply with more than one type of requirement, comply with the specified requirements for each type; for instance, an exterior door that is also indicated as being sound-rated must comply with the requirements specified for exterior doors and for sound-rated doors; where two requirements conflict, comply with the most stringent.

2.03 HOLLOW METAL DOORS

- A. Door Finish: Factory primed and field finished.
- B. Exterior Doors: Thermally insulated, Non-Fire Rated.
 1. Based on SDI Standards: ANSI/SDI A250.8 (SDI-100).
 - a. Level 3 - Extra Heavy-duty.
 - b. Physical Performance Level A 1 000 000 cycles; in accordance with ANSI/SDI A250.4.
 - c. Model 2 - Seamless.
 - d. Door Face Metal Thickness: 20 gauge, 0.032 inch, minimum.
 - e. Zinc Coating: A60/ZF180 galvannealed coating; ASTM A653/A653M.
 2. Door Core Material: Vertical steel stiffeners with fiberglass batts.
 3. Door Thermal Resistance: R-Value of ____.
 4. Weatherstripping: Refer to Section 08 7100.
- C. Interior Doors, Non-Fire Rated:
 1. Based on SDI Standards: ANSI/SDI A250.8 (SDI-100).
 - a. Level 2 - Heavy-duty.
 - b. Physical Performance Level B, 500,000 cycles; in accordance with ANSI/SDI A250.4.
 - c. Model 2 - Seamless.
 - d. Door Face Metal Thickness: 20 gauge, 0.032 inch, minimum.
 2. Door Core Material: Manufacturers standard core material/construction and in compliance with requirements.
- D. Fire-Rated Doors:
 1. Based on SDI Standards: ANSI/SDI A250.8 (SDI-100).
 - a. Level 2 - Heavy-duty.
 - b. Physical Performance Level B, 500,000 cycles; in accordance with ANSI/SDI A250.4.

- c. Model 2 - Seamless.
- d. Door Face Metal Thickness: 20 gauge, 0.032 inch, minimum.
- 2. Fire Rating: As indicated on drawings, tested in accordance with UL 10C and NFPA 252 ("positive pressure fire tests").
- 3. Temperature-Rise Rating (TRR) Across Door Thickness: 450 degrees F.
 - a. Provide where indicated on Drawings and at vertical exit enclosures and exit passageways.
- 4. Provide units listed and labeled by UL (DIR) or ITS (DIR).
 - a. Attach fire rating label to each fire rated unit.
- 5. Smoke and Draft Control Doors: Install in accordance with NFPA 80 and NFPA 105, with fire-resistance-rated wall construction rated the same or greater than the fire-rated doors, and the following;
 - a. Maximum Air Leakage: 3.0 cfm/sq ft of door opening at 0.10 inch w.g. pressure, when tested in accordance with UL 1784 at both ambient and elevated temperatures.
 - b. Gasketing: Refer to Section 08 7100.
 - c. Label: Include the "S" label on fire-rating label of door.
- 6. Door Core Material: Manufacturers standard core material/construction in compliance with requirements.
- 7. For Exterior Fire-Rated Doors provide the following:
 - a. Zinc Coating: A60/ZF180 galvanized coating; ASTM A653/A653M.
 - b. Core Material: Mineral board.
 - c. Weatherstripping: Refer to Section 08 7100.

2.04 HOLLOW METAL FRAMES

- A. Hollow metal frames based on SDI Standards: ANSI A250.8 (SDI-100).
 - 1. Joints between faces of abutting frame members shall appear seamless; joints shall be securely welded, filled, and finished smooth without visible seams.
- B. Frame Finish: Factory primed and field finished.
- C. Exterior Door Frames: Full profile/continuously welded type.
 - 1. Galvanizing: Components hot-dipped zinc-iron alloy-coated (galvanized) in accordance with ASTM A653/A653M, with A60/ZF180 coating.
 - 2. Frame Metal Thickness: 16 gage, 0.053 inch, minimum.
 - 3. Weatherstripping: Separate, see Section 08 7100.
- D. Interior Door Frames, Non-Fire Rated: Full profile/continuously welded type.
 - 1. Frame Metal Thickness: 16 gage, 0.053 inch, minimum.
 - 2. Includes frames for wood doors.
- E. Door Frames, Fire-Rated: Full profile/continuously welded type.
 - 1. Fire Rating: Same as door, labeled.
 - 2. Frame Metal Thickness: 16 gage, 0.053 inch, minimum.
 - 3. Includes frames for wood doors.
 - 4. For Exterior Fire-Rated Doors provide the following:
 - a. Galvanizing: Components hot-dipped zinc-iron alloy-coated (galvanized) in accordance with ASTM A653/A653M, with A60/ZF180 coating.
- F. Borrowed Light Frames: Full profile/continuously welded type.
 - 1. Frame Metal Thickness: 16 gage, 0.053 inch, minimum.
 - 2. Face dimensions to match door frames.
- G. Mullions for Pairs of Doors: Where indicated provide fixed mullions with profile similar to jambs.
 - 1. Refer to Section 08 7100 - Door Hardware for removable mullions.
- H. Transom Bars: Fixed, of profile same as jamb and head.
- I. Provide mortar guard boxes for hardware cut-outs in frames to be installed in masonry or to be grouted.
- J. Frames in Masonry Walls: Size to suit masonry coursing with head member 4 inches high to fill opening without cutting masonry units.

- K. Frames Wider than 48 inches: Reinforce with steel channel fitted tightly into frame head, flush with top.
- L. Frame Anchors:
 - 1. Provide anchors of minimum size and type required by applicable door and frame standard, and suitable for performance level indicated.
 - 2. Floor Anchors: Base anchors welded to bottom of frames, designed to attach frame to floor.
 - 3. Masonry Anchors: Masonry anchors shall be T-strap type, corrugated or perforated.
 - 4. Stud Anchors: Z-type, welded to back of frames.
 - 5. In-Place Concrete or Masonry Wall Anchors: Minimum 3/8 inch diameter bolts with expansion shields or inserts, with manufacturer's standard spacer.
 - a. For existing walls or new openings cut into existing walls

2.05 FINISHES

- A. Primer: Rust-inhibiting, complying with ANSI/SDI A250.10, door manufacturer's standard.
- B. Corrosion Resistant Back-Coating: Automotive undercoating, asphalt emulsion, or other high-build, water-resistant, resilient coating.

2.06 ACCESSORIES

- A. Louvers: Roll formed steel with overlapping frame; finish same as door components; factory-installed.
 - 1. In Fire-Rated Doors: UL (DIR) or ITS (DIR) listed fusible link louver, same rating as door.
 - 2. Style: Sightproof inverted V or Y blades.
 - 3. Louver Free Area: 50 percent.
 - 4. Fasteners: Concealed fasteners.
- B. Glazing: As specified in Section 08 8000.
- C. Removable Stops: Formed sheet steel, mitered or butted corners; prepared for countersink style tamper proof screws.
 - 1. At Contractor's option, instead of glass stops provided by door manufacturer, provide fire rated glass manufacturer's standard vision lite kits for installing fire-rated glass in doors.
 - a. Refer to Section 08 8000 - Glazing.
- D. Astragals for Double Doors: Specified in Section 08 7100.
- E. Grout for Frames: Mortar grout complying with ASTM C476 with maximum slump of 4 inches as measured in accordance with ASTM C143/C143M for hand troweling in place; plaster grout and thinner pumpable grout are prohibited.
 - 1. Comply with requirements of Section 04 2000 - Unit Masonry.
- F. Silencers: Resilient rubber, fitted into drilled hole; provide three on strike side of single door, three on center mullion of pairs, and two on head of pairs without center mullions.
- G. Filler: Two-component, non-shrinking resin, autobody filler.
 - 1. Available Products:
 - a. 3M/Bondo; Professional Gold Body Filler: www.bondo.com.
- H. Mineral Fiber Insulation: Flexible preformed batt or blanket, complying with ASTM C665; friction fit; unfaced flame spread and smoke developed indexes of 0 (zero) when tested in accordance with ASTM E84.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify that opening sizes and tolerances are acceptable.
- C. Verify that finished walls are in plane to ensure proper door alignment.

3.02 PREPARATION

- A. Back-Coating of Non-Rated Frames: Field-apply corrosion resistant back-coatings to frames that are to be grouted solid.

- 1. Do not back-coat fire-rated frames.

3.03 INSTALLATION

- A. Install doors and frames in accordance with manufacturer's instructions and related requirements of specified door and frame standards or custom guidelines indicated.
- B. Install fire rated units in accordance with NFPA 80.
- C. Install smoke control units in accordance with NFPA 105.
- D. Set frames accurately in position, aligned, plumb, and square.
- E. Fill head and jamb members with mineral fiber insulation prior to installation.
 - 1. Exception: Do not fill frames that are to be grouted solid.
- F. Grout frames solid in masonry and concrete construction, using hand trowel methods; brace frames so that pressure of grout before setting will not deform frames.
 - 1. Install silencers prior to grouting frames.
 - 2. Do not grout fire-rated frames; instead fill head and jamb members with mineral fiber insulation.
- G. Frame Anchors:
 - 1. Coordinate frame anchor placement with wall construction.
 - 2. Minimum number of anchors:
 - a. Provide 3 jamb anchors per jamb up to 90 inches in height; evenly spaced.
 - b. Provide 4 jamb anchors per jamb from 90 to 144 inches in height; evenly spaced.
 - c. Provide 1 additional anchor per jamb for each 24 inches or fraction thereof more than 144 inches in height.
 - d. Provide 1 floor anchor at the bottom of each jamb or mullion; where a floor anchor is not possible provide one additional jamb anchor.
 - 3. In-Place Concrete or Masonry Wall Anchor: Secure frames in place with postinstalled expansion anchors. Countersink anchors, and fill and make smooth, flush, and invisible on exposed faces.
- H. Install doors plumb with uniform clearance at jambs and head; doors shall open and close without binding
- I. Install glass in accordance with Section 08 8000 - Glazing.
- J. Install door hardware as specified in Section 08 7100.
- K. Coordinate installation of electrical connections to electrical hardware items.

3.04 TOLERANCES

- A. Clearances Between Door and Frame: Comply with related requirements of specified frame standards or custom guidelines indicated in accordance with SDI 117.
- B. Maximum Diagonal Distortion: 1/16 inch measured with straight edge, corner to corner.

3.05 ADJUSTING

- A. Adjust for smooth and balanced door movement.

END OF SECTION 08 1113

SECTION 08 1416 - FLUSH WOOD DOORS**PART 1 GENERAL****1.01 SECTION INCLUDES**

- A. Flush wood doors; flush and flush glazed configuration; fire-rated and non-rated.

1.02 REFERENCE STANDARDS

- A. HPVA HP-1 - American National Standard for Hardwood and Decorative Plywood; 2024.
- B. ITS (DIR) - Directory of Listed Products; Current Edition.
- C. NFPA 80 - Standard for Fire Doors and Other Opening Protectives; 2025.
- D. NFPA 105 - Standard for Smoke Door Assemblies and Other Opening Protectives; 2025.
- E. UL (DIR) - Online Certifications Directory; Current Edition.
- F. UL 10C - Standard for Positive Pressure Fire Tests of Door Assemblies; Current Edition, Including All Revisions.
- G. UL 1784 - Standard for Air Leakage Tests of Door Assemblies and Other Opening Protectives; Current Edition, Including All Revisions.

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Indicate door core materials and construction; veneer species, type and characteristics.
- C. Shop Drawings: Show doors and frames, elevations, sizes, types, swings, undercuts, beveling, blocking for hardware, factory machining, factory finishing, cutouts for glazing and other details.
 - 1. Provide information as required by AWI/AWMAC/WI (AWS).
 - 2. Include details of electrical raceway and preparation for electrified hardware, access control systems, and security systems
- D. Samples: Submit three samples of door veneer, 8 by 10 inch in size illustrating wood grain, stain color, and sheen.
 - 1. Transparent finish Samples shall illustrate typical range of wood color and grain.
- E. Manufacturer's Qualification Statement.
- F. Installer's Qualification Statement.
- G. Warranty, executed in Owner's name.

1.04 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section, with not less than 5 years of documented experience.
- B. Installer Qualifications: Company specializing in performing work of the type specified in this section, with not less than 5 years of documented experience.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Package, deliver and store doors in accordance with specified quality standard.
- B. Accept doors on site in manufacturer's packaging, and inspect for damage.
- C. Protect doors with resilient packaging. Do not store in damp or wet areas; or in areas where sunlight might bleach veneer. Seal top and bottom edges if stored more than one week. Break seal on site to permit ventilation.

1.06 WARRANTY

- A. See Section 01 7800 - Closeout Submittals for additional warranty requirements.
- B. Interior Doors: Provide manufacturer's warranty for the life of the installation.
- C. Include coverage for delamination of veneer, warping beyond specified installation tolerances, defective materials, and telegraphing core construction.

PART 2 PRODUCTS**2.01 MANUFACTURERS**

- A. Wood Veneer Faced Doors:
 - 1. Masonite Architectural; Cendura Standard Wood Veneer Doors: www.architectural.masonite.com/#sle.
 - 2. Mohawk Doors, Masonite Architectural: <https://architectural.masonite.com>.
 - 3. Oshkosh Door Company: www.oshkoshdoor.com.
 - 4. VT Industries, Inc: www.vtindustries.com.
 - 5. Substitutions: See Section 01 6000 - Product Requirements.
- B. Lead-Lined Wood Doors:
- C. Sound-Rated Wood Doors:

2.02 DOORS

- A. Doors: See drawings for locations and additional requirements.
 - 1. Quality Standard: Premium Grade, Extra Heavy Duty performance, in accordance with AWI/AWMAC/WI (AWS), unless noted otherwise.
 - 2. Wood Veneer Faced Doors: 5-ply unless otherwise indicated.
- B. Interior Doors: 1-3/4 inches thick unless otherwise indicated; flush construction.
 - 1. Provide solid core doors at each location.
 - 2. Fire Rated Doors: Tested to ratings indicated on drawings in accordance with UL 10C - Positive Pressure; Underwriters Laboratories Inc (UL) or Intertek/Warnock Hersey (WHI) labeled without any visible seals when door is open.
 - 3. Smoke and Draft Control Doors: In addition to required fire rating, provide door assemblies tested in accordance with UL 1784 with maximum air leakage of 3.0 cfm per sq ft of door opening at 0.10 inch wg pressure at both ambient and elevated temperatures for "S" label.
 - 4. Wood veneer facing with factory transparent finish.

2.03 DOOR CORES

- A. Non-Rated Solid Core and 20 Minute Rated Doors: Type particleboard core (PC), plies and faces as indicated.
- B. Fire-Rated Doors: Mineral core type, with fire resistant composite core (FD), plies and faces as indicated above; with core blocking as required to provide adequate anchorage of hardware without through-bolting.

2.04 DOOR FACINGS

- A. Veneer Facing for Transparent Finish:
 - 1. Species and Cut:
 - a. Species: Red Oak.
 - b. Cut: Rift cut.
 - c. Grade: HPVA Grade A.
 - 2. Veneer Matching:
 - a. Matching of Adjacent Veneer Leaves: Book match.
 - b. Matching Within Door Faces: Center balance match.
 - 3. Vertical Edges: Same species hardwood edge as face veneer.
 - 4. "Pair Match" each pair of doors; "Set Match" pairs of doors within 10 feet of each other when doors are closed.
 - 5. Transoms: Continuous match to doors.
- B. Veneer Facing for Opaque Finish: Closed grain hardwood veneer, in compliance with indicated quality standard.
- C. Facing Adhesive: Type II - water resistant.

2.05 DOOR CONSTRUCTION

- A. Fabricate doors in accordance with door quality standard specified.
- B. Cores Constructed with stiles and rails:

1. Provide solid blocks at lock edge and top of door for closer for hardware reinforcement.
 2. Provide solid blocking for other throughbolted hardware.
 3. Provide solid mid-rail blocking, in doors indicated to have exit devices.
- C. Glazed Openings: Non-removable stops on non-secure side; sizes and configurations as indicated on drawings.
- D. Factory machine doors for hardware other than surface-mounted hardware, in accordance with hardware requirements and dimensions.
- E. Factory fit doors for frame opening dimensions identified on shop drawings, with edge clearances in accordance with specified quality standard.
- F. Provide edge clearances in accordance with the quality standard specified.

2.06 FINISHES - WOOD VENEER DOORS

- A. Finish work in accordance with AWI/AWMAC/WI (AWS), Section 5 - Finishing for grade specified and as follows:
1. Transparent:
 - a. System 5 - Conversion Varnish, System 10 - UV Curable Water-based, or System 11 - Catalyzed Polyurethane.
 - b. Stain: As selected by Architect.
 - c. Sheen: Satin.
 - B. Seal door top edge with color sealer to match door facing.

2.07 ACCESSORIES

- A. Wood Door Frames: As specified in Section {id\#1000008} - {t\#1000008}.
- B. Hollow Metal Door Frames: As specified in Section 08 1113 - Hollow Metal Doors and Frames.
- C. Metal Louvers:
 1. Material and Finish: Roll formed steel; pre-painted finish to color as selected.
 2. Louver Blade: Inverted V or Y blade, sight proof.
 3. Louver Free Area: 50 percent.
 4. Frame: Overlapping style with tamper proof fasteners.
 5. In Fire-Rated Doors: UL (DIR) or ITS (DIR) listed fusible link louver, same rating as door.
- D. Glazing: See Section 08 8000.
- E. Glazing Stops:
 1. Non-Rated Doors: Rolled steel channel shape, mitered corners; prepared for countersink style tamper proof screws.
 - a. Type: Lipped moldings.
 2. Fire-Rated Doors: Rolled steel channel shape, mitered corners; prepared for countersink style tamper proof screws.
 - a. Type: Lipped moldings.
- F. Door Hardware: See Section 08 7100.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify that opening sizes and tolerances are acceptable.
- C. Do not install doors in frame openings that are not plumb or are out-of-tolerance for size or alignment.

3.02 INSTALLATION

- A. Install doors in accordance with manufacturer's instructions and specified quality standard.
 1. Install fire-rated doors in accordance with NFPA 80 requirements.
 2. Install smoke and draft control doors in accordance with NFPA 105 requirements.
- B. Factory-Finished Doors: Do not field cut or trim; if fit or clearance is not correct, replace door.
- C. Use machine tools to cut or drill for hardware.
- D. Coordinate installation of doors with installation of frames and hardware.

- E. Coordinate installation of glazing.
- F. Install door louvers plumb and level.
- G. Install glass in accordance with Section 08 8000 - Glazing.
- H. Install door hardware as specified in Section 08 7100 - Door Hardware.
- I. Coordinate installation of electrical connections to electrical hardware items.

3.03 TOLERANCES

- A. Comply with specified quality standard for fit and clearance tolerances.
- B. Comply with specified quality standard for telegraphing, warp, and squareness.

3.04 ADJUSTING

- A. Adjust doors for smooth and balanced door movement.
- B. Adjust closers for full closure.

END OF SECTION 08 1416

SECTION 087100 - DOOR HARDWARE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes commercial door hardware for the following:
 - 1. Swinging doors.
- B. Door hardware includes, but is not necessarily limited to, the following:
 - 1. Mechanical door hardware.
- C. Related Sections:
 - 1. Division 06 Section "Rough Carpentry".
 - 2. Division 08 Section "Door Schedule".
 - 3. Division 08 Section "Door Hardware Schedule".
 - 4. Division 08 Section "Hollow Metal Doors and Frames".
 - 5. Division 08 Section "Flush Wood Doors".
- D. Codes and References: Comply with the version year adopted by the Authority Having Jurisdiction.
 - 1. ANSI A117.1 - Accessible and Usable Buildings and Facilities.
 - 2. ICC/IBC - International Building Code.
 - 3. NFPA 105 - Installation of Smoke Door Assemblies.
 - 4. State Building Codes, Local Amendments.
- E. Standards: All hardware specified herein shall comply with the following industry standards as applicable. Any undated reference to a standard shall be interpreted as referring to the latest edition of that standard:
 - 1. ANSI/BHMA Certified Product Standards - A156 Series.

1.3 SUBMITTALS

- A. Product Data: Manufacturer's product data sheets including installation details, material descriptions, dimensions of individual components and profiles, operational descriptions and finishes.

- B. Door Hardware Schedule: Prepared by or under the supervision of supplier, detailing, fabrication and assembly of door hardware, as well as procedures and diagrams. Coordinate the final Door Hardware Schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.
1. Format: Comply with scheduling sequence and vertical format in DHI's "Sequence and Format for the Hardware Schedule."
 2. Organization: Organize the Door Hardware Schedule into door hardware sets indicating complete designations of every item required for each door or opening. Organize door hardware sets in same order as in the Door Hardware Sets at the end of Part 3. Submittals that do not follow the same format and order as the Door Hardware Sets will be rejected and subject to resubmission.
 3. Content: Include the following information:
 - a. Type, style, function, size, label, hand, and finish of each door hardware item.
 - b. Manufacturer of each item.
 - c. Fastenings and other pertinent information.
 - d. Location of door hardware set, cross-referenced to Drawings, both on floor plans and in door and frame schedule.
 - e. Explanation of abbreviations, symbols, and codes contained in schedule.
 - f. Mounting locations for door hardware.
 - g. Door and frame sizes and materials.
 - h. Warranty information for each product.
 4. Submittal Sequence: Submit the final Door Hardware Schedule at earliest possible date, particularly where approval of the Door Hardware Schedule must precede fabrication of other work that is critical in the Project construction schedule. Include Product Data, Samples, Shop Drawings of other work affected by door hardware, and other information essential to the coordinated review of the Door Hardware Schedule.
- C. Keying Schedule: After a keying meeting with the owner has taken place prepare a separate keying schedule detailing final instructions. Submit the keying schedule in electronic format. Include keying system explanation, door numbers, key set symbols, hardware set numbers and special instructions. Owner must approve submitted keying schedule prior to the ordering of permanent cylinders/cores.
- D. Informational Submittals:
1. Product Test Reports: Indicating compliance with cycle testing requirements, based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified independent testing agency.

1.4 CLOSEOUT SUBMITTALS

- A. Operating and Maintenance Manuals: Provide manufacturers operating and maintenance manuals for each item comprising the complete door hardware installation in quantity as required in Division 01, Closeout Procedures.

- B. Project Record Documents: Provide record documentation of as-built door hardware sets in digital format (.pdf, .docx, .xlsx, .csv) and as required in Division 01, Project Record Documents.

1.5 QUALITY ASSURANCE

- A. Manufacturers Qualifications: Engage qualified manufacturers with a minimum 5 years of documented experience in producing hardware and equipment similar to that indicated for this Project and that have a proven record of successful in-service performance.
- B. Certified Products: Where specified, products must maintain a current listing in the Builders Hardware Manufacturers Association (BHMA) Certified Products Directory (CPD).
- C. Installer Qualifications: A minimum 3 years documented experience installing both standard and electrified door hardware similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.
- D. Door Hardware Supplier Qualifications: Experienced commercial door hardware distributors with a minimum 5 years documented experience supplying both mechanical and electromechanical hardware installations comparable in material, design, and extent to that indicated for this Project. Supplier recognized as a factory direct distributor by the manufacturers of the primary materials with a warehousing facility in Project's vicinity. Supplier to have on staff a certified Architectural Hardware Consultant (AHC) available during the course of the Work to consult with Contractor, Architect, and Owner concerning both standard and electromechanical door hardware and keying.
- E. Each unit to bear third party permanent label indicating compliance with the referenced testing standards.
- F. Keying Conference: Conduct conference to comply with requirements in Division 01 Section "Project Meetings." Keying conference to incorporate the following criteria into the final keying schedule document:
 1. Function of building, purpose of each area and degree of security required.
 2. Plans for existing and future key system expansion.
 3. Requirements for key control storage and software.
 4. Installation of permanent keys, cylinder cores and software.
 5. Address and requirements for delivery of keys.
- G. Pre-Submittal Conference: Conduct coordination conference in compliance with requirements in Division 01 Section "Project Meetings" with attendance by representatives of Supplier(s), Installer(s), and Contractor(s) to review proper methods and the procedures for receiving, handling, and installing door hardware.
 1. Prior to installation of door hardware, conduct a project specific training meeting to instruct the installing contractors' personnel on the proper installation and adjustment of their respective products. Product training to be attended by installers of door hardware (including electromechanical hardware) for aluminum, hollow metal and wood doors.

Training will include the use of installation manuals, hardware schedules, templates and physical product samples as required.

2. Inspect and discuss electrical roughing-in, power supply connections, and other preparatory work performed by other trades.
3. Review sequence of operation narratives for each unique access controlled opening.
4. Review and finalize construction schedule and verify availability of materials.
5. Review the required inspecting, testing, commissioning, and demonstration procedures

- H. At completion of installation, provide written documentation that components were applied according to manufacturer's instructions and recommendations and according to approved schedule.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Inventory door hardware on receipt and provide secure lock-up and shelving for door hardware delivered to Project site. Do not store electronic access control hardware, software or accessories at Project site without prior authorization.
- B. Tag each item or package separately with identification related to the final Door Hardware Schedule, and include basic installation instructions with each item or package.
- C. Deliver, as applicable, permanent keys, cylinders, cores, access control credentials, software and related accessories directly to Owner via registered mail or overnight package service. Instructions for delivery to the Owner shall be established at the "Keying Conference".

1.7 COORDINATION

- A. Templates: Obtain and distribute to the parties involved templates for doors, frames, and other work specified to be factory prepared for installing standard and electrified hardware. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing hardware to comply with indicated requirements.
- B. Door and Frame Preparation: Doors and corresponding frames are to be prepared, reinforced and pre-wired (if applicable) to receive the installation of the specified electrified, monitoring, signaling and access control system hardware without additional in-field modifications.

1.8 WARRANTY

- A. General Warranty: Reference Division 01, General Requirements. Special warranties specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.
- B. Warranty Period: Written warranty, executed by manufacturer(s), agreeing to repair or replace components of standard and electrified door hardware that fails in materials or workmanship within specified warranty period after final acceptance by the Owner. Failures include, but are not limited to, the following:

1. Structural failures including excessive deflection, cracking, or breakage.
2. Faulty operation of the hardware.
3. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
4. Electrical component defects and failures within the systems operation.

C. Warranty Period: Unless otherwise indicated, warranty shall be one year from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 BUTT HINGES

A. Hinges: ANSI/BHMA A156.1 butt hinges with number of hinge knuckles and other options as specified in the Door Hardware Sets.

1. Quantity: Provide the following hinge quantity:
 - a. Two Hinges: For doors with heights up to 60 inches.
 - b. Three Hinges: For doors with heights 61 to 90 inches.
 - c. Four Hinges: For doors with heights 91 to 120 inches.
 - d. For doors with heights more than 120 inches, provide 4 hinges, plus 1 hinge for every 30 inches of door height greater than 120 inches.
2. Hinge Size: Provide the following, unless otherwise indicated, with hinge widths sized for door thickness and clearances required:
 - a. Widths up to 3'0": 4-1/2" standard or heavy weight as specified.
 - b. Sizes from 3'1" to 4'0": 5" standard or heavy weight as specified.
3. Hinge Weight and Base Material: Unless otherwise indicated, provide the following:
 - a. Exterior Doors: Heavy weight, non-ferrous, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate standard weight.
 - b. Interior Doors: Standard weight, steel, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate heavy weight.
4. Hinge Options: Comply with the following:
 - a. Non-removable Pins: With the exception of electric through wire hinges, provide set screw in hinge barrel that, when tightened into a groove in hinge pin, prevents removal of pin while door is closed; for all out-swinging lockable doors.
5. Manufacturers:
 - a. McKinney (MK) - TA/T4A Series, 5-knuckle.
 - b. No Substitution.

2.2 DOOR OPERATING TRIM

- A. Flush Bolts and Surface Bolts: Provide products conforming to ANSI/BHMA A156.3 and A156.16, Grade 1.
1. Flush bolts to be furnished with top rod of sufficient length to allow bolt retraction device location approximately six feet from the floor.
 2. Furnish dust proof strikes for bottom bolts.
 3. Surface bolts to be minimum 8" in length and U.L. listed for labeled fire doors and U.L. listed for windstorm components where applicable.
 4. Provide related accessories (mounting brackets, strikes, coordinators, etc.) as required for appropriate installation and operation.
 5. Manufacturers:
 - a. Rockwood (RO).
 - b. No Substitution.

2.3 CYLINDERS AND KEYING

- A. General: Cylinder manufacturer to have minimum (10) years experience designing secured master key systems and have on record a published security keying system policy.
1. Manufacturers:
 - a. Medeco (MC).
 - b. No Substitution.
- B. Cylinder Types: Original manufacturer cylinders able to supply the following cylinder formats and types:
1. Threaded mortise cylinders with rings and cams to suit hardware application.
 2. Rim cylinders with back plate, flat-type vertical or horizontal tailpiece, and raised trim ring.
 3. Bored or cylindrical lock cylinders with tailpieces as required to suit locks.
 4. Tubular deadlocks and other auxiliary locks.
 5. Mortise and rim cylinder collars to be solid and recessed to allow the cylinder face to be flush and be free spinning with matching finishes.
 6. Keyway: Match Facility Restricted Keyway.
- C. Small Format Interchangeable Cores: Provide small format interchangeable cores (SFIC) as specified, core insert, removable by use of a special key; usable with other manufacturers' cylinders.
- D. Keying System: Each type of lock and cylinders to be factory keyed.
1. Supplier shall conduct a "Keying Conference" to define and document keying system instructions and requirements.
 2. Furnish factory cut, nickel-silver large bow permanently inscribed with a visual key control number as directed by Owner.

3. Existing System: Field verify and key cylinders to match Owner's existing system.

E. Key Quantity: Provide the following minimum number of keys:

1. Change Keys per Cylinder: Two (2)
2. Construction Keys (where required): Ten (10).
3. Construction Control Keys (where required): Two (2).

F. Construction Keying: Provide temporary keyed construction cores.

G. Key Registration List (Bitting List):

1. Provide keying transcript list to Owner's representative in the proper format for importing into key control software.
2. Provide transcript list in writing or electronic file as directed by the Owner.

2.4 MORTISE LOCKS AND LATCHING DEVICES

A. Mortise Locksets, Grade 1 (Heavy Duty): Provide ANSI/BHMA A156.13, Series 1000, Operational Grade 1 Certified Products Directory (CPD) listed mortise locksets. Listed manufacturers shall meet all functions and features as specified herein.

1. Manufacturers:
 - a. Corbin Russwin Hardware (RU) - ML2000 Series.
 - b. No Substitution.

2.5 LOCK AND LATCH STRIKES

A. Strikes: Provide manufacturer's standard strike with strike box for each latch or lock bolt, with curved lip extended to protect frame, finished to match door hardware set, unless otherwise indicated, and as follows:

1. Flat-Lip Strikes: For locks with three-piece antifriction latchbolts, as recommended by manufacturer.
2. Extra-Long-Lip Strikes: For locks used on frames with applied wood casing trim.
3. Aluminum-Frame Strike Box: Provide manufacturer's special strike box fabricated for aluminum framing.
4. Double-lipped strikes: For locks at double acting doors. Furnish with retractable stop for rescue hardware applications.

B. Standards: Comply with the following:

1. Strikes for Mortise Locks and Latches: BHMA A156.13.
2. Strikes for Bored Locks and Latches: BHMA A156.2.
3. Strikes for Auxiliary Deadlocks: BHMA A156.36.
4. Dustproof Strikes: BHMA A156.16.

2.6 SURFACE DOOR CLOSERS

- A. All door closers specified herein shall meet or exceed the following criteria:
1. General: Door closers to be from one manufacturer, matching in design and style, with the same type door preparations and templates regardless of application or spring size. Closers to be non-handed with full sized covers.
 2. Standards: Closers to comply with UL-10C for Positive Pressure Fire Test and be U.L. listed for use of fire rated doors.
 3. Cycle Testing: Provide closers which have surpassed 15 million cycles.
 4. Size of Units: Comply with manufacturer's written recommendations for sizing of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Where closers are indicated for doors required to be accessible to the Americans with Disabilities Act, provide units complying with ANSI ICC/A117.1.
 5. Closer Arms: Provide heavy duty, forged steel closer arms unless otherwise indicated in Hardware Sets.
 6. Closers shall not be installed on exterior or corridor side of doors; where possible install closers on door for optimum aesthetics.
 7. Closer Accessories: Provide door closer accessories including custom templates, special mounting brackets, spacers and drop plates as required for proper installation. Provide through-bolt and security type fasteners as specified in the hardware sets.
- B. Door Closers, Surface Mounted (Heavy Duty): ANSI/BHMA A156.4, Grade 1 Certified Products Directory (CPD) listed surface mounted, heavy duty door closers with complete spring power adjustment, sizes 1 thru 6; and fully operational adjustable according to door size, frequency of use, and opening force. Closers to be rack and pinion type, one piece cast iron or aluminum alloy body construction, with adjustable backcheck and separate non-critical valves for closing sweep and latch speed control. Provide non-handed units standard.
1. Heavy duty surface mounted door closers shall have a 30-year warranty.
 2. Manufacturers:
 - a. Norton Rixson (NO) - 7500 Series.
 - b. No Substitution.

2.7 ARCHITECTURAL TRIM AND ACCESSORIES

- A. Door Protective Trim:
1. General: Door protective trim units to be of type and design as specified below or in the Hardware Sets.
 2. Size: Fabricate protection plates (kick, armor, or mop) not more than 2" less than door width (LDW) on stop side of single doors and 1" LDW on stop side of pairs of doors, and not more than 1" less than door width on pull side. Coordinate and provide proper width and height as required where conflicting hardware dictates. Height to be as specified in the Hardware Sets.

3. Where plates are applied to fire rated doors with the top of the plate more than 16" above the bottom of the door, provide plates complying with NFPA 80. Consult manufacturer's catalog and template book for specific requirements for size and applications.
4. Protection Plates: ANSI/BHMA A156.6 protection plates (kick, armor, or mop), fabricated from the following:
 - a. Stainless Steel: 300 grade, 050-inch thick.
5. Options and fasteners: Provide manufacturer's designated fastener type as specified in the Hardware Sets. Provide countersunk screw holes.
6. Manufacturers:
 - a. Rockwood (RO).
 - b. No Substitution.

2.8 DOOR STOPS AND HOLDERS

- A. General: Door stops and holders to be of type and design as specified below or in the Hardware Sets.
- B. Door Stops and Bumpers: ANSI/BHMA A156.16, Grade 1 door stops and wall bumpers. Provide wall bumpers, either convex or concave types with anchorage as indicated, unless floor or other types of door stops are specified in Hardware Sets. Do not mount floor stops where they will impede traffic. Where floor or wall bumpers are not appropriate, provide overhead type stops and holders.
 1. Manufacturers:
 - a. Rockwood (RO).
 - b. No Substitution.

2.9 FABRICATION

- A. Fasteners: Provide door hardware manufactured to comply with published templates generally prepared for machine, wood, and sheet metal screws. Provide screws according to manufacturers recognized installation standards for application intended.

2.10 FINISHES

- A. Standard: Designations used in the Hardware Sets and elsewhere indicate hardware finishes complying with ANSI/BHMA A156.18, including coordination with traditional U.S. finishes indicated by certain manufacturers for their products.
- B. Provide quality of finish, including thickness of plating or coating (if any), composition, hardness, and other qualities complying with manufacturer's standards, but in no case less than specified by referenced standards for the applicable units of hardware
- C. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine scheduled openings, with Installer present, for compliance with requirements for installation tolerances, labeled fire door assembly construction, wall and floor construction, and other conditions affecting performance.
- B. Notify architect of any discrepancies or conflicts between the door schedule, door types, drawings and scheduled hardware. Proceed only after such discrepancies or conflicts have been resolved in writing.

3.2 PREPARATION

- A. Hollow Metal Doors and Frames: Comply with ANSI/DHI A115 series.
- B. Wood Doors: Comply with ANSI/DHI A115-W series.

3.3 INSTALLATION

- A. Install each item of mechanical and electromechanical hardware and access control equipment to comply with manufacturer's written instructions and according to specifications.
 - 1. Installers are to be trained and certified by the manufacturer on the proper installation and adjustment of fire, life safety, and security products including: hanging devices; locking devices; closing devices; and seals.
- B. Mounting Heights: Mount door hardware units at heights indicated in following applicable publications, unless specifically indicated or required to comply with governing regulations:
 - 1. Standard Steel Doors and Frames: DHI's "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames."
 - 2. DHI TDH-007-20: Installation Guide for Doors and Hardware.
 - 3. Where indicated to comply with accessibility requirements, comply with ANSI A117.1 "Accessibility Guidelines for Buildings and Facilities."
 - 4. Provide blocking in drywall partitions where wall stops or other wall mounted hardware is located.
- C. Retrofitting: Install door hardware to comply with manufacturer's published templates and written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work specified in Division 9 Sections. Do not install surface-mounted items until finishes have been completed on substrates involved.
- D. Push Plates and Door Pulls: When through-bolt fasteners are in the same location as a push plate, countersink the fasteners flush with the door face allowing the push plate to sit flat against the door.

- E. Thresholds: Set thresholds for exterior and acoustical doors in full bed of sealant complying with requirements specified in Division 7 Section "Joint Sealants."
- F. Storage: Provide a secure lock up for hardware delivered to the project but not yet installed. Control the handling and installation of hardware items so that the completion of the work will not be delayed by hardware losses before and after installation.

3.4 FIELD QUALITY CONTROL

- A. Field Inspection (Punch Report): Reference Division 01 Sections "Closeout Procedures". Produce project punch report for each installed door opening indicating compliance with approved submittals and verification hardware is properly installed, operating and adjusted. Include list of items to be completed and corrected, indicating the reasons or deficiencies causing the Work to be incomplete or rejected.
 - 1. Organization of List: Include separate Door Opening and Deficiencies and Corrective Action Lists organized by Mark, Opening Remarks and Comments, and related Opening Images and Video Recordings.

3.5 ADJUSTING

- A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.

3.6 CLEANING AND PROTECTION

- A. Protect all hardware stored on construction site in a covered and dry place. Protect exposed hardware installed on doors during the construction phase. Install any and all hardware at the latest possible time frame.
- B. Clean adjacent surfaces soiled by door hardware installation.
- C. Clean operating items as necessary to restore proper finish. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of owner occupancy.

3.7 DEMONSTRATION

- A. Instruct Owner's maintenance personnel to adjust, operate, and maintain mechanical and electromechanical door hardware.

3.8 DOOR HARDWARE SETS

- A. The hardware sets represent the design intent and direction of the owner and architect. They are a guideline only and should not be considered a detailed hardware schedule. Discrepancies, conflicting hardware and missing items should be brought to the attention of the architect with

corrections made prior to the bidding process. Omitted items not included in a hardware set should be scheduled with the appropriate additional hardware required for proper application and functionality.

1. Quantities listed are for each pair of doors, or for each single door.
2. The supplier is responsible for handing and sizing all products.
3. Where multiple options for a piece of hardware are given in a single line item, the supplier shall provide the appropriate application for the opening.
4. At existing openings with new hardware the supplier shall field inspect existing conditions prior to the submittal stage to verify the specified hardware will work as required. Provide alternate solutions and proposals as needed.

B. Refer to Section 080671, Door Hardware Sets, for hardware sets.

END OF SECTION 087100

SECTION 08 8000 - GLAZING**PART 1 GENERAL****1.01 SECTION INCLUDES**

- A. Monolithic glazing.
- B. Fire rated glazing.
- C. Glazing compounds.

1.02 REFERENCE STANDARDS

- A. 16 CFR 1201 - Safety Standard for Architectural Glazing Materials; Current Edition.
- B. ANSI Z97.1 - American National Standard for Safety Glazing Materials Used in Buildings - Safety Performance Specifications and Methods of Test; 2015 (Reaffirmed 2020).
- C. ASTM C1311 - Standard Specification for Solvent Release Sealants; 2022.
- D. ASTM C864 - Standard Specification for Dense Elastomeric Compression Seal Gaskets, Setting Blocks, and Spacers; 2005 (Reapproved 2019).
- E. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2018.
- F. ASTM C1036 - Standard Specification for Flat Glass; 2021.
- G. ASTM C1048 - Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass; 2018.
- H. ASTM C1193 - Standard Guide for Use of Joint Sealants; 2025.
- I. ASTM C1376 - Standard Specification for Pyrolytic and Vacuum Deposition Coatings on Flat Glass; 2021a.
- J. GANA (GM) - GANA Glazing Manual; 2022.
- K. GANA (SM) - GANA Sealant Manual; 2008.
- L. GANA (LGRM) - Laminated Glazing Reference Manual; 2019.
- M. ICC (IBC) - International Building Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- N. IGMA TB-3001 - Guidelines for Sloped Glazing; 2001.
- O. IGMA TM-3000 - North American Glazing Guidelines for Sealed Insulating Glass Units for Commercial & Residential Use; 1990 (Reaffirmed 2016).
- P. NFPA 251 - Standard Methods of Tests of Fire Resistance of Building Construction and Materials - 2006.

1.03 ADMINISTRATIVE REQUIREMENTS

- A. Preinstallation Meeting: Convene a preinstallation meeting one week before starting work of this section; require attendance by each of the affected installers.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data on Glazing. Provide structural, physical and environmental characteristics, size limitations, special handling and installation requirements.
- C. Product Data on Glazing Compounds and Accessories: Provide chemical, functional, and environmental characteristics, limitations, special application requirements, and identify available colors.
- D. Samples: Submit three samples 12 by 12 inch in size for each glass type.
 - 1. Non-insulated types may be 4 by 4 inches in size.
- E. Certificate: Certify that products of this section meet or exceed specified requirements.
- F. Warranty Documentation: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

1.05 QUALITY ASSURANCE

- A. Perform Work in accordance with GANA (GM), GANA (SM), GANA (LGRM), IGMA TM-3000, and IGMA TB-3001 for glazing installation methods.
- B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum 5 years of documented experience.
- C. Installer Qualifications: Company specializing in performing work of the type specified and with at least 5 years documented experience.

1.06 FIELD CONDITIONS

- A. Do not install glazing when ambient temperature is less than 40 degrees F.
- B. Maintain minimum ambient temperature before, during and 24 hours after installation of glazing compounds.

1.07 WARRANTY

- A. See Section 01 7800 - Closeout Submittals for additional warranty requirements.
- B. Insulating Glass Units: Provide a ten (10) year manufacturer warranty to include coverage for seal failure, interpane dusting or misting, including providing products to replace failed units.
- C. Laminated Glass: Provide a ten (10) year manufacturer warranty to include coverage for delamination, including providing products to replace failed units.
- D. Coated Glass: Provide a ten (10) year manufacturer warranty to include coverage for peeling, cracking, and other indications of deterioration in coating, including providing products to replace failed units.

PART 2 PRODUCTS**2.01 MANUFACTURERS**

- A. Float Glass Manufacturers:
 - 1. Guardian Glass, LLC: www.guardianglass.com.
 - 2. Pilkington North America Inc: www.pilkington.com.
 - 3. Viracon, Inc: www.viracon.com.
 - 4. Vitro Architectural Glass (formerly PPG Industries, Inc.): www.vitroglazings.com.
- B. Source Limitations: Obtain Float Glass and Low Iron Float Glass from one manufacturer. Obtain Fire Rated Glass from one manufacturer.

2.02 PERFORMANCE REQUIREMENTS

- A. Probability of Breakage: Design glass for a probability of breakage not greater than 0.008 (8 lites per 1000) for glass not more than 15 degrees from vertical.
- B. Differential Shading: Design glass to resist thermal stresses induced by differential shading within individual glass lites.
- C. Insulating Glass:
 - 1. Insulating Glass Certification Program: Provide insulating glass units that are certified by the Insulating Glass Certification Council (IGCC).
 - a. Provide permanent markings with appropriate certification label of IGCC on either the spacer or one lite of each insulated unit.
- D. Safety Glazing:
 - 1. Complies with ANSI Z97.1 and 16 CFR 1201; test requirements for Class A/Category II.
 - 2. Markings for Safety Rated Glazing: Provide permanent markings on safety-rated glazing in compliance with applicable safety glazing standards, ICC (IBC), local building code, and authorities having jurisdiction.
- E. Glass Thickness: Indicated glass thicknesses are minimums. Provide glass that complies with performance requirements and load designs, and is not less than the thickness indicated.
- F. Glass Strength:

1. Where annealed float glass is indicated, provide annealed float glass, heat-strengthened float glass, or fully tempered float glass as needed to comply with performance requirements.
 2. Where heat-strengthened float glass is indicated, provide heat-strengthened float glass or fully tempered float glass as needed to comply with performance requirements.
- G. Glass Distortion Tolerances:
1. Roller Wave: Maximum 0.003 (0.076 mm) from peak to valley within the main body of the sheet and maximum 0.008 (0.2 mm) within 10.5 inches of a leading or trailing edge.
 2. Localized Warp: Maximum 0.03 inch (0.8 mm) over any 12 inch (305 mm) span, but limited to 0.31 inch (8 mm).

2.03 FLOAT GLASS

- A. Float Glass: Provide float glass based glazing unless otherwise indicated.
1. Annealed Type: ASTM C1036, Type I - Transparent Flat, Class 1 - Clear, Quality - Q3.
 2. Kind HS - Heat-Strengthened Type: Complies with ASTM C1048.
 3. Kind FT - Fully Tempered Type: Complies with ASTM C1048.

2.04 ONE-WAY MIRRORED GLASS

- A. One-Way Mirrored Glass: Comply with requirements of ASTM C1376 for pyrolytic (hard-coat) type coatings on flat glass; coated vision glass, Kind CV.
1. Allows privacy with clear vision into observed space.
 2. Light Level Ratio: 8:1 from bright (subject) side to dark (observer) side.
 3. Mirrored coating toward subject-side.
 4. Glass Tint: Gray.
 5. Visible Transmittance: 11 percent.
 6. Visible Reflectance - Coated Side: 68 percent.
 7. Visible Reflectance - Glass Side: 16 percent.

2.05 GLAZING COMPOUNDS

- A. Butyl Sealant: Solvent-based; ASTM C1311; single component, nonsag, butyl sealant.
1. Product:
 - a. Pecora Corp.; BC-158: www.pecora.com.
 - b. Tremco, Inc.; Butyl Sealant: www.tremcosealants.com.
 - c. Substitutions: Refer to Section 01 6000 - Product Requirements.
- B. General Glazing Silicone Sealant: Neutral-curing silicone glazing sealant complying with ASTM C920, Type S, Grade NS, Class 25 or 50, Use NT.
1. Products:
 - a. Dow Corning Corporation; 899 Silicone Glazing Sealant: www.dowcorning.com.
 - b. GE/Momentive Performance Materials, Inc: SCS2800 SilGlaz II: www.siliconeforbuilding.com
 - c. Pecora Corporation: 896: www.pecora.com.
 - d. Tremco, Inc.: Spectrem 2: www.tremcosealants.com.
 - e. Substitutions: Refer to Section 01 6000 - Product Requirements.
 2. Color: Black.

2.06 ACCESSORIES

- A. Setting Blocks: EPDM or neoprene, with 80 to 90 Shore A durometer hardness; ASTM C864 Option II. Length of 0.1 inch for each square foot of glazing or minimum 4 inch by width of glazing rabbet space minus 1/16 inch by height to suit glazing method and pane weight and area.
- B. Spacer Shims: EPDM or neoprene, 50 to 60 Shore A durometer hardness; ASTM C864 Option II. Minimum 3 inch long by one half the height of the glazing stop by thickness to suit application, self adhesive on one face.
- C. Glazing Tape, Back Bedding Mastic Type: Preformed, butyl-based, 100 percent solids compound; 5 to 30 cured Shore A durometer hardness; coiled on release paper; black color.

1. Width: As required for application.
 2. Thickness: As required for application.
- D. Glazing Gaskets and Splines: Resilient EPDM or polyvinyl chloride extruded shape to suit glazing channel retaining slot; ASTM C864 Option II; color black.
- E. Glazing Clips: Manufacturer's standard type.

PART 3 EXECUTION

3.01 VERIFICATION OF CONDITIONS

- A. Verify that openings for glazing are correctly sized and within tolerances, including those for size, squareness, and offsets at corners.
- B. Verify that surfaces of glazing channels or recesses are clean, free of obstructions that may impede moisture movement, weeps are clear, and support framing is ready to receive glazing system.
- C. Proceed with glazing system installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

- A. Clean contact surfaces with appropriate solvent and wipe dry within maximum of 24 hours before glazing. Remove coatings that are not tightly bonded to substrates.
- B. Seal porous glazing channels or recesses with substrate compatible primer or sealer.
- C. Prime surfaces scheduled to receive sealant where required for proper sealant adhesion.

3.03 INSTALLATION, GENERAL

- A. Install glazing in compliance with written instructions of glass, gaskets, and other glazing material manufacturers, unless more stringent requirements are indicated, including those in glazing referenced standards.
- B. Use one or more of the specified glazing methods as recommended by GANA, glass manufacturer, and installer, and as required to comply with performance requirements.
- C. Install glazing sealants in accordance with ASTM C1193, GANA (SM), and manufacturer's instructions.
- D. Do not exceed edge pressures around perimeter of glass lites as stipulated by glass manufacturer.
- E. Set glass lites of system with uniform pattern, draw, bow, and similar characteristics.
- F. Set glass lites in proper orientation so that coatings face exterior or interior as indicated.
- G. Prevent glass from contact with any contaminating substances that may be the result of construction operations such as, and not limited to the following; weld splatter, fire-safing, plastering, mortar droppings, and paint.

3.04 INSTALLATION - DRY GLAZING METHOD (GASKET GLAZING)

- A. Application - Exterior and/or Interior Glazed: Set glazing infills from either the exterior or the interior of the building.
- B. Place setting blocks at 1/4 points with edge block no more than 6 inch from corners.
- C. Rest glazing on setting blocks and push against fixed stop with sufficient pressure on gasket to attain full contact.
- D. Install removable stops without displacing glazing gasket; exert pressure for full continuous contact.

3.05 INSTALLATION - DRY GLAZING METHOD (TAPE AND GASKET SPLINE GLAZING)

- A. Application - Exterior Glazed: Set glazing infills from the exterior of the building.
- B. Cut glazing tape or spline to length; install on glazing pane. Seal corners by butting tape and sealing junctions with butyl sealant.
- C. Place setting blocks at 1/4 points with edge block no more than 6 inch from corners.

- D. Rest glazing on setting blocks and push against fixed stop with sufficient pressure to attain full contact.
- E. Install removable stops without displacing glazing spline. Exert pressure for full continuous contact.
- F. Carefully trim protruding tape with knife.

3.06 INSTALLATION - DRY GLAZING METHOD (TAPE AND TAPE)

- A. Application - Interior Glazed: Set glazing infills from the interior of the building.
- B. Cut glazing tape to length and set against permanent stops, projecting 1/16 inch above sight line.
- C. Place setting blocks at 1/4 points with edge block no more than 6 inch from corners.
- D. Rest glazing on setting blocks and push against tape for full contact at perimeter of pane or unit.
- E. Place glazing tape on free perimeter of glazing in same manner described above.
- F. Install removable stop without displacement of tape. Exert pressure on tape for full continuous contact.
- G. Carefully trim protruding tape with knife.

3.07 CLEANING

- A. Remove excess glazing materials from finish surfaces immediately after application using solvents or cleaners recommended by manufacturers.
- B. Remove nonpermanent labels immediately after glazing installation is complete.
- C. Clean glass and adjacent surfaces after sealants are fully cured.
- D. Clean glass on both exposed surfaces not more than 4 days prior to Date of Substantial Completion in accordance with glass manufacturer's written recommendations.

3.08 PROTECTION

- A. Remove and replace glass that is damaged during construction period prior to Date of Substantial Completion.

3.09 GLASS SCHEDULE

- A. GL-2: Clear monolithic safety glass.
 - 1. Clear fully tempered safety glass.
 - 2. Minimum Thickness: 1/4 inch (6 mm).
 - 3. Safety glazing required.

END OF SECTION 08 8000

SECTION 09 2216 - NON-STRUCTURAL METAL FRAMING**PART 1 GENERAL****1.01 SECTION INCLUDES**

- A. Metal non-load-bearing interior partition, ceiling, and soffit framing.
- B. Suspension systems for interior ceilings and soffits.
- C. Framing accessories.

1.02 REFERENCE STANDARDS

- A. ASTM A641/A641M - Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire; 2019.
- B. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2023.
- C. ASTM B633 - Standard Specification for Electrodeposited Coatings of Zinc on Iron and Steel; 2023.
- D. ASTM C645 - Standard Specification for Nonstructural Steel Framing Members; 2024.
- E. ASTM C754 - Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products; 2020.
- F. ASTM C840 - Standard Specification for Application and Finishing of Gypsum Board; 2023.
- G. ASTM C955 - Standard Specification for Cold-Formed Steel Structural Framing Members; 2018, with Editorial Revision.
- H. ASTM D3575 - Standard Test Methods for Flexible Cellular Materials Made From Olefin Polymers.
- I. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements; 2023.
- J. ASTM E413 - Classification for Rating Sound Insulation; 2022.
- K. ASTM F1941/F1941M - Standard Specification for Electrodeposited Coatings on Mechanical Fasteners, Inch and Metric; 2016.
- L. ASTM F593 - Standard Specification for Stainless Steel Bolts, Hex Cap Screws, and Studs; 2022.
- M. ASTM F594 - Standard Specification for Stainless Steel Nuts; 2022.
- N. GA-216 - Application and Finishing of Gypsum Panel Products; 2024.
- O. ICC-ES AC193 - Acceptance Criteria for Mechanical Anchors in Concrete Elements; 2017, with Editorial Revision (2020).
- P. ICC-ES AC308 - Acceptance Criteria for Post-Installed Adhesive Anchors in Concrete Elements; 2023.
- Q. UL (FRD) - Fire Resistance Directory; Current Edition.

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Shop Drawings:
 - 1. Indicate component details, control joints, stud layout, framed openings, anchorage to structure, acoustic details, type and location of fasteners, and accessories.
 - 2. Describe method for securing studs to tracks, splicing, and for blocking and reinforcement of framing connections.
 - 3. Coordinate with Section 09 2900
- C. Product Data: Provide data describing framing member materials and finish, product criteria, load charts, and limitations.
- D. Product Data: Provide manufacturer's data on partition head to structure connectors, showing compliance with requirements.
- E. Manufacturer's Qualification Statement.

F. Installer's Qualification Statement.

1.04 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in performing work of type specified and with at least five years of documented experience.
- B. Installer Qualifications: Company specializing in performing the work of this section with minimum five years documented experience and approved by manufacturer.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Metal Framing, Connectors, and Accessories:
 - 1. ClarkDietrich Building Systems: www.clarkdietrich.com.
 - 2. Jaimes Industries Inc.: www.jaimesind.com.
 - 3. MarinoWARE: www.marinoware.com.
 - 4. MBA Building Supplies, Inc.: www.mbastuds.com.
 - 5. State Building Products; www.statebp.com.
 - 6. The Steel Network, Inc: www.SteelNetwork.com.
 - 7. Telling Industries; www.buildstrong.com.
 - 8. Substitutions: See Section 01 6000 - Product Requirements.

2.02 PERFORMANCE REQUIREMENTS

- A. Provide completed assemblies complying with ASTM C840 and GA-216.
- B. STC-Rated Assemblies: For STC-rated assemblies, provide materials and construction identical to those tested in assembly indicated on Drawings, calculated in accordance with ASTM E413, based on tests conducted in accordance with ASTM E90.
- C. Horizontal Deflection: For wall assemblies, limit maximum deflection of wall framing to L/240 at 5 psf .
 - 1. Exception: Limit deflection of walls to receive hard tile surfaces to L/360 at 5 psf.
- D. Protective Coatings: Equivalent (EQ) coatings are not acceptable; products shall be hot-dip galvanized as indicated.
- E. Embossed (equivalent thickness) steel framing products are not acceptable; unless products are in steel thicknesses indicated.

2.03 FRAMING MATERIALS

- A. Non-Loadbearing Framing System Components: ASTM C645; galvanized sheet steel, of size and properties necessary to comply with ASTM C754 for the spacing indicated.
 - 1. Protective Coating: ASTM A653/A653M, G60, hot-dip galvanized.
 - 2. Minimum Metal Thickness: 0.030 inch (20 gage).
 - 3. Framing Depths: As indicated.
 - 4. Profiles:
 - a. Studs: C shaped with flat or formed webs.
 - b. Runners: U shaped, sized to match studs.
 - 1) Where indicated or required, provide slip-type head joints using slotted deflection track.
 - c. Ceiling Channels: C shaped.
 - d. Furring: Hat-shaped sections, minimum depth of 7/8 inch.
- B. Slotted Deflection Track: Provide galvanized sheet steel track with slotted holes in flanges for mechanical anchorage of studs that accommodate deflection; provide screws and anti-friction bushings. Slotted connections prevent stud rotation without use of lateral bracing and maintains structural performance of partition.
 - 1. Provide at partition heads to structure connections.
 - 2. Shall prevent cracking of finishes applied to interior partition framing resulting from deflection of structure above

3. Structural Performance: Maintain lateral load resistance and vertical movement capacity required by applicable code, when evaluated in accordance with AISI S100-12.
4. Comply with ASTM C645 and ASTM C754.
5. Protective Coating: ASTM A653/A653M, G60, hot-dip galvanized.
6. Minimum Metal Thickness: Same material thickness as studs.
7. Track Depth: Matching studs.
8. Provide components UL-listed for use in UL-listed fire-resistance-rated head of partition joint systems indicated on drawings.
 - a. At Contractor's option, provide the following:
 - 1) Slotted Deflection and Firestop Track: Similar to standard slotted deflection track specified, but includes intumescent strip factory-applied to track flanges or web that expands when exposed to heat or flames to provide a perimeter joint seal.
 - (a) Products:
 - (1) ClarkDietrich Building Systems; BlazeFrame Firestop Deflection Track: www.clarkdietrich.com.
 - (2) MarinoWARE; FAS Track 1000: www.marinoware.com.
 - (3) Substitutions: See Section 01 6000 - Product Requirements.
- C. Preformed Top Track Firestop Seal: Pre-formed firestop device field-applied to head of top track that expands when exposed to heat or flames to provide a perimeter joint seal.
 1. At Contractor's option provide preformed top track firestop seals instead of traditional perimeter joint seals.
 2. Provide components UL-listed for use in UL-listed fire-resistance-rated head of partition joint systems indicated on drawings.
 3. Products:
 - a. Hilti, Inc; Top Track Seal CFS TTS: www.us.hilti.com.
 - b. Substitutions: See Section 01 6000 - Product Requirements.
- D. Resilient Furring Channels: Galvanized sheet steel, single leg, asymmetrical channel, 1/2 inch deep with a 1-1/4 inch screw flange; complying with ASTM C645.
 1. Exception: At ceilings provide double leg, symmetrical channels.
 2. Protective Coating: ASTM A653/A653M, G40, hot-dip galvanized.
 3. Minimum Metal Thickness: 0.0179 inch (25 gage).
- E. Z-shaped Furring: Galvanized sheet steel z-shaped furring, 2 inches deep, unless otherwise indicated; complying with ASTM C645.
 1. Protective Coating: ASTM A653/A653M, G60, hot-dip galvanized.
 2. Minimum Metal Thickness: 0.0312 inch (20 gage).

2.04 FRAMING ACCESSORIES

- A. Bridging and Bracing Members: Of same material as studs; thickness to suit purpose; complying with applicable requirements of ASTM C754.
 1. Steel, 0.0538-inch (1.37mm) minimum base-metal thickness, with a minimum 1/2-inch (13mm) wide flanges.
 - a. Basis-of-Design Product: Subject to compliance with requirements, provide ClarkDietrich Systems Spazzer 9200 Bridge and Spacing Bar, or equivalent.
- B. Backing Plates: 0.064 inch thick (16 gage), galvanized.
- C. Wood Blocking: Refer to Section 06 1000 - Rough Carpentry.
- D. Anchorage Devices: Powder actuated or Drilled expansion bolts.
- E. Acoustic Sealant: As specified in Section 09 2900 - Gypsum Board.
- F. Isolation Strip: Foam gasket, ASTM D3575, closed-cell vinyl foam strips, 1/8 inch thick, in width to suit steel stud size.
 1. Manufacturer:
 - a. Williams; Everlastic EVA 200; www.williamsproducts.net.
 - b. Substitutions: See Section 01 6000 - Product Requirements.

2.05 SUSPENSION SYSTEMS

- A. Carrying Channels: ASTM C955; cold-rolled galvanized steel sheet U-channel.
 - 1. Protective Coating: ASTM A653/A653M, G60, hot-dip galvanized.
 - 2. Minimum Metal Thickness: 0.064 inch (16 gage).
 - 3. Depth: 2 inches unless otherwise indicated.
- B. Furring Channels:
 - 1. Hat-Shaped, Rigid Furring Channels: As specified in "Framing Materials" above.
 - 2. Resilient Furring Channels: As specified in "Framing Materials" above.
- C. Tie Wire: ASTM A641/A641M, Class 1 zinc coating, soft temper, 0.062-inch (16 gage) diameter or double strand of 0.048-inch (18 gage) diameter wire.
- D. Wire Hangers: ASTM A641/A641M, Class 1 zinc coating, soft temper, 0.16 inch (8 gage) diameter.
- E. Hanger Attachments to Concrete:
 - 1. Expansion Anchors: Fastener systems with evaluations based on ICC-ES AC193.
 - 2. Adhesive Anchors: Fastener systems with evaluations based on ICC-ES AC308.
 - 3. Material for Interior Locations: Carbon-steel components zinc-plated to comply with ASTM B633 or ASTM F1941/F1941M, Class Fe/Zn 5, unless otherwise indicated.
 - 4. Material for Exterior Locations and Interior Wet/Humid Locations: Alloy Group 1 (A1) stainless-steel bolts, ASTM F593, and nuts, ASTM F594.
- F. Grid Suspension System for Gypsum Board Ceilings: ASTM C645, direct-hung system composed of main beams and cross-furring members that interlock.
 - 1. At Contractor's option provide grid suspension system instead of traditional carrying and furring channels.
 - 2. Not permitted for multi-layer gypsum board systems.
 - 3. Manufacturers:
 - a. Armstrong World Industries, Inc.; Drywall Grid Suspension System: www.armstrongceilings.com.
 - b. CertainTeed/Saint-Gobain; Quickspace Locking Drywall Grid System: www.certainteed.com.
 - c. Rockfon, Part of the Rockwool Group; Chicago Metallic Drywall Grid: www.rockfon.com.
 - d. USG Corporation: Drywall Suspension System: www.usg.com
 - e. Substitutions: See Section 01 6000 - Product Requirements

2.06 FABRICATION

- A. Fabricate assemblies of framed sections to sizes and profiles required.
- B. Fit, reinforce, and brace framing members to suit design requirements.

PART 3 EXECUTION**3.01 EXAMINATION**

- A. Verify existing conditions before starting work.

3.02 INSTALLATION OF STUD FRAMING

- A. Comply with requirements of ASTM C754.
- B. Install framing, shaft wall framing, suspension systems, and related accessories and components in accordance with manufacturer's instructions.
- C. Extend partition framing to structure where indicated and to 4 inches above ceiling in other locations unless otherwise indicated.
- D. Partitions Terminating at Ceiling: Attach ceiling runner securely to ceiling framing in accordance with details.
- E. Partitions Terminating at Structure: Attach extended leg top runner to structure, maintain clearance between top of studs and structure, and brace both flanges of studs as indicated.

- F. Partitions Terminating at Structure: Attach top runner to structure, maintain clearance between top of studs and structure, and connect studs to track using specified mechanical devices in accordance with manufacturer's instructions; verify free movement of top of stud connections; do not leave studs unattached to track.
- G. Align and secure top and bottom runners at 24 inches on center.
- H. Fire-Resistance-Rated Partitions: Install framing, including shaft wall framing, to comply with fire-resistance-rated assembly indicated.
- I. Sound-Rated Partitions: Install framing to comply with sound-rated assembly indicated.
 - 1. At partitions indicated with an acoustic rating:
 - a. Provide components and install as required to produce STC ratings indicated, based on published tests by manufacturer conducted in accordance with ASTM E90 with STC rating calculated in accordance with ASTM E413.
 - b. Place two beads of acoustic sealant between runners and substrate, studs and adjacent construction.
- J. Curved Partitions:
 - 1. Bend track to uniform curve and locate straight lengths so they are tangent to arcs.
 - 2. Begin and end each arc with a stud, and space intermediate studs equally along arcs.
- K. Fit runners under and above openings; secure intermediate studs to same spacing as wall studs.
- L. Install studs vertically at 16 inches on center, unless otherwise indicated.
 - 1. Install studs so flanges within framing system point in same direction
- M. Align stud web openings horizontally.
- N. Secure studs to tracks using fastener method. Do not weld.
 - 1. Secure studs to top and bottom runner tracks at both inside and outside flanges.
- O. Stud splicing is not permissible.
- P. Fabricate corners using a minimum of three studs.
- Q. Install double studs at wall openings, door and window jambs, not more than 2 inches from each side of openings.
- R. Brace stud framing system rigid.
- S. Coordinate installation of bucks, anchors, and blocking with electrical, mechanical, and other work to be placed within or behind stud framing.
- T. Blocking/Backing: Use metal backing plate, wood blocking, or supplementary framing secured to studs. Provide blocking/backing for support of equipment services, plumbing fixtures, toilet partitions, wall cabinets, toilet accessories, hardware, and similar construction.
- U. Furring: Install at spacing and locations shown on drawings. Lap splices a minimum of 6 inches.
- V. Do not bridge building control and expansion joints. Frame both sides of joints independently.
 - 1. Install Horizontal stiffeners in stud system, spaced (vertical distance) not more than 4'-6" o.c.
- W. General requirements and locations of control joints in metal-framed gypsum board construction:
 - 1. General: Comply with requirements of ASTM C840, and as noted below:
 - a. Control joints shall be constructed with manufactured control joint trim, or field fabricated from materials as specified.
 - b. Control joints will be installed where a partition, wall, or ceiling traverses and construction joint (expansion, or building control element) in the base building structure.
 - c. Control joints will be installed where a wall or partition extends in an uninterrupted straight plane exceeding 30 linear feet. Door and/or window frames that extend full height of partitions will be considered equivalent to control joint construction.

- d. Control joints in interior ceilings, bulkheads, fasciae and soffits will be installed so that linear dimensions between control joints do not exceed 30 linear feet and total area between control joints does not exceed 900 square feet. Control joints will be installed to isolate wings of "L", "U: and "T" shaped ceiling and soffit areas.
 - e. A control joint will be installed where ceiling, bulkhead, fascia and soffit framing members change direction.
 - f. Provide appropriate backing material, fire-safing insulation, and sealant for control joints installed in acoustical or fire-rated construction, as required to maintain fire-rating and/or acoustical separation.
- X. Where studs are installed directly against exterior masonry walls, install isolation strip between studs and exterior wall.

3.03 CEILING AND SOFFIT FRAMING

- A. Comply with requirements of ASTM C754.
- B. Install furring after work above ceiling or soffit is complete. Coordinate the location of hangers with other work.
- C. Install furring independent of walls, columns, and above-ceiling work.
- D. Securely anchor hangers to structural members or embed in structural slab. Space hangers as required to limit deflection to criteria indicated.
 - 1. Space hangers at maximum 48 inches on center.
 - 2. Do not attach hangers to the following:
 - a. Metal deck or rolled-in hanger tabs of composite metal deck.
 - b. Permanent metal forms.
 - c. Ducts, pipes, or conduit.
 - 3. Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structural or suspension system.
 - 4. Splay hangers only where required to miss obstructions and offset resulting horizontal forces by bracing, countersplaying, or other equally effective means.
 - 5. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with locations of hangers required to support suspension system members, install supplemental suspension members and hangers in the form of trapezes or equivalent devices.
 - a. Size supplemental suspension members and hangers to support ceiling loads within performance requirements.
- E. Space main carrying channels at maximum 48 inch on center, and not more than 6 inches from wall surfaces. Lap splices securely.
- F. Securely fix carrying channels to hangers to prevent turning or twisting and to transmit full load to hangers.
- G. Place furring channels perpendicular to carrying channels, not more than 2 inches from perimeter walls, and rigidly secure. Lap splices securely.
 - 1. Space furring channels at maximum 24 inches on center.
- H. Laterally brace suspension system.
- I. Grid Suspension Systems:
 - 1. Attach perimeter wall angle where grid suspension systems meet vertical surfaces.
 - 2. Mechanically join main beam and cross-furring members to each other and butt-cut to fit into wall track.

3.04 TOLERANCES

- A. Maximum Variation From True Position: 1/8 inch in 10 feet.
- B. Maximum Variation From Plumb: 1/8 inch in 10 feet.
- C. Maximum variation From Level: 1/8 inch in 10 feet.

END OF SECTION 09 2216

SECTION 09 2900 - GYPSUM BOARD**PART 1 GENERAL****1.01 SECTION INCLUDES**

- A. Gypsum wallboard.
- B. Tile backing board.
- C. Finishing materials.
- D. Trim accessories.
- E. Acoustic insulation.

1.02 REFERENCE STANDARDS

- A. ANSI A108.11 - American National Standard Specifications for Interior Installation of Cementitious Backer Units; 2023.
- B. ANSI A118.9 - American National Standard Specifications for Test Methods and Specifications for Cementitious Backer Units; 2023.
- C. ASTM C475/C475M - Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board; 2017 (Reapproved 2022).
- D. ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing; 2023.
- E. ASTM C834 - Standard Specification for Latex Sealants; 2017 (Reapproved 2023).
- F. ASTM C840 - Standard Specification for Application and Finishing of Gypsum Board; 2023.
- G. ASTM C919 - Standard Practice for Use of Sealants in Acoustical Applications; 2022.
- H. ASTM C954 - Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs from 0.033 in. (0.84 mm) to 0.112 in. (2.84 mm) in Thickness; 2022.
- I. ASTM C1002 - Standard Specification for Steel Self-Piercing Tapping Screws for Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs; 2022.
- J. ASTM C1047 - Standard Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base; 2019.
- K. ASTM C1325 - Standard Specification for Fiber-Mat Reinforced Cementitious Backer Units; 2022, with Editorial Revision (2023).
- L. ASTM C1396/C1396M - Standard Specification for Gypsum Board; 2017.
- M. ASTM C1629/C1629M - Standard Classification for Abuse-Resistant Nondecorated Interior Gypsum Panel Products and Fiber-Reinforced Cement Panels; 2023.
- N. ASTM D3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber; 2021.
- O. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2023d.
- P. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials; 2022.
- Q. GA-216 - Application and Finishing of Gypsum Panel Products; 2024.
- R. GA-226 - Application of Gypsum Board to Form Curved Surfaces; 2025.
- S. GA-600 - Fire Resistance and Sound Control Design Manual; 2024.
- T. UL (FRD) - Fire Resistance Directory; Current Edition.

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Indicate special details associated with fireproofing and acoustic seals.

1. Include locations of control joints. Coordination drawings for proposed control joint locations may be annotated copies of Construction Documents architectural floor plans, reflected ceiling plans, and interior elevations. Submit prior to commencement of framing installation. Coordinate with requirements specified in Section 09 2216.
- C. Product Data: Provide data on gypsum wallboard, shaft wall liner panels, tile backing panels, finishing materials, trim accessories, acoustical accessories, and fasteners and adhesives.
- D. Samples:
 1. Submit three samples of each board type, 4 inches square in size.
 2. Submit three samples of each type of special trim, 4 inches in length.
- E. Manufacturer's Qualification Statement.
- F. Installer's Qualification Statement.

1.04 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in performing work of type specified and with at least 5 years of documented experience.
- B. Installer Qualifications: Company specializing in performing the work of this section with minimum 5 years documented experience.

1.05 FIELD CONDITIONS

- A. Ambient Condition (Environmental Limitations): Comply with ASTM C840 and GA-216 requirements or gypsum board manufacturer's written instructions, whichever are more stringent

PART 2 PRODUCTS

2.01 PERFORMANCE REQUIREMENTS

- A. Provide completed assemblies complying with ASTM C840 and GA-216.
- B. Fire-Rated Assemblies: For fire-resistance-rated assemblies that incorporate gypsum board, provide materials and construction identical to those tested in assembly indicated, according to ASTM E119 and as follows:
 1. Provide construction equivalent to one of the following:
 - a. UL Assembly Numbers: Provide construction equivalent to that listed for the particular assembly in the current UL (FRD).
 - b. Gypsum Association File Numbers: Provide construction complying with requirements of GA-600 for the particular assembly.
- C. STC-Rated Assemblies: For STC-rated assemblies, provide materials and construction identical to those tested in assembly indicated on Drawings, calculated in accordance with ASTM E413, based on tests conducted in accordance with ASTM E90.
- D. Horizontal Deflection: For wall assemblies, limit maximum deflection of wall framing to L/240 at 5 psf.
 1. Exception: Limit deflection of walls to receive hard tile surfaces to L/360 at 5 psf.

2.02 GYPSUM WALLBOARD

- A. Gypsum Wallboard: Paper-faced gypsum panels; ASTM C1396/C1396M.
 1. Thickness: 1/4 and 1/2 inch.
 2. Long Edges: Tapered with paper face wrapping edge.
 3. Short Edges: Square cut.
 4. Sized to minimize joints.
 5. Products:
 - a. CertainTeed Corp.; Regular Gypsum Board: www.certainteed.com.
 - b. Continental Building Products; Regular Drywall: www.continental-bp.com.
 - c. Georgia-Pacific Gypsum; ToughRock Gypsum Board: www.gp.com.
 - d. National Gypsum Company; Gold Bond Brand Gypsum Board: www.nationalgypsum.com.
 - e. USG Corporation; Sheetrock Brand Gypsum Panels: www.usg.com.

- f. Substitutions: See Section 01 6000 - Product Requirements.
- B. Gypsum Wallboard - Type X: Paper-faced gypsum panels with fire-resistant core; ASTM C1396/C1396M.
 - 1. Thickness: 5/8 inch.
 - 2. Long Edges: Tapered with paper face wrapping edge.
 - 3. Short Edges: Square cut.
 - 4. Sized to minimize joints.
 - 5. Type: Fire resistance rated Type X, UL or WH listed.
 - 6. Products:
 - a. CertainTeed Corp.; Type X Gypsum Board: www.certainteed.com.
 - b. Continental Building Products; Firecheck Type X: www.continental-bp.com.
 - c. Georgia-Pacific Gypsum; ToughRock Fireguard X: www.gp.com.
 - d. National Gypsum Company; Gold Bond Brand Fire-Shield Gypsum Board: www.nationalgypsum.com.
 - e. USG Corporation; Sheetrock Brand Firecode X Panels: www.usg.com.
 - f. Substitutions: See Section 01 6000 - Product Requirements.
- C. Impact Resistant Gypsum Wallboard: Heavy paper-faced, mold and moisture resistant, gypsum panel with fire-resistant core; ASTM C1396/C1396M.
 - 1. Thickness: 5/8 inch.
 - 2. Long Edges: Tapered with paper face wrapping edge.
 - 3. Short Edges: Square cut.
 - 4. Sized to minimize joints.
 - 5. Type: Fire resistance rated Type X, UL or WH listed.
 - 6. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
 - 7. Surface Abrasion: Level 2, minimum, when tested in accordance with ASTM C1629/C1629M.
 - 8. Indentation: Level 1, minimum, when tested in accordance with ASTM C1629/C1629M.
 - 9. Soft Body Impact: Level 3, minimum, when tested in accordance with ASTM C1629/C1629M.
 - 10. Hard Body Impact: Level 3, minimum, when tested in accordance with ASTM C1629/C1629M.
 - 11. Products:
 - a. CertainTeed Corp.; Extreme Impact Resistant Gypsum Board: www.certainteed.com.
 - b. Continental Building Products; Protecta HIR 300 Type X with Mold Defense: www.continental-bp.com.
 - c. National Gypsum Company; Gold Bond Brand Hi-Impact XP Gypsum Board: www.nationalgypsum.com.
 - d. USG Corporation; Sheetrock Brand Mold Tough VHI Firecode X Panels: www.usg.com.
 - e. Substitutions: See Section 01 6000 - Product Requirements.

2.03 TILE BACKING BOARDS

- A. Cementitious Backer Board: Non-gypsum-based; aggregated Portland cement panels with glass fiber mesh embedded in front and back surfaces complying with ANSI A118.9 or ASTM C1325.
 - 1. Thickness: 5/8 inch.
 - 2. Flame Spread/Smoke Developed: 0/0 per ASTM E84.
 - 3. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
 - 4. Locations: Wet areas and elsewhere as indicated on Drawings; including, but not limited to, the following:
 - a. Showers.
 - b. Swimming pool areas.
 - 5. Products:

- a. National Gypsum Company; PermaBase Brand Cement Board: www.nationalgypsum.com.
- b. USG Corporation; Durock Brand Cement Board: www.usg.com.
- c. Substitutions: See Section 01 6000 - Product Requirements.

2.04 FINISHING MATERIALS

- A. Joint Materials: ASTM C475/C475M and as recommended by gypsum board manufacturer for project conditions.
 1. Paper Tape: 2 inch wide, creased paper tape for joints and corners.
 - a. Exception: At tile backing board provide the following:
 - 1) Fiberglass Tape: 2 inch, coated glass fiber tape for joints and corners.
 - b. Manufacturers: Provide products from one of the specified gypsum wallboard manufacturers.
 2. Joint Compound: Drying and setting types, vinyl-based, ready-mixed or field-mixed.
 - a. Each coat shall be compatible with previously applied coats.
 - b. Manufacturers: Provide products from one of the specified gypsum wallboard manufacturers.

2.05 TRIM ACCESSORIES

- A. Trim Accessories: ASTM C1047, galvanized steel or rolled zinc, unless noted otherwise.
 1. Types: As detailed or required for finished appearance. Including, but not limited to, the following:
 - a. Corner beads.
 - b. Control joints.
 - c. LC or L bead at exposed edges.
 2. Products:
 - a. ClarkDietrich Building Systems: www.clarkdietrich.com.
 - b. Marino\WARE: www.marinoware.com.
 - c. Telling Industries; www.buildstrong.com.
 - d. Phillips Manufacturing Co: www.phillipsmfg.com.
 - e. USG Corporation: www.usg.com.
 - f. Substitutions: See Section 01 6000 - Product Requirements.

2.06 ACOUSTICAL ACCESSORIES

- A. Acoustic Insulation: Provide one of the following types:
 1. Mineral Fiber/Rock Wool Batts: ASTM C665; preformed mineral fiber, friction fit type, unfaced.
 - a. Thickness: 3 inches, unless otherwise indicated.
 - b. Density: 2.5 pcf.
 - c. Flame Spread/Smoke Developed: 0/0 per ASTM E84.
 - d. Products:
 - 1) JohnsManville; Mineral Wool Sound Attenuation Fire Batts (SAFB): www.jm.com.
 - 2) Owens Corning; Thermafiber SAFB (Sound Attenuation Fire Batts): www.owenscorning.com.
 - 3) Rockwool; Safe'n'Sound: www.rockwool.com.
 - 4) Substitutions: See Section 01 6000 - Product Requirements.
 2. Fiberglass Batts: ASTM C665; preformed glass fiber, friction fit type, unfaced.
 - a. Thickness: 3-1/2 inches, unless otherwise indicated.
 - b. Products:
 - 1) CertainTeed Corporation/Saint-Gobain; NoiseReducer Sound Attenuation Batts: www.certainteed.com.
 - 2) Johns Manville; Formaldehyde-Free Fiberglass Insulation: www.jm.com.
 - 3) Knauf Insulation; EcoBatt Insulation with ECOSE Technology: www.knaufinsulation.com.

- 4) Owens Corning Corporation; EcoTouch Sound Attenuation Batts: www.owenscorning.com.
 - 5) Substitutions: See Section 01 6000 - Product Requirements.
- B. Acoustical Sealant: Nonsag, paintable, nonstaining latex sealant complying with ASTM C834. Reduces airborne sound transmission through perimeter joints and openings in wall assemblies.
1. Products:
 - a. Franklin International Inc; Titebond GreenChoice Professional Acoustical Smoke & Sound Sealant: www.titebond.com.
 - b. PPG Architectural Coatings; Liquid Nails AS-825 Acoustical Sound Sealant: www.liquidnails.com.
 - c. Pecora Corporation; AC-20 FTR: www.pecora.com.
 - d. Pecora Corporation; AIS-919: www.pecora.com.
 - e. United States Gypsum Co.; USG Sheetrock Brand Firecode Smoke-Sound Sealant: www.usg.com.
 - f. United States Gypsum Co.; USG Sheetrock Brand Acoustical Sealant: www.usg.com.
 - g. Substitutions: See Section 01 6000 - Product Requirements.

2.07 FASTENERS AND ADHESIVES

- A. Screws for Fastening of Gypsum Panel Products to Cold-Formed Steel Studs Less than 0.033 inch in Thickness and Wood Members: ASTM C1002; self-piercing tapping screws, corrosion resistant.
- B. Screws for Fastening of Gypsum Panel Products to Steel Members from 0.033 to 0.112 inch in Thickness: ASTM C954; steel drill screws, corrosion resistant.
- C. Screws for Fastening of Cementitious Backer Board Products to Steel Studs: Use screws of type and size recommended by panel manufacturer
- D. Anchorage to Other Substrates: Tie wire, nails, screws, and other metal supports, of type and size to suit application; to rigidly secure materials in place.
- E. Laminating Adhesive: For directly adhering gypsum-base, face-layer panels to backing-layer panels in multi-layer construction. Provide one of the following types:
 1. Joint Compound: As recommended by gypsum board manufacturer.
 2. Adhesives:
 - a. Franklin International, Inc; Titebond GREENchoice Professional Drywall Adhesive; www.titebond.com.
 - b. PPG Architectural Coatings; Liquid Nails DWP-24 Drywall Construction Adhesive: www.liquidnails.com.
 - c. Substitutions: See Section 01 6000 - Product Requirements.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that project conditions are appropriate for work of this section to commence.
- B. Control Joint Layout: Prior to commencement of framing and gypsum board installation, submit coordination drawings indicating proposed control joint locations in metal-framed gypsum board-sheathed partitions, walls, ceilings, bulkheads, fasciae, and soffits, for review and acceptance of Architect. Coordinate with requirements of Section 09 2216.

3.02 GENERAL INSTALLATION

- A. Comply with ASTM C840, GA-216, and manufacturer's instructions.

3.03 ACOUSTIC ACCESSORIES INSTALLATION

- A. General: Apply acoustic accessories at all STC-Rated Assemblies and elsewhere as indicated on Drawings.
 1. Apply acoustic sealant at all smoke-tight assemblies.

2. Fire-Rated Construction: Install acoustic accessories in strict compliance with requirements of assembly listing.
- B. Acoustic Insulation: Place tightly within spaces, around cut openings, behind and around electrical and mechanical items within partitions, and tight to items passing through partitions.
- C. Acoustic Sealant: Install in accordance with manufacturer's instructions.
 1. Comply with ASTM C919.
 2. Place continuous bead at perimeter of each layer of gypsum board.
 3. Seal around all penetrations by conduit, pipe, ducts, rough-in boxes, and similar items, except where firestopping is provided.

3.04 BOARD INSTALLATION

- A. Install to minimize butt end joints, especially in highly visible locations.
 1. Use screws for attachment of gypsum board.
 2. Use screws for attachment of cementitious backing board.
- B. Single-Layer Non-Rated: Install gypsum board parallel to framing, with long edges occurring over framing.
 1. Stagger joints on opposite sides of partitions.
- C. Multi-Layer Non-Rated: Install first layer of gypsum board parallel to framing with long edges occurring over framing. Place second layer parallel to framing with long edges occurring over framing, and joints offset from joints of first layer.
 1. Offset face-layer joints at least one stud or furring member from base-layer joints.
 2. Stagger joints on opposite sides of partitions.
 3. Install additional layers beyond double layers similarly; maintain offset and staggered joints between layers.
 4. Apply laminating adhesive between layers of gypsum board for bonding of layers in addition to fasteners.
- D. Fire-Rated Construction: Install gypsum board in strict compliance with requirements of assembly listing.
- E. Cementitious Backing Board: Install in accordance with ANSI A108.11 and manufacturer's instructions.
- F. Curved Surfaces: Apply gypsum board to curved substrates in accordance with GA-226.

3.05 INSTALLATION OF TRIM AND ACCESSORIES

- A. Control Joints: Place control joints consistent with lines of building spaces and as follows:
 1. Not more than 30 feet apart on walls and ceilings, unless otherwise indicated.
 2. Submit control joint locations to Architect for approval prior to installation.
- B. Corner Beads: Install at external corners, using longest practical lengths.
- C. Edge Trim (LC or L Beads): Install at locations where gypsum board abuts dissimilar materials and as indicated, using longest practical lengths.
- D. Special Trim: Install at indicated locations, and as follows.
 1. Wall End Caps: Provide at all exposed ends of wall assemblies not covered in wallboard and at locations of partition closures.
 2. Use longest practical lengths.
- E. Partition Closures: Locate at vertical junctures between end of wall assemblies and windows, glazing, and similar construction, unless otherwise indicated.
 1. Notch around horizontal mullions, sills, or other obstructions leaving appropriate gap for differential movement between the sound barrier wall end cap and the obstruction.
 2. Apply continuous bead of acoustical sealant to the unexposed side of extruded aluminum surface that will be in contact with the wall edge.
 3. Place sound barrier partition closure on the vertical surface of the wall partition and loosely install fasteners in the top and bottom slotted holes of the wall end cap.
 4. Plumb the partition closure leaving recommended gap spacing between the interior glass surface and the wall end cap. Foam gasket to be in contact with glass.

5. Tighten top and bottom fasteners to secure partition closure.
6. Install additional fasteners at 12 inches on center, minimum.
7. Install snap cover to conceal fasteners.
8. Apply color matched sealant at joints of dissimilar materials.

3.06 JOINT TREATMENT

- A. Paper Faced Gypsum Board: Use paper joint tape, embed with drying or setting type joint compound and finish with drying type joint compound.
- B. Tile Backing Panels: Use fiberglass joint tape, embed and finish with tile setting material.
 1. Refer to Section 09 3000 - Tiling for tile setting materials.
- C. Glass Mat Faced Gypsum Board other than Tile Backing Panels: Use fiberglass joint tape, embed and finish with setting type joint compound.
- D. Finish gypsum board in accordance with levels defined in ASTM C840, as follows:
 1. Level 4: Walls and ceilings to receive paint finish or wall coverings, unless otherwise indicated.
 2. Level 2: In utility areas, behind cabinetry, and in similar locations that shall not be painted or finished, and at tile backing board to receive tile finish.
 3. Level 1: Wall areas above finished ceilings, whether or not accessible in the completed construction.
 - a. Exception: Fire-Rated Construction shall comply with requirements of assembly listing.
- E. Tape, fill, and sand exposed joints, edges, and corners to produce smooth surface ready to receive finishes.
 1. Feather coats of joint compound so that camber is maximum 1/32 inch.
 2. Taping, filling and sanding is not required at base layers of multi-layer applications.

3.07 TOLERANCES

- A. Maximum Variation of Finished Gypsum Board Surface from True Flatness: 1/8 inch in 10 feet in any direction.

END OF SECTION 09 2900

SECTION 09 6513 - RESILIENT BASES AND ACCESSORIES**PART 1 GENERAL****1.01 SECTION INCLUDES**

- A. Resilient base.

1.02 REFERENCE STANDARDS

- A. ASTM F1861 - Standard Specification for Resilient Wall Base; 2021.

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on specified products, describing physical and performance characteristics; including sizes, patterns and colors available; and installation instructions.
- C. Shop Drawings: Indicate seaming plans and floor patterns.
- D. Verification Samples:
 - 1. Resilient Base, Floor Moldings, and Stair Coverings: Submit 3 samples, 12 inches long illustrating color, pattern, and profile for each accessory specified.
- E. Maintenance Data: Include maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning, stripping, and re-waxing.
- F. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. See Section 01 6000 - Product Requirements, for additional provisions.
 - 2. Extra Wall Base: Quantity equal to 2 percent of total installed, but not less than 8 linear feet of each type and color.
 - 3. Extra Stair Covering Materials: Quantity equal to 2 percent of total installed, but not less than 8 linear feet for each type and color.
 - 4. Extra Floor Moldings: Quantity equal to 2 percent of total installed, but not less than 8 linear feet of each type and color.

1.04 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing specified resilient accessories with minimum 5 years documented experience.
- B. Installer Qualifications: Company specializing in installing specified resilient accessories with minimum 5 years documented experience.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Upon receipt, immediately remove any shrink-wrap and check materials for damage and the correct style, color, quantity and run numbers.
- B. Store all materials off of the floor in an acclimatized, weather-tight space.
- C. Maintain temperature in storage area between 55 degrees F and 90 degrees F.
- D. Protect roll materials from damage by storing on end.
- E. Do not double stack pallets.

1.06 FIELD CONDITIONS

- A. Store materials for not less than 48 hours prior to installation in area of installation at a temperature of 70 degrees F to achieve temperature stability. Thereafter, maintain conditions above 55 degrees F.

PART 2 PRODUCTS**2.01 RESILIENT BASE**

- A. RB-1 Resilient Base: ASTM F1861, Type TS rubber, vulcanized thermoset; top set Style B, Cove.
 - 1. Manufacturers: Provide products from one of the following:
 - a. Armstrong Flooring Inc.: www.armstrongflooring.com.
 - b. Burke Flooring: www.burkeflooring.com.
 - c. Johnsonite, a Tarkett Company: www.johnsonite.com.
 - d. Roppe Corp: www.roppe.com.

- e. Substitutions: See Section 01 6000 - Product Requirements.
- 2. Height: 4 inch.
- 3. Thickness: 0.125 inch.
- 4. Finish: Satin.
- 5. Length: Roll.
- 6. Color: To be selected by Architect from manufacturer's full range.
- 7. Accessories: Premolded external corners and internal corners.

2.02 ACCESSORIES

- A. Primers and Adhesives: Waterproof; types recommended by accessories manufacturer.
- B. Filler for Cove Base: Plastic.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that surfaces are flat to tolerances acceptable to stair covering manufacturer, free of cracks that might telegraph through stair coverings, clean, dry, and free of curing compounds, surface hardeners, and other chemicals that might interfere with bonding of stair coverings to substrate.
- B. Verify that surfaces are flat, clean, dry, and free of curing compounds, surface hardeners, and other chemicals that might interfere with bonding of floor moldings to substrate.
- C. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive resilient base.

3.02 PREPARATION

- A. Clean substrates.

3.03 INSTALLATION - GENERAL

- A. Install in accordance with manufacturer's written instructions.
- B. Adhesive-Applied Installation:
 - 1. Fully adhere resilient base, stair coverings, and floor moldings, to substrates using a full spread of adhesive completely covering substrate.
 - 2. Spread only enough adhesive to permit installation of materials before initial set.
 - 3. Fit joints and butt seams tightly.
- C. Install floor moldings at unprotected or exposed edges, where flooring terminates, and where indicated.
 - 1. Resilient Strips: Attach to substrate using adhesive.

3.04 INSTALLATION - RESILIENT BASE

- A. Fit joints tightly and make vertical. Maintain minimum dimension of 18 inches between joints.
- B. Install with minimal amount of joints; tops of adjacent pieces shall be aligned.
- C. Miter internal corners. At external corners, use premolded units. At exposed ends, use premolded units.
- D. Install base on solid backing. Bond tightly to wall and floor surfaces.
- E. At masonry and other irregular substrates fill voids along top edge of resilient wall base with manufacturer's recommended adhesive filler material.
- F. Scribe and fit to door frames and other interruptions.

3.05 INSTALLATION - FLOOR MOLDINGS

- A. Install floor moldings in one piece for full width of installation, where possible.
- B. Where joints are unavoidable, fit tightly together and align adjacent molding profiles.
- C. Adhere over entire surface. Fit accurately and securely.

3.06 CLEANING

- A. Remove excess adhesive from floor, base, and wall surfaces without damage.

3.07 PROTECTION

- A. Prohibit traffic on resilient stair coverings and floor moldings for 48 hours after installation.

END OF SECTION 09 6513

SECTION 09 9123 - INTERIOR PAINTING**PART 1 GENERAL****1.01 SECTION INCLUDES**

- A. Surface preparation.
- B. Field application of paints.
- C. Specification for Canyon Tone for clear block sealer is in Specification 07 1900 Water Repellent Acrylic Penetrating Sealer.
- D. Do Not Paint or Finish the Following Items:
 - 1. Items factory-finished unless otherwise indicated; materials and products having factory-applied primers are not considered factory finished.
 - 2. Items indicated to receive other finishes.
 - 3. Items indicated to remain unfinished.
 - 4. Fire rating labels, equipment serial number and capacity labels, bar code labels, and operating parts of equipment.
 - 5. Stainless steel, anodized aluminum, bronze, terne-coated stainless steel, and lead items.
 - 6. Marble, granite, slate, and other natural stones.
 - 7. Floors, unless specifically indicated.
 - 8. Brick, architectural concrete, cast stone, integrally colored plaster, and stucco.
 - 9. Glass.
 - 10. Acoustical materials, unless specifically indicated.
 - 11. Concealed pipes, ducts, and conduits.

1.02 DEFINITIONS

- A. Comply with ASTM D16 for interpretation of terms used in this section.

1.03 REFERENCE STANDARDS

- A. 40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency; Current Edition.
- B. ASTM D16 - Standard Terminology for Paint, Related Coatings, Materials, and Applications; 2024.
- C. ASTM D4442 - Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Based Materials; 2020.
- D. MPI (APL) - Master Painters Institute Approved Products List; Master Painters and Decorators Association; Current Edition.
- E. MPI (APSM) - Master Painters Institute Architectural Painting Specification Manual; Current Edition.
- F. SSPC-SP 1 - Solvent Cleaning; 2015, with Editorial Revision (2016).
- G. SSPC-SP 13 - Surface Preparation of Concrete; 2018.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide complete list of products to be used, with the following information for each:
 - 1. Manufacturer's name, product name and/or catalog number, and general product category (e.g., "alkyd enamel").
 - 2. MPI product number (e.g., MPI #47).
 - 3. Cross-reference to specified paint system(s) product is to be used in; include description of each system.
- C. Samples: Submit three paper "draw down" samples, 8-1/2 by 11 inches in size, illustrating range of colors available for each finishing product specified.
 - 1. Where sheen is specified, submit samples in only that sheen.
 - 2. Where sheen is not specified, discuss sheen options with Architect before preparing samples, to eliminate sheens not required.

- D. Maintenance Data: Submit data including finish schedule showing where each product/color/finish was used, product technical data sheets, care and cleaning instructions, touch-up procedures, repair of painted and finished surfaces, and color samples of each color and finish used.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.
- B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.
- C. Paint Materials: Store at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in ventilated area, and as required by manufacturer's instructions.

1.06 FIELD CONDITIONS

- A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.
- B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.
- C. Do not apply materials when relative humidity exceeds 85 percent, at temperatures less than 5 degrees F above the dew point, or to damp or wet surfaces.
- D. Minimum Application Temperatures for Paints: 50 degrees F for interiors unless required otherwise by manufacturer's instructions.
- E. Provide lighting level of 80 ft candles measured mid-height at substrate surface.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Provide paints and finishes used in any individual system from the same manufacturer; no exceptions.
- B. Provide paints and finishes from the same manufacturer to the greatest extent possible.
 - 1. If a single manufacturer cannot provide specified products; minor exceptions will be permitted provided approval by Architect is obtained using the specified procedures for substitutions.
 - 2. Substitution of MPI-approved products by a different manufacturer is preferred over substitution of unapproved products by the same manufacturer.
 - 3. Substitution of other products by the same manufacturer is preferred over substitution of products by a different manufacturer.
 - 4. Substitution of a different paint system using MPI-approved products by the same manufacturer will be considered.
- C. Paints:
 - 1. Pittsburgh Paints: www.ppgpaints.com/#sle.
 - 2. Sherwin-Williams Company: www.sherwin-williams.com/#sle.
 - 3. Benjamin Moore; www.benjaminmoore.com/#sle
- D. Primer Sealers: Same manufacturer as top coats.
- E. Substitutions: See Section 01 6000 - Product Requirements.

2.02 PAINTS AND FINISHES - GENERAL

- A. Paints and Finishes: Ready-mixed, unless intended to be a field-catalyzed paint.
 - 1. Where MPI paint numbers are specified, provide products listed in Master Painters Institute Approved Product List, current edition available at www.paintinfo.com, for specified MPI categories, except as otherwise indicated.
 - 2. Provide paints and finishes of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.

3. Provide materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.
 4. For opaque finishes, tint each coat including primer coat and intermediate coats, one-half shade lighter than succeeding coat, with final finish coat as base color.
 5. Supply each paint material in quantity required to complete entire project's work from a single production run.
 6. Do not reduce, thin, or dilute paint or finishes or add materials unless such procedure is specifically described in manufacturer's product instructions.
- B. Volatile Organic Compound (VOC) Content:
1. Provide paints and finishes that comply with the most stringent requirements specified in the following:
 - a. 40 CFR 59, Subpart D--National Volatile Organic Compound Emission Standards for Architectural Coatings.
 - b. Architectural coatings VOC limits of the State in which the Project is located.
 2. Determination of VOC Content: Testing and calculation in accordance with 40 CFR 59, Subpart D (EPA Method 24), exclusive of colorants added to a tint base and water added at project site; or other method acceptable to authorities having jurisdiction.
- C. Sheens: Provide the sheens specified; where sheen is not specified, sheen will be selected later by Architect from the manufacturer's full line.
- D. Colors: To be selected from manufacturer's full range of available colors.
1. Selection to be made by Architect after award of contract.
 2. Extend colors to surface edges; colors may change at any edge as directed by Architect.
 3. In finished areas, finish pipes, ducts, conduit, and equipment the same color as the wall/ceiling under which they are mounted.
 4. In utility areas, finish equipment, piping, conduit, and exposed duct work in colors according to the color coding scheme indicated.
 5. During bidding, price accent walls as low-hide colors. Include pricing for additional prep and coats as required.

2.03 PAINT SYSTEMS - INTERIOR

- A. Paint I-OP - Interior Surfaces to be Painted, Unless Otherwise Indicated: Including gypsum board, concrete masonry units, wood, plaster, uncoated steel, shop primed steel, and galvanized steel.
1. Two top coats and one coat primer.
 2. Top Coat(s): Interior Latex; MPI #44, 53, 54.
 - a. Products:
 - 1) Benjamin Moore Super Hide Zero VOC Interior Latex Flat 355 (MPI #53).
 - 2) Benjamin Moore Super Hide Zero VOC Interior Latex Low Sheen 356 (MPI #44)
 - 3) Benjamin Moore Super Hide Zero VOC Interior Latex Semi-Gloss 358 (MPI # 53)
 - 4) Benjamin Moore Ultra Spec 500 Interior Latex, Flat T535 (MPI #53) (Dark Colors)
 - 5) Benjamin Moore Ultra Spec 500 Interior Latex, Low Sheen Eggshell T537 (MPI #44) (Dark Colors)
 - 6) Benjamin Moore Ultra Spec 500 Interior Latex, Semi-Gloss T546 (MPI # 54) (Dark Colors)
 - 7) Pittsburgh Paints Speedhide Zero Interior Latex, 6-4110XI Series, Flat. (MPI #53)
 - 8) Pittsburgh Paints Speedhide Zero Interior Latex, 6-4310XI Series, Eggshell. (MPI #44)
 - 9) Pittsburgh Paints Speedhide Zero Interior Latex, 6-4510XI Series, Semi-Gloss. (MPI #54)

- 10) Sherwin-Williams ProMar 200 Zero VOC Interior Latex, Flat B30W12651 (MPI #53).
 - 11) Sherwin-Williams ProMar 200 Zero VOC Interior Latex, Semi-Gloss. (MPI #43)
 - 12) Sherwin-Williams ProMar 200 Zero VOC Interior Latex, Eggshell. (MPI #52)
3. Top Coat Sheen:
 - a. Flat: MPI gloss level 1; use this sheen for ceilings and other overhead surfaces.
 - b. Eggshell: MPI gloss level 3; use this sheen at gypsum board, except at ceilings and wood.
 - c. Satin: MPI gloss level 4; use this sheen for items subject to frequent touching by occupants, including door frames and railings.
 - d. Semi-Gloss: MPI gloss level 5; use this sheen at masonry and metals .
 4. Primer: As recommended by top coat manufacturer for specific substrate.
- B. Paint I-OP-MD-DT - Medium Duty Door/Trim: For surfaces subject to frequent contact by occupants, including metals:
1. Medium duty applications include doors, door frames, railings, handrails, guardrails, and balustrades.
 2. Two top coats and one coat primer.
 3. Top Coat(s): High Performance Architectural Interior Latex - Steel Doors and Door Frames; #141.
 - a. Products:
 - 1) Benjamin Moore Pre-Catalyzed Waterborne Epoxy Semi-Glass, V341 (MPI #141)
 - 2) Pittsburgh Paints Pure Performance Interior Latex, 9-510XI Series, Semi-Gloss. (MPI #141)
 - 3) Sherwin-Williams Pro Industrial Pre-Catalyzed Waterbased Epoxy, K46W01151 Semi-Gloss. (MPI #141)
 - 4) Substitutions: See Section 01 6000 - Product Requirements
 4. Top Coat(s): Interior Light Industrial Coating, Aluminum, Ferrous Metal Galvanized Steel except Steel Door and Frames Water Based; MPI #153.
 - a. Products:
 - 1) Benjamin Moore Ultra Spec HP DTM Acrylic Semi-Glass HP29 (MPI #153)
 - 2) Pittsburgh Paints Pitt-Tech Plus WB DTM Industrial Enamel. 4216 HP Series, Semi-Gloss. (MPI #153)
 - 3) Sherwin-Williams Pro Industrial DTM Acrylic Semi-Gloss, B66W01150 Series. (MPI #153)
 5. Top Coat Sheen:
 - a. Semi-Gloss: MPI gloss level 5; use this sheen at all locations.
- C. Paint I-OP-MD-WC - Medium Duty Vertical: Including gypsum board, concrete masonry units, and Structural Glazed Facing Tile.
1. Drawing Designation EP.
 2. Two top coats and one coat primer.
 3. Top Coat(s): High Performance Architectural Interior Latex; MP #141.
 - a. Products:
 - 1) Benjamin Moore Ultra Spec 500 Interior Latex Low Sheen Eggshell T537 (MPI #138)
 - 2) Benjamin Moor Ultra Spec 500 Interior Latex Semi-Gloss T546 (MPI #141)
 - 3) Benjamin Moore Pre-Catalyzed Waterborne Epoxy, Eggshell V342 (MPI #138)
 - 4) Benjamin Moore Pre-Catalyzed Waterborne Epoxy, Semi-Glass V341 (MPI #141)
 - 5) Pittsburgh Paints Pure Performance Interior Latex, 9-310XI Series, Eggshell. (MPI #138)
 - 6) Pittsburgh Paints Pure Performance Interior Latex, 9-510XI Series, Semi-Gloss. (MPI #141)

- 7) Sherwin-Williams Pro Industrial Pre-Catalyzed Waterbased Epoxy, Eg-Shel. (MPI #139)
 - 8) Sherwin-Williams Pro Industrial Pre-Catalyzed Waterbased Epoxy, Semi-Gloss. (MPI #141)
- D. Paint I-OP-DF - Dry Fall: Metals; exposed structure and overhead-mounted services in utilitarian spaces, including shop primed steel deck, structural steel, metal fabrications, galvanized ducts, galvanized conduit, and galvanized piping.
1. Shop primer by others.
 2. One top coat.
 3. Top Coat: Latex Dry Fall; MPI #118.
 - a. Products:
 - 1) Benjamin Moore Latex Dry Fall Flat 395 (MPI #118)
 - 2) Sherwin-Williams Waterborne Acrylic Dryfall, Flat. (MPI #118)
 - 3) Substitutions: Section 01 6000 - Product Requirements.
 4. Top Coat Sheen:
 - a. Flat: MPI gloss level 1; use this sheen at exposed ceiling.
 5. Primer: As recommended by top coat manufacturer for specific substrate.
- E. Paint I-TR-C - Solid Color Stain Finish on Concrete Floors.
1. 1 coat stain.
 2. Stain: Solid Color Stain for Concrete.
 - a. Products:
 - 1) Pittsburgh Paints Perma-Crete Color Seal WB Interior/Exterior Acrylic Concrete Stain, 4-4210XI Series, Satin.
 - 2) H&C; Colortop Water-Based Solid Color Concrete Stain.
 - 3) Substitutions: Section 01 6000 - Product Requirements.
- F. Paint I-TR-F - Fire-Retardant Coating, Intumescent:
1. One coat of fire-retardant primer sealer.
- G. Paint FI-OP-3A - Fabrics/Insulation Jackets, Alkyd, 3 Coat:
1. Semi-gloss: Two coats of alkyd enamel.

2.04 PRIMERS

- A. Primers: Provide the following unless other primer is required or recommended by manufacturer of top coats.
1. Alkali Resistant Water Based Primer - Structural Glazed Facing Tile and Hard Tile, Insulated Piping, Insulated Ductwork, Existing Brick, Previously Painted Surfaces, and Concrete; MPI #3.
 - a. Products:
 - 1) Benjamin Moore Ultra Spec Int/Ext 100% Acrylic Sealer 608 (MPI #3)
 - 2) Pittsburgh Paints Seal Grip Interior/Exterior Acrylic Universal Primer/Sealer, 17-921XI Series. (MPI #3)
 - 3) Sherwin-Williams Loxon Concrete and Masonry Primer Sealer (Existing Brick), LX02W50. (MPI #3)
 - 4) Sherwin Williams; PrepRite ProBlock Interior/Exterior Latex Primer/Sealer, B51-W60020 Series (MPI #3).
 - 5) Substitutions: Section 01 6000 - Product Requirements.
 2. Interior/Exterior Latex Block Filler; MPI #4.
 - a. Products:
 - 1) Benjamin Moore Ultra Spec High Build Masonry Int/Ext Block Filler 571 (MPI #4)
 - 2) Pittsburgh Paints Speedhide Masonry Hi Fill Latex Block Filler, 6-15XI. (MPI #4)
 - 3) Sherwin-Williams PrepRite Interior/Exterior Latex Block Filler, B25W00025. (MPI #4)
 - 4) Substitutions: Section 01 6000 - Product Requirements.
 3. Interior Latex Primer Sealer - Gypsum Board; MPI #50.
 - a. Products:

- 1) Benjamin Moore Super Hide Zero VOC Interior Latex Primer 354 (MPI #50)
- 2) Pittsburgh Paints Pure Performance Interior Latex Sealer, 9-900. (MPI #50).
- 3) Sherwin Williams; ProMar 200 Zero VOC Interior Latex Primer, B28W02600 (MPI 50).
- 4) Substitutions: Section 01 6000 - Product Requirements.
4. Alkali Resistant Water Based Primer - Dry Erase Primer Gypsum; MPI #3.
 - a. Products:
 - 1) Benjamin Moore Super Hide Zero VOC Interior Latex Primer 354
 - 2) PPG Paints Seal Grip Interior/Exterior Acrylic Universal Primer/Sealer, 17-921XI Series. (MPI #3)
 - 3) Sherwin Williams; PrepRite ProBlock Interior/Exterior Latex Primer/Sealer, B51-W60020 Series (MPI #3).
5. Interior Rust-Inhibitive Water Based Primer (Aluminum and Non-Galvanized Ferrous Metals); MPI #107.
 - a. Products:
 - 1) Benjamin Moore Ultra Spec HP Acrylic Metal Primer HP04 (MPI #107)
 - 2) Pittsburgh Paints Pitt-Tech Plus Interior/Exterior DTM Waterborne Acrylic Primer/Finish, 4020 PF Series.
 - 3) Sherwin-Williams Pro-Cryl Universal Primer. (MPI #107)
 - 4) Substitutions: Section 01 6000 - Product Requirements.
6. Interior Water Based Primer Galvanized Metal; MPI #134.
 - a. Products:
 - 1) Benjamin Moore Ultra Spec HP Acrylic Metal Primer HP04 (MPI#134)
 - 2) Pittsburgh Paints Pitt-Tech Plus Interior/Exterior DTM Waterborne Acrylic Primer/Finish, 4020 PF Series. (MPI #134)
 - 3) Sherwin-Williams Pro-Cryl Universal Primer. (MPI #134)
 - 4) Substitutions: Section 01 6000 - Product Requirements.
7. Stain Blocking Primer, Water Based; MPI #137.
 - a. Products:
 - 1) Benjamin Moore High Hiding All Purpose Primer 046 (MPI #137)
 - 2) Pittsburgh Paints Seal Grip Interior/Exterior Acrylic Universal Primer/Sealer, 17-921XI Series. (MPI #137)
 - 3) Sherwin Williams; Multi-Purpose Latex, B51W00450 (MPI #137).
 - 4) Substitutions: Section 01 6000 - Product Requirements.
8. Latex Primer for Interior Wood; MPI #39.
 - a. Products:
 - 1) Benjamin Moore High Hiding All Purpose Primer 046 (MPI #39)
 - 2) Pittsburgh Paints Seal Grip Interior/Exterior Acrylic Universal Primer/Sealer, 17-921XI Series. (MPI #39)
 - 3) Substitutions: Section 01 6000 - Product Requirements.
9. Bonding Primer, Water Based for Dryfall; MPI #17.
 - a. Products:
 - 1) Benjamin Moore High Hiding All Purpose Primer 046 (MPI #17)
 - 2) Pittsburgh Paints Seal Grip Interior/Exterior Acrylic Universal Primer/Sealer, 17-921XI Series. (MPI #17)
 - 3) Sherwin Williams, Multi-Purpose Latex Primer/Sealer B51W00450 (MPI #17).

2.05 ACCESSORY MATERIALS

- A. Accessory Materials: Provide primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials as required for final completion of painted surfaces.
- B. Patching Material: Latex filler.
- C. Fastener Head Cover Material: Latex filler.

PART 3 EXECUTION**3.01 EXAMINATION**

- A. Do not begin application of paints and finishes until substrates have been adequately prepared.
- B. Verify that surfaces are ready to receive work as instructed by the product manufacturer.
- C. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.
- D. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
- E. Test shop-applied primer for compatibility with subsequent cover materials.
- F. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces is below the following maximums:
 - 1. Gypsum Wallboard: 12 percent.
 - 2. Plaster and Stucco: 12 percent.
 - 3. Masonry, Concrete, and Concrete Masonry Units: 12 percent.
 - 4. Interior Wood: 15 percent, measured in accordance with ASTM D4442.
 - 5. Concrete Floors and Traffic Surfaces: 8 percent.

3.02 PREPARATION

- A. Clean surfaces thoroughly and correct defects prior to application.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- C. Remove or repair existing paints or finishes that exhibit surface defects.
- D. Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces or finishing.
- E. Seal surfaces that might cause bleed through or staining of topcoat.
- F. Remove mildew from impervious surfaces by scrubbing with solution of tetra-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.
- G. Masonry:
 - 1. Remove efflorescence and chalk. Do not coat surfaces if moisture content, alkalinity of surfaces, or if alkalinity of mortar joints exceed that permitted in manufacturer's written instructions. Allow to dry.
 - 2. Prepare surface as recommended by top coat manufacturer.
- H. Concrete Floors and Traffic Surfaces: Remove contamination, acid etch and rinse floors with clear water. Verify required acid-alkali balance is achieved. Allow to dry.
- I. Gypsum Board: Fill minor defects with filler compound. Spot prime defects after repair.
- J. Plaster: Fill hairline cracks, small holes, and imperfections with latex patching plaster. Make smooth and flush with adjacent surfaces. Wash and neutralize high-alkali surfaces.
- K. Insulated Coverings: Remove dirt, grease, and oil from canvas and cotton.
- L. Aluminum: Remove surface contamination and oils and wash with solvent according to SSPC-SP 1.
- M. Galvanized Surfaces:
 - 1. Remove surface contamination and oils and wash with solvent according to SSPC-SP 1.
- N. Ferrous Metal - Non-galvanized:
 - 1. Solvent clean according to SSPC-SP 1.
 - 2. Shop-Primed Surfaces: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces. Re-prime entire shop-primed item.
 - 3. Shop-Primed Surfaces: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces.

- a. Re-prime entire shop-primed item.
4. Remove rust, loose mill scale, and other foreign substances using methods recommended in writing by paint manufacturer and blast cleaning according to SSPC-SP 6 "Commercial Blast Cleaning." Protect from corrosion until coated.
- O. Wood Surfaces to Receive Opaque Finish: Wipe off dust and grit prior to priming. Seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after primer has dried; sand between coats. Back prime concealed surfaces before installation.
- P. Wood Doors to be Field-Finished: Seal wood door top and bottom edge surfaces with clear sealer.
- Q. Metal Doors to be Painted: Prime metal door top and bottom edge surfaces.
- R. Previously Painted Existing Surfaces:
 1. Remove all loose paint, dust, dirt, mold, mildew, oil, grease, rust, loose mill scale, mortar, and any other surface contamination.
 2. Scrape all loose, blistered, peeling, scratched or otherwise imperfect paint down to bare substrate and sand adjacent tightly adhering paint to feather edge.
 - a. Tightly adhered existing paint may remain.
 - b. Spot prime all bare areas with appropriate primer before re-priming entire surface.
- S. Structural Glazed Facing Tile and Hard Tile Surfaces:
 1. Remove all dust, dirt, mold, mildew, oil, grease, mortar, and any other surface contamination.
 2. Mechanically abrade surface to achieve a surface profile as recommended by the paint manufacturer.

3.03 APPLICATION

- A. Apply products in accordance with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual".
- B. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.
- C. Apply each coat to uniform appearance in thicknesses specified by manufacturer.
- D. Sand wood and metal surfaces lightly between coats to achieve required finish.
- E. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.
- F. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

3.04 FIELD QUALITY CONTROL

- A. See Section 01 4000 - Quality Requirements, for general requirements for field inspection.
- B. Owner will provide field inspection.
- C. Adhesion Test to be performed per ASTM D3359 Method A (5mils or less) or B (over 5mils)
- D. All coatings shall be inspected as follows:
 1. Coatings shall be rejected for the following:
 - a. Lacking minimum dry film thicknesses.
 - 1) Inspector may test for proper dry film thickness using methods as recommended by the inspector.
 - b. Poor coverage at rivet heads, plate edges, lap joints, crevices, pockets, and corners.
 - c. Damage from touching, or disturbing paint in any other manner, before sufficiently dry.
 - d. Damage from application to moist surfaces or damage caused by inadequate protection from the weather.
 - e. Damage or contamination of paint from blown contaminants including but not limited to dust.

2. Coatings shall be rejected if any of the following are evident under natural lighting for exterior surfaces and final lighting source, including daylighting, for interior surfaces:
 - a. Visible defects are evident on vertical surfaces when viewed at normal viewing angles from a distance of not less than 48 inches.
 - b. Visible defects are evident on horizontal surfaces when viewed at normal viewing angles from a distance of not less than 48 inches.
 - c. Visible defects are evident on ceiling, soffit and other overhead surfaces when viewed at normal viewing angles from a distance of not less than 48 inches.
- E. Visible defects are defined as follows:
 1. Brush and roller marks, streaks, laps, runs, sags, drips, heavy stippling, hiding or shadowing by inefficient application methods, skipped or missed areas, and foreign materials in paint coatings.
 2. When the final coat on any surface exhibits a lack of uniformity of color, sheen, texture, and hiding across full surface area.
- F. Coatings rejected by the inspection shall be repaired or replaced at the expense of the Contractor.
- G. Small affected areas shall be touched up.
 1. Large affected areas shall be repainted.
 2. Small and large areas shall be as defined by the Architect.
 3. Areas without sufficient dry film thickness shall be repainted.
 4. Paint runs and sags shall be removed by scraper or sanding and repainted.

3.05 CLEANING

- A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.

3.06 PROTECTION

- A. Protect finishes until completion of project.
- B. Touch-up damaged finishes after Substantial Completion.

3.07 SCHEDULE - PAINT SYSTEMS

- A. Concrete, Concrete Masonry Units (CMU), Concrete Block, Brick Masonry: Finish surfaces exposed to view.
 1. Interior: CI-OP-3L, semi-gloss.
- B. Structural Glazed Facing Tile: Finish surfaces exposed to view:
 1. Interior: I-OP-MD-WC, eggshell.
 2. Interior: I-OP-MD-WC, semi-gloss.
- C. Gypsum Board: Finish surfaces exposed to view.
 1. Interior Ceilings and Bulkheads: GI-OP-3L, flat.
 2. Interior Walls: GI-OP-3L, eggshell.
- D. Wood: Finish surfaces exposed to view.
 1. Interior trim and frames: WI-OP-3L, semi-gloss.
- E. Steel Doors and Frames: Finish surfaces exposed to view; MI-OP-MD-DT, semi gloss.
- F. Steel Fabrications: Finish surfaces exposed to view.
 1. Interior: MI-OP-3L, semi gloss.
- G. Galvanized Steel: Finish surfaces exposed to view.
 1. Interior: Mgl-OP-3L.
- H. Shop-Primed Metal Items: Finish surfaces exposed to view.
 1. Finish the following items:
 - a. Elevator pit ladders.
 - b. Exposed surfaces of steel stairs and railings.
- I. Pipe and Duct Insulation Jackets: Finish surfaces exposed to view; FI-OP-3A, flat.

3.08 COLOR SCHEDULE

- A. PT-1

- 1. Sherwin Williams, Grizzle Gray :SW7068
- B. PT-2
 - 1. Sherwin Williams,.Crabby Apple: SW7592
- C. PT-3
 - 1. Sherwin Williams, To match existing
- D. PT-5
 - 1. Sherwin Williams,Overjoy: SW6689:
 - a. Accent Color
- E. PT-6/EP
 - 1. Sherwin Williams, Fountain: SW6787
 - a. Accent Color

END OF SECTION 09 9123